Theoretical Principles of Tibb

A treatise on the Philosophy, Aetiology, Pathology, Diagnosis and Therapeutics from Greek, Arab and Unani sources

HIPPOCRATES GALEN AVICENNA

Prof. Rashid Bhikha

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Ibn Sina Institute of Tibb

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Dedication

To my wife, children and grandchildren for living a ‘Tibb’ life

The Ibn Sina Institute of Tibb, a Public Benefit Organisation (PBO 930008393) was established by the Bhikha Family Trust in 1997 with the vision of assisting in the provision of effective, affordable healthcare. The Institute is academically supported by Hamdard University Pakistan, Jamia Hamdard and Aligarh University, both from India, as well as local tertiary institutions.

Among the objectives of the Institute is the promotion of the training and practice of Tibb by facilitating the training of Tibb doctors, as well as introducing the Tibb concepts of treatment and health promotion to other healthcare practitioners.

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FOREWORD

I first met Prof Rashid Bhikha, Founder of the Ibn Sina Institute of Tibb, South Africa, in May 2001 when he participated in a conference at Aligarh Muslim University. Further to the books he has already published over the past years, I am pleased about the publication of this reference text book which details and explains the theoretical principles of Tibb.

This healing paradigm originates in Ancient Greece, although its roots can be traced back to Egypt at the time of the Pharaohs, and to the contemporary Mesopotamian civilisation. One important aspect of Tibb – herbal medicine – was prominent back in ancient Egypt, where botanical remedies occupied a primary place in the management of diseases prevalent at the time. The Greek period of Tibb begins with Aesclepius (around1200 BCE), a great scholar who refined the art and practice of medicine at the height of medical knowledge of Egyptian and Babylonian healing.

The Greek philosopher/physician Hippocrates (460-370 BCE) freed medicine from the realm of superstition and magic, and conferred on it the status of science. As a matter of fact, the theoretical framework of Greek medicine is firmly based on the teachings of Hippocrates. To develop medicine as a systematic science, he emphasised the natural causes of disease, and recorded the medical knowledge existing at the time. He laid the fundamental principles of Hippocratic medicine, and these still hold good in the field of today's scientific medicine.

After Hippocrates other Greek scholars, particularly Galen (129-200 CE), developed and enriched the system. This laid the foundations on which Arab physicians like Rhazes (865-925 CE) and Avicenna (aka Ibn Sina: 980-1037 CE), during the 'Golden Islamic Age' of contribution to medicine, established an impressive healing paradigm. The system rapidly diffused throughout Egypt, Syria, Iraq, Persia, India, China and others Middle East and far Eastern countries, becoming further enriched in the process.

Tibb is known by different names in different parts of the world as Graeco-Arab Medicine, Ionian Medicine, Arab Medicine, Islamic Medicine, Traditional Medicine and Oriental Medicine and as Unani Medicine in the Indian subcontinent.

Those interested in the history of medicine will find that the practice of medicine has had to face unique conditions from the very beginning; it could never become a pure 'Science' because it concerns humans, who by their very nature are constituted of matter and mind. Nor could it remain pure 'Art' because it has to deal with many concepts and postulates which give it the status of science. This dual character of medicine and its relationship to human beings has been the cause of eternal controversy whether it is an art or a science. This controversy has never been finally resolved: sometimes it is regarded as 'Art', whereas at other times it is considered as 'Science'. As far as the ancient philosophers were concerned, they recognised both aspects of medicine.

In this book Prof Bhikha deals with this dilemma with his description of Tibb as 'A Science of Medicine and the Art of Care' by referring to it as a 'Science of Medicine' as it is based on the principle of cause and effect as described by Ibn Sina; and the 'Art of Care' with respect to health promotion and the treatment of illness taking into account the physical, mental, emotional and spiritual aspects of the human being.

Whilst it is well established that conventional, Western medicine has the same roots as Graeco-Arab Medicine. Western medicine has moved away from the holistic approach of the 'Fathers of Medicine' Hippocrates, Galen and Ibn Sina. Ironically Graeco-Arab Medicine has been reduced to one of many 'Complementary Medicines' in Western circles.

This present book may therefore be considered to set the things in the true perspective. The correct portrayal of theories and philosophies of Tibb system of healthcare detailed in the text will lead to a better appraisal of healing, and directly result in a more accurate orientation

of diagnostic principles and healthcare management which will ultimately be in the larger interest of human health and healing.

I strongly maintain that this book is another milestone in our understanding of the letter and spirit of medical education. Prof Bhikha deserves our full, sincere commendation for his efforts in this complex area. I am confident that this book will fulfil a long time need for elucidation of this supremely important subject.

Dr Mohammad Khalid Siddiqui
Former Director General
Central Council for Research in Unani Medicine
Ministry of Health & Family Welfare
Government of India

INTRODUCTION

My Tibb journey began more than twenty-five years ago when my youngest daughter was diagnosed with fibrosing alveolitis and a prognosis of merely six months to live. A pharmacist at the time, dealing with such a traumatic illness so close to home, made me realise that whilst Western Medicine has made great strides in technological advancements especially with regards to diagnostic procedures and emergency care, there was limited understanding of the causes of disease and the treatment options that could be offered. This turning point made me realise that focusing on the pharmacokinetics and pharmacodynamics of Western medication was only one aspect of the puzzle of understanding aetiology, pathology, diagnosis and treatment. The medical care offered to my young daughter highlighted several limitations of current Western medicine, whose philosophy is based largely on the germ theory and doctrine of specific aetiology, where most illness conditions are linked to a single cause, either a micro-organism or a distortion of a biochemical or physiological nature.

My personal experience sparked the catalyst to research a health system that could have a better understanding of not only treatment methods, but also the 'causes' of illnesses. After years of research into different philosophies of healthcare, including, amongst others, Ayurveda and Chinese medicine, I uncovered the hidden history of medicine. Founded and refined by the fathers of medicine - Hippocrates, Galen and Ibn Sina this scientific and tested approach to health that most Western trained practitioners are not even aware of. I endeavoured to study this theory and practice of medicine, which over the centuries has been known by different names such as Greco-Arab medicine, Western herbal medicine, Unani medicine and simply as Tibb.

Tibb places equal emphasis on the treatment of illness and the maintenance of health. Whilst the name 'Tibb' does differentiate what we do from Western medicine, it is in fact simply the Arabic word for

'medicine' and expresses our willingness to incorporate any medical knowledge and practice that coincides with the basic philosophy of the founders of medicine.

In 1994, in order to research and study the philosophy of Tibb, I met with Hakim Mohamed Said of Hamdard University in Pakistan for academic support. To this day, the Institute is academically supported by the University through the munificence of Mrs Sadia Rashid, and Dr Navaid ul Zafar. Inspired by the legacy of Hakim Said, and after attending training in Unani-Tibb for healthcare professionals designed by Hamdard University, I established the Ibn Sina Institute of Tibb in 1997, to promote the training and practice of Tibb in South Africa.

To achieve this, three tasks had to be achieved; Firstly, official recognition of Unani-Tibb with the South African Department of Health was imperative. This was achieved in September 2001, when Unani-Tibb was included as the eleventh modality under the auspices of the Allied Health Professions Council of South Africa together with, amongst others Homeopathy, Naturopathy, Ayurveda and Chinese Medicine. Secondly, the inclusion of Unani-Tibb medication as one of the categories of Complementary medicines with the Medicine Control Council of South Africa had to be initiated. This was accomplished in July 2002. Finally, establishing the training of Unani-Tibb doctors had to be realised. This was attained in the 2003 academic year at the University of the Western Cape (UWC)'s School of Natural Medicine (SoNM), where training at both a Postgraduate and at an Undergraduate level commenced.

To ensure that the facilitation of Unani-Tibb at UWC was in keeping with international standards, Dr Abdul Haq was seconded from Hamdard, Pakistan in 1998 to assist with curriculum development. Training was further supported by Dr Mohammad Khalid Siddiqui, former Director General of the Central Council for Research in Unani Medicine (CCRUM), and Prof. Anis Ansari, former Advisor of the Central Council of Indian Medicine, Ministry of AYUSH, Department of Health and Welfare, Government of India.

In November 2002, before the training of Unani-Tibb commenced at UWC, a review of the training material was conducted. The review committee included Prof. Jamil Ahmad from Jamia Hamdard University, India and Prof. Hakim Abdul Hannan from Hamdard University, Pakistan. A second Curriculum Review Workshop was held in May 2010 with participation from representatives from the University of Kwa-Zulu Natal, Cape Peninsula University of Technology as well as academics from Hamdard University, Pakistan, Indian Foundation for Traditional Knowledge, Jamia Hamdard and Aligarh Muslim University from India.

In addition to the formal Curriculum Review with participation from international experts, research, has been an important activity of the Institute. Both research reviews as well as on-going research projects have been conducted at the Institute's Treatment Centres in Cape Town (Langa 2006, Saartjie Baartman 2008), which have been established for the clinical practice of Tibb and UWC's Unani-Tibb students.

The continuation of the training and practice of Tibb in South Africa has remained a focus of the Institute of Tibb. Early in 2017, an exciting development, which would further our education endeavours, was the offer from Lambert Academic Publishing in Germany to publish and distribute books on behalf of the Institute. This, together with a request from Dr Barrie Oldham, founder and Chairman of The Centre for Bio-Regulatory Medicine to establish the training of Unani-Tibb in Greece was the stimulus for the compilation of this reference book.

As a comprehensive overview of philosophy, aetiology, pathology, diagnosis and treatment from a Tibb perspective, this reference book is aimed at medical professionals trained in Western medicine, wishing to integrate the principles of Tibb into their current practice. This book may further contribute positively to undergraduate students of Unani-Tibb.

Prof Rashid Bhikha
January 2018

ACKNOWLEDGEMENTS

Before acknowledging the individuals who were directly involved in the completion of the book I would like to take this opportunity to thank the many students with whom I have interacted during the lecture sessions of the first six years of training of Unani-Tibb at the School of Natural Medicine, University of the Western Cape, South Africa. In addition, interaction with, and reviewing of the case studies and research activities with Tibb doctors at the Tibb treatment centres in Cape Town has been invaluable in my further understanding of the Tibb principles in medical practice. For me this interaction was, and will always be, an essential component in the development and implementation of Tibb.

With reference to the successful completion of this reference book, it would not have been possible without contribution from the medical team at the Institute, including Dr Hakim Abdul Haq, Dr Joy Saville, Dr Yumna Abrahams, and especially Dr John Glynn for his immense dedication, commitment and guidance during the task of finalising this book. A special thanks is also extended to Magdalene du Sart, my personal assistant, for the many hours of typing and re-typing.

Of special significance is the contribution of the following persons who reviewed the contents of this book: Prof. M M Wamiq Amin - Dean, Faculty of Unani Medicine Aligarh Muslim University; Prof. Shakir Jamil, School of Unani Medicine, Jamia Hamdard University and former Director General, CCRUM; Dr Merajul Haqur - Research Officer CCRUM; Prof. Hakim Abdul Hannan - Former Vice Chancellor, Hamdard University Pakistan; Dr Mohammad Khalid Siddiqui - Former Director General CCRUM and Advisor to Hamdard Archives and Research Centre; Dr Mujeeb Hoosen - Head of Unani-Tibb, UWC; Prof Mutaq Ahmed - former Unani Chair UWC; and Dr Barrie John Oldham - The Centre for Bio-Regulatory Medicine.

A special thank you to Dr Ghazala Javed, from the CCRUM, who not only contributed towards reviewing the contents of the book, but is

actively supporting the establishment of the training of Unani-Tibb in Greece.

Finally, I am most grateful to my family for their continuous support of all activities at the Institute. My wife Mariam, who remains my greatest support and pillar of strength. My daughters, Nasira and Nasima, for their work at the Institute since its inception.

Nasira, for the proof-reading and editing of this book. My son, Zain, who ably manages the product division of Tibb in South Africa and my youngest daughter, Zaheera, who overcame illness and whose test became my life journey.

Above all, my gratitude to the Almighty for the opportunity to serve others in health.

God Bless
Rashid Bhikha
January 2018
Johannesburg
South Africa

CHAPTER 1: PHILOSOPHY OF TIBB

INTRODUCTION

Tibb is a total system of healthcare, based on the original principles of medicine practiced by Hippocrates, Galen and Ibn Sina (Avicenna), the founders of present day medicine. It includes the basic principles of modern clinical science, embracing both its theory and practice. Tibb recognises the physical, mental, emotional, and spiritual origins of both health and illness. It promotes the early diagnosis of possible predispositions to diseases, well before physical symptoms appear. This prevents these diseases from appearing in a more severe form. Thereafter, treatment is integrative – combining various therapies in response to specific needs. Tibb embraces a whole new way of looking at the body. It considers our health to be the result of a natural, harmonious balance. It believes that our bodies have a way of finding the path back to health. Healing comes from within. Recognition of this inherent wisdom to self-healing is essential in the treatment of disease and maintenance of health. In this chapter we cover the basic philosophical aspects of Tibb, especially the main axioms of Physis, Qualities, Temperament, Humours and Lifestyle Factors. The interrelationship between the individual and the environment, both internal and external is also dealt with.

DEFINITIONS AND DESCRIPTIONS

Tibb. The term ‘Tibb’ is derived from the Arabic word meaning medicine. Tibb is also known as *‘Western Holistic Medicine’, ‘Greco-Arabic Medicine’,* or *‘Unani Medicine’*. This system of healthcare is practiced extensively on the Indian sub-continent. The healing philosophy underpinning Tibb is derived not only from Greek and Arabic principles, but also from Indian and European medical systems. Generally, the term *‘medicine’* refers to the art and science of preserving health, preventing illnesses and curing or alleviating disease. Tibb defines medicine more extensively - as the science by which we learn.

It embraces knowledge and understanding of:

- The various states of the human body, in both health and disease;
- The means by which health is likely to be lost; and when lost, how health can to be restored.

This is highlighted in Ibn Sina's definition of Tibb:

> *"Tibb is a branch of knowledge that deals with the states of health and disease in the human body for the purpose of adopting suitable measures for the preservation or restoration of health."*

The above epitomises the Tibb approach of equal emphasis on the preservation (maintenance) of health, and the restoration (treatment) of clinical disorders.

Complementary medicine. There is a wide variety of medical or healing systems which are different in theory and practice to conventional medicine. These are conveniently termed complementary or alternative (to conventional medicine). The term complementary medicine is a vague and confused one in many minds. It is a general term used interchangeably with terms such as *alternative; holistic* and *natural*.

Many forms of complementary medicine appear, at first glance, to be completely unconnected. However, most of them are united in one important core aspect – when treating the patient, they act primarily to support the body's inner healing systems, rather than merely suppressing the patient's symptoms.

Complementary medicine encourages self-healing and the prevention of disease, rather than reacting to and suppressing symptoms as they arise. In contrast, conventional or Western medicine's approach is mainly treating with medication and or surgical procedures. Furthermore, whilst conventional medicine has proven reasonable success at treating acute disorders, complementary medicine is far more efficient for those people who suffer from chronic complaints. Complementary medicine includes therapies which can be used alongside conventional medicine in order to improve the treatment outcome.

Complementary medicine can be divided into four categories:

- Healthcare systems or paradigms – for example Tibb, Naturopathy, Ayurveda, Homeopathy, Chinese medicine.
- Diagnostic techniques – for example Iridology, Hair Analysis.
- Therapeutic techniques – for example Aromatherapy, Hypnotherapy, Chiropractic, Osteopathy.
- Self-help techniques – for example Yoga, Detoxification and Dieting.

Western medicine is the standard scientific or medical model *(paradigm)* for Western and developed countries; also termed conventional, orthodox bio-medicine or modern medicine.

Alternative is a general term for any therapy which is used instead of Western medicine. It can refer to traditional systems such as Chinese medicine, Ayurveda and African traditional medicine, or to specific techniques like aromatherapy and acupuncture.

CAM. The common abbreviation for Complementary and Alternative Medicine.

Integrative medicine is the deliberate and logical combination of complementary and conventional therapy in a systematic manner aimed at diagnosing and treating the patient's clinical disorder.

Holistic is a state of well-being in which the person's body, mind, emotions and spirit are in tune with the physical, mental, spiritual and social environment. Holistic therapy refers to treatment in which the physical, mental and social factors are taken into account, rather than just the overt diagnosed disease.

Traditional medicine is an indigenous medical system, typical of a particular region, in different parts of the world. This is often termed 'folk medicine' or 'ethno-medicine'.

Translation. Arabic translation of English terminology (Annexure1).

NATURE OF HEALTH AND DISEASE

Attaining and maintaining optimum health is a major preoccupation of modern times. We live in a time where there is unrelenting interest in and awareness of health-related issues. Advice on changes to our diet, the use of supplements, exotic herbs, taking more exercise, stress relieving measures and much more assail us continually, especially in the print and electronic media. Health itself, however, is not an easy concept to define.

Health is generally described in terms of either how we feel, or how capable we are of functioning. It does not merely mean not being sick, and is more than the absence of illness or unwanted physical symptoms. A person would be considered healthy if he is able to carry out his general physical, mental, occupational and social functions to his complete satisfaction. In line with this is the World Health Organisation definition:

> *"Health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity."*
> [WHO]

However, health usually denotes the absence of disease. According to the dictionary, health is:

> *"Freedom from bodily or mental disease or decay; a state of bodily or organic soundness; the absence of disease".*
> [Cassell's English Dictionary]

In the Tibb context, health is seen as a balance between the four humours in relation to the temperament of an individual (concepts that will be discussed later on in this chapter).

> *According to Tibb, therefore, health is:*
>
> *"A state of physical, emotional, and spiritual harmony resulting from the most favourable balance of humours in a person"*
> *[Chishti, 1985]*

Tibb believes that good health is more than the absence of signs and symptoms. Even without troublesome symptoms, a person's ability to resist illness may be low, and his or her essential vitality may be seriously depressed. In Tibb, health is present when our body, emotions, mind and spirit maintain a correct and sound balance between qualities, temperament, structure and functions. A disease is contrary to the above – it is an abnormal condition which produces a functional disorder as a primary consequence. It can be an expression of a temperamental imbalance, humoral imbalance or a disorder of tissue structure.

Conversely, conventional, Western medicine defines disease as:

> *"... a disorder with a specific cause and recognisable signs and symptoms; any bodily abnormality or failure to function properly, except that resulting directly from physical injury".*
> [Oxford Medical Dictionary]

According to this definition:

- Western medicine reduces the human body to series of mechanistic causes and effects. A consequence of this is that patients are regarded as collections of body parts and systems, not as holistic beings.
- Western medicine is primarily concerned with the physical dimension of the person. This contrasts with complementary systems, such as Tibb, which place no barriers between physical, mental and spiritual well-being.
- Western medicine looks for single causes for single diseases. Complementary medicine, especially Tibb, regards most, if not all diseases as arising from multiple causes ('multifactorial'). These include accumulation of toxins or humoral imbalances from an imprudent lifestyle, exposure to toxins and poor personal habits.

[The differences between Tibb and Western medicine are detailed later.]

HISTORY OF TIBB

Historically, codified medical practice goes back as far as 10,000 BCE (Before the Common Era). Chinese Herbal Medicine is recorded as far back as 3000 BCE, and Egyptian Pharaohic Medicine, which was practiced by *Imhotep*, as long ago as 2980 BCE.

Originally, the school of Greek Medicine at Cnidus placed emphasis on subjective symptoms, but little on objective signs. It originated the organ-based scheme of disease and therapy. A breakaway group, led by *Hippocrates* (460-375 BCE: *"the Father of Medicine"*), set up Medical Schools in Greece (on the Isle of Cos and at Athens) and elsewhere. Traditionally, Hippocrates has been regarded as the embodiment of the ideal physician, and the origins of Tibb can be traced back to him. Hippocrates believed that health is the expression of a harmonious balance between the various components of our nature, the environment that surrounds us, and our adopted lifestyle. He also believed that there is a natural and powerful tendency towards self-healing, which is driven by Physis. This is the body's innate vital life force, which helps to maintain the body's equilibrium or harmony, so allowing the proper functioning of the cells, tissues and organs.

> *"Life is short and the Art of medicine long, the occasion fleeting, experience fallacious and judgement difficult".* [Hippocrates]

During the Roman Era and afterwards, medicine stagnated for more than a millennium. The Romans apparently preferred divine to medical intervention. However, *Galen*, a Greek philosopher living in Pergamum, Asia Minor, around 130 CE, compiled Hippocrates' work and all other available medicinal information. He introduced both the term *"pneuma"* – the creative force for being – and the idea of *temperament*. Not only did he accept the humoral theory, but he extended it to include foods, each of which, he suggested, had a characteristic temperament. The science of dietetics arose from his findings. During the Dark Ages in Europe, which lasted for more than 800

years, little of note was produced in the medical sphere. However, *Ibn Sina* (known in the West as *Avicenna – "the Prince of Physicians"*) came to the fore in 980 CE, in Bokhara (Afghanistan). He is justifiably the most famous physician in history. Resident in Persia, he was famous as a polymath, being responsible for 270 books. He codified medicine into a science in the late 10th and early 11th centuries. Tibb was guarded and nurtured by Ibn Sina, and his fellow Arab physicians. He authored two major books on medicine: *The Book of Healing (metaphysics of health)* and *The Canon of Medicine* – the latter being *"the single most famous book in the history of medicine"*, according to the Encyclopaedia Britannica.

Ibn Sina's philosophy of medicine was adopted by medieval schools of thought, and his influence on the development of medicine cannot be overstated. It has maintained its authority well over 1000 years. His *Canon of Medicine* is still the preferred reference handbook for Tibb practitioners.

Muslim practitioners of Tibb introduced, amongst others, medical botany and chemistry; organisation of the pharmacy; and the founding of hospitals, with lecture halls, charity wards, kitchens, dispensaries, qualified medical and nursing staff. Innovative techniques also appeared at this time – distillation, filtration, sublimation and calcination.

By the early 1700's, Tibb was the basis of virtually all medicine in most parts of the world. It formed the basis of Homeopathy, (developed by S. Hahnemann, 1755-1843). In the mid-1800s, Tibb principles underpinned the foundation of natural therapeutics, and these were introduced into the Western medical discipline of Naturopathy.

However, the advent of the germ theory of disease at the end of the 19th century, and the arrival of chemical or pharmaceutical medicine in the 20th century heralded major changes in medical practice. At the present time, Tibb is practiced in its original form predominantly on the Indian Sub-continent. However, healing traditions directly inspired by Tibb remain the treatment of choice for *more than a billion* people in many parts of the world.

MAIN AXIOMS OF TIBB

The main axioms of Tibb are:

Physis. Is the intrinsic ability of the body to preserve health, and the mechanism that activates the body's healing processes. Physis is the vital life force, inherent in the human body, which helps to maintain equilibrium or harmony within the internal environment, so allowing the proper functioning of the cells, tissues and organs. It is the power behind the body's innate capacity for inner or self-healing. In addition, it regulates the reservoir of energy which is the driving force behind maintaining health.

Temperament. The *temperamental theory* is derived from Greek philosophers who hypothesised that everything in the universe is created from four primary elements with corresponding qualities: fire (Hot & Dry), air (Hot & Moist), water (Cold & Moist), and earth (Cold & Dry). Depending on the ratio of the four primary elements that make up an entity, the opposing qualities in the entity will reach a state of equilibrium resulting in an overall *quality*. This overall quality is known as *temperament*. Every part of creation, be it mineral, plant or animal, has a particular temperament with an overall quality. Temperament in human beings describes the uniqueness of an individual with respect to physical, mental, emotional and spiritual attributes divided into four broad categories: sanguinous, phlegmatic, bilious and melancholic, with a combination of qualities of hot, cold, moist and dry.

Humours. The *humoral theory* is based on the hypothesis that each individual has an ideal humoral balance which is made up from the four humours. This unique balance has to be in harmony with the unique temperament of an individual for health to be maintained. The humours, produced in the liver from the food and drink consumed, are also four in number: sanguinous, phlegmatic, bilious and melancholic also with a combination of qualities of hot, cold, moist and dry.

Lifestyle Factors. There are six main Lifestyle Factors, namely Environmental Air and Breathing, Food and Drink, Movement and Rest, Our Emotional Life, Sleep and Wakefulness, Elimination and Retention. There are also a number of minor ones, such as the place of residence, age or gender, habits, and nature of occupation. All are

interpreted within the context of qualities.
Qualities. The qualities of hot, cold, moist and dry, common to elements, temperament, humours and Lifestyle Factors, are also associated with most illness conditions. Qualities form the basis of interpreting aetiology, pathology, diagnosis and treatment.

UNIQUE FEATURES OF TIBB

In addition to the main axioms of Tibb, a few unique features of Tibb are described below:

Emphasis on health. One of the most significant features of Tibb is that it is a comprehensive system of healthcare with a sound philosophical base. This provides valuable insights into the nature of energy and matter, the origin of mankind, and the relationship that exists between humans and their environment.
Tibb fully appreciates the complex interplay of our human nature, our make-up, and how we relate to the environment. By regarding mankind in the broader context of the universe in which we live, we can better understand the causes of illnesses and equally important, how we can maintain optimum health. According to Tibb, a healthy person can become even healthier. It places equal emphasis on understanding the states of health and disease in the human body. Its mission is both maintaining existing health and in the case of disease, actively supporting the individual in the restoration of optimum health.

Holistic nature. Holistic health has been defined as:

> *"… Not merely the absence of disease or infirmity, but a state of complete physical, mental and social well-being"* [WHO].

A similar definition of holistic health has been put forward:

> *"... the state of well-being in which an individual's body, mind, emotions and spirit are in tune with the natural, cosmic and social environment"* [American Holistic Medical Assn.]

Holistic medicine therefore takes into account the physical, mental, emotional and social factors in the patient's illness, rather than just the disease that has been diagnosed. In other words, Tibb has as its basic focus of activity the optimum health of the individual – not merely the absence of illness.
Another aspect of Tibb and holism is that both the causes of the disorder and the susceptibility of the person to the disorder have to be addressed. For instance, in treating a person with the common cold, Tibb directs its efforts into two areas; firstly, the alleviation of the symptoms (coughing, sneezing, runny nose, etc.); and secondly, enhancing the person's resistance, so that he or she is less likely to succumb to further attacks of the illness.

Spiritual nature. Tibb accepts that many diseases, whether predominantly of the physical body or of an emotional or psychological nature, have a spiritual component. It therefore strongly advocates the use of spiritual activities such as meditation, prayer and contemplation where such spiritual aberrations are recognised.

Empirical nature. Tibb treatment is largely based on centuries of practical experience, observation and investigation. In this respect Tibb differs from Western medicine, which is derived from experimentation according to the scientific method. For example, the use of a drug, such as a diuretic, to treat hypertension in conventional medicine, follows from a number of controlled randomised clinical trials. This is the gold standard of Western medicine. Tibb, on the other hand, treats hypertension with a combination of changes to the person's lifestyle, plus the use of one or more herbal medications which have proven effective over many years of clinical practice.
Tibb does, however, accept the need for scientific enquiry. It is not only in complete harmony with the need for the basic medical sciences of biochemistry, anatomy and physiology (although interpreted in different terms, such as humours, organs and members, faculties, functions and energies) but also includes the fundamentals of chemistry, physics and metaphysics.

The Ibn Sina Institute of Tibb is actively involved in research which is relevant and important in South Africa. Internationally, extensive research into the theoretical and practical aspects of Tibb is being conducted in established Institutions such as the Central Council of Research in Unani Medicine, and the National Institute of Unani Medicine, both under the auspices of the Ministry of Ayurveda, Yoga, Unani, Siddha and Homeopathy (Naturopathy) – (AYUSH), Government of India. Extensive research is also being undertaken by various universities which include Aligarh Muslim University, Jamia Hamdard University (India), Hamdard University (Pakistan), as well as universities in Bangladesh, Sri Lanka, Iran and the Middle East.

Natural healing. Tibb accepts that symptoms such as diarrhoea, vomiting and fever are invariably reactive responses of the body towards healing. They are often the body's attempt to rid itself of toxins which have disturbed the internal harmony. The process is directed and controlled by Physis, so is termed a *Physis response*.

Tibb considers that these symptoms should not be stopped, unless they have gone too far and are causing intolerable distress to the person. In other words, Physis should be supported, not suppressed. If these symptoms are actively subdued by the use of anti-diarrhoeal, anti-emetic and antipyretic drugs, the patient will no doubt gain relief. However, as the toxin affecting him or her has not been totally flushed from the body, the symptoms will inevitably reappear.

Everyone is unique. A primary feature of Tibb is the concept of temperament, and its importance as part of the total diagnostic and therapeutic procedure. As such, Tibb attaches considerable value to assessing a patient's authentic temperament as a precursor to a therapeutic approach based on his or her uniqueness, and how to restore health by supporting inner healing. In this, Tibb contrasts markedly with Western medicine, which focuses almost exclusively on diagnosing, describing and quantifying features of the patient's disorder, with scant attention paid to the individual nature of the patient. Western medicine treats the disease; Tibb treats the person with the disease.

Cost effectiveness. Tibb is ideally suited to meet the challenges of the high cost of healthcare. Because of the comprehensive understanding it has of the causes of illnesses, it allows for inexpensive, low-tech, easily accessible means to achieve health rather than expensive high-tech interventions. The understanding of the causes as well as the progress of diseases allows the practitioner early diagnosis of 'syndromes' long before the appearance of symptoms thereby preventing more serious illness.

Furthermore, by advising on meaningful changes to the patient's Lifestyle Factors, Tibb helps to reduce the chance of the disease reappearing. For example, the symptoms of type 2 diabetes can be readily suppressed by one or more of a number of hypoglycaemic drugs. However, this means continuous treatment, which is costly, inconvenient, prone to side effects, and probably needs regular dosage adjustment. Tibb, on the other hand, will not only treat the elevated blood sugar, but will counsel on lifestyle changes which will result in the underlying conditions that lead to the illness in the first place, being resolved.

Empowerment. Tibb emphasises empowerment of the patient as well as preventative medicine. Here again, the understanding of the causes of diseases enables the practitioner to advise his patients more effectively on management of illnesses and primary healthcare. The awareness of an individual's temperament further empowers people to make sound health choices.

COMPARISON: TIBB AND CONVENTIONAL MEDICINE

Although Western medicine can trace its roots as far back as Hippocrates, the acknowledged 'Father of Medicine', its present practice is not always in line with the early founders' ethical principles. Western medicine really originated during the period of the Renaissance, during which the scientific thinking of the causative theory of modern science progressively replaced the earlier holistic models which had been dominant for nearly two thousand years. The new paradigm, termed the "Cartesian model", after the French philosopher, Rene

Descartes (1596-1650 CE), heralded the birth of modern medicine. It claimed to invalidate the humoral concepts and holistic principles which underlie Tibb theory and practice, and promoted the ideology that man was separate from nature, the mind from the body, and that the world could be viewed objectively through experiment. This model was supported later by Virchow (1821-1902), who demonstrated that disease begins with changes in living cells, and by Pasteur (1822-1895) whose role in the development of the theory of infection was of key importance.

In this new "Germ Theory" paradigm, infectious diseases are caused by specific pathogenic microbes. Another pillar on which conventional medicine is based is the "Doctrine of Specific Aetiology", whereby most diseases are reduced to a simple cause - a micro-organism, an inborn error of metabolism, or one or other physiological or biochemical malfunctions. The prevailing holistic approach to disease was marginalised in favour of this doctrine, scientific reductionism, and a tendency to view the body as a machine.

Listed below are differences between Tibb and Western medicine:

Differences in Theory

1. *Tibb takes a holistic approach to the treatment of disease.* For Tibb, disease results from several negative factors coming together, bringing disharmony to the person's body, mind or soul. The aim of therapy is to support and bolster physis, our natural inner healing power. Alleviation of the person's disease therefore needs a multifactorial, holistic approach, based on lifestyle changes, behaviour modification, active physical and mental therapies and, where appropriate, herbal and other natural remedies. Conversely, Western medicine adheres to the theory of specific aetiology as the basis for therapy: "*One disease; one cause; one treatment*".

2. *Tibb accepts that many diseases have a spiritual dimension.* Tibb feels that there is a powerful spiritual component in

maintaining optimum health and alleviating chronic disease, and that this should be considered when deciding upon therapy. This can include spiritual support from contemplation, fasting and prayer. Western medicine, however, downplays or rejects any marked spiritual influence in healthcare, as it cannot be detected physically or quantified:" If *you cannot measure it, it doesn't exist".*

3. *Tibb is true to the Hippocratic tradition.* It accepts the principle of: "*First, do no harm*", a cardinal feature of the Hippocratic Oath, and all treatment and techniques are consistent with this. Tibb also accepts the Hippocratic advice of "*Assist nature*", so all Tibb measures cooperate with physis. Western medicine, however, tends to pay lip-service to this. Drug treatment, by far the major intervention, is usually negated by intolerable side effects and long-term adverse drug reactions. Moreover, much drug therapy actually hinders or neutralises the power of inner healing. Antibiotics, proton pump inhibitors, steroid use and cancer therapy are prime examples.

4. *Tibb is health focused, not disease, focused.* Its main objective is achieving and maintaining realistic and optimum wellbeing. It is prevention focused. This approach is more cost-effective than treating disease once it is established. In this regard, Tibb essentially believes in supporting inner healing, and adapting to the changing environment, rather than opposing it. Western medicine, on the other hand, has traditionally been half-hearted in its approach to disease prevention, preferring active drug therapy.

5. *Tibb regards each patient as unique.* It recognises the individuality of everyone in terms of temperament. This is relevant in diagnosis and treatment, and for the long-term maintenance of wellbeing. Western medicine tends to view patients as effectively identical carriers of a particular disorder, and with a "*one size fits all"* approach to drug therapy. The disease itself is treated, not the person.

6. *Tibb views living beings as highly adaptive and incredibly complex interacting dynamic systems.* This manifests in both physical and metaphysical aspects and is probably beyond our comprehension. Western medicine has a more simplistic, more mechanistic, view of living beings. Malfunctioning parts can be fixed or replaced by transplants, and faulty metabolism corrected by drugs.

7. *Tibb accepts the body-mind interaction.* It is firmly convinced of the existence of powerful and significant links between a person's physical, mental and spiritual states. These links have major consequences in deciding a person's wellbeing. Western medicine, however, rejects the existence of non-physical aspects of wellness, as it cannot be readily identified, isolated and quantified.

8. *Tibb differs in its definition of health.* It sees health as the result of an adaptive dynamic harmony between the person's temperament, (especially the genetic component), the immediate environment, and the lifestyle adopted. Tibb also accepts that harmony between body, mind and spirit is necessary for optimum health. Western medicine generally defines health simply as the absence of disease. Western medicine relies heavily on laboratory parameters in its definition of 'normality' as part of being healthy.

9. *Tibb differs in its definition of disease.* It sees disease as the consequence of a breakdown in the body's homeostasis. This is due to physis being overwhelmed by a faulty lifestyle, a hostile environment, self-destructive personal habits, or adverse genetic factors. In Tibb, physical, emotional, spiritual and social aspects are involved. Western medicine views a disease as a physical disorder with recognisable signs and symptoms and a specific cause which leads to metabolic abnormality or bodily dysfunction.

Difference in Diagnosis

1. *Tibb does not rely only on invasive or hi-tech diagnosis.* It employs empirical, traditional and time-tested techniques to reach both provisional and final diagnoses, although it may resort to quantitative physical or laboratory data in support where uncertainty exists. Western medicine, by contrast, relies very heavily, often overwhelmingly, on quantitative data, especially laboratory and scanning results, before making a diagnosis.

Differences in Treatment

1. *Tibb supports inner healing.* A major pillar of Tibb healthcare is physis, the power behind inner healing. All Tibb therapy is designed to support or augment physis, never to oppose, ignore or override it. Western medicine does not accept the existence of physis, as it cannot be isolated and quantified. In fact, Western treatment often undermines the patient's physis with drugs like antibiotics and steroids.

2. *Tibb treats both symptoms and underlying causes.* Tibb acts to relieve any bothersome symptoms immediately. It then seeks to identify and correct the underlying causes of the ailment. Western medicine generally focuses on alleviating the symptoms troubling the patient, with little or no attention paid to redressing any possible underlying causes.

3. *Tibb is better suited for chronic, recurring disorders.* Chronic diseases, not acute disorders, demand most of the healthcare burden and budget. Tibb focuses on rectifying any obvious aspects of a faulty lifestyle and personal behaviour. As Tibb treatment is humoral balance and lifestyle, not drug, focused, it does not provoke adverse reactions. Treatment of chronic disorders is natural, patient focused, and respectful of the force of inner healing. Western medicine is generally successful in alleviating symptoms with a wide variety of drugs. Over the long-term, however, serious adverse reactions and unwanted metabolic effects often develop. These in turn need further drug

treatment, and patient compliance is often reduced or lost due to adverse drug reactions.

4. *Tibb examines a patient's diet and lifestyle early on in therapy.* It attaches great importance to a person's lifestyle and habits in the healthcare scenario. Lifestyle management is accepted as a major part of the present and future medicine. Western medicine does not offer detailed lifestyle advice. It does not attach much value to lifestyle changes, other than routine advising on weight loss, smoking and drinking habits. It usually resorts to potent drugs before lifestyle changes have been explored.
5. *Tibb therapy does not impact gut bacteria.* The gut microbiome is now recognised as a major influence health and disease and has a significant influence on the person's immune system. No Tibb therapy, whether lifestyle changes, diet improvement, or herbal or regimental therapies is known to disrupt the patient's microbiome. Western medicine's regular use and overuse of antimicrobials can seriously upset the patient's microbiome, often leading to super-infection by pathogens.

Differences affecting the patient

1. *Tibb treatment is better tolerated.* Tibb therapy is natural and has been around for centuries, so there is little chance of unexpected or unusual surprises from it. Herbal medicine, for instance, is demonstrably less prone to side effects or adverse reactions than drugs are. Western medical treatment, however, is firmly based upon synthetic drug therapy, for acute, chronic and recurring disorders. This exposes the patient to a wide range of side effects in the short term and potentially serious adverse metabolic changes over the longer term. This lack of tolerance often leads to discontinuation of therapy, or to the need for additional drug treatment to counter these side effects and reactions.
2. *Tibb is less prone to iatrogenic problems.* Tibb therapy is based on lifestyle changes supplemented by traditional healing

techniques and natural/herbal medicine. Tibb therapy is much less prone to problems due to poor clinical practice. Conventional medicine, in contrast, is seriously prone to iatrogenic problems, due mainly to poor tolerance, and drug interactions.

3. *Tibb therapy is less expensive and time-consuming.* Tibb therapy usually involves repeated face-to-face counselling, and this encourages good patient compliance. It is less inclined to need complex monitoring, as much of the clinical progress involves lifestyle changes. Western medical treatment often demands constant laboratory or physical monitoring of clinical progress. For chronic disorders this is both expensive and time consuming.

4. *Tibb empowers the patient.* A cardinal feature of Tibb therapy is that the patient is more involved in diagnosis, treatment and follow-up. In Tibb, the patient's active participation in therapy is expected, and personal responsibility is encouraged. Western medicine generally adopts a 'top-down' approach, in which the patient is placed in a submissive role. It assumes the doctor is the all-knowing authority, never to be questioned or challenged.

5. *The Tibb practitioner offers the patient empathy.* In Tibb, care and empathy are needed to effect optimum healing and health. Tibb diagnosis focuses on subjective feelings and opinions, as well as symptoms and signs. Western medicine the doctor is emotionally neutral, detached and usually focuses on objective data only.

6. *Tibb has a constant healthcare message.* The theoretical basis and main practices of Tibb have been generally consistent over many centuries. Western medicine, however, is constantly changing its advice, according to new information and different opinions. This can be confusing to both patient and practitioner.

In summary, Tibb differs from Western medicine in several important ways:

Tibb position	Western Medicine position
It takes a holistic approach	It adheres to the Doctrine of Specific Aetiology
Diseases have a spiritual dimension	It denies spiritual influence on health status
It is true to the Hippocratic tradition	Some therapies are traumatic to the patient
Tibb is health focused	Symptom alleviation, not cure, is focus of therapy
Each patient has a unique temperament	Patient regarded as disease carrier, not a person
Human beings are incredibly complex	Has a mechanistic model of health & disease
The body-mind interaction is accepted	Rejects the body-mind interaction in wellbeing
Tibb differs in its definitions of health & disease	Defines health as the absence of disease
Diagnosis does not rely on invasive/ hi-tech methods	Relies heavily/exclusively on physical data
Physis is actively protected and boosted	Does not accept existence of inner healing
Tibb treats both symptoms and underlying causes	Mainly concerned with symptom alleviation
It is better for chronic, recurring disorders	Adverse drug reactions usually develop
Lifestyle & diet are considered before active therapy	Lifestyle advice is simplistic and half-hearted
Tibb therapy does not disturb gut bacteria	Many drugs upset the patient's microbiome
Treatment is better tolerated by the patient	Poor tolerance from synthetic drug therapy
Tibb is less prone to iatrogenic problems	Commonly prone to serious iatrogenic problems
Treatment is less expensive or time-consuming	Need for laboratory or physical monitoring
Tibb values patient empowerment	A 'top down' approach is standard
Tibb has a constant healthcare message	Healthcare advice is constantly changing

TIBB CONCEPT: PHYSIS

Tibb views the human being as part of the larger cosmos – as are all living entities in the Universe. Everything in the Universe (or *Macrocosm*) is interconnected in one way or another. We as individuals do not exist in our own self-contained world (or *Microcosm*), but are connected to other parts of the Macrocosm: via our behaviour in our families, our communities, our societies, our planet, and our very existence. Everything we do has repercussions far removed from ourselves.

As human beings, we are all ultimately made up of the same basic material as the rest of the Universe. We connect with the Macrocosm by our behaviour, our actions, and even the air that we breathe. We influence all living organisms which share the earth with us.
A harmonious balance normally exists between the components of the Macrocosm, whether at the cosmic, geological, social or physiological levels. The relationship between the fauna and flora, man and animals, the atmosphere, the oceans, and the earth are all carefully and delicately balanced for the maintenance and perpetuation of life. An example of the maintenance of this balance for the perpetuation of life on this planet is seen if we consider on the salt content in the sea. Despite the natural disasters of earthquakes, volcanic eruptions or the effect of mankind extracting salt from the sea over thousands of years, the saline content in the oceans is still ideal for all forms of marine life.

This harmonious balance is guided by an organizing principle, the *Supreme Wisdom of the Universe*, the essence of which exists in every living entity. This inherent wisdom resides in our genetic make-up (our genes), and in our folk memories (our memes). This inherent wisdom is recognised in several medical philosophies and disciplines, such as Chinese Herbal Medicine, Ayurvedic Medicine and Homeopathy. Hippocrates and Galen also acknowledged its existence. In Tibb, this inherent wisdom is called *Physis*, which is controlled by the supreme wisdom of the universe.

Our health can be regarded as an expression of a dynamic but harmonious balance between the various components of our nature, our environment, and our lifestyle. Physis is the intrinsic ability of the body to preserve health, and the mechanism that activates the body's healing processes.
Briefly stated, Physis is the vital life force, inherent in the human body, which helps to maintain equilibrium or harmony within the internal environment, so allowing the proper functioning of the cells, tissues and organs. In addition, it regulates the reservoir of energy which is the driving force behind maintaining homeostasis in the myriad of complex processes we recognise as life. It is the origin of movement and rest.

> *"Nature heals, and the physician is only nature's assistant."*
> [Hippocrates]

The various systems in the body – the circulatory, respiratory, digestive, immune systems, etc. – have their own organisation. However, they do not work in complete isolation, but are each connected to the other systems in order to function effectively and efficiently. Physis has the innate ability to orchestrate the body into maintaining dynamic optimum functioning, better known as *homeostasis*. It acts to heal the body when it is sick, restore it when it is depleted, and to develop and thrive when supplied with suitable nourishment. As the regulator for homeostasis, it is essentially the human's 'inborn intelligence of health'.
In the event of disease (or even when the body fails to reach its ideal state), Physis acts by correcting imbalances and disharmony. One important feature of Physis is that it operates in all dimensions of health – in the physical, the mental, the emotional, and spiritual.

Physis and other medical paradigms

Physis is recognised in other healing philosophies – as *Prana* (Ayurvedic Medicine); *Chi Energy* (Chinese Medicine); *Vital Force* (Homeopathic Medicine), and *Nature* (Naturopathy). Hippocrates described it as *Vis Medicatrix Natura*. Physis is also akin to the *Yin and Yang* principle of oriental philosophy. It has also been termed the *Divine Wisdom* and in the Abrahamic scriptures as God Almighty.

In early Western holistic medicine it was labelled the *Etheric Body*. It has also been variously described as the *Vital Force*, *Natura* ("the healing power of nature"), *Mother Nature* and the *Hierarchical Principle*. Physis was used to describe the natural vitality of what is now recognised as the immune system, in its spontaneous response to environmental influences. It was quickly brought into action to detect and react to both supportive and disruptive factors. In fact, one component of Physis is our immunological identity, which forms the molecular basis of healing. Another aspect of Physis, which is a key focus of the relatively new discipline of psycho-neuro-immunology (PNI) is the placebo response, and the possibly associated phenomenon of spontaneous healing.

> *"When Physis is powerful enough to withstand the disease, it does not require the aid of the physician, as in the case of minor diseases that are self-healing"* [Al-Malki]

The nature of Physis

Physis is the administrator of the body, and it operates in the physical, mental and spiritual dimensions. It embraces all metabolic and homeostatic functions of the body. Physis comes into effect from the instant of fertilisation, and is present until the moment of death. It maintains harmony between the individual and both the internal and the external environments. Physis ensures that an ideal balance exists within the body's cells, in the tissues, between the many internal organs, and the entire body. This dynamic maintenance of harmony within the body is also termed homeostasis, as mentioned earlier.

In the *physical context*, Physis ensures that the many millions of biochemical reactions taking place – for protection, for growth, tissue maintenance, reproduction and repair – which are taking place at any instant, are controlled.

At the *psychological level*, the harmony or balance of the complex of emotions, the control of destructive urges or thoughts, and the maintenance of good mental health is regulated by Physis.

One specific aspect of Physis relevant in health and disease is the immune system. This ensures that infections arising from outside do not disturb the body's internal harmony. It also maintains an extensive surveillance on the body's many tissues, to detect any cancers in development, and remove them if they become established.
Other aspects of Physis in the physiological dimension are the numerous *biochemical feedback* mechanisms which operate in the body's metabolic processes, and the regulation of hormone secretion from glands.

Physis is not confined to humans – it pervades all living tissue: it is part of the *biochemical unity of life*. It follows the laws of nature as we understand them, and works in a pre-determined, instinctual manner.

Physis and medicine
The word 'physician' is derived from the word Physis. The true role of the physician is to aid Physis in the healing process, by understanding the factors governing Physis, and plan and execute treatment accordingly. For example, when a person has eaten something that disagrees with him or her, then vomiting or diarrhoea is a natural reaction. The physician should be aware of this natural reaction, and assist Physis by devising effective treatment which is in harmony with the body's healing mechanisms.

> *"Each patient carries his own doctor inside him. We are at our best when we give the doctor who resides within each patient a chance to go to work"* [Albert Schweitzer]

> *"Behind every natural action of the human body is an inherent wisdom, a mechanism [Physis] that allows the body to heal itself. In fact, no herb, no food or any other substance or procedure can do anything on its own to heal. It can only assist the body in its own self-healing role. If your finger is cut, it is not the stitches or the bandage or the iodine that causes it to heal; it is the skin itself that performs this miracle"* [Chishti, 1985]

A major aspect of Tibb is that Physis has to be respected if the healing process is to be successful. The treatment of illness is imposed from outside, whereas actual healing is achieved from within.

TIBB CONCEPT: CREATION

The nature of matter

We know that energy and matter are interchangeable, as described by the equation: $\mathbf{E = mc^2}$, Where **E** is energy, **m** is mass, and **c** is the speed of light. However, in ancient Greece, the philosophers Democrates and Aristotle believed that between *Energy and Matter* there existed an intermediate *'Primary Matter'*; or '*Elements*', symbolically represented by the universal elements *earth, water, air, and fire*, each of which is characterised by two qualities: Earth (Cold & Dry), Water (Cold & Moist), Air (Hot & Moist), Fire (Hot & Dry).

Elements

According to Ibn Sina, elements are indivisible matter, which provides the basic components of everything in the Universe (the *Macrocosm*), including our own body (the *Microcosm*). The various substances (*compounds*) in nature depend on their combination, and their variety is brought about by the degree of complexity. Depending on the ratios of qualities in these elements, everything in the Universe exists in one or other states – solid, liquid, gaseous or in the state of plasma. (Plasma is the state of matter found at very high temperatures in nuclear reactions and inside the sun where the electrons are stripped from the atom.)

Earth	*Cold and Dry*	solid
Water	*Cold and Moist*	liquid
Air	*Hot and Moist*	gas
Fire	*Hot and Dry*	plasma

According to Tibb philosophy, of the four elements, two are light and two are heavy. Fire and air are light while earth and water are heavy. These elements are described within the context of our planet, where the earth element is in the centre of existence. In its nature it is at rest and because of its inherent weight, all other elements gravitate

towards it. It is the heaviest, densest, most solid element.
It is by means of the earth element that the parts of our body are fixed and held together into a compacted form. This is how our outward form is maintained.
Earth is naturally Cold and Dry, and it appears so to sight and touch, as long as it is not changed by the other elements. It retains, solidifies, condenses, coagulates, precipitates, sustains, supports, endures and attracts substances towards it.

Water in its natural state surrounds earth and is in turn surrounded by air. This positioning is because of its relative density. Water is Cold and Moist in temperament. Water is easily dispersed and assumes any shape without permanency. In the construction of things, the addition of water allows the possibility of their being shaped, moulded and spread out. Shapes can readily be made from it and just as easily dispersed. Moisture dispels dryness, the latter being overruled by the former. Moisture protects dryness from crumbling (as earth) and likewise, dryness prevents moisture from dispersing. Thus the two elements of earth and water are interacting and interdependent. Water is of course absolutely essential to life. Water is the most passive, receptive element, and the greatest receiver and absorber of energy. Its properties include cooling, moistening, lubricating, dissolving, cleansing, and purifying.

Air is positioned in nature above both water and earth, but beneath fire. The temperament of air is Hot and Moist and its purpose in nature is to make things finer, lighter and more delicate, and thus more able to ascend into higher spheres. When air is hot it rises and when it is cool it descends. Therefore it is proned to both extremities and affected by the elements around it.

Fire is situated higher than the other three elements. Fire is hot and dry in temperament. It is the most active, energetic and volatile element, and the greatest emitter of energy. It is light, rising and penetrating. Its role in nature is to rarefy, distil, refine, extract, digest, metabolise, transform and intermingle things. By its heat it has the capacity to overcome coldness of the two cold elements, earth and

water, and so creates and maintains harmony among the elements.

Temperament. The overall quality of primary matter/element that make-up any substance/entity when in a state of equilibrium, is termed: *temperament.* For example, a compound which is in a *liquid state* will have a far larger concentration of the *water* element, and therefore have a predominant *Cold and Moist* temperament. Conversely, a compound in a *solid state* will have more of the earth element, and so have a *Cold and Dry* temperament.

Creation in the universe

Every level of organisation of matter, from the quarks and electrons, through atoms and elements, to compounds, has a specific temperament. Each level of organisation is characterised with specific temperaments, and these become the building blocks for all materials in existence – from minerals to plants, and from lower animals to ultimately the highest, namely human beings. They exist in different shapes and structures, each with their unique temperament. Every level of creation thus has an overall temperament made up from a combination of the four qualities.

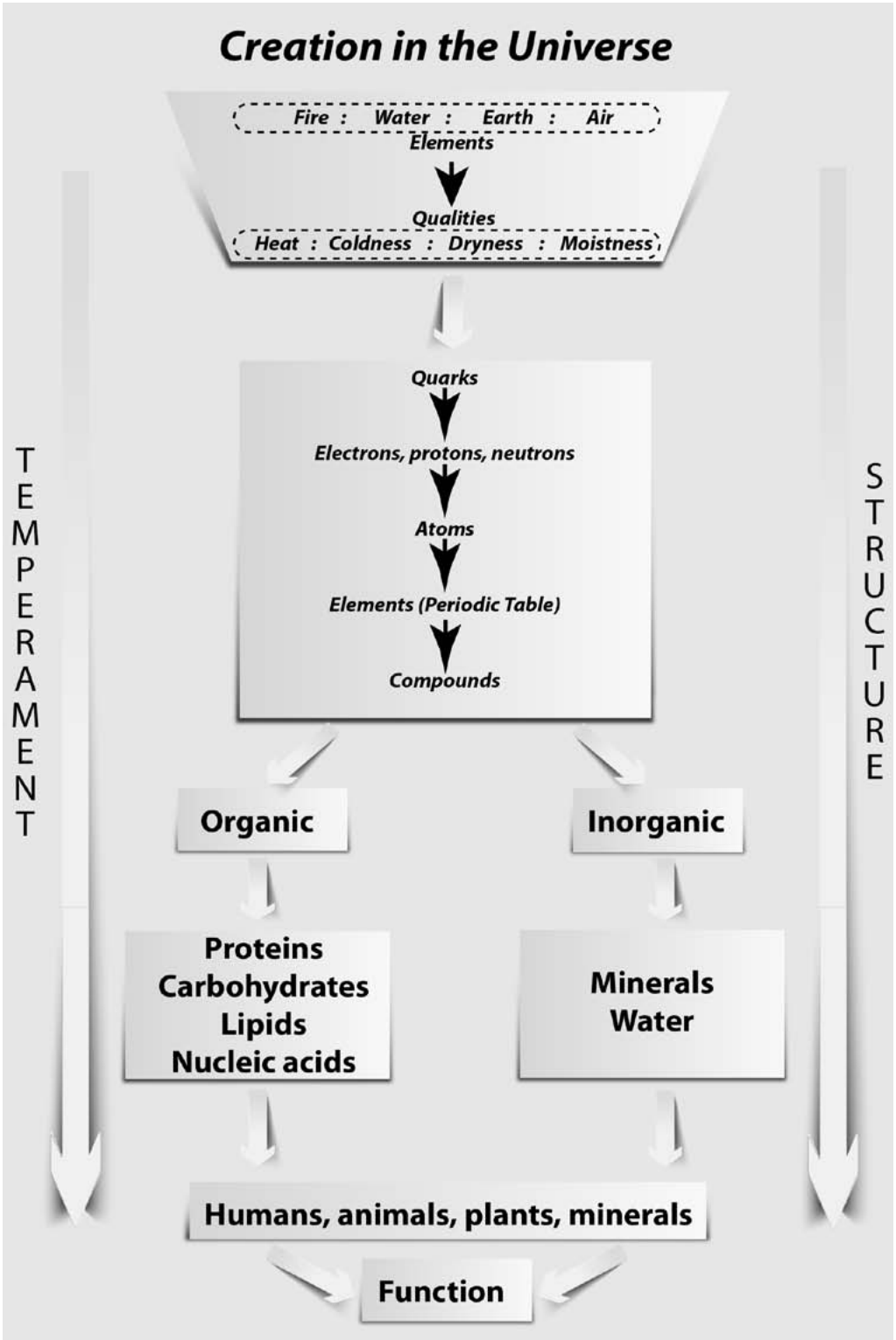
The overall temperament of human beings is Hot & Moist. This is easily understood when we consider that the human body is at a temperature of 37ºC (heat) and 70% water (moistness). Similarly, animals have an overall temperament between Hot & Dry and Dry & Hot.

Creation, however, goes one step further. God has created everything with a suitable structure having an ideal temperament to perform a specific function. Birds have wings to enable them to fly and fish have fins and a tail enabling them to swim. All plants, insects, animals and man have a particular and unique structure with an assigned temperament enabling them to perform a specific function.

> *"If we examine any corner of the universe, from the galaxies in space to the living beings in nature, and from our own body to the invisible cells, we see a flawless plan incorporating order, design*

and purpose. This order, design and purpose illustrates the perfection of creation." [Yahya, 1999]

Table 1:



The creation of humans

As in the creation of atoms that form elements, primary matter gives rise to cells - the basic unit of a living body. Just as the atom is the unit for the outer environment, so cells are the basic unit for the inner environment of man and all living entities. Cells combine to form tissues, the combination of which forms organs. Ultimately from the cells, tissues and organs the overall shape of the body is obtained. Once again each level, whether it is a cell, tissue, organ or the total human being (body, mind and soul), is assigned a specific temperament.

Temperament, structure and function

According to Tibb philosophy, every part of the human being has been created with a specific shape and structure in order to fulfil a specific function. For example:

- The shape of ears enhances our ability to hear.
- Our nose filter out impurities from inspired air before it enters the lungs.
- Our eyebrows prevent perspiration from entering our eyes.

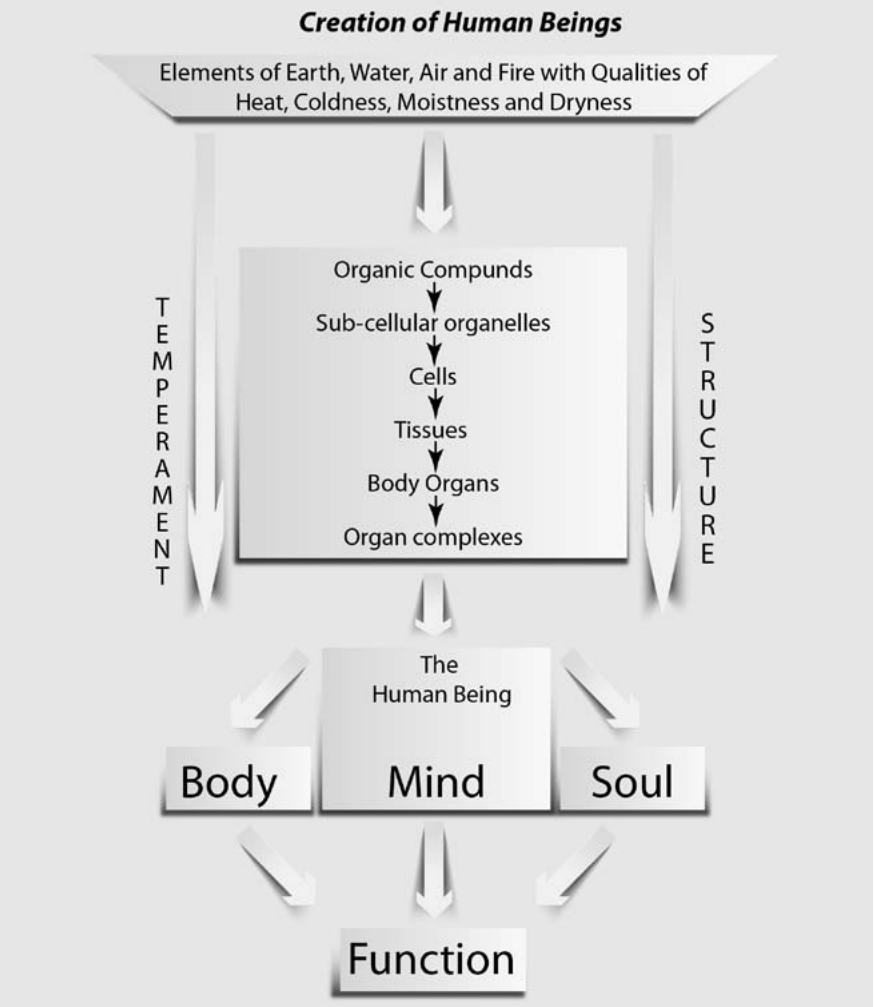
When examining the geometry of our internal organs, we see many different shapes, again performing different functions, each having a specific temperament. For example, the shape of the heart facilitates the pumping action whereas the overall temperament of the brain is moist (with less heat), enabling nerve impulses to be transmitted easily, because moisture is a good conductor of electrical impulses. On the other hand, the overall temperament of the liver is hot (with less moistness), because of the heat generated during the process of metabolism.

Delving further into the marvels of the body, we begin to realise just how intricate the systems of the body are: the respiratory, the circulatory, and the digestive systems, and of special significance in the context of health and disease, the immune system. Each system working independently and yet is associated with and interconnected to each other.

The human body is unbelievably complex. It has been created with self-regulatory, self-healing mechanisms that are under the control of Physis. This governing principle maintains the correct structure and temperament of the body and its components, in order to perform the desired functions. Every cell, tissue and organ is in equilibrium with its characteristic primary qualities, or temperament, upon which its structure and functions depend.

Changes in both structure and temperament will affect functions. These changes can occur from the qualitative effects of the interaction of man and his environment. As we are part of the universe, things that happen outside our bodies have an influence on us. As everything in the universe possesses qualities, whether in the form of energy or matter, qualities are the common link within the universe.

Table 2:



TIBB CONCEPT: QUALITIES

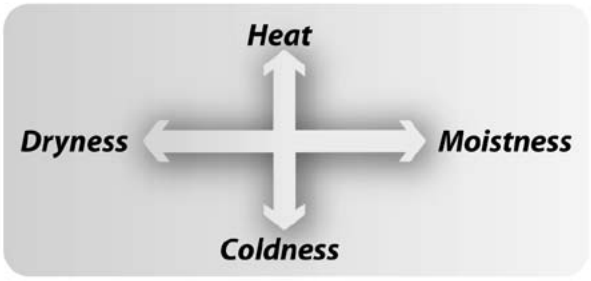
Everything in the universe is made up of primary matter with corresponding qualities. The effect that qualities have on human beings, as well as on all living organisms, is an important consideration in Tibb. Whether we are conscious of them or not, we are constantly experiencing them and being influenced by them.
According to one Cassel's English Dictionary:

> *"Quality is a distinctive attribute or property which gives individuality".*

The four universal qualities are Heat, Coldness, Dryness and Moistnes. According to Tibb philosophy, the qualities of *Heat and Coldness* are said to be the *active qualities*. The qualities *Moistness and Dryness* are said to be the *passive qualities*.

To understand the influence that these qualities have on us it is necessary to understand the interaction of qualities in nature.

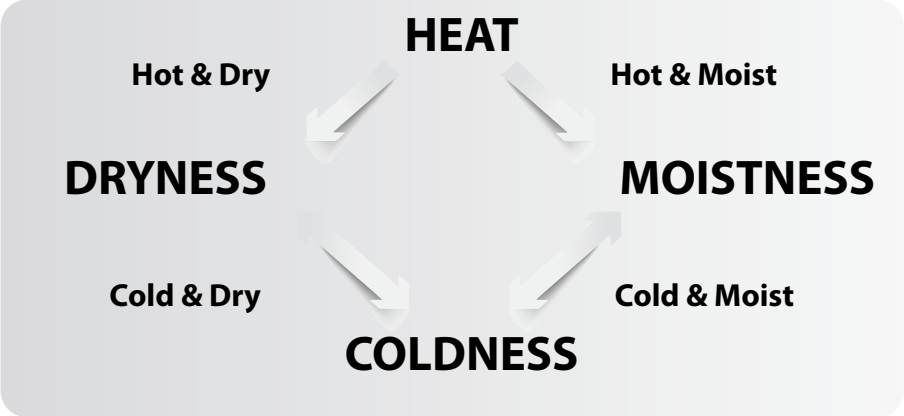
Their interaction in nature is shown below, where the quality of heat is opposite to the quality of coldness and moistness opposite to the quality of dryness:



Opposing qualities cannot exist simultaneously. Nothing can be hot and cold at the same time, nor moist and dry at the same time.
There is always a gradual transition between opposing qualities – there is no rapid change from one extreme to another. For example, the cold of winter is never followed by the heat of summer. Nature ensures a gradual transition between extreme qualities, so

minimising the negative effects of sudden change to plants, animal and man.

This results in intermediate states of Hot & Moist, Cold & Moist, Cold & Dry, Hot & Dry.



Qualities are the common denominator of living entities. The important realisation of the Natural Cycle is that these four extreme qualities of heat, coldness, moistness and dryness always move according to the natural cycle from heat to moistness to coldness to dryness.
The interaction and effect of these qualities constitutes the fundamental laws of nature applicable to and in harmony with the laws of physics (such as the laws of thermodynamics, or Newton's Laws of motion) or biochemistry (such as the Krebs Cycle), or the processes of catabolism and anabolism, affecting all biological systems and physical matter.
In Tibb philosophy qualities form the basis of interpreting aetiology, pathology, diagnosis and treatment.

TIBB CONCEPT: TEMPERAMENT

Each one of us is unique. But what is the essence of this uniqueness? The basis of the human temperament, and why it fluctuates so much between people of similar background and upbringing, and even between people in the same family, has been a source of fascination for thousands of years. Every age has a preferred explanation of the obvious differences amongst people, and many have attributed the

differences to physiology – in ancient times to bodily fluids, and more recently, to genes. The subject of a person's individuality or uniqueness – *temperament* in Tibb – is now going through a revival of interest, for three good reasons:

- Because of what we now know about our behaviour during personal development.
- Because of our varying responses to medical intervention; and
- Because the technological advances of the computer age has enabled better understanding of the biochemistry and genetics of the human body.

Importance of identifying temperament

The identification of a person's temperament is a major pre-requisite for accurate diagnosis and effective therapy when practicing Tibb. This has been highlighted by Hippocrates when he mentioned:

> *"It is more important to know what sort of a person has a disease than to know what sort of disease a person has"* [Hippocrates]

Temperament is a term which describes a person's physical characteristics (*the constitution*) plus his or her psychological, emotional, and spiritual attributes. It assesses personality strengths and weaknesses, and includes the predisposition (*risk factors*) for particular disorders.

Tibb therefore attaches considerable importance to assessing a patient's authentic temperament, as it is an important precursor to a therapeutic approach based on his or her uniqueness, and how to restore health by supporting inner healing. In this, Tibb contrasts markedly with the conventional medical system, which focuses almost exclusively on diagnosing, describing and quantifying features of the patient's presenting disorder, with little attention paid to the patient's uniqueness or individuality.

The practice of Tibb revolves around the *art and skill* of identifying a person's individual authentic temperament, combined with the

science and practice of serving his or her Physis to reach and maintain their particular ideal state of health.

Temperamental types

Just as we have a unique fingerprint, so we have a unique temperament. Each person's ideal temperament is fixed. In reality, we are all a composite mixture of the four temperamental types, with a dominant temperament combined with a subdominant temperament.

Although the number of possible temperaments is virtually infinite, Tibb has narrowed them down to the four temperamental types labelled by Galen below:

- **Sanguinous**
- **Phlegmatic** – sometimes called serous
- **Melancholic** – sometimes called atrabilious
- **Bilious** – sometimes called choleric

This poem identifies the key personality traits of the four temperamental types:

*God could have made us all **Sanguinous**.*
We would have lots of fun, but accomplish little.
*He could have made us all **Melancholics**.*
We would have been organized and chartered, but not very cheerful.
*He could have made us all Choleric **(Bilious**).*
We would have been set to lead, but impatient that no one would follow!
*He could have made us all **Phlegmatics**.*
We would have had a perfect world, but not much enthusiasm for life.
We need each temperament for the total function of
The body. Each part should do its work to unify
The action, and produce harmonious results.

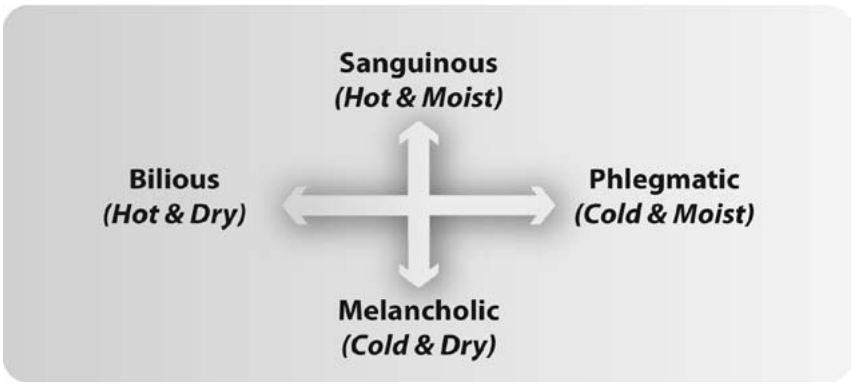
[Florence Littauer, 1985]

From this poem we realise that each of us is a combination of all four personality or temperamental types resulting in a dominance of one with a sub-dominance of another, less of the third and the least amount of the fourth temperamental type. As well as different people being divided into the four temperamental types above, each temperamental type also has a combination of *qualities* associated with it.

As mentioned earlier, the overall temperament of the human being is Hot & Moist. The reason is that the human body has a temperature of around 37º and consisting of 60% to 70% water. However, in this Hot & Moist category of the human being there are slight differences between each temperamental type. This is obvious – some of us feel hotter or cooler than others, and some us suffer from dry skin, or sweat less than others. Therefore each temperamental type also has different qualities assigned to them.

- **Sanguinous** – the qualities of *Hot and Moist*
- **Phlegmatic** – the qualities of *Cold and Moist*
- **Bilious** – the qualities of *Hot and Dry*
- **Melancholic** – the qualities of *Cold and Dry*

The relationship between the four temperamental types and their associated qualities is shown below:



The diagram above indicates that the sanguinous temperament with qualities of Hot & Moist is opposite to the melancholic temperament with qualities of Cold & Dry. As in nature extremes do not exist together in harmony, so it is not possible for a person who is a dominant sanguinous (Hot & Moist) temperament to have a sub-dominant mel-

ancholic (Cold & Dry) temperament. What is possible is that a person who has a dominant temperament of sanguinous (Hot & Moist) may have a sub-dominant of phlegmatic or bilious temperament. Similarly a person with a dominant phlegmatic temperament will have a sub-dominant temperament which is either sanguinous or melancholic.

Factors determining temperament

The calculation of temperament is based upon the following factors:

- Maternal food type and consumption during gestation.
- Date and time of birth.
- The temperaments of the parents.

Of the above three factors, the temperaments of the parents, expressed as hereditary factors, have the greatest influence.

Identifying temperament

Clinically, a person's temperament can be diagnosed using the following criteria: Frame and gait (walk); complexion and skin texture; climatic preferences; food and drink; health problems; sleep patterns; speech; personality traits; emotional traits.

The table on the next page lists the above criteria with information on the four different temperamental types. The column with the most ticks will be the dominant temperament, and the sub-dominant temperament with the second most ticks. The following needs to be noted when completing the table.

- The patient's frame may be altered due to slimming, ageing, side effects of medication (cortisone, for example) or as a result of a severe disorder such as HIV & AIDS.
- Shaking the patient's hand can also provide valuable clues of the skin texture and the qualities associated with it. It may feel hot or cold, moist or dry.
- The personality and emotional traits are important indicators. However, do remember that this category should be considered for the patient under normal circumstances when he or she is not under stress. A good indicator would be how the person is perceived to be by his/her friends and family.

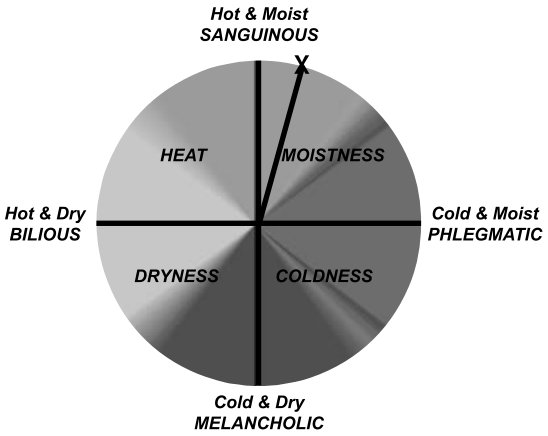
- Nobody fits perfectly into only one temperament, we all may have characteristics of other temperaments. However, each one will have a dominance of one and a sub-dominance of another temperament – which will be next to each other and not opposite.

Table 3: Description of the different temperaments

CATEGORY	SANGUINOUS HOT & MOIST	PHLEGMATIC COLD & MOIST	BILIOUS HOT & DRY	MELANCHOLIC COLD & DRY
FRAME AND GAIT	Medium to large frame more muscle	Medium to large frame more fat	Medium frame, Lean	Thin, bony frame(short/tall)
	Macho stride	Slow pace	Firm stride	Quick/Anxious pace
	Moderate to large eyes	Moderate to large eyes	Small to moderate eyes	Small eyes
COMPLEXION AND SKIN TEXTURE	Reddish or shiny Moderate in softness and moistness,warm	Whitish/pale Cool, moist, soft	Warm, dry	Dry, rough, cold
CLIMATIC PREFERENCES	Prefers cold, dry conditions Winter and Autumn	Prefers hot, dry conditions Summer and Spring	Prefers cold conditions / Winter and rainy weather	Prefers hot conditions / Summer and rainy weather
FOOD AND DRINK	Healthy appetite with a moderate to excessive thirst	Slow, steady appetite, low thirst, can skip meals	Healthy appetite, excessive thirst, cannot skip meals	Irregular and variable appetite and thirst
	Prefers cold drinks	Prefers hot drinks	Prefers cold drinks	Prefers hot drinks
HEALTH PROBLEMS	Hypertension, Diabetes	Phlegm related disorders	Stress, Anxiety, Hayfever	Indigestion, gas related disorders
SLEEP PATTERNS	Moderate to Deep	Heavy	Low but sound	Interupted tendency towards insomnia
	6 to 8 hours	at least 8 hours	5 to 6 hours	6 to 7 hours
SPEECH	Clear, moderate to loud	Slow, soft	Sharp, talkative, loud	Fast, less vocal, soft
PERSONALITY TRAITS	Persuasive, sociable outgoing, talkative	Calm, accommodating patient, good listener	Resourceful, outspoken dominant, leader, may be short tempered	Thoughtful, logical analytical, tend to be perfectionist
EMOTIONAL TRAITS	Playful, cheerful, excitable, disorganized, tends to exaggerate	shy, self-contained, indecisive	Aggressive, angry, irritable, impatient	Fearful, insecure, suspicious, anxious

Qualities associated with Temperament

The adjacent diagram illustrates an individual with a dominant sanguinous and sub-dominant phlegmatic temperament, as indicated by the line in the circle marked **X**. This person's ideal qualitative state will have a dominant quality of moistness, followed in turn by heat, then coldness, and finally the least quality of dryness.



Any change to this ideal qualitative combination will have a negative influence on the individual's health. As moistness is the dominant quality associated with this individual, change in the level of moistness (and more particularly, excess of moistness) will affect this individual the most and the fastest. On the other hand, changes in the quality of dryness (which is the least in concentration), will have the least negative effect on the individual.

Just as each person has a unique temperament, each person will also have a unique ideal qualitative state in line with (or according to) the person's temperament.

An individual's health will depend on the maintenance of an ideal qualitative state, which is the unique mixture of qualities embodied in the specific temperament of the individual. Because of the interaction of qualities between an individual and the environment, there will always be a continual shift from the ideal. However, Physis will adjust these changes to maintain the ideal qualitative state as required by the individual. If the person's Physis is incapable of restoring the ideal qualitative state, symptoms of a disorder will appear. The appearance of symptoms suggests that Physis needs assistance in restoring a normal qualitative state.

TIBB CONCEPT: THE HUMOURS

A key concept in Tibb is the Humoral Theory. The humours are the primary fluids that are manufactured from the digestion of food and drink, which are processed and transformed in the liver. Every level of organisation within the body is infused by and interconnected with the humours. A proper balance of humours ensures efficient metabolism, and prevents the build-up of toxins. Humours give rise to all constituents of the body. Also, a person's temperament is maintained by the balance of these humours. They are the agents which form the bridge linking the microcosm of the human body to the macrocosm of the universe.

Humours are very much involved in the origin and development of a particular illness, the diagnostic principles invoked, and the therapeutic approaches adopted in the healing process.

Historically, the core concept of humours was originated by Hippocrates, expanded by Galen, and formalised by Ibn Sina and his medical contemporaries, who completed the final classification, codification and application of Tibb. The theory of humours fits comfortably into the physics of primary matter or four elements (air, water, earth, and fire) and four qualities (Hot, Cold, Dry, and Moist).
There are four humours, with different qualities:

- **Blood – sanguinous** humour [Arabic: *dam*]
  (Qualities: *Hot and Moist*)
- **Phlegm – phlegmatic** humour [Arabic: *balgham*]
  (Qualities: *Cold and Moist*)
- **Yellow bile – bilious** humour [Arabic: *safra*]
  (Qualities: *Hot and Dry*)
- **Black bile – melancholic** humour) [Arabic: *sauda*]
  (Qualities: *Cold and Dry*)

The humours can also be regarded from a more metaphysical standpoint. In his translation of the *"Canon of Medicine"*, O.C. Gruner states that:

> *"A humour should not be regarded as matter, but more as 'an essence' or a 'quasi-material' that make up the body fluids".*

The metaphysical nature of humours is similar to and associated with the four primary matters of earth, water, air and fire. Both primary matter and humours have assigned qualities which are in essence the link between energy and matter. For example, whilst humours are produced by the liver from food and drink, the food and drink also provides the primary matter component that translates into body fluids containing minerals, amino acids, hormones, enzymes, etc.
Gruner also states that:

> *"In a sense the body fluids are the meeting places of various opposing forces and/or primary matter".*

Humours exist at a cellular/sub-cellular level, from which tissues are formed. The humours, although metaphysical, influence the outcome of the physical manifestations of the body fluids. This includes the cells, tissues, organs and ultimately the entire human being.

Al-Abbas describes humours as:

> *"…Those moist and fluid parts of the body which are produced after the transformation and metabolism of the aliments; they serve the function of nutrition, growth and repair; and produce energy, for the preservation of the individual and his species. A right proportion and inter-mixture (homeostasis) of them, according to the quantity and quality constitutes health, whereas an imbalance according to the quantity or quality and irregular distribution leads to disease".*

Al-Abbas interprets the role of humours in the following manner. First, the basis of health is the right proportion and specific equilibrium of humours according to their quality (and quantity) i.e. homeostasis in the internal environment. As long as this homeostasis in the internal

environment is maintained the body remains healthy. *This is the basis of health and preventative medicine*. Second, when the normal proportion and specific equilibrium of humours is altered, the internal environment reaches a state of imbalance, and thus disease develops. *This is the basis of aetiology and pathology of disease*. Third, when this wrong proportion and altered equilibrium of humours is corrected, health can be recovered. *This is the basis of treatment*.

The humoral theory covers all aspects of disease i.e. prevention, aetiology, pathology, diagnosis and treatment.

The humours have three main functions:

- Maintaining the *temperamental balance*.
- Providing *nutrition* for the maintenance of the body's complex structure by replacing body's tissues.
- Provides the *energy requirements* for the various activities of the body.

[*The production, features and functions of the four humours, both normal and abnormal will be detailed on further later in the chapter: Pathology in Tibb.*]

Homeostasis between temperament and humours

Just as everyone has a unique temperament, so each person has a unique humoral combination, made up of the four humours, but with a distinct overall quality. The human being is a dynamic entity interacting physically, (in the form of catabolism and anabolism) intellectually, emotionally and spiritually. The humours are responsible for ensuring that the ideal qualitative state or temperament of the individual is maintained according to his/her ideal requirements.

The four humours exist in an individual in different combinations. This ensures that the overall qualitative state of the humours is in harmony with the overall qualitative state of the temperament of an individual. For example, if a person has a dominant sanguinous and sub-dominant phlegmatic temperament, the person's overall qualitative and quantitative ratio will have an overall quality that has more *moisture*,

then *heat*, then *coldness* and then the least, *dryness*. This will be ensured by an overall comparative dominance of sanguinous humour over the others in this individual.
This ideal state can be altered both *qualitatively* (changes in qualities of heat, coldness, moistness and dryness) and *quantitatively* (changes in the ratios of the humours).

Health will only be maintained as long as the overall quality of the humours is in harmony with the overall quality of the individual's temperament. The relevance of maintaining the overall quality of the humours in relation to the overall qualities associated with temperament of an individual will be discussed in the next chapter 'Aetiology'.
The metaphysical humours, together with elements and their respective qualities, become the basis for physical matter. This ranges from organic compounds, to sub-cellular organelles, to cells, tissues, body organs, organ complexes and ultimately the human anatomy.

Anatomy and the perfection of creation
In the anatomy section of the Canon of Medicine, Ibn Sina brings in a philosophical dimension of *why different organs have been created with a perfect structure with an ideal temperament in order to perform a specific function*. Changes to either temperament or structure will negatively affect the function/s of anatomical structures.

Regarding structure, Ibn Sina's description of the hand stated that:

> *"metacarpals provide a concave surface that enables the hand to retain liquids and firmly surround objects".*

In addition, Ibn Sina argued why there should be only three phalanges in each finger, noting that:

> *"… if there had been more than 3 phalanges, the fingers would have obtained a greater range of movement but they would be weakened in strength. If the phalanges had been 2, the fingers would have become stronger but the range of movement would*

have been restricted – noting that the fingers need greater movement and nominal strength".

In his anatomy of the brain and spinal column, Ibn Sina explains the purpose of creating the spinal column:

He mentioned that:

- "....*If the brain supplied all the nerves, it would be too big a burden for it and;*
- *If all the nerves have arisen from the brain, the nerves for the hands and feet would have to travel quite a long distance and thus be exposed to greater risks of injury and damage. The nerves would also be too weak to contract and expand the heavy muscles (of the leg and the thigh). Almighty God has therefore, provided the spinal cord from the lower part of the brain;*
- *The spinal cord arises from the brain like a canal from a spring so the nerves may reach both sides of the body;*
- *The source of the nerves has in this way been brought closer to the recipient organs".*

On the maintenance of temperament: Ibn Sina describes the temperament of the brain as Cold & Wet (moist), where the quality of cold allows for the brain to work as hard as it does and the quality of moistness is to prevent dryness in the large number of functions that takes place within the brain. He also mentions that the blood flowing from the heart is Hot & Moist and the brain being Cold & Moist, the middle ventricles (in the brain/brain stem) will help with maturation of the blood from the heart to suit the Cold & Moist temperament of the brain.

Similarly on maintaining the temperament of compact bones, he mentioned that compact bones are made up of an outer cortical bone and a central marrow cavity. Taking into account that bones have a Cold & Dry temperament, bone marrow provides moisture to counteract the dryness produced by exercise.

On the functioning of organs: Ibn Sina described the function of the bladder based on a two phase dogma which still stands in modern physiology information. He stated that "*God has created an organ similar to a cyst in the human body to remove the useless liquids (or urine). This allows the urine to gradually pour into the bladder and at a necessary time, it can be completely expelled from the body. Otherwise, the human would have to urinate every minute and every hour*".

Ibn Sina described the curvatures of the urethra and suggested that they help in preventing involuntary voiding of urine. He wrote, "*God in his power, has made a gullet-like organ to eliminate the removable liquids (urine) through the penile urethra. Thus, this organ that is similar to a water pipe is continuous from the bladder to the penile urethra and it has multiple curvatures so that the liquid material would not be expelled out suddenly and totally*".

Why different organs have been positioned where they are in the body? *"Ibn Sina opined that the lungs help to cool the heart with each breath. This is analogous to the wings of a bird and its body where the wings represent the lungs and the body represent the heart. As the lungs flap they bring a cool breeze to the heart keeping it cooler. Similarly he opined that the nasal passages facilitate exchange of temperature (of air) between the brain and the external environment allowing the brain to maintain its natural temperament."*

The interpretation of tissues, organs within the context of temperament is discussed below.

TISSUES AND ORGANS

Tissues

The humours form the building blocks for the four major types of tissues – *connective tissue, muscular tissue, epithelial tissue* and *nervous tissue*, each having its specific temperament.
Different organs are made up of different ratios of these tissues.

Temperament of organs

Organs are made from a combination of the four tissues, each of which has a specific temperament. The dominant quality is shown in bold.

- Connective tissue – Cold & **Dry**
- Muscular tissue – **Dry** & Hot
- Epithelial tissue – **Hot** & Dry to **Hot** & Moist
- Nervous tissue – **Moist** & Hot to Cold & **Moist**

A specific and unique combination of the four different tissues makes up the different organs in the body. Every organ has a specific temperament, which is determined according to the following criteria:

- The ratio of the different tissues that make up the organ. This will influence the balance of qualities.
- The amount of blood that supplies the organ. This will determine the heat and moisture of the organ or tissue.
- How much movement the organ or tissue normally undergoes. This will influence the heat and dryness of the organ or tissue.

Temperament of specific organs. The individual temperament of major organs and tissues within the body are shown in the following table. The dominant quality is depicted in **bold** type.

Table 4: Temperament of specific organs

Blood - ***Hot*** *and Moist*	Bones, tendons, cartilages - ***Cold*** *and Dry*
Lungs - ***Hot*** *and Dry*	Lymphatic glands and vessels - ***Hot*** *and Moist to* ***Moist*** *and Hot*
Heart - ***Dry*** *and Hot*	Ovaries - ***Hot*** *and Moist*
Brain - ***Moist*** *and Hot*	Pancreas - ***Hot*** *and Moist*
Kidneys - ***Hot*** *and Moist*	Small intestine - ***Hot*** *and Moist to Moist and* ***Hot***
Liver - ***Hot*** *and Moist*	Stomach - ***Dry*** *and Hot*
Gall Bladder - ***Dry*** *and Hot*	Thyroid gland - ***Hot*** *and Moist*
Large intestine - ***Cold*** *and Dry*	Uterus - ***Hot*** *and Moist*
Urinary bladder - ***Cold*** *and Dry*	Veins - ***Hot*** *and Moist*

Organs. Organs are divided into three main groups under the control of the three main organs the heart (vital), liver (metabolic) and the brain (psychic):

- **Vital** – these are the organs of the cardiovascular and respiratory system, all of which are 'controlled' by the **heart**
- **Metabolic** – these are the organs associated with the digestive and excretory systems, all of which are 'controlled' by the **liver.** The reproductive organs can also be included in this group.
- **Psychic** – these are the organs of the central and peripheral nervous system, all of which are 'controlled' by the **brain**.

THE TIBB THREE-ORGAN THEORY

Embryology describes the development of the human foetus from the three germinal layers: the endoderm, mesoderm and the ectoderm. This is equivalent to aspects of the Tibb main organ theory which is not only in keeping with modern medical science, but also brings in the concept of temperament and quality:

- The **endoderm**, or inner layer as identified in embryology, develops into the lining of most of the gastrointestinal tract and the organs which serve it - particularly the liver, gall bladder and pancreas. According to Tibb the endoderm is linked with the **liver** and has a dominant quality of **heat**.
- The **mesoderm**, or middle layer is the embryonic tissue which gives rise to the urogenital system, heart, kidneys, and the musculoskeletal system. According to Tibb the mesoderm is linked with the **heart** and has a dominant quality of **dryness**.
- The **ectoderm**, or outer layer as identified in embryology, matures into the nervous system, skin and sense organs. According to Tibb the ectoderm is linked with the **brain** and has a dominant quality of **moistness**.

The holistic nature of the human being is evident early in the developmental stage of the three germinal layers of organ formation, and per-

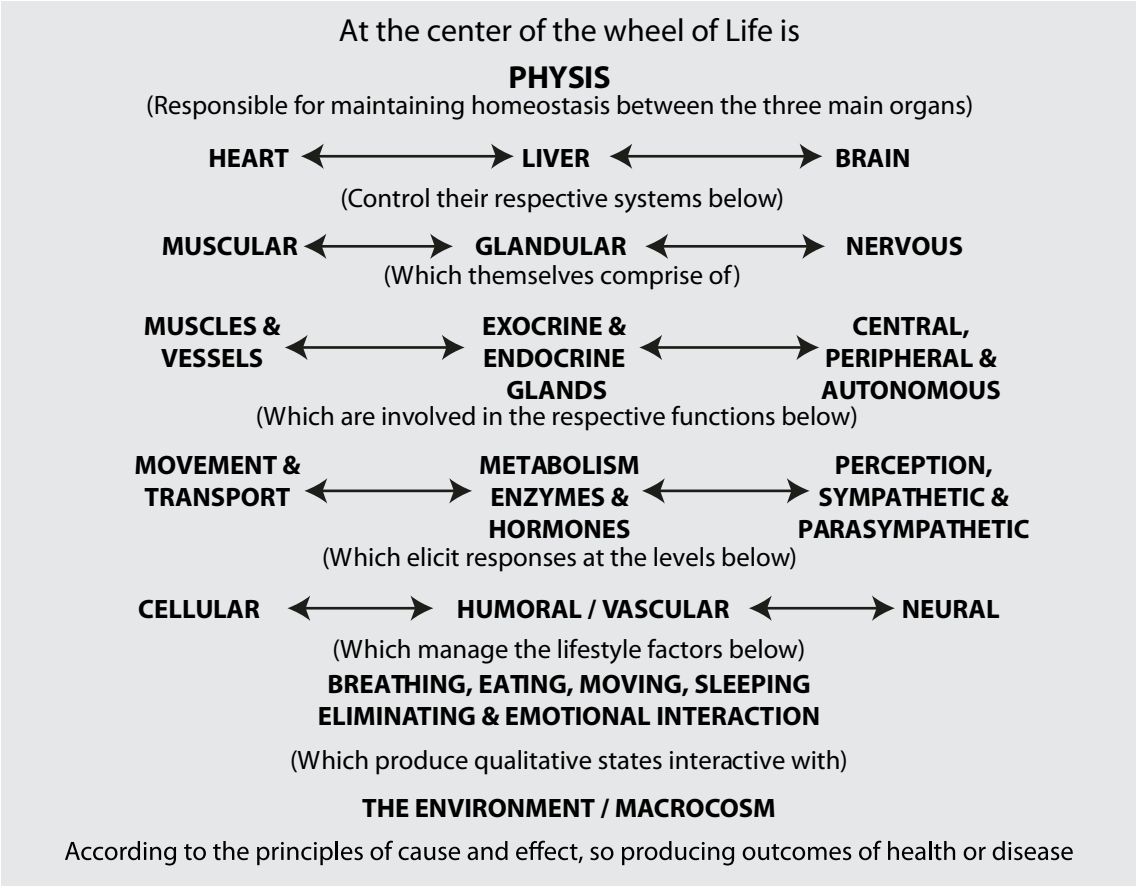
sists until the complete and total formation of the independent foetus. This complex integration of different systems within the body persists throughout life.

The three main organs – heart, liver and brain – are considered in Tibb medical philosophy to be completely integrated in terms of both information and energy transfer. Any imbalances or deficiencies can lead to physical or emotional disorders.

> *"There is complete integration amongst the main organs. Each of them is the source of preservation for the other. Thus, the preservation of the whole body depends upon the harmonious interlinkage or integration of energies of these main organs."*
> [Abu Sahil Mashi]

This concept is in line with conventional medical science, which acknowledges the presence in the body of the three self-regulatory systems – the immune, endocrine/exocrine, and nervous systems. These are capable of communicating information, storing information, learning from pattern recognition, and activating complex feedback processes. In addition, they are now known to communicate with each other via neuro-peptides such as the cytokines – all under the control of Physis.

Table 5: Physis, the regulator of homeostasis between the three main organs



The three organ theory of the heart, the liver, and the brain, fits in well with the Tibb understanding of the ***three faculties***: the ***vital faculty*** associated with the ***heart***, the ***metabolic faculty*** associated with the ***liver*** and ***psychic faculty*** associated with the ***brain*** as discussed below:

ENERGY, FACULTIES AND FUNCTIONS

According to Tibb, what a thing is – its essential nature – is closely related to what it does – its function. The power of an object to behave or function in a certain way and produce particular effects is thought to reveal the basic nature of that object. This power is derived from the inherent wisdom within the object, and is called a ***faculty***.

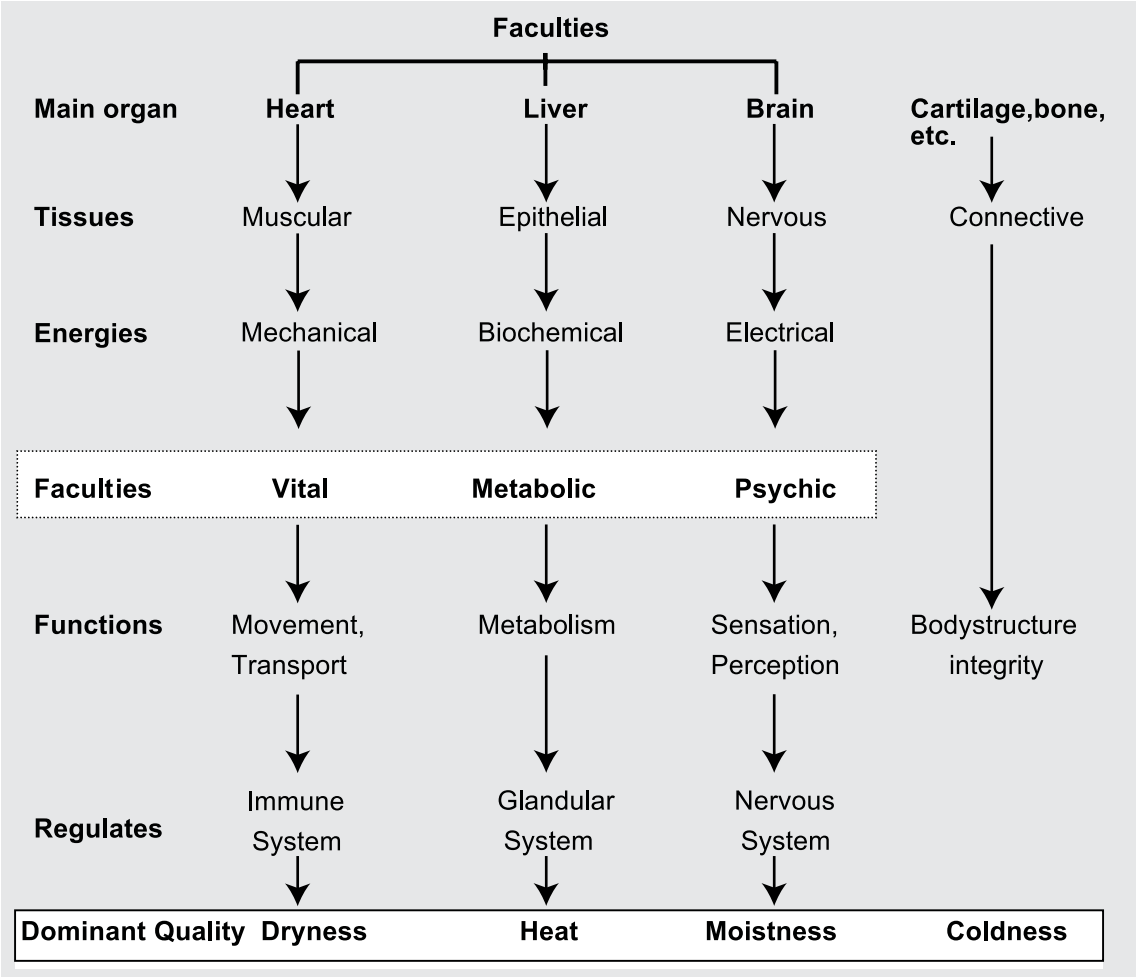
However, in order for the ***faculties*** *to* ***perform*** *their* ***functions***, ***energy*** is required.

After food has been ingested, digested and metabolised, humours are formed in the liver, with the assistance of inspired oxygen. These humours then act as nutrients for the formation, development and maintenance of cells, tissues and organs.

Energy is produced by oxidative respiration – from the interaction between the oxygen inhaled and the subsequent conversion of glucose into adenosine tri-phosphate (ATP), also known as the 'energy currency' of living tissues. The faculties of the body will continue their functions as long as adequate energy, as ATP, remains available to the respective organs. This energy is used by the three faculties to carry out their specific, pre-determined functions.

The table on the next page highlights the integrative nature of Tibb. It shows the relationship between the *main organs*, *tissues, energies, faculties, functions, qualities* and the *three systems* of the body that *it regulates* – that is, the *immune* system, the *endocrine/exocrine* system and the *nervous* system.

Table 6: Tibb: a fully Integrated system



- The ***heart*** is the seat of the ***vital faculty***. It controls the muscular tissues, uses mechanical energy to perform the functions of movement/transport and regulates the immune system; and has an overall temperament of ***dryness***.
- The ***liver*** is the seat of the ***metabolic faculty***. It controls the epithelial tissues uses bio chemical energy to perform the functions of metabolism and regulates the glandular system; and has an overall temperament of ***heat***.
- The ***brain*** is the seat of the ***psychic faculty***. It controls the nervous tissues uses electrical energy to perform the functions of sensation/perception and regulates the nervous system; and has an overall temperament of ***moistness***.

Tibb physicians recognised this relationship between the three systems by means of the overall quality associated with each system and

the delicate balance that exists between them. Whilst they did not have the technology to understand the interrelationship between the systems, they were able to appreciate this relationship via the concept of qualities. They understood that an increase in quality (hyper) associated with any one of the systems will invariably have an opposite affect (hypo) on the other systems.

Comparing Ibn Sina's constitution of man with the basic sciences

Having discussed the constitution of the human being from the Tibb perspective, that is, primary matter, temperament, humours, organs and tissues, energies, faculties and functions, we see the relationship between the Tibb constitution of the human being and the basic sciences of biochemistry, anatomy and physiology as follows.

Biochemistry
Primary matter; Temperament; Humours
Anatomy
The tissues and organs of the body
Physiology
Energies – originating from oxygen;
Faculties – the systems which make up the body;
Functions – the actions, control mechanisms and interactions which take place in the body.

There is complete integration between the energies, faculties and functions of the human body. The food and drink that we consume provides primary matter from which humours are produced. Humours form tissues, which when combined form the organs of the body. The organs produced form a structure with an appropriate temperament, in order to perform specific functions. Energy is produced from the interaction of oxygen and humours.

TIBB CONCEPT: THE LIFESTYLE FACTORS

We now accept that the environment plays a vital role in determining our health.

Disease is invariably the result of failure to assimilate the various environmental factors effectively. These factors include the air we breathe, and the food and drink we consume. However, there are several other factors present in the environment (which modern science is now rediscovering) that are capable of influencing our health, both for better, or for worse.

Tibb has identified a number of Lifestyle Factors (also termed '*governing factors*') which profoundly influence our health. How we respond to these factors, determines how we grow, move, think and feel. Variations in the qualities associated with the Lifestyle Factors (especially food and drink) are the real causes of health or disease. Management of the Lifestyle Factors determines the outcome of health or disease. If well managed, good health will be maintained; if poorly managed, disease will result.

Lifestyle Factors affecting health and disease
The six main Lifestyle Factors are:

- *Environmental air and breathing*
- *Food and drink*
- *Movement and rest*
- *Our emotional life*
- *Sleep and wakefulness*
- *Elimination and retention*

The effects of the Six Lifestyle Factors are determined by the qualities of heat, moistness, coldness and dryness affecting an individual. For example, the weather can be hot, cold, moist or dry; foods have inherent qualities where heating foods increases metabolic rate and cooling foods decrease it. Similarly, movement increases heat, resting confers a cooling effect, and emotions (such as anger) also produce heat. Sleeping cools the person down, increasing moisture.

These external factors were originally called the '*non-naturals*', because they affected the body from the *outside*. They were said to have numerous inevitable effects on a person, good or bad.
For health to be maintained, all Six Lifestyle Factors need to be regulated. This regulation comes under the heading of 'hygiene' in its widest sense (*Hygea,* incidentally, was one of the daughters of Aesclepius, the Greek god of health. Another one was *Panacea*).

The above Six Lifestyle Factors affects every person. The overall qualities of an individual's temperament needs to be taken into account to determine what quality and quantity of each is necessary to maintain the optimum balance, and the manner this can be achieved.

In Tibb, the practitioner must also personally apply the rules of good hygiene, if he or she is to assess and understand the patient correctly:

> *"The physician who neglects his own will hardly be thought very careful of the health of others"* [Hippocrates]

Other Lifestyle Factors. There are factors other than the six above which may also play a part, but may or may not affect every individual. These are:

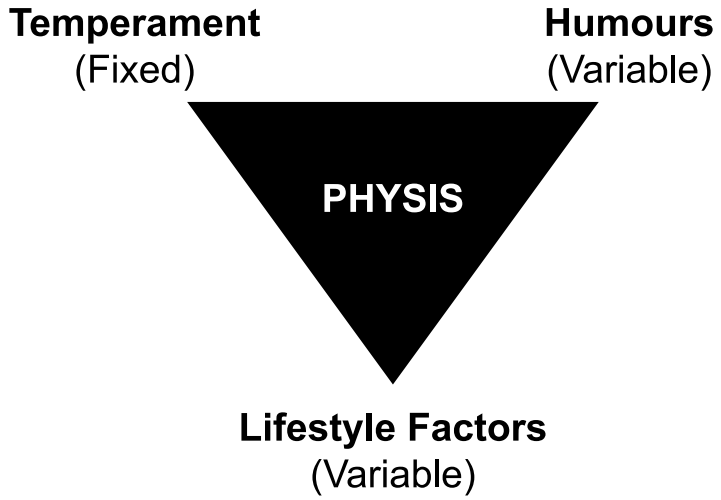
- *Occupation or career*
- *Place of residence*
- *Exposure to toxic substances*
- *Exposure to pathogenic organisms*
- *Age, gender*
- *Personal habits and hygiene*

The Lifestyle Factors are responsible for maintaining the ideal qualitative state of humours in relation to the unique qualitative state of the temperament of an individual.

Ultimately the Lifestyle Factors are the main cause/s of health and disease affecting every individual.

THE AXIOMATIC CONNECTION

The scheme (*below*) illustrates the constant interplay between temperament, humours, the Lifestyle Factors and Physis. Although an individual's temperament is fixed, humours fluctuate constantly as a result of changes to diet and other aspects of lifestyle, such as sleep, physical activity, breathing efficiency and stress levels. This dynamic relationship influences the humoral balance, qualitatively in relation to the temperament, with Physis constantly striving to restore homeostasis. The inability of Physis to restore homeostasis inevitably leads to pathological processes that manifest as clinical disorders.



The Lifestyle Factors have a critical role in maintaining the overall qualitative state of an individual's humours in relation to his/her temperament. For the maintenance of health, the rule to remember is that an excess of the dominant quality associated with an individual's temperament will negatively affect this person the fastest and the most – health promotion is to ensure that Lifestyle Factors exert opposite qualities to the dominant quality of an individual is required.

However, of the four qualities exerted by the Lifestyle Factors, two qualities are of supreme importance in the body – heat and moisture. This is because the human body has two important features. Firstly, as mentioned previously, it contains a large amount of water – up to 70%, present in the blood vessels, between the tissues, or in the cells themselves. This high proportion of water is necessary in order to let the many biological processes to take place. The body's water amount is strictly controlled. Too little fluid can lead to dehydration, and too much can lead to oedema. Also, without moisture the body would become overheated. Disturbances in the body's water composition can lead to serious health problems.

Secondly, the human body has a normal temperature of around 37^0, which is maintained by Physis in a very narrow range. This temperature is necessary for the myriad of enzymatic reactions essential for life. Too high a temperature will result in damage to the body's metabolism and structures; too low and hypothermia will develop. Both of these extremes are potentially life-threatening. The body works best at this temperature.

As a result of the above features, the dominant qualities in human beings are not surprisingly, heat and moistness. Heat is obtained in the body mainly from the metabolic energy locked into food, from physical activity, and from the environment. Moistness in the body is obtained mainly from food and drink; so these two factors are immensely important in Tibb's approach to both health maintenance and the treatment of disorders.

The other qualities have a minor role, mainly because coldness and dryness do not support life. In order to achieve good health, it is necessary to maintain homeostasis between all the qualities.
The body's state of equilibrium of the two main qualities (heat and moistness) is fundamental to a person's state of health. This equilibrium is not rigidly fixed, but varies throughout the day and changes with food intake, physical activities, elimination of toxins, etc. It is therefore important to maintain these two qualities within strict boundaries or limits through suitable lifestyle choices whenever possible.

In addition, these two qualities are mutually supportive, being intimately related within the body. Heat prevents moisture from changing excessively, and this avoids it corrupting the metabolic activities and body structures. A person's body needs the correct amount of moisture balanced with heat to ensure good health.

> *"Health, stability and the body's state of equilibrium are regulated through moisture which opposes the heat. Each of the two qualities upholds the other, and the body is upheld by them both. When one of them exceeds the other, the body becomes indisposed accordingly".* [Ibn Jawziyya]

Hippocrates and pepsis. The interaction between an individual and the environment can be interpreted within the Hippocratic principles of '*pepsis'*. Hippocrates firmly believed in the interaction of living organisms, including human beings, with the external environment. He felt that we take from the environment the nutrients and other factors which help us grow, develop and survive, and return to the environment the waste products rejected by the body. Our efficient interaction with the environment and the ability to effectively 'digest' the environment constitutes health.

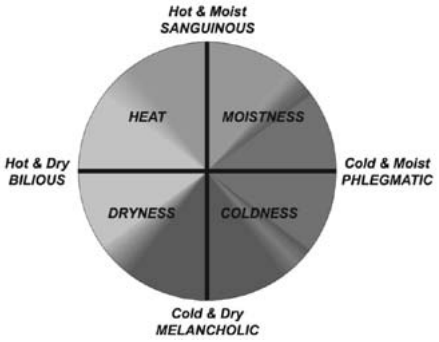
According to Hippocrates, disease is as a result of the difficulty in the digestion or '*pepsis*', of the environment, by the organism. His term of dyspepsia is still used today. However the understanding of '*dyspepsia*' by Hippocrates extended beyond the inability to digest food and drink but extended to the effective digestion of the total environment in a state of complete harmony – which includes the Lifestyle Factors.

Our personal health reflects the extent to which this interaction is successful; if we fail to derive adequate nutrition from our environment, then we will fail to thrive. Also, if we are inefficient in rejecting unwanted, waste products, then our very survival will be threatened by a build-up of toxic materials.
Disease is invariably the result of our failure to assimilate and elimi-

nate the environment – the Tibb Lifestyle Factors effectively.

Lifestyle Factors in health and illness. A brief overview on the role of Lifestyle Factors in both health promotion and in the management of illnesses is mentioned below.

Health promotion. Identifying the dominant quality of an individual's temperament is absolutely essential in health promotion. As previously mentioned a person with a sanguinous/phlegmatic temperamental combination will have an overall quality of moistness. Research has indicated that for this individual Lifestyle Factors that will increase the qualities of moistness (such as moist foods, humid weather etc.) will be detrimental to this person's health, whereas Lifestyle Factors that will increase dryness will be most suitable for this person.



Similarly a person with a bilious/sanguinous temperamental combination, with an overall quality of heat will be negatively affected by hot spicy foods/strenuous exercises. As mentioned earlier, an excess of the dominant quality associated with an individual's temperament will negatively affect the person the fastest and the most. Therefore health promotion is to ensure that Lifestyle Factors exert opposite qualities to the dominant quality of an individual is required.

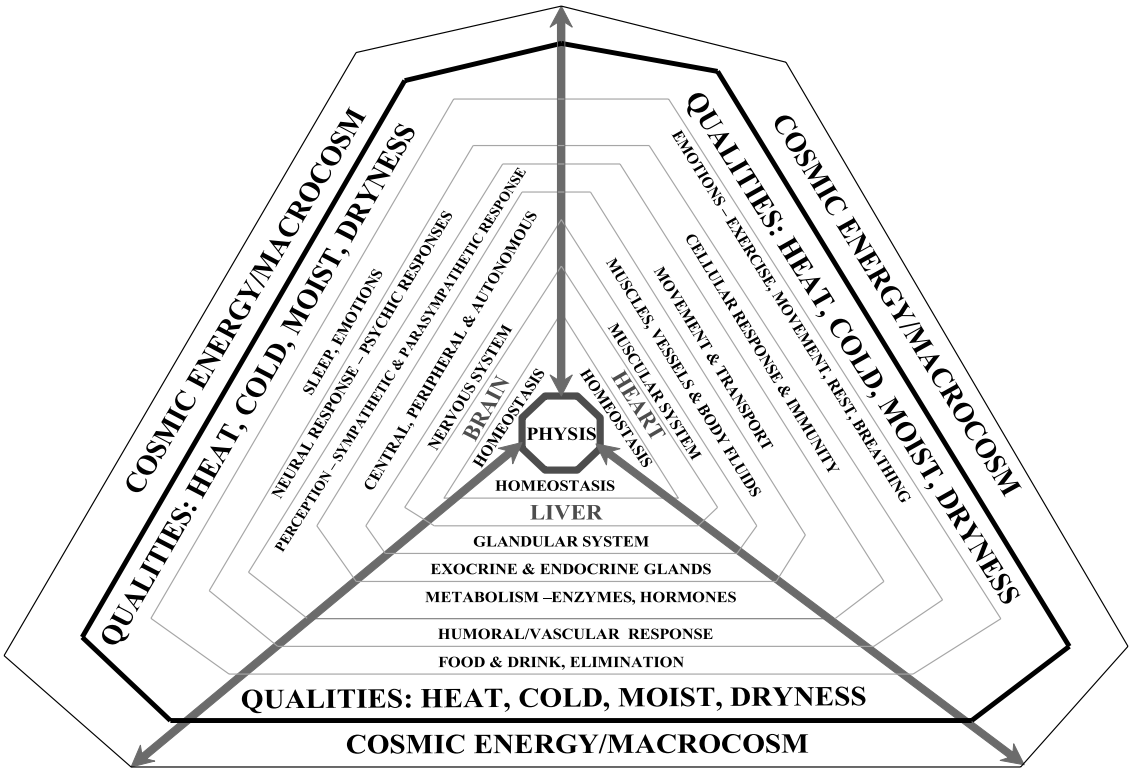
Illness management. Tibb interprets the signs and symptoms/illness conditions also within the context of qualities. Colds and flu, for example, are linked to the qualities of coldness and moistness, and osteoarthritis to coldness and dryness. Management of Lifestyle Factors opposite to the qualities linked to the disorder addresses both symptoms and its underlying causes, thereby assisting Physis in restoring humoral balance – homeostasis.

HOLISM IN TIBB - THE WHEEL OF LIFE

The Wheel of Life not only illustrates the complexity of the human being – from single cells to tissues, organs, electrolytes, enzymes, hormones, neurotransmitters, etc., it also illustrates the comprehensive understanding of the relationship between the human being (i.e., microcosm) and the environment (i.e., macrocosm) and the role of Physis in maintaining homeostasis between them. The wheel of life emphasises the need for a holistic, integrated approach which recognises every component and respects Physis, in the maintenance of health and the alleviation and curing of disease.

Whilst other disciplines such as Chinese medicine and Ayurveda focus on the effect of energetics, the Tibb temperamental and humoral theories allows for an understanding between the relationship of cosmic energy and the biochemistry of the body.

Table 7: Wheel of Life; Microcosm to Macrocosm



TIBB: A SCIENCE OF MEDICINE, THE ART OF CARE

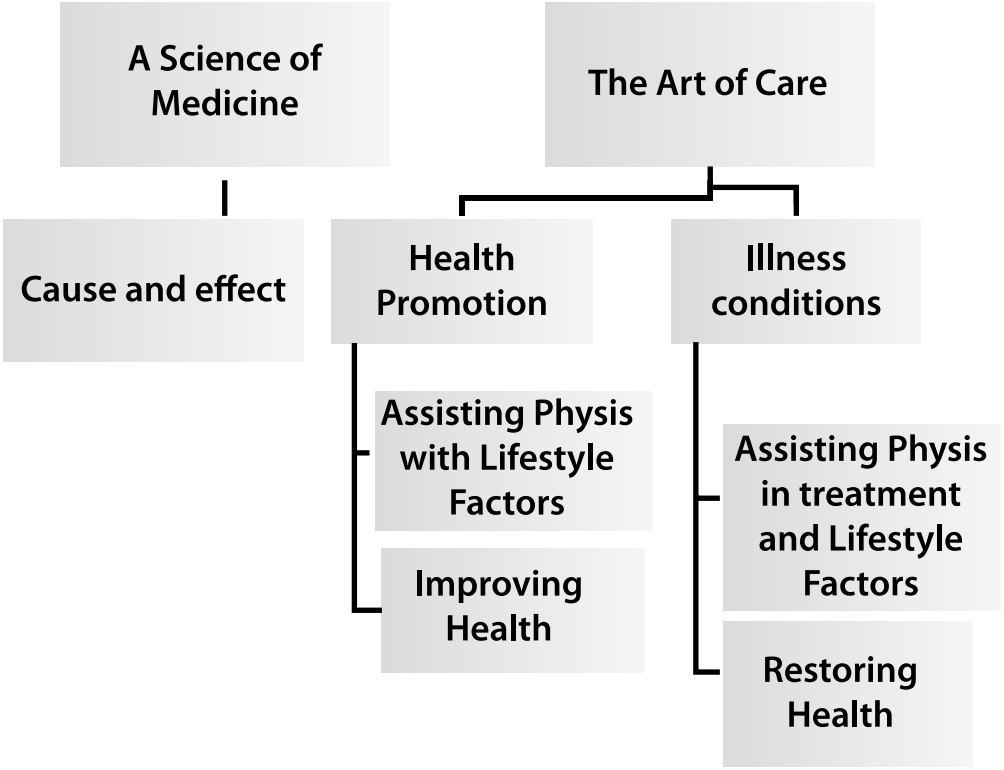
Tibb is described as:

"A Science of Medicine, the Art of Care".

It is *a 'Science of Medicine'* because it is based on the principles of cause and effect, the foundation of which was established by Hippocrates, who made the momentous break from the previous magical and superstitious attitude to disease, to a theory and practice of medicine based on scientific principles.

It is *the 'Art of Care'* because the Tibb Philosophical principles of Physis, temperament, humours, Lifestyle Factors and qualities provides a comprehensive understanding that enables healthcare professionals in health maintenance as well as in the treatment of disease.
Health maintenance is achieved by managing the Lifestyle Factors, whereas treatment of disease is designed to assist Physis in restoring health.

Table 8:



CHAPTER REVIEW

This chapter details the fundamental concepts of Physis, temperament, humours, Lifestyle Factors and qualities within the context of health and disease. The most significant outcomes are the realisation of the relationship between man (the microcosm), and the universe (the macrocosm), the recognition of the uniqueness of each individual, acknowledging and respecting the inherent self-healing mechanism of Physis; and the appreciation of the insights provided by the temperamental and humoral theories in the preservation and restoration of health.

General: Tibb is not a newly emerging or esoteric form of healthcare, but has its roots in traditional medicine which extends back for many centuries to ancient Greece and Persia. In Tibb, health is present when the body's functions maintain a correct balance of temperament, structure and function. Also disease is viewed as an abnormal condition which produces a functional disorder as a primary consequence. Disease can be an expression of a temperamental imbalance, humoral imbalance or a disorder of tissue structure. Tibb was the mainstay of medicine until recently, and practiced all over the Western World. In many ways Tibb is the foundation of present-day Western medicine.

Many of Tibb's basic principles are now being reintroduced into Western conventional medicine, such as the awareness of a patient's individuality and the importance of lifestyle factors in health maintenance. The main therapies employed in Tibb are lifestyle adjustment, dietotherapy and medication. Therapy aims at encouraging inner healing, and treats the underlying causes of disease, rather than focusing on counteracting the patient's symptoms. Tibb is well suited to being combined with Western medicine, in the form of Integrative Medicine.

Tibb therapy is cost-effective, as much of its therapy involves reasonable lifestyle changes which are economical to apply compared to prescription drugs, for example. The Tibb practitioner's care and empathy are considered very important to the healing process. The physician becomes a partner in healing.

Physis: The term 'physician' is derived from the word 'Physis'. The role of Physis is to ensure that optimum health is maintained. In Tibb, Physis has to be respected if the healing process is to be successful. It has a predominant role in the body's self-healing and self-repair processes, and actively counteracts influences which lead to injury and illness. When illness develops, Physis always directs the healing processes in specific ways.

The treatment of illness by the practitioner is imposed from outside, whereas actual healing is achieved from within. Physis restores humoral imbalances in relation to the temperament of an individual.

Temperament: Tibb adheres to the concept of temperament, which is central to its philosophy. Temperament is the result of what emerges from the interaction of the four primary qualities – heat, coldness, moistness and dryness – when these qualities have attained a state of equilibrium in an individual. Temperament is an amalgam of a person's physical, mental, emotional and spiritual attributes. Each individual has a unique temperament, with corresponding qualities. In Tibb, The four main temperaments are: sanguinous, phlegmatic, bilious and melancholic. A person is generally a mixture of two basic temperaments; a dominant, and a sub-dominant. A person's temperament is maintained by the humours. The temperament of a specific organ is largely determined by: (a) the ratio of different tissues it contains; (b) its blood supply; and (c) its functional mobility.

Qualities: A person's optimum health depends on the maintenance of an ideal qualitative state, which is a unique combination of the four qualities. There are continual changes or adjustments to the proportions of the different qualities due to the dynamic interaction between the person and the environment. Physis is responsible for actively counteracting these changes, in order to maintain the person's ideal qualitative state in relation to their temperament. If the person's physis is incapable of restoring the ideal qualitative state, signs and symptoms of a particular disorder will begin to appear. In Tibb, the appearance of symptoms suggests that Physis needs assistance in

restoring a normal qualitative state.

Humours: In Tibb there are four humours: sanguinous, phlegmatic, bilious and melancholic. These humours are associated with body fluids: sanguinous – blood; phlegmatic – phlegm or mucus; bilious – yellow bile; melancholic – black bile. Each humour has its own characteristic qualities. The sanguinous humour is Hot & Moist; the phlegmatic humour is Cold & Moist; the bilious humour is Hot & Dry; and the melancholic humour is Cold & Dry.

The humours are involved in providing nutrition and energy for the body. An important function of the humours is to maintain the individual's ideal qualitative state, associated with the temperament of an individual. Health is the outcome of the right quantity and quality of humours within the body, the equilibrium between them, and the temperament of the individual. Disease arises from imbalances in the composition of a person's humours.

Faculties: There are three basic faculties in the body: vital, metabolic and psychic. Each faculty has its characteristic dominant quality: vital (dryness), metabolic (heat), psychic (moistness). The faculties are based on three organs: the heart (vital); the liver (metabolic); and the brain (psychic). The vital faculty controls muscular movement and the immune system. The metabolic faculty controls the use of nutrition, and the glandular system. The psychic faculty controls the bodily senses, voluntary muscle activity and intellectual functions.

Energy: There is complete integration between the energies, the faculties and the functions of the human body. The food and drink that we consume provides the primary matter for the production of humours. This process is influenced by the interaction between our body and the environment. Energy is produced from the interaction of oxygen from air, and humours. The humours form tissues, which when combined form the organs of the body. The organs produced form a structure with an appropriate temperament, in order to perform specific functions.

Lifestyle Factors: Tibb focuses on the relationship between the individual human being (the microcosm) and the external environment (the macrocosm). The main Tibb Lifestyle Factors are: environmental air & breathing, food & drink, movement & rest, sleep & wakefulness, emotions, and elimination and retention. Variations in the qualities associated with the Lifestyle Factors (especially food and drink) are often the cause/s of health or disease.

Holism: Tibb recognises that the human being is an unbelievably complex phenomenon. It regards the body, the mind and the spirit as being interconnected. Tibb is a holistic approach to the healing of illness through restoration of balance to the physical, mental, emotional and spiritual aspects of the person. Tibb deals with the whole patient, rather than with a particular organ or tissue, or just with the symptoms of a disease. Tibb's view of the holistic approach to health and disease is illustrated in the Wheel of Life, which inter-relates the many functions in terms of their structures, functions and qualities in the context of the person's microcosm and the macrocosm.

CHAPTER 2: AETIOLOGY IN TIBB

INTRODUCTION

Aetiology according to conventional medicine is the study or science of the causes of illnesses only. In Tibb, aetiology refers to a study of both the causes of illnesses as well as the factors involved in the maintenance of health. It is relatively easy to define illness in terms of tissue or organ malfunction, but defining health is a rather more difficult challenge. Health is a positive, definite concept, not simply the absence of illness. The practice of Tibb is as relevant to people who are healthy as it is to patients who are ill. The appetite for health is more than simply avoiding illness; it is the desire to pursue a lifestyle which allows the person to function at the optimum level, and to maintain the physical, mental and spiritual activities which are necessary to get the most out of life. An already healthy person can actively improve his or her physical and mental health.

This chapter on Aetiology elaborates on the principles of 'cause and effect' in relation to the causes of disease and also the maintenance of optimum health. The philosophical basis of Tibb provides a strong foundation for both a comprehensive understanding of the different causes of illnesses, and the active maintenance of health. This chapter provides insights into the principles of cause and effect from the Tibb perspective. It accepts that the cause of disease is multifactorial and dynamic. Tibb contends that distortions in the patient's Lifestyle Factors are ultimately major contributors to the onset and perpetuation of most diseases, especially those which are chronic and recurring. The causes of most if not all ailments are related to changes in the qualities of heat, coldness, moistness and dryness. Tibb affirms that for every illness there is a defined cause, or group of causes, and this contributes to the selection of subsequent treatment. This chapter also provides Lifestyle Management Programmes for health maintenance for the different temperamental combinations.
Aetiology here discusses causes on the assumption that a person is born with normal faculties and metabolism, and without any signifi-

cant genetic, physical or mental abnormality. Tibb strongly believes that everyone has a natural tendency towards health, and that this is the normal condition.

PRINCIPLES OF CAUSE AND EFFECT

Tibb is a science of medicine and the art of care that deals with the human body in both health and disease. It is committed to identifying, isolating and possibly eliminating the cause/s of disease, and the enhancement of factors that help maintain optimum health. With respect to the various ailments, we arrive at a greater understanding of a particular disease if we find out what the underlying causes are. Although the cause may be evident in many diseases, there may be other conditions which may have more obscure causes.

Different circumstances result in a cause being labelled differently. For *example*, sometimes one disease causes another disease (as colic can cause convulsions or epilepsy) and sometimes a symptom becomes the cause for a disease (an acute pain in colic becomes the cause for the occurrence of syncope, or fainting). Similarly acute pain causes swelling (from the accumulation of matter in response to the area of the pain). Sometimes a condition can be indicative of a cause, a symptom and a disease. For example, a headache may be caused by a prolonged fever, which gradually leads to meningitis.

Definition of Aetiology. In medical terms, the cause of a disease is a specific factor associated with the definitive onset of the disease. It can also apply to an injury, or accident. It is different to a risk or predisposing factor, which is an attribute of behaviour or habit which makes a person more likely, or probable, to develop a particular illness. In Tibb, the definition is more extensive. A cause is that event, behaviour, or change in the microcosm or macrocosm from which originates the outcome of a certain state of the human body, be it a state of health or disease. Tibb's understanding of the cause of the disease includes what are generally known as risk factors.

Ibn Sina has identified three criteria for a cause to produce an effect.

- **Sufficient active power**. This means that the cause must be able to produce an effect. We do not expect a slight knock to produce a huge bruise.
- **Sufficient receptive power**. This means that the body must be able to respond to the cause by reacting appropriately. The biochemical mechanisms responsible for developing an infection, for instance, should be functioning before the infection occurs.
- **Prolonged contact between the two**. This means that the cause must have realistic time to exert its action. A brief rise in blood pressure, for example, should not cause kidney failure.

Definition of 'effect'. An effect within the context of medicine is the result of treatment or medical intervention. However, it does not always follow that a course of treatment with a drug, for example, results in an effect which is only due to the drug. There could be a clinical improvement which is due to:

Spontaneous healing. Spontaneous healing, or remission, is the sudden but inexplicable recovery from clinical disorders without any real medical intervention. The recovery from the disorder may not be due to the drug or other treatment, but in spite of it. The person's physis is able to restore the internal harmony which is the underlying problem. In fact, more than 80% of clinical disorders improve or completely heal on their own, without any outside intervention.

> *"Spontaneous healing gives us the strongest evidence that there is an extraordinary self-repair system lying dormant within us"*
> [O'Regan]

The placebo response. A placebo is a therapeutically inactive, neutral substance made to physically resemble the active drug. A placebo effect is an unanticipated mind-produced response to a placebo. The placebo response would appear to be close or even identical to the physis response.

However, as physis transcends the physical, emotional and spiritual dimensions of the person, it can often manifest in one form or another.

> *"For many doctors, the practice of placebo medicine has an unsavoury scent about it. It seems to involve deception and trickery, and so is not clearly distinguishable from quackery".*
> [Andrew Weil]

Cause and disease. The temperamental and humoral theories have enabled Tibb practitioners to understand the cause/s of disease for centuries.

Let us consider the following case history:

> Mr Robert M., aged 55, somewhat overweight, smokes 30 cigarettes a day, drinks quite heavily at weekends, exercises very occasionally, and is a mild type 2 diabetic. One day, after a difficult time at the office, and during an argument with his daughter the same evening, he suffers a non-fatal heart attack.

The question is: What caused Robert M's myocardial infarction?

- Was it one of the several risk factors (smoking, overweight, binge drinking, glucose intolerance) for atherosclerosis he possesses?
- Was it the emotional stress brought about by his confrontation with his daughter?
- Was it the atherosclerotic plaque in his coronary artery, preventing adequate blood flow to the heart muscle?
- Was it a blood clot, formed in the leg, but carried to the heart by the bloodstream, where it became stuck in an artery?
- Was it his sedentary lifestyle?
- Was it his genetic make-up?

There is, in this case, a series of possible causes, any one of which could be responsible for his heart attack.

Types of causes

According to Ibn Sina, there are four different kinds of causes:

- **Material causes** – substances (structures) upon which health and disease depend. In this case, this would include disharmony in circulating lipids and glucose that existed in Robert M, ultimately as a result of a poor diet. The term material cause would invariably refer to foods and derivatives – that is, *associated with the humours*.
- **Formal causes** – those which maintain or alter the body. With Robert M, this would be his constitution or genetic make-up, or temperament, and its failure to prevent the build-up of atherosclerotic plaques in his coronary arteries (inherited) *associated with the temperament of the person*.
- **Efficient causes** – the effect on temperament from the environment or Lifestyle Factors. For Robert M, this would mean his sedentary lifestyle, which causes an imbalance in humours, which leads to structural changes in the heart's arteries. The heart attack would be triggered by the emotional stress of the argument with his daughter. This is the interaction between man and the environment *associated with the Lifestyle Factors*.
- **Final causes** – the functions, which disturbed, leads to the illness. In Robert M's case, this would refer to the blockage of the coronary artery brought about by the formation of a blood clot, and its lodging in a particularly narrow section of one of the heart's blood vessels. This would be the manifestation of the causes – a consequence of the final outcome *associated with a function of the body*.

Origin of Clinical disorders. Tibb identifies two basic origins of clinical disorders:

- **Internal origin** – these are diseases that originate within the body due to a humoral, qualitative or functional imbalance resulting from poor management of Lifestyle Factors. (For example, inflammation of the gastric mucosa can lead to gastric ulcers.)

- **External origin** – those arising from outside the body. (For example, an injury leading to pain, or a disorder which results from microbes.)

Causes of clinical disorders are varied, and not specific. This applies to both internal and external causes. They are associated with every aspect of the human being – humours, temperament, structure and function. There is invariably a link between cause and effect, both externally and internally.

Sequence of cause and effect. An example, supplied by Ibn Sina, of external causes influencing a person's health, is as follows:

> *"If a person consumes hot and dry foods to excess, and other related external hot and dry causes, such as hot weather and anger, are present, an imbalance in the bilious humour can occur. This imbalance originating externally can then become the cause for the internal conditions of inflammation of the liver – hepatitis – which can result in the symptoms of nausea, vomiting, shivering, jaundice and fever".*

Effects from different causes. Ibn Sina listed a number of internal and external factors which can cause different forms of structural or functional disorders which themselves can lead to specific symptoms of bodily disorders.

- **Increase in body temperature** – can result from putrefaction (*infection*), or from excessive consumption of hot foods or drinks.
- **Decrease in body temperature** – can result from excessive sleep, overeating cold and moist foods, constipation, and certain drugs (*humectants*).
- **Excessive dryness** – results from over-exercise, wakefulness, desiccant drugs (*such as diuretics*), and starvation.
- **Dyspepsia** – results from lack of exercise, overeating, lack of depletion (*slow stomach emptying*).
- **Excessive skin smoothness or roughness** – results from the application of caustic solutions, detergents, acids, solvents

and plaster.

- **Channels dilating** – results from constipation, diarrhoea.
- **Ulceration** – results from the rupture of skin blisters, sepsis, corrosive pustules, and an acidic environment.
- **Blockage of vessels** – results from growths (*tumours*), kidney stones, blockage (*embolism*).
- **Disorders of configuration** – results from abnormalities in structural development (shape, ducts, cavities or surface of the organs); or from displacement of the correct anatomical position such as a prolapse of an internal organ or displacement of a joint.
- **Loss of continuity** – results from damage at an anatomical level to skin, bone, cartilage, nerves, muscles and organs.

Other points from Ibn Sina

The effects of a particular cause will vary from person to person. It may have a different response in strong or weak persons, or in sensitive or insensitive individuals. This is another example supporting the uniqueness of the individual. The same cause may give rise to different diseases in different people. For example, high blood pressure in one person may lead to kidney failure, in another person to a stroke, and in a third person to heart failure.

The concepts of cause and effect are complex from the Tibb perspective. Aetiology in Tibb is multifactorial, and associated with the maintenance of the ideal temperament of the individual (***formal cause***). It takes into account humoral imbalances arising from biochemical and physiological changes (***material cause***). Tibb recognises the role of **Lifestyle Factors** in determining the outcome of health or disease (***efficient cause***) and establishes that impaired functions lead to further illnesses (***final cause***).

CAUSES ASSOCIATED WITH HUMOURS

Humours are produced in the liver from the food and drink we consume. As mentioned in Chapter 1, one of the main functions of the humours is to maintain the ideal qualitative state, in accordance with the overall qualities of the temperament of an individual. Causes associated with humours – **material causes** – can happen either qualitatively from the effects of heat, coldness, dryness and moistness, and/or quantitatively, resulting from different concentrations of the four humours, both of which impact the overall quality of the humours.

Humoral changes resulting from diet

If a person consumes improper or unsuitable food and drink, an excess of a particular humour will be produced that may not be ideally suited to the person. For example, if someone with a dominant bilious (Hot & Dry) temperament eats excessively Hot & Dry foods, this will lead to the formation of too much bilious humour. As a result, the ideal composition of humours required will change, specifically increasing the qualities of heat and dryness above the ideal for this temperament. Similarly, if the same person eats too much in the way of Cold & Moist foods, the excessive phlegmatic humour which will follow will again change the ideal composition of humours. This will reduce the ideal Hot & Dry qualities associated with the person's bilious temperament.

These changes in humours therefore affect the person:

- *Quantitatively* – by increasing or decreasing the amounts of the different humours.
- *Qualitatively* – from changes to the ideal qualitative state of humours in accordance with the overall qualities of the temperament of an individual.

Either way, a humoral imbalance develops.

Humoral changes resulting from other Lifestyle Factors

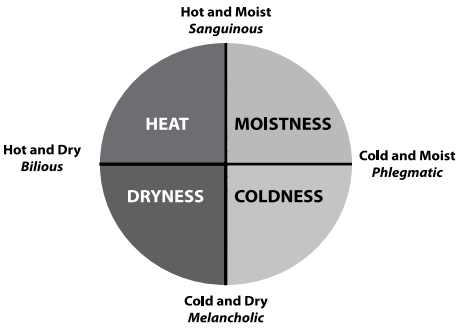
A person may have the ideal balance of humours, both quantitatively and qualitatively, because he or she eats and drinks sensibly and avoids excess, but changes may occur to the ideal combination of

humours because of other Lifestyle Factors. For example, if someone reacts badly to stress or fails to achieve good sleep hygiene, the resultant negative impact will alter the qualitative state of the humours required by the temperament. A person's *humoral balance is thus entirely dependent on Lifestyle Factors*.

CAUSES OF DISEASE ASSOCIATED WITH TEMPERAMENT

Temperament and predisposition to disease

As mentioned in the previous chapter, the relationship between temperament and health (or disease) is also based on the maintenance of the ideal qualitative state of an individual's temperament. Each person has a unique temperament in which one of the four qualities is dominant. For example, in the adjacent diagram a person with a dominant/sub-dominant sanguinous/phlegmatic temperament, having an overall dominant quality of moistness, will be predisposed to illness conditions with a dominant quality of moistness.



Research conducted at the Tibb Treatment Centres in Cape Town, published in the International Journal of Recent Scientific Research, states, *"Of the 100 patients, 55% showed a link between the dominant quality of the temperament in the context of the signs and symptoms of the illness having the same quality. This percentage increases to 74% in patients below the age of 40, and more significantly, increases to 92% in those below the age of 30. This clearly indicates that the predisposition to illness is closely aligned to the dominant quality of the temperament - especially in the early life during which physis functions optimally."*

Temperament is considered to be one of the determining factors in health and disease and like the humours, *these are ultimately dependent on the Lifestyle Factors*.

CAUSES ASSOCIATED WITH FUNCTION

The body's structure is continually regenerated by means of cell division and a sophisticated range of metabolic activities. The humours are the agents for this regeneration. The maintenance of both the temperament of organs/tissues as well as the structure to perform efficient functions is, as discussed previously, dependent on the humours of the body. As the ideal humoral balance of an individual is dependent on Lifestyle Factors, especially diet, causes associated with functions (final cause) *are also dependent on the Lifestyle Factors.*

Whilst Ibn Sina has identified four basic causes determining the health and disease situation, ultimately Tibb considers that disturbances in Lifestyle Factors are the primary causes of all illnesses (Ibn Sina's 'efficient cause').

This is in keeping with the Hippocratic principles of 'pepsis', describing the relationship between the individual and the environment:

> *"All living organisms grow at the expense of the environment, taking from it what is necessary and rejecting what is unnecessary."* [Hippocrates]

It is the effective digestion of the environment that constitutes health. However, if poorly managed, it becomes the cause of disease.

CAUSES ASSOCIATED WITH THE LIFESTYLE FACTORS

Tibb philosophy has identified the environment within the context of the Lifestyle Factors, which if managed well will ensure health is maintained. Otherwise, an accumulation of toxins will lead to excess/abnormal humours forming, resulting in one or other ailments. The toxins that we are currently exposed to come from four main sources: internal, external, dietary and mental.

- **Internal toxins** or endotoxins are the natural end-products of the body's general metabolism. They include the breakdown

products of the body's gut microflora, or microbiome. They also include any surplus fat soluble vitamins and minerals.

- **External toxins** or exotoxins encompasses tobacco smoke, drugs, whether prescription, over-the-counter, or recreational, and their metabolites. They also include the toxins mentioned above, such as food additives, volatile household chemicals, cosmetic products, agricultural/horticultural products and industrial effluent. For example, oestrogen-mimicking endocrine disrupting chemicals have recently been identified as a likely source of the serious fall in sperm count and rise in testicular cancer reported from parts of the Western world.
- **Dietary toxins** are substances present in our Westernised food and drink, usually legally, but which are now known to have adverse effects on our general health, mostly in the long-term, but often in the short-term. They include artificial sweeteners, fructose present in corn syrup and other agents, high sugar content pastries, etc., trans acids, pesticides in eggs and other staples, herbicides used on grain foods, fluoride in tap water. Microbial contamination from moulds or bacteria in poorly stored or preserved food also fits into this category.
- **Mental toxins** are emotional or spiritual situations which lead to severe humoral imbalance and psychological disorders. Anxiety, depression, social isolation or loneliness, anger, hostility, and jealousy, for instance, often manifest as physical disorders if not countered by appropriate measures.

The impact of the above toxins, whether from internal, external, dietary or mental sources, is included in this section.

Six of these Lifestyle Factors are common to all individuals.

- Environmental air and breathing
- Food and drink
- Movement and rest
- Our emotional life
- Sleep and wakefulness
- Elimination and retention

There are other factors which have varying influences in specific circumstances.

- Occupation or career
- Place of residence
- Exposure to toxic substances
- Exposure to pathogenic organisms
- Age, gender
- Personal habits

The Lifestyle Factors, especially the six major ones, influence each and every one of us.

ENVIRONMENTAL AIR AND BREATHING

The air we breathe is the first step in the hierarchy of physiological needs. It is the most important living connection with our environment – from the moment we are born, to the time of our death. Hippocrates wrote a text – 'Airs, Waters and Places' – which discussed the medical merit of different environments. Its role in the maintenance of health is too often neglected or ignored completely.

> *"Air is the author of life, disease and death to the people"*
> [Culpeper]

Air is the main thing that all living organisms share on Earth. It flows between us all, connecting us intimately. Physis is actively involved in maintaining the balance between the body's need for oxygen, and its need to remove toxins from the body.

These days, we are increasingly exposed to alien chemicals, largely as a result of the extensive changes in the modern lifestyle. There is more pollution from, inter alia, industrial waste and agricultural chemicals, synthetic food additives, body care products, domestic pesticides, cleaning materials and packaging. An alarming observation is that umbilical blood following childbirth in some developed countries

contains hundreds of alien, new-to-nature chemicals, the toxicity of which has not been quantified. The possibility that many of these chemicals are neurotoxic, and may be contributing to the upsurge in cancers, autism, Alzheimer's and other dementias is currently under active scrutiny.

The function of air in health and disease.
Air is composed of nitrogen (around 78%), oxygen (21%) and carbon dioxide (0.04%, and rising), plus a number of rare gases such as helium, methane and argon. The oxygen in environmental air is the only component used by human beings. The air we inhale and exhale has several vital functions:

- **Air is our primary source of nutrition**. The oxygen contained in air is needed to transform the nutrients present in our food into energy, humours and body fluids that maintain the body.
- **Air diminishes excessive heat**, thus helping maintain our ideal body temperature.
- **Air cleanses the body** of some forms of waste matter, such as carbon dioxide and volatile gases formed in the breakdown of, for example, garlic in the food.

> *"Air is the fountain of life, and also provides the source for the activation of energies to form humours and body fluids and maintain life"* [Hippocrates].

There is a growing body of evidence suggesting that changes in temperature, humidity, air speed and pollution can lead to increases in the number of people who have heart attacks, strokes, respiratory problems and other disorders. Tibb has long recognised this.

Purity of air

We require clean, healthy air to breathe and maintain our optimum health. By far the most important aspect of health is the nature and severity of pollution in the atmosphere. Industrial smoke is now accepted as the worst offender, and a real danger to life. However, domestic pollution – from cooking or heating fires – is also a serious problem.

The air we breathe should be neither contaminated by industrial pollutants, domestic activity or car exhaust fumes nor made stale by people who are confined to homes, offices, airliners and social venues without proper ventilation. If the quality of air is poor, then the onset and development of specific diseases can be accelerated. In fact, many occupational diseases have their origin in lungs weakened by exposure to poor quality air.

Today, environmental factors of all sorts, especially air pollutants, are being implicated in the development of several diseases.The role of good quality air in maintaining health and avoiding disease is often neglected. This is a factor which should be considered when relocating for job, retiring or emigrating – a person should be aware of the benefits and drawbacks arising from the environmental air he or she will be breathing.

Changes to environmental air which can affect health

Air pollution. This can prove fatal. It poses a greater threat to health, causing more early deaths, than previously believed. Not only does it affect overall mortality, it increases the incidence of ischaemic heart disease, asthma and lung cancer. Thunderstorms have been linked to a higher incidence of hay fever, due to the circulation by the disturbed air of pollen and spores and toxins. Burning mosquito coils is harmful to children especially, as coils are known to produce very toxic by-products.

Workplace toxins. In the person's workplace, the floor, chair, desk

and computer are contaminated by toxins which readily circulate in the air, encouraged by electrostatic charges. The toxins include fragments of insects, particularly cockroaches and mites, and plant pollen. In fact, offices can be more toxic than public toilets. Occupational and domestic exposure to paint fumes should always be avoided as they are toxic and associated with several negative health effects, such as headaches and nausea.

Cigarette smoking. The deleterious effects of 'side stream' cigarette smoke have been suspected for some time. Now there is considerable evidence that the dangers to innocent bystanders are real and substantial. Not only watery eyes and asthma attacks in the short term, but bronchitis, skin disorders and various cancers in the longer period are some of the effects. Since the no smoking rule was introduced, the improvement in people's health is definitely noticeable.

Climatic changes. Climates do influence diseases. In recognition of this, some medical schools have separate departments of tropical medicine, recognising that heat and humidity in the air that we breathe can make the person more vulnerable to certain diseases. It is well known that people living in different regions are more prone to certain diseases. Intestinal complaints are more prevalent in warm climates, chest diseases in cold, moist climates, and skin disorders in moist and hot climates. Heat waves, when the air temperature is very high both day and night, may lead to heat exhaustion, heat strokes, heart attacks and strokes. Low temperatures also put stress on the body. Heart attacks increase after bitterly cold weather. Deaths as a result of respiratory disorders also increase after a cold snap.

Effect of air conditioners. As air conditioners are a central feature of daily life in developed countries, it is important to be aware that they can be a health hazard, especially in confined spaces such as airliners, hospitals, teaching establishments and offices. Many illnesses are the result of exposure to air conditioners, which are known to be very effective in rapidly spreading disease-causing microbes, toxins and allergens. Air conditioners are responsible for sudden qualitative

changes which can arise from their use. Persons suffering from sinus problems or bronchial asthma are hardly likely to recover completely from these illnesses, no matter what treatment they are receiving, if the air conditioner is a contributory cause.

Most air conditioners increase the qualities of coldness and dryness in the immediate environment. Therefore, the people most likely to be adversely affected would be people with a phlegmatic or melancholic temperament. In addition, other temperamental types could conceivably be affected by the sudden changes from hot to cold to hot, etc. Even individuals with dominant sanguinous and bilious temperaments will be affected negatively.

Air and infectious disease

We are all familiar with the fact that different seasons of the year bring with them different diseases. Tibb physicians were unable to identify micro-organisms (viruses, bacteria and fungi) because at the time they lacked the appropriate technology. However they recognised that different seasons bring illnesses that are the result of changes of qualities in the air (Hot, Cold, Moist or Dry) which allows for greater multiplication of certain bacteria and other micro-organisms when the conditions are ripe for this. This explains why certain ailments are more prevalent at certain times of the year. For example, viral respiratory infections are more prevalent in winter (coryza and influenza), respiratory allergic disorders (hay fever) in spring, and in summer gastro-intestinal problems and fungal infections are prevalent. (*The impact of seasonal changes on humours that will result in the proliferation of micro-organisms will be elaborated on in the Pathology chapter*).

The connection between air and infectious diseases can easily be explained according to Ibn Sina's conditions necessary for a cause to have an effect.

As mentioned earlier, the following three conditions are necessary:

Active power. Using the winter season example quoted above; there may be sufficient active power. The person may be exposed to a highly pathogenic viral or bacterial load in the air. Also, the person may be exposed to a particular microbe or toxin for the very first time, so will react very definitely.
Receptive power. Because of the internal environment, microbes will only be capable of exerting a pathological impact if there is sufficient receptive power within the individual's humour, or if the individual's immune system is compromised. This is more likely to happen if the person has not come into earlier contact with the pathogen or toxin. Also, certain temperamental types will be more inclined than others to certain illness conditions.
Prolonged contact. The third condition relates to the need for prolonged contact between the microorganism and the person. This means that even if an individual's humoral balance is strong enough to initially withstand the onslaught of the bacteria or virus, over a sustained period the immune system may become compromised. This is more likely to happen in conditions of overcrowding, or in institutions such as schools and prisons, where people are in very close proximity to each other.

Environmental air and Temperament
People are affected differently by air, depending on their individual temperament. As the qualities of environmental air varies from region to region, these differences will have different effects on different people. For example, in the coastal regions it is more likely to be Hot & Moist, being more humid, and on the inland plateau it is more likely to be Cold & Dry. Unfortunately, a person cannot control the weather. However, by knowing the temperament of a patient, you could advise him or her to compensate for adverse weather conditions by maintaining their ideal temperamental quality by actively invoking other Lifestyle Factors, especially diet and exercise.

People with different temperaments will be affected differently by

certain weather scenarios. A number of these are shown below:

- Persons with a dominant ***sanguinous*** temperament will be most affected by the overall heat of summer, especially on the coast.
- Persons with a dominant ***phlegmatic*** temperament will be most affected by the overall coldness of winter, especially on the coast.
- Persons with a dominant ***bilious*** temperament will be most affected by the overall heat of summer, especially in dry regions.
- Persons with a dominant ***melancholic*** temperament will be most affected by the overall coldness of winter, especially in dry regions.

Breathing techniques

The manner in which we breathe can affect our health, even when the quality of the air is fine. Poor breathing habits are a major underlying cause of a number of illnesses. Often symptoms like headaches, fatigue and irritability arise from poor, inefficient breathing, which results in sub-optimal levels of circulating oxygen in the body. A correct breathing technique can overcome strong emotions like anger and fear. It may also help in reducing the symptoms of anxiety – trembling, palpitations, sweating – which arise, for example, in interviews, public speaking and competitions.

> *"Life is not measured by the number of breaths we take, but by the number of moments that take our breath away".* [Anon]

Health maintenance

It is generally accepted that seasonal changes can have a significant effect on health. One should always be aware of these and the adverse effect that exposure to extreme elements can have on health. For example, during cold and wet climatic conditions people with a phlegmatic temperament should take special care to ensure optimum body heat is maintained. Similarly, a bilious person should avoid too much exposure to summer heat.

Breathing also has different qualitative effects, depending on the breathing techniques used. For example slow and deep breathing ex-

ercises have a cooling effect, and are thus ideal for people with a bilious or sanguinous temperament. Conversely, fast and deep breathing exercises have a heating effect, ideal for people with a phlegmatic or melancholic temperament.

FOOD AND DRINK

For Tibb practitioners, food is seen as the major external factor in the maintenance of health, and the chief medicine at their disposal. There is more and more data linking the food we consume to different diseases.

> *"Leave your drugs in the chemist's pot if you can heal the patient with food"* [Hippocrates]

Also:

> *"All diseases begin at the stomach"* [Hippocrates]

The world is facing a pandemic of obesity. In the United Kingdom alone about one thousand people die prematurely each week from obesity or its complications. Being obese doubles your chance of getting bowel and breast cancer and causes osteoarthritis, diabetes, hypertension and lung disease. Excessive eating also raises levels of cholesterol, which accumulates in arteries causing strokes and heart attacks. Socially, too, obesity is a disaster. People who are overweight are depressed, experience a higher divorce rate and are more prone to committing suicide.

Whereas some Lifestyle Factors, such as the air we breathe and our emotional state, cannot be rigorously controlled, a certain amount of choice exists with other Lifestyle Factors, such as our sleeping patterns and exercise and rest. However, the food and drink we consume is the one lifestyle factor over which we have *absolute* control, as the process is purely voluntary. People can be empowered in their decision regarding what enters, or does not enter, their stomach.

Food is the raw material the body uses for the production of the four humours. Therefore the quality and quantity of the food consumed has a direct impact on the quality and quantity of the humours produced by the body.

Classification of foods

Food can be classified in different ways. Some are shown below:

- *Conventionally* – divided chemically into proteins, fats, carbohydrates, vitamins and minerals.
- *Nutrition-wise* – allocated to groups which provide nutrition and energy, either in different densities or at different rates.
- *Protection-wise* – foods which can boost the immune system or contain antioxidants.
- *Value-wise* – food which are 'good' for you (health foods) and those which are 'bad' for you (junk foods).

Temperaments of different foods

In Tibb, foods are classified according to qualities in categories of either ***Hot & Moist***, ***Hot & Dry***, ***Cold & Dry*** and ***Cold & Moist*** foods.

The concept of heating and cooling applied to foods is linked to the effect of the foods on the body. Foods which are heating in nature will increase the rate of metabolism. Conversely, foods which are cooling in nature will reduce the body's metabolic rate.

Hot & Moist Foods

Meats: Mutton, lamb, liver, turkey, venison, goat, goose, **Vegetables:** Sweet potato, spinach, spring onion, turnips, asparagus, olives, artichokes, **Fruits:** Bananas, dates, guavas, mangoes, peaches, papaya, **Nuts:** Almonds, brazil nuts, pistachios, apricot kernels,
Grains & Seeds: Bread, rye bread, wheat, flour, pasta, macaroni, bulgar wheat, sunflower seeds, dill seeds, **Dairy Products:** Cheese, cream cheese, clarified butter, fresh cream, condensed milk, **Oils:** Olive oil, sunflower oil, castor oil, **Herbs & Spices:** Ginger, turmeric, fennel, cayenne pepper, black pepper, white pepper, chives, green masala, marjoram, mint, sage, soya sauce, thyme, watercress, bay

leaves, **Drinks:** Green tea, hot water, juices (see fruits), herbal teas (see Herbs & Spices – above), **Flavourants:** Honey, molasses, salt, sugar, **Condiments & Spreads:** Mayonnaise, **Confectionery & Desserts:** Biscuits, cakes, chocolate, licorice, vermicelli, **Cereals:** Oats, puffed wheat, muesli, Weetbix, Bran flakes, bran, Taystee wheat, **Dishes:** Sweet/salty dishes.

Hot & Dry Foods

Meats: Chicken, oily fish (salmon, mackerel, pilchards, sardines), prawns, lobster, **Vegetables:** Onion, red pepper, yellow pepper, green pepper, celery, leek, bitter gourd, **Fruits:** Avocado, grapes, **Nuts:** Cashews, pecan nuts, hazel nuts, walnuts, **Grains & Seeds:** Chickpeas, celery seeds, fenugreek seeds, mustard seeds, gram flour, papad, **Dairy Products:** Eggs, **Oils:** Mustard oil, **Herbs & Spices:** Garlic, cinnamon, fenugreek, nutmeg, oregano, green/red chilli, paprika, parsley, rocket, rosemary, saffron, aniseed, cloves, tarragon, lavender, **Drinks:** Grape juice, herbal teas (see Herbs & Spices – above), alcohol, **Flavourants:** Pungent & bitter flavourants, **Condiments & Spreads:** Chilli sauce, mustard sauce, peri-peri sauce, **Dishes:** Spicy dishes

Cold & Dry Foods

Meats: Beef, biltong (beef), pork, ostrich, fish (snoek, tuna), tripe, mussels, oysters, snails, knuckles, crab, **Vegetables:** Potato, tomato, cabbage, cauliflower, Brussel sprouts, eggplant, peas, green beans, mushrooms, sauerkraut, **Fruits:** All sour fruit (lemon, grapefruit, lime, naartjies, oranges, pineapple), dried fruit (sultanas, prunes), green apples, cherries, coconut, granadilla, plums, pomegranate, raspberries, strawberries, **Nuts:** Peanuts, **Grains & Seeds:** Corn, lentils, mielies, beans (all types), barley, couscous, popcorn, poppy seeds, samp, sesame seeds, **Dairy Products:** Sour milk, yoghurt, sour cream, **Oils:** Coconut oil, corn oil, sesame oil, **Herbs & Spices:** Basil, tamarind, **Drinks:** Coffee, tea (black), sour fruit juices, **Condiments & Spreads:** Peanut butter, tomato ketchup, vinegar, balsamic vinegar, pickles, worcestershire sauce, **Cereals:** Cornflakes, mielie meal, maltabella, millet, **Dishes:** Sour dishes.

Cold & Moist Foods

Meats: Rabbit, duck, **Vegetables:** Beetroot, baby marrow, butternut, broccoli, carrots, cucumber, squash, lady fingers (orka), lettuce, pumpkin, radish, sprouts, soya beans, tofu, zucchini, **Fruits:** Apricot, figs, melons, pawpaw, pears, prickly pears, mulberries, cranberries, quince, spanspek, sweet apples, kiwi fruit, litchis, **Nuts:** Macadamia, **Grains & Seeds:** Pumpkin seeds, rice, rice cakes, semolina, cucumber seeds, linseed, melon seeds, **Dairy Products:** Cow's milk, butter, goat's milk, buttermilk, rice milk, soya milk, coconut milk, margarine, **Oils: Herbs & Spices:** Cumin, cardamom, coriander, vanilla, **Drinks:** Water, rooibos, milk shakes, sugar cane juice, **Flavourants:** Fructose, glucose, rose syrup, **Confectionary & Desserts:** Custard, ice cream, sago, **Cereals:** Pronutro, Rice Krispies.

It is evident from the preceding tables that all foods – meat, vegetables, grains, etc. – have qualities associated with them. If we add the concept of qualities to the standard classification we can see the relationship between proteins, fats, carbohydrates, minerals and qualities.

- **Protein** – Overall quality of dryness, but with degrees of heat or coldness, and the least amount of moistness.
- **Fats** – Overall quality of heat, but with degrees of moistness, and the least amount of dryness and coldness.
- **Carbohydrates** – Overall quality of moistness, but with degrees of heat and coldness, and the least amount of dryness.
- **Water** – Overall quality of cold and moistness.
- **Minerals** – Overall quality of cold and dryness.

The biochemistry of the body depends not only on the quantity of food we eat but also on the quality of the food we take in.

When providing dietary advice for a patient, the practitioner should ask three questions: What is the particular temperament of the individual? What will produce or restore the balance in the four humours? What is appropriate for his or her age, the season of the year, and the climate in which he or she lives?

A balanced diet which includes heating and cooling foods is abso-

lutely essential for the maintenance of good health.

"The throat destroys more than the sword doth" [Galen]

A diet in which nutrients consumed in excess of the body's needs or its ability to digest it will produce an imbalance of humours. Also, the undigested food can lead to *plethora*, a feeling of fullness or satiety, in which food accumulates without elimination.

Food and body heat

According to Tibb, many serious diseases arise from an excess of Cold and Dry foods, aggravated by a lack of body heat. Correct body heat is necessary so that metabolism in general and enzyme activity in particular can proceed effectively. A confirmation of Tibb's view of the metabolic efficiency of foods and digestion is found in recent research on enzymes. Research done by Dr Edward Howell, a leading authority on enzyme activity in food digestion, reveals that when spices such as ginger, cumin and cinnamon – the heating spices – are consumed, the production of digestive enzymes by the body increases dramatically, thereby facilitating digestion and improving elimination.

According to Tibb, 'heating' foods and spices:

- Increase the production of digestive enzymes in the gastro-intestinal tract.
- Increase the efficiency of functioning at the cellular and metabolic levels.
- Facilitate the assimilation of micronutrients, with a minimum of metabolic waste.
- Achieve and maintain complete metabolic digestion.

The typical Western diet, which relies heavily on meat (overall *dryness*), pastas and salads (overall *cold*), etc. would invariably increase the cold and dry qualities within the body. This is opposite to the maintenance of the body's ideal temperament, which is hot (normal temp 37ºC) and moist (contains 60% to 70% water). Not unexpectedly,

'diseases of lifestyle' such as diabetes, obesity, atherosclerosis and rheumatic disorders develop from long term adherence to the typical Western diet.

Qualities linked to specific tastes
As well as assigning qualities to ingredients, they have also been assigned to different tastes: Salty (Hot & Moist), Sweet (Moist & Hot), Sour (Cold & Dry), Bitter (Dry & Hot), Pungent or spicy (Hot & Dry), Tasteless or bland (Cold & Moist).

These tastes have both qualitative and physiological effects which are listed below.

Salty or tangy taste (*Hot and Moist foods)*
Excessive intake of salty foods increases the Heat and Moistness qualities. These commonly consumed foods – for example, many snack foods – can be harmful to the heart, increase the blood pressure, and can lead to electrolyte imbalance, congestive headache, dizziness, vertigo, stroke or paralysis of the right side. *Examples: salty foods.*

The qualitative effects of salty foods are counteracted by foods having an insipid or bland taste (Cold and Moist).

Sweet taste *(Moist and Hot foods)*
Eating sweet foods to excess will increase the Moistness and Heat qualities of the body.These foods can be harmful to the spleen, pancreas and kidneys. They can also favour the onset of diabetes, sluggish spleen and arthritis. *Examples: cakes, biscuits, sweetmeats.*

The qualitative effects of sweet foods are counteracted by foods having a sour or astringent taste (Cold and Dry).

No taste or insipid taste *(Cold and Moist foods)*
Excess of insipid foods increases the Coldness and Moistness qualities of the body.These foods are potentially harmful to the glands,

metabolism and vital faculties. They also decrease the haemoglobin level, so promoting anemia. In addition they can lead to hypothyroidism, amenorrhoea, anorexia, high level of lipids *(dyslipidaemia)*, sluggish liver, impotence and loss of hair. *Examples: cucumber, radish, watermelon.*

The qualitative effects of insipid foods are counteracted by foods having a bitter, acidic or tart taste (Dry and Hot).

Sour taste *(Cold and Dry foods)*
Excessive consumption of sour and astringent food increases the Cold and Dry qualities.This can negatively affect the digestive and nervous systems, and encourages thicker blood in the circulatory system. The net effect can be illnesses such as hyperacidity, weakness of the nerves (neuritis), thrombosis, arteriosclerosis, constipation, kidney stones, psoriasis and gout. The skin is more likely to become dry and wrinkled. *Examples: citrus fruits.*

The qualitative effects of sour and astringent foods are counteracted or overcome by foods having a pungent or spicy taste (Hot and Dry).

Bitter taste *(Dry and Hot foods)*
An excessive intake of bitter foods increases the Dry and Hot qualities in the body. They can be harmful to the lungs and the arteries, and may promote excessive bleeding. The net effect may be provocation of illnesses such as tuberculosis and bleeding piles. They also tend to dry out the skin. *Examples: nutmeg, cinnamon, cloves.*

The qualitative effects of bitter foods are counteracted by foods having a salty or tangy taste (Hot and Moist).

Pungent or spicy taste *(Hot and Dry foods)*
Pungent foods taken in abnormally large portions increase the Heat and Dryness qualities.Foods flavoured according to this taste are potentially harmful to the liver, and can weaken the heart's muscular tone. The net effect may be conditions such as jaundice, hepatitis

and cardiomegaly (enlargement of the heart). *Examples: red chillies, garlic, peri-peri.*

The qualitative effects of pungent foods are counteracted by foods having a *sweet or honeyed taste* (Moist and Hot).

The effects of qualities on specific temperaments

The effects of taste on individuals are increased or enhanced if the tastes and the quality associated with it are similar to the individual's dominant temperamental quality. For example, an individual who is dominant Bilious *(Hot & Dry)* is affected much more by pungent or spicy foods (which are *Hot & Dry*) or bitter or tart foods (which are *Dry & Hot*).

Mixing foods with different qualities

Current ideas in therapeutic dieting advocate that proteins and carbohydrates should not be mixed in the same serving. Tibb has traditionally discouraged the consuming of many dishes and tastes at the same meal. For example, milk products should not be eaten at the same time as sour foods. The combination of milk products with sour things in the same meal would interfere with the digestive process, and cause flatulence and bloating. Also, fish should not be taken at the same time as milk or milkshakes. Indeed, milk (as a large portion) should be avoided at any meal.

Temperature of foods

Whilst specific foods may have their own inherent qualities, the temperature at which the foods and drinks are consumed can also have negative effects. Bearing in mind that the average body temperature is 37ºC, consuming foods at temperatures close to the body's temperature will have the least negative effect. The common practice of iced drinks, especially in winter, is an aggravating factor for many disorders.

Water

In order to maintain the body's 70% moisture content, one of the most important needs of the body is water. Water plays an important role in the processes of food digestion, nutrient metabolism, and elimination of waste products. It also ensures the proper circulation of blood and lymph. Virtually every function of the body, from cell division to food digestion to tissue synthesis requires adequate moisture levels. The importance of the maintenance of the ideal moisture content is therefore self-evident.

The human body is capable of dealing with excessive water intake. However, it is unable to handle an inadequate water intake. Many illnesses result from inadequate water intake. For example, kidney stones and kidney failure result from dehydration. An adequate intake of water helps in reducing raised blood pressure, elevated levels of cholesterol, uric acid and glucose in the body.

Health maintenance

Food is by far the most effective Lifestyle Factor, and the easiest to implement as it is entirely within our control. Dietary advice on health maintenance is based on the principle that an excess of food with qualities similar to the dominant quality associated with an individual's temperament will negatively affect his/her health. This means that foods selected from the opposite spectrum of the Diet Charts will be most appropriate. For example, the preferred diet for an individual with dominant sanguinous and sub-dominant phlegmatic temperament will be foods mostly from Cold & Dry followed by Hot & Dry, less of Cold & Moist and the least amount of Hot & Moist foods. Similarly for a dominant bilious/sub-dominant melancholic person the preferred diet will be mostly Cold & Moist, followed by Hot & Moist, less Cold & Dry and the least amount of Hot & Dry foods.

In addition to the Diet Charts, the taste of different recipes should also be taken into account when making dietary choices. For example, an individual with a temperamental phlegmatic/melancholic combination should prefer Hot & Moist, Dry & Hot and Hot & Dry tastes to overcome the coldness associated with their temperament.

MOVEMENT AND REST

A harmonious balance between physical activity, movement, relaxation, and rest is essential for the maintenance of good health. The concept of exercise has important implications when viewed from the Tibb perspective. Movement and rest have an effect on the overall heat and moistness that is associated with the temperament of the human body with the appropriate variations of the individual temperament. Therefore, excess of either movement or rest will have harmful effects.

Exercise and movement

For movement to occur, we have to expend energy, which in turn results in the production of body heat. People vary enormously in the relative proportion of physical exercise, to relaxation. Some people can endure greater degrees of physical activity or movement; others need more rest and relaxation. This wide variation between movement and rest is determined by the temperament of the individual.

Initially, movement (or exercise) produces levels of heat dependent on the extent and intensity of the physical activity. This increased level of heat will result in a *decrease of moisture*, and an *increase in dryness*. As physical activity continues, a state of diminished heat and moistness will come about, which then progresses into a state of coldness and dryness. This could result in an overall loss of body functions.

Regular physical movement, whether voluntary or by reflex action, is conducted by the action of the musculoskeletal system, in combination with, and response to, the voluntary nervous system. It is essential that the person's spinal column and associated structures are protected from trauma, age-related deterioration, and the formation of blockages to associated tissues from abnormal humours. This is an important factor not only when determining the causes(s) of an ailment, but in subsequent treatment.

Physical rest

Life is a constant flux between movement and rest. This is highlighted by the periods of rest between the heartbeats, breathing, blinking and so forth. In fact all functions of the body are governed by this constant interchange between movement and rest. *Lack of good quality rest has a disturbing effect on a person's physis, making him or her more susceptible to illnesses.*

Unfortunately, many people are unable to rest properly because:

- They are over-stimulated by the caffeine present in tea, coffee and fizzy or caffeinated drinks;
- They are affected by stimulant drugs often found in cold and flu preparations, or herbal mixtures containing ephedrine, for example;
- Their environment is too noisy or distracting;
- They are suffering from miscellaneous aches and pains.

However, just as too much movement is possibly harmful, excessive rest is not good for the body either. Resting increases moisture in the body. If this becomes excessive, the body will cool down, and eventually tend towards becoming cold and moist. Finally an excessively cold and dry condition will develop. This could also progress to overall loss of body functions. It is interesting to note that excess of movement (exercise) will have the same final result as excessive rest in terms of qualities of Cold & Dry, both affecting bodily functions.

Health benefits of exercise

A number of major benefits resulting from physical exercise have been uncovered by research and observation in specific areas.

- **The heart:** Regular, mild to moderate exercise is good for the heart.
- **The brain:** Exercise helps to protect against stroke in those people who are at risk.
- **Excess body mass:** Regular exercise helps to reduce excessive body mass, and maintain healthy weight.

- **Bone mass:** Together with good nutrition, regular, low-impact exercise prevents osteoporosis.
- **Blood pressure:** Exercise is good for maintaining normal blood pressure.
- **Stress:** Exercise helps reduce the impact of constant mental or emotional stress.
- **Colds and Flu:** People who exercise are less likely to get respiratory infections.
- **Asthma:** The severity of asthmatic attacks is lower in those who exercise regularly.
- **Diabetes:** The complications of diabetes are minimised in people who exercise.
- **Sleep:** Relaxation exercises help in insomnia, and for recurrent headache and backache.
- **Impotence:** Exercise helps to combat sexual problems, especially impotence.
- **Mental, emotional health:** Regular, reasonable exercise helps to maintain sound mental and emotional health.

Health maintenance

Both movement and rest are essential for maintaining health. A harmonious balance between movement and rest is very important, as is the type of exercise chosen. Different people require different amounts of exercise or rest for the maintenance of health.This depends on their temperament as well as their state of health. Where spinning classes or running on a treadmill (both of which increase heat and dryness) are excellent for some, for others who have a dominant bilious temperament these activities may be too energetic and may cause health problems. Yoga may be suited to highly-strung stressed individuals but may be too passive for others. It is important to match a particular exercise to the temperamental type.

OUR EMOTIONAL STATE

Emotions are known to play a major role in the maintenance of health. Andrew Weil (author of Spontaneous Healing) and other authorities strongly emphasise the importance of how the mind can play a significant role in the healing process. Time and time again research has revealed the value and benefit of a positive attitude on the maintenance of health, and in assisting the processes of healing and recovery. Of interest is that the relatively new healing discipline, psycho-neuro-immunology (PNI) is based on the premise that the conscious mind (psycho), the central nervous system (neuro) and the body's defences (immuno) are interconnected. These combine and actively co-operate in the healing process.

A good example of how emotions can affect an individual's health emerges from clinical trials in which placebos (so-called inactive drug forms) are compared to active conventional drugs. Very often the participants receiving the placebos exhibit the same or very similar quantitative improvement as the participants who are receiving the active drug.

An inclination towards certain emotions is inherent in an individual's personality. This is part of a person's genetic make-up. People respond differently under similar circumstances. Whilst some people can handle stress, others cannot. Some people are calm by nature, others are easily ruffled. Reaction to a particular environment or situation results in emotional states that can seriously affect a person's health. Emotions such as anger produce heat, which leads to palpitations; fear leads to sweaty palms.

According to Tibb, excessive, uncontrolled emotions may be functionally damaging. The mind can play a significant role in helping the healing process, and a positive attitude can play a major part in the prognosis of a particular illness.

The influence of emotions manifests itself by the qualities associated with each of them. For example: Anger (Hot & Dry), Worry (Hot & Moist), Depression (Moist & Hot), Fear (Cold & Moist), Grief (Cold & Dry), and Excitement (Dry & Hot).

Ibn Sina was one of the pioneers who wrote extensively on the effects of suppressed or uncontrolled emotions. Over the centuries, Tibb has recognised the effect of, and the relationship between, emotions and specific illnesses. The effect of the specific emotion is linked to the quality associated with the individual as well as the quality associated with the emotion. For example, if a bilious person whose temperament is Hot & Dry is influenced by anger, which has the similar quality of Hot & Dry, the negative effect of anger in this individual will be intensified.

Listed below are the negative effects of the qualities of respective emotions:

Anger *(Hot and Dry quality)*
Excessive anger can be harmful to the liver, and also have a negative effect on the digestive process. Anger produces stimulation in the liver. When a person is angry, the blood circulation suddenly diverts to the skin. With this emotion a lot of heat is produced in the body, which can harm the internal organs. This requires Physis to shift the circulation outward in order to protect the internal organs from damage. Episodes of anger produce harmful effects on the heart and liver, and damage the brain.

Worries *(Hot and Moist quality)*
Excessive worries can cause disease of the pancreas, resulting in an imbalance of glucose levels.
Depression *(Moist and Hot quality)*
Excessive depression is harmful to the brain and weakens all faculties.

Fear *(Cold and Moist quality)*
Excessive fear leads to diseases of the kidneys and bladder, weakening the adrenal and posterior pituitary glands. When a person has excess fear, the blood circulation suddenly moves inwards, resulting in the face and skin becoming pale and cold, and breathing becoming shallow. Because of this emotion a lot of cold develops in the body, so physis shifts the circulation inwards to protect the internal organs from damage. Fear also produces negative effects in the liver and heart.

Grief *(Cold and Dry quality)*
Excessive grief affects the nervous system. It weakens the nerve impulses and produces negative effects on the brain, lungs, heart and liver.

Excitement *(Dry and Hot quality)*
Excessive excitement can be harmful to the heart. Circulation gradually surfaces to the skin, the face and skin become red and hot, and breathing increases. With excitement a lot of heat is produced in the body, which can harm the internal organs, physis shifts the circulation outward to protect the internal organs from this damage.

From the above descriptions it can be observed that emotions with their respective qualities play a crucial role in an individual's well-being.
It is extremely important to recognise the effect of emotions as being a cause of many illnesses. The health professional needs to be aware of this and should always include this factor in the treatment programme.

> *"Some patients, though their condition is perilous, recover their health simply through their contentment with the goodness of the physician."* [Hippocrates]

Health maintenance
Different temperamental types are predisposed to certain emo-

tional disorders, so a special effort is required to ensure that emotional wellbeing is maintained. For example, sanguinous temperaments are inclined towards worry, irritability and depression; whereas bilious people are inclined towards anger and aggression. Self-help techniques such as meditation, breathing exercises, aromatherapy, colour therapy, as well as psychotherapy and counselling are recommended.

SLEEP AND WAKEFULNESS

According to Tibb, sleep is seen as cooling and moistening. It affords Physis the opportunity for uninterrupted action in restoring the body's harmonies. Wakefulness increases dryness and heat depleting the energies caused by physical and mental activity. Sleep renews and maintains physical and psychological performance. Sleep strengthens all natural functions, including digestion, metabolism, and brain power. During sleep the body restores itself from fatigue and gives Physis the opportunity to prepare for the elimination of toxins and the opportunity to focus on repair and restoration of health.
When a person perspires heavily during sleep without any obvious cause, it means that undigested and unwanted fluids have accumulated in excess of the bodily requirements. With the help of sleep these unwanted matters are eliminated through the skin.

Sleep strengthens all natural functions, including:

- **Digestive processes**, which it helps to complete, ready for bowel movement on awakening.
- **Metabolic processes**, which repairs damage and restores integrity, primarily under the influence of the parasympathetic nervous system.
- **Brain functions**, by sorting out and filing sensory and intellectual input from the previous day.
- **Detoxification**, by assisting physis in eliminating toxins from the system.

The requirement for sleep differs from person to person, and also for different age groups. The amount of sleep required will also be influenced by the extent of physical or mental activity which the person undergoes through the day. Generally, women need more sleep than men, and children more than adults. Also, the elderly will benefit from extra sleep, as the moisture will overcome the dryness associated with old age.

Sleep requirements vary widely, according to temperament:

- Persons with a dominant *bilious* temperament – *5 to 6 hours minimum nightly*;
- Persons with a dominant *melancholic* temperament – *6 to 7 hours minimum nightly*;
- Persons with a *sanguinous* temperament – *6 to 7 hours minimum nightly*;
- Persons with a dominant *phlegmatic* temperament – *8 hours nightly.*

Insufficient sleep leads to excessive heat and dryness affecting all individuals especially a person with a *bilious* temperament. This condition can easily be reversed with an appropriate amount of sleep that will help reduce the excess heat and dryness.
Insomnia is quite a prevalent problem, especially amongst the individuals with *melancholic* temperament. Excessive dryness is the cause behind insomnia (which is often why a glass of warm milk, which has Hot & Moist qualities seems to help). Obviously if a person does not get enough sleep, it will affect the person's mental, physical and emotional states. Troubled sleep indicates that a disease may be developing. Excessive awakening brings about conditions of headaches, slurred speech, lack of concentration, mood swings, irritability, lethargy, melancholia, etc.

Today's lifestyle (entertainment, TV, etc.) invariably leads to chronic sleep debt, which often results in serious consequences. Without adequate sleep, our mental, physical and emotional states are eventually impaired. Sleep deficit is often overlooked as an aggravating factor in many illnesses.

Excessive rest and sleep (*hypersomnia*) gives rise to an excess of Coldness & Moistness, which is harmful for the vital, metabolic and psychic faculties affecting the level of available energy. Long periods of increased Cold & Moistness increases the weakness of the muscles, disturbs the digestion and metabolism, and dulls the mind. It further increases phlegm in the body, bradycardia (low heart rate), weak memory and low blood pressure.

Health maintenance

The need for sleep varies from person to person, for different age groups, and according to their physical or mental activity. For this reason the quality and amount of sleep should be matched to individual requirements. The best time to sleep is from 22h00 until just before sunrise. Supper should be eaten at least three hours before sleeping. Lying on the right-hand side allows food in the stomach to move towards the intestines more easily and decreases the pressure on the heart.

ELIMINATION AND RETENTION

Waste products are substances which are of no further use to the body. According to Hippocrates, the relationship between an individual and the environment is a dynamic process of consuming and retaining what is necessary to support life, and efficiently eliminating the waste that has accumulated. Tibb subscribes to the traditional philosophy that the stomach is the home of all illnesses.

Retention within the body

The term ‘retention’ is linked to the metabolic faculty, which is under the control of the liver, to ensure that nutrients are retained long enough for the assimilation to be effective and then eliminated. Very often, a person may consume nutritious food but the body is unable to assimilate the nutrients. Improper functioning of the metabolic faculty will inhibit effective metabolism and the ideal period of retention will not be met thus having negative effects on the body.

Accumulation of toxins interferes with normal biochemical processes of the body. This impairs not only basic bodily functions, but also affects the further continuous processing of food and drink into ideal humours. This would then introduce more toxins into the system and eventually overcome the ability of physis to maintain health. The presence of toxins places great burdens on the liver, kidney and the lungs eventually causing serious damage to these important organs.

The body has many levels of dealing with abnormal physiological functions, from built-in repair and screening mechanisms, to sophisticated levels of interception by the immune system. Invariably, toxins or excess/abnormal humours which invade the bloodstream or tissues can cause illnesses associated with tissue, organ damage and even cancers.

As mentioned before, the human body is a very complex system completely integrated and interdependent. Whilst a person may be suffering from a headache or mouth sores and the link between this and a toxin-filled colon may not be apparent, in Tibb this link as the cause is clearly identified.

> *"The effective digestion, assimilation and elimination of the Lifestyle Factors constitute health."*

Retention also applies to the inefficiency of the body to eliminate wastes, as is the case with ascites.

Elimination from the body

As waste products are toxic if they accumulate excessively in the body, they must be expelled regularly and totally. *Elimination is a term which embraces all natural functions in which waste products are removed from the body*.

There are four main routes of excretion:

- Via the **kidney** – by *urination*, as urine;
- Via the **faeces** – by *defaecation*, as faeces (stool);
- Via the **lung** – by *respiration*, as volatile substances;
- Via the **skin** – by *perspiration*, as visible or invisible sweating.

These are the main excretory systems. However, there are a number of others which also contribute to toxic waste expulsion. These include coughing, sneezing, nasal mucus, vomiting, flatulence, menstruation, ear wax and ejaculation. Elimination can only be efficient if and when all the metabolic functions are in order. If the Lifestyle Factors are well managed and functions are normal, elimination should be reasonably efficient. However in a world that is not ideal, the Lifestyle Factors invariably are not managed well at all times resulting in accumulation of toxins at different levels of the body. The recognition of the accumulation of toxins as the biggest contributory cause of illness is absolutely essential.

Medicine today is quite aware of the elimination mechanisms of coughing, sneezing, vomiting, menstruation, and other routes. Unfortunately, not enough attention is given to the evacuation of the colon which leads to so many illnesses. Physiologically it is a known fact that the re-absorption of water in the digestive tract takes place in the colon. This process of reabsorption of water would invariably result in a film of matter accumulating on the sides of the colon. Normal peristaltic movement does not remove this accumulation which in turn impedes not only subsequent reabsorption but becomes a reservoir for toxic accumulation. The need to keep the colon clean is common to all traditional systems of medicine. They recognize this as a major cause of many symptoms and illnesses, and promote specific treatments which ensure that effective elimination is maintained.

The importance of elimination has been highlighted in research conducted at Tibb Treatment Centres in Cape Town, and published in the International Journal of Recent Scientific Research under the heading of *“Treatment of Humoral Imbalances at a Cellular/sub-cellular Level”*.

Health maintenance

The elimination of natural waste and toxins, especially via the colon, is critically important. Throughout history, virtually every culture has practiced the taking of natural laxatives on a regular basis – at least once or twice a month. Unfortunately, with today’s hectic lifestyle this

has been somewhat neglected. Although our busy schedule may not allow someone to take a reasonable dose leading to complete evacuation of the colon, even a small dose over two nights produces the required effect. The frequency of taking a laxative will depend on the temperament, age and requirements of the individual. In addition to evacuation from the colon, other eliminative techniques such as massage, sauna, sneezing and cupping can also be carried out.

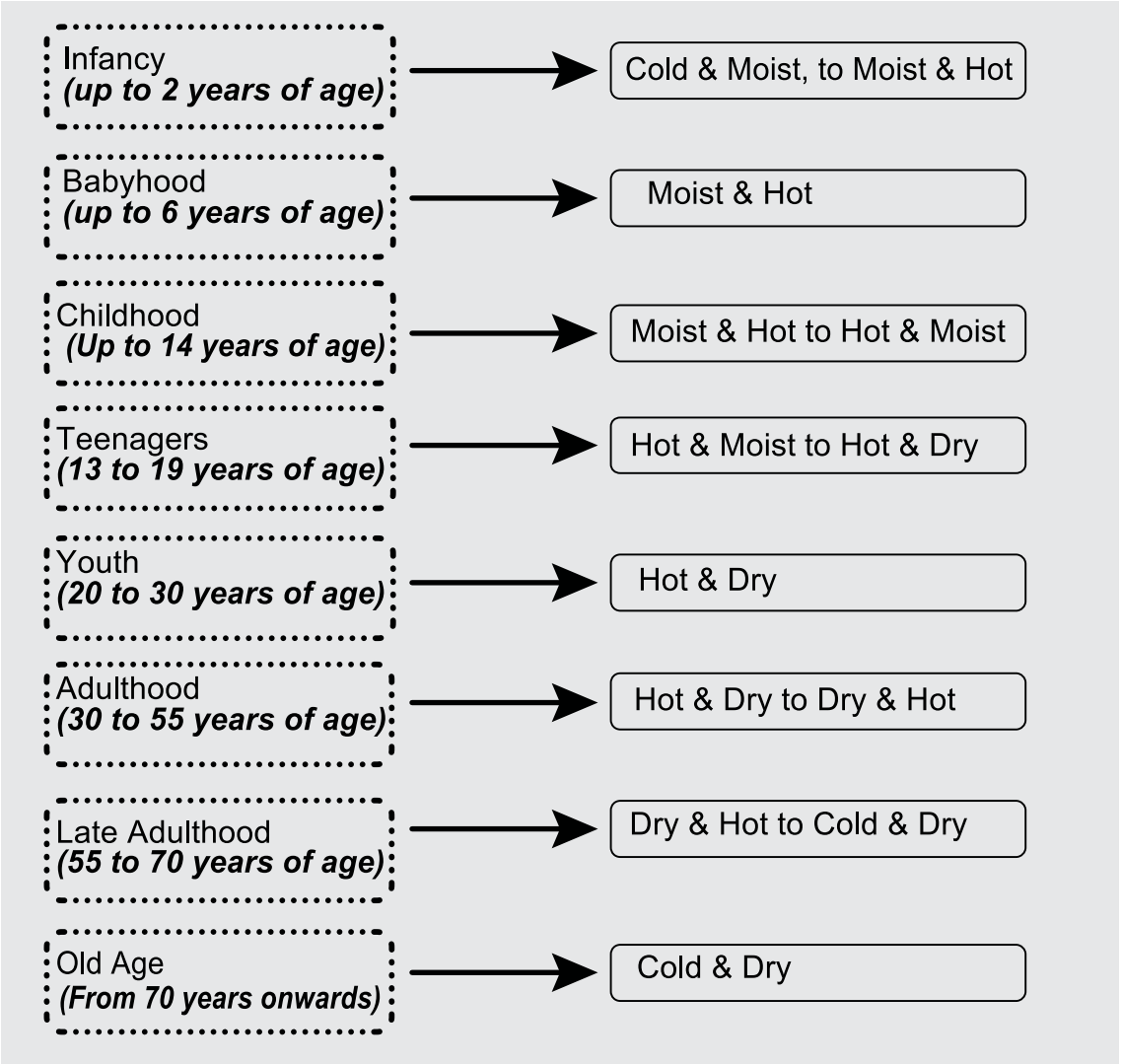
OTHER LIFESTYLE FACTORS

Although the six Lifestyle Factors described above are the main players in the maintenance of health and healing of disease, they are by no means the only ones. The following are pertinent to specific individuals and under specific circumstances.

Age and gender

The age and gender of an individual will also have an impact on Aetiology. Whilst a person's temperament is fixed, (with an ideal qualitative state) the different stages of a person's life from infancy to old age, influences disease conditions that a person may be inclined to.

Table 9: Qualitative changes from infancy to old age



This diagram shows the changes that take place during a person's life cycle from cold and moist to heat and eventually cold & dryness at old age. The qualities associated with each of the stages of the life cycle are an interpretation of the illness conditions that are associated with those stages of life. For example; during infancy and early childhood most of the illnesses are associated with moistness (vomiting, diarrhoea etc.) with teenagers and early adulthood the illnesses are associated with heat (acne, inflammatory conditions) and finally with late adulthood illnesses are associated with dryness (osteoporosis).

Gender also influences predispositions to disease. Females, for instance, have qualities that are slightly more moist than males with the appropriate affectation towards the respective diseases. For example, more women suffer from depression, which is a disease associated with excess moisture.

Occupation or career

Illnesses associated with an individual's career are specific to that individual. The nature of occupations varies enormously – both physically and mentally. For example, a host of different challenges present between a young executive sitting behind a desk, in front of a screen all day, with little exercise and no fresh air, and a farm worker out in the sun from dawn to dusk; or, between an academic, carrying out research, and a manual worker on a car factory production line. A person may also be exposed to toxic or noxious chemicals at work. These often have major effects on the individual's health, both over a brief period of time, but more importantly, after chronic exposure over an extended time span.

Place of residence

This refers to the home environment, which may be overcrowded, or under tension, often resulting in increased challenges, aggression and stress. Ambient noise, lack of ventilation in the home, the presence of insects and house dust mites all have deleterious effects on many occupants' health. Radioactive gas emanating from the bedrock underneath is known to be a serious health hazard in certain geological areas.

Exposure to toxic substances

Pollution in the environment is now accepted as a major cause of chronic disease in the developed and developing worlds. The source of these pollutants comes from the enormous number of industrial chemicals, process gases and fumes, nuclear materials, household chemicals, cleaners and detergents. Also important are the numerous additives included in processed foods and drinks, the side reaction to the chlorination of water.

Personal habits

Personal habits may also be the direct cause of certain illnesses, or adversely affect existing clinical disorders. Our society is characterised by extensive abusive lifestyle activities, for example, heavy smoking, the use of recreational drugs, spree, seasonal or binge drinking, and certain sporting activities. These are not ideal for a person's health.

LIFESTYLE PROGRAMMES FOR DIFFERENT TEMPERAMENTAL TYPES

In the light of the emphasis that Tibb places on the role of Lifestyle Factors in the promotion and maintenance of health, Personalised Lifestyle Programmes for the different Temperamental Combinations have been included (Annexure 2).

CHAPTER REVIEW

Tibb Aetiology is multifactorial. Ibn Sina described four types of causes. The first of these causes is linked to the maintenance of the person's ideal temperament (formal cause). It takes into account humoral imbalances arising from biochemical and physiological changes (material cause). The Lifestyle Factors are important in determining the outcome of health or disease (efficient cause) and establish that impaired functions lead to further illnesses (final cause). However, the causes related to temperament, humours and impaired functions are influenced by the Lifestyle Factors.

For a cause to be effective, it must have three features: active power, receptive power and prolonged contact. Active power means the cause must be sufficiently powerful, and in sufficient numbers, whether the pathogen is a microbe, toxin or parasite, or in the food or inspired air. Regarding receptive power, everyone's internal environment is effectively a culture media. However, microbes are only capable of pathological impact when there is sufficient receptive power – when the immune system is compromised. Prolonged contact means that even though a person's humoral balance is strong enough initially to

withstand the pathogen, over a period, the immune system can become worn down and compromised.

General: A person's temperament is a unique fusion of personality, body constitution and genetic factors. Changes to this ideal qualitative state make the person more vulnerable to the development of illness. Disease is ultimately the outcome of a poor interaction between the person (microcosm) and the environment (macrocosm). Changes in the environment will initiate changes in the person's qualitative state, and thus affect the temperament.

Clinical disorders, especially those which are chronic or recurring, rarely if ever arise from a single cause. This is in contrast to Western medicine, fixated on the 'one disease, one cause' idea, which has largely proven elusive in their aetiology of disease. Tibb accepts that diseases are multifactorial in nature, with both internal and external causes playing a role. These do vary from patient to patient, and according to the type and severity of the clinical disorder being experienced. In addition, Tibb feels that the signs appearing and symptoms reported by a particular patient actually reflect the balance of different causes which led to the disorder in the first place.

Lifestyle Factors: These everyday activities determine the quality of our health. They can affect the person's humoral balance both quantitatively and qualitatively. These changes to a person's humoral state often arise, for example, through a poor or deficient diet, or from ineffective elimination. The main Tibb Lifestyle Factors, common to all, are: environmental air and breathing, food and drink, movement and rest, sleep and wakefulness, our emotional life, and elimination and retention.

Environmental air and breathing: The air we breathe is the first step in the hierarchy of physiological needs. The way we breathe is very important. Air possesses several properties which can affect our health: temperature, humidity, ionic content, and pollutants. Many chronic diseases are associated with poor breathing, or inferior air

quality. Air pollutants are implicated in the onset and progress of several disorders. Changes in local weather can have profound effects on a person's health. People respond differently to changing weather according to their temperament.

Food and drink: Food is the raw material for the production of the humours. It can be classified in different ways: as chemical components, or nutritional value, or potential for immune protection, or as a cultural perception value (good vs. junk). In Tibb, a particular food is classified according to its nutritional components and whether it is heating or cooling, with appropriate levels of moisture or dryness. The concept of heating and cooling foods is linked to the effect of the foods on the body. All foods have qualities associated with them.

Movement and rest: A balance between physical activity and rest is essential for the maintenance of good health. Many people are unable to rest properly because of over-stimulation, the intake of certain drugs, environmental problems, and physical disorders. The benefits of exercise are proven for a wide range of ailments, including heart disease, diabetes, sleep disorders and certain cancers. Energy is expended for movement to occur, which in turn results in the production of body heat. Qualitatively, this increased level of heat decreases moisture and increases dryness. As physical activity continues, diminished heat and moistness occur, which progresses to coldness and dryness. Regular physical movement, whether voluntary or by reflex action, is conducted by the action of the musculoskeletal system. It is essential that the person's spinal column and associated structures are protected from trauma, age-related deterioration, and the formation of blockages to associated tissues from abnormal humour accumulation.

Sleep and wakefulness: Qualitatively, good sleep is cooling and moistening, whereas a lack leads to excessive heat and dryness. Excessive dryness is the cause behind many cases of insomnia. Sleep lets Physis remove toxins and metabolic debris, and restore the body's harmonies. Wakefulness increases dryness and heat, depleting the

energies caused by mental and physical activity. Sleep strengthens all natural functions, especially digestion, metabolism, and brain power. It provides the opportunity to repair and restore health. Sleep requirements vary widely, according to temperament; phlegmatic people need more than those of a bilious nature. Insomnia is prevalent in those with a melancholic temperament.

Our emotional state: Emotions play a major role in the maintenance of sound health, and excessive, uncontrolled emotion may be psychologically damaging. The mind plays a significant role in helping the healing process, and a positive attitude can play a major part in the prognosis for a particular illness. Emotions influence the person's qualitative balance. For example, anger increases Hot and Dry qualities; worry, Hot & Moist; depression, Moist & Hot; fear, Cold & Moist; grief, Cold & Dry; and excitement, Dry & Hot.

Elimination and retention: There is a dynamic relationship between the person and the environment, consuming and retaining what is necessary to support life, and eliminating the waste that has built up. Accumulation of natural waste and environmental toxins interferes with normal biochemical processes of the body. The four main routes of excretion are via the kidney, faeces, lung and skin. Other processes also contribute to expulsion, such as coughing, sneezing and vomiting. Failure to eliminate efficiently often leads to most illness conditions.

Others: There are several other Lifestyle Factors which vary in importance from person to person, such as: age and gender, nature of the person's occupation, exposure to toxic substances, and where a person lives: urban, peri-urban or rural. This latter is increasingly important, as noise, pollution, crime, stress and other influences affect health. Personal habits such as smoking, excessive drinking and drugging, both recreational and prescription, fall into this category.

CHAPTER 3: PATHOLOGY IN TIBB

INTRODUCTION

In the previous chapter on aetiology, the various causes of both disease and good health were covered. The differences between the Tibb approach and that of present-day conventional medicine were outlined as a preliminary factor in the nature of disease.
This chapter on pathology provides an understanding of the processes which lead to temperamental, qualitative, humoral, functional or structural imbalances within the body. Tibb's contention that any disease process can be reversed is also supported. Although certain microbes are responsible for some diseases, this is only one of many pathological processes. An understanding of the pathological states associated with inflammation is also provided. Tibb affirms that clinical signs and symptoms indicate qualitative imbalances at one or more of the temperamental, humoral, functional or structural levels. In realising this, the temperamental and humoral theories of Tibb provide a comprehensive understanding of pathological processes.

DEFINITIONS AND DESCRIPTIONS

Health. The term 'health' describes the state of a person's body based on complete harmony between the internal and the external environment. Health is actually the body's natural state or default. According to Tibb, health is the state in which the temperament, ratios of the bodily humours, and bodily structures are in a state of dynamic balance, or harmony, maintained and regulated by Physis. In this state all the functions in the body perform efficiently, consistently and accurately.

Homeostasis. This is defined as the tendency of the body's physiological systems to maintain an environment of stability. In Tibb homeostasis is described as *dynamic optimum functioning*. This homeostasis is specific for each individual, and is under the influence of Physis. The maintenance of homeostasis focuses on the person's internal environment, and how it responds to both internal and external

stimuli. Physis organises this balance via the faculties and functions of all the systems and organs of the body, which are under the control of the three main organs – namely, the liver, brain and heart.
The agents of homeostasis are the many physiological systems within the body, such as blood pressure regulation, acid-base balance and body temperature control, which are maintained in equilibrium, in spite of continual variations, both major and minor, in the external environment.

Disease. Disease is a disorder of health, with recognisable signs and symptoms characteristic of a particular disease. It is diagnosed initially on the basis of what the physician observes (*signs*), and what the patient complains of (*symptoms*). Diagnostic tests may be necessary to confirm (or reject) the diagnosis. According to Tibb, disease is that abnormal state of the body in which there is an alteration in the temperamental, humoral, functional and structural level due to any internal or external cause.

Pathology. In conventional medicine, pathology is the scientific study of disease processes with the aim of understanding their nature and causes. It is concerned with the cause, manifestation and diagnosis of a particular disease. The discipline of pathology generally involves the following considerations:

- **Aetiology** – is the study of what agent or activity causes a particular disease.
- **Pathogenesis** – deals with the mechanisms by which a disease originates and develops. Pathogenesis is the basis for *prognosis*, which is an evaluation of the future course and outcome of a person's ailment.
- **Structural changes** – this refers to the noticeable changes in tissue or organ structure that develop during the course of the disease.
- **Clinical significance** – describes the signs and symptoms of the disease. *Signs* are what the healthcare practitioner observes by use of the five senses. They emerge from the examination. *Symptoms* are usually the reason for the visit to the

healthcare practitioner, or volunteered by the patient on examination or enquiry.
- **Clinical pathology** is the application of the knowledge we have gained from the study of the pathology of the disorder to the actual treatment of the patient.

Defining pathology in Tibb. Pathology according to Tibb refers to the state of imbalance (disturbed homeostasis) in the body which tends to affect the body directly. This lack of harmony may be brought about by internal or external causes, or a combination of both. Homeostasis concerns both the inner, internal balance, and its adjustments to the many outside, external influences. Pathology in Tibb, therefore, is based upon the interpretation of the patient's signs and symptoms. These are carried out within the scope of qualitative and humoral changes that affect variation in temperament, structure and function from the normal healthy state. It also includes pathological processes that result in disorders of configuration and the loss of continuity, in line with the description by Ibn Sina.

COMPARISON: TIBB AND WESTERN MEDICINE

Tibb and Western medicine differ in a number of ways in the interpretation of pathology. The primary difference is that conventional medicine examines the pathology of a clinical disorder by evaluating the disease process in purely physical terms. In particular it tends to obtain information only on what is quantifiable or measurable, derived from a wide range of biochemical assays, physiological calculations or imaging techniques. These findings, or parameters, are then interpreted to suggest whether or not there are functional (pathological) or structural (morphological) abnormalities. These findings are based on existing and verifiable knowledge of how the disease progressed in other patients of the same age, state of health and gender.

This approach has its limitations, as it is purely objective, and operates only at the physical level. It does not take into account the important changes that often take place in the emotional, metaphysical and

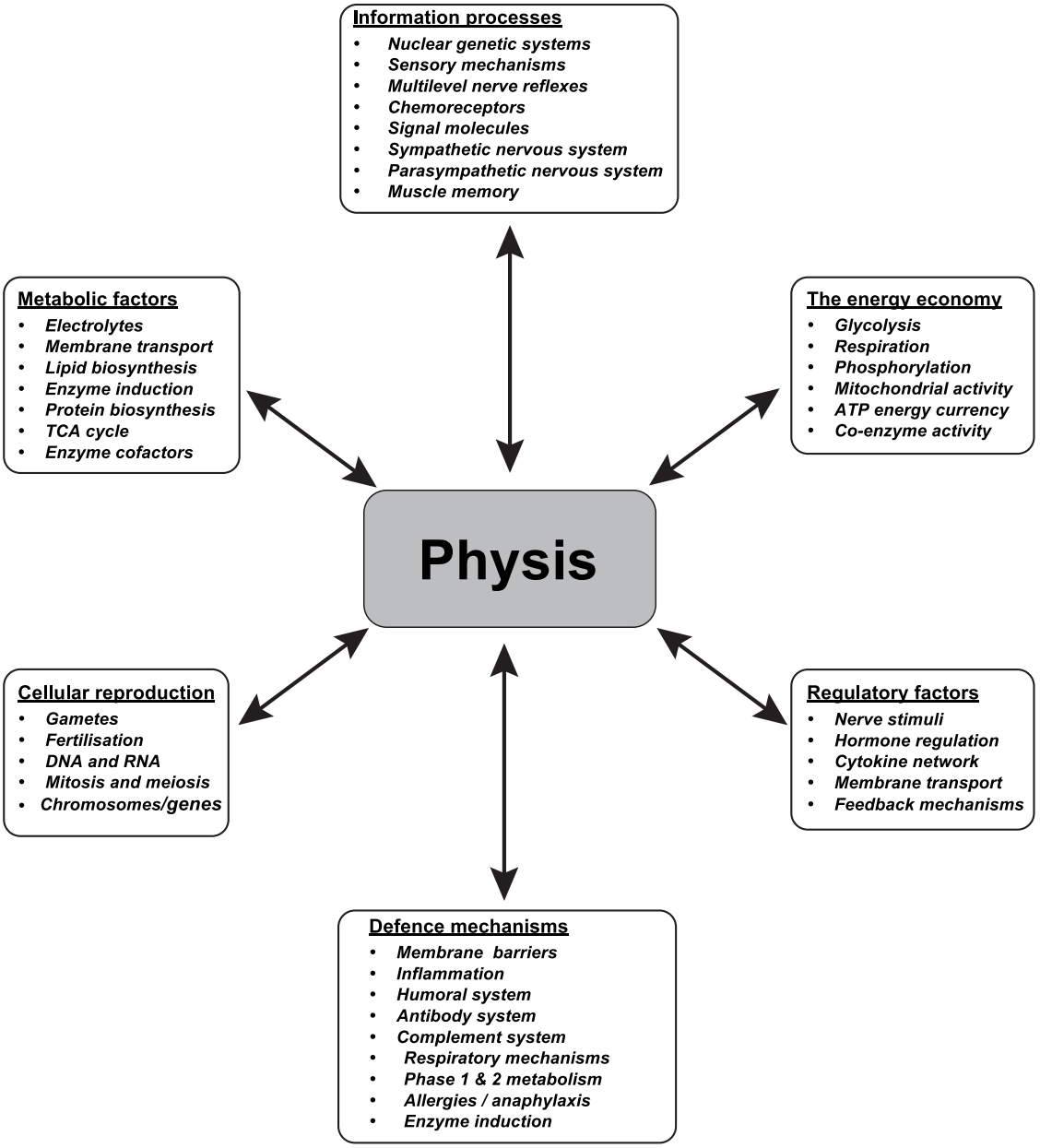
spiritual dimensions. The reason is simple – these changes cannot be isolated or quantified.

Western medicine tends to focus on one cause as the origin of a particular disorder: “one cause; one effect”. The objective of conventional medical research is to isolate one specific cause from a number of others, and determining the outcome of treatment on the disease under scrutiny. This reductionist approach, also termed the ‘Doctrine of Specific Aetiology’ is the theory of conventional medicine, originating with Louis Pasteur in the 19th century, in which disease came to be associated with specific microbes, rather than imbalances in humours, or complex convergences of factors in a person’s unique lifestyle. The conventional medical approach to pathology is to link a particular disease to physical malfunction of an organ, tissue or metabolic process. Tibb, in contrast, views pathological processes as the result of changes or distortions in the qualities and/or humours.

This reductionist approach fails to appreciate the intense complexity of the human body, and in so doing loses sight of the bigger picture. The complex functioning of the human body, highlighted in the diagram below, shows the intricate processes involved in the different categories of biochemical and physiological activities of the body. This embraces metabolic factors, energy generation and usage, cellular synthesis processes, information processes, defence mechanisms, and the multitude of regulatory mechanisms.

If we go into any of the topics in the scheme, whether energy production, hormone regulation or communication structures, each requires an elaborate series of checks and balances as well as initiators and inhibitors, all working together in time and space, balancing and counteracting each other in order to maintain homeostasis. One can only but marvel at the intricacies which exist at every level and yet all of which are so amazingly balanced by Physis to ensure homeostasis.

Table 10: The complex functioning of the human body



What is even more amazing is that the above diagram highlights only the complexity of the human body's mechanisms with respect to the limited knowledge that even present-day technology is able to measure. The important contributions of emotional and spiritual dimensions, which are not measurable, are hence not appreciated.

Today, rather belatedly, conventional medicine is beginning to recognise the effects of these abstract or immeasurable entities. However, it cannot focus on these effectively, as it does not have a philosophical basis for understanding these entities. Equally important perhaps, is that what conventional medicine measures, and from which assumptions are made, is usually more relevant to the final stages of the pathological process. The final stage in the disease process often represents only the tip of the iceberg. It is far removed from the origin and early stages of the pathological process.

Tibb asserts that the human body should not be regarded simply as a machine. It is too complex for us to understand the true nature of pathology from only what we can measure. The Tibb philosophical principles embodied in the temperamental and humoral theories allow for a comprehensive understanding of pathological processes.

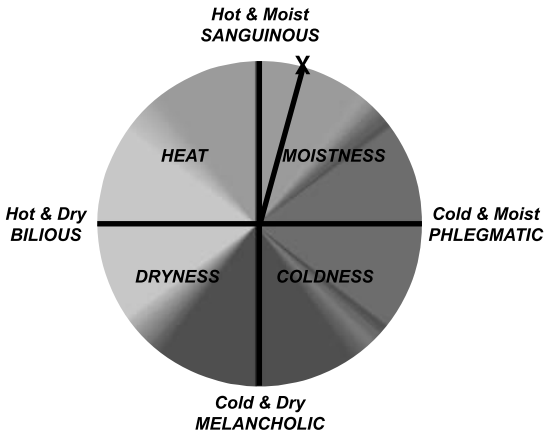
In Tibb, the understanding of pathology begins at the metaphysical level of the humours and measures outcomes in terms of the patient's temperament, qualitative imbalances, organ structure and the functioning of the various body systems. The physicians who practiced in earlier times were not able to monitor, measure, and understand the innumerable biochemical, physiological, and electrical activities occurring in the human body. They were, however, able to focus on what can be seen or reported (signs and symptoms) as well as being able to interpret temperament, qualities and humours. Moreover, they had immense metaphysical insights and keen intuition into the workings of the body, in both health and disease.

Although we do not fully comprehend pathological processes, there is a definite and consistent link between the metaphysical level and the outcomes which can be identified and measured. This tried and tested approach of understanding the causes of illnesses, pathological processes and diagnosis of diseases, has proven itself empirically over thousands of years in line with the principles of cause and effect. The study of pathology in Tibb focuses on the lack of harmony or homeostasis within the human being. Pathological processes begin

when Physis is unable to maintain homeostasis and correct imbalances via the faculties and functions of the body's systems and organs. This imbalance occurs during the interaction between the human being and the environment represented by the Lifestyle Factors.

Pathology: The Tibb Perspective

In Tibb, pathology describes the scope of temperament, qualities, humours, structure and function in line with the three main organs. These are the heart, liver and brain, which respectively regulate the immune system, the endocrine/exocrine system and the nervous system. This approach enabled the early practitioners of Tibb to have a comprehensive understanding of outcomes – not only on the pathological process but also within the principles of cause and effect.



The starting point for Tibb pathology, at the humoral level, is the ideal qualitative state associated with the unique temperament of each individual. In the diagram adjacent the ideal qualitative state of an individual with a dominant sanguinous and subdominant phlegmatic temperament, for example, has an overall dominant quality of moistness, followed by heat, less of coldness, and the least amount of dryness – as represented by the point marked **X**.

As long as a person's ideal humoral qualitative state is in harmony with the overall qualitative requirement of his or her temperament, optimum health is maintained. This state of equilibrium/homeostasis is altered from the effect of the Lifestyle Factors which Physis is constantly restoring.

Changes to this humoral balance, beyond the ability of Physis to restore homeostasis, defines the beginning of pathological process in Tibb.

HUMOURS WITHIN THE CONTEXT OF PATHOLOGY

Changes to the ideal humoral composition occurs either qualitatively or quantitatively.

> *"When the normal proportion and specific equilibrium of humours is altered, the internal environment reaches a state of imbalance, and thus disease develops. This is the basis of aetiology and pathology of disease".* [Al-Abbas]

As previously mentioned the four humours are:

- **Sanguinous** *(Hot and Moist)*;
- **Phlegmatic** *(Cold and Moist)*;
- **Bilious** *(Hot and Dry)*;
- **Melancholic** *(Cold and Dry)*.

Synthesis of humours

The humours are synthesised in the liver, according to the nature of the foods eaten and the degree of their digestion. They are transferred to the vascular system, and from here they are distributed to all bodily cells, tissues and organs.

The production of humours is influenced by the quality of heat, which prevails during the liver's metabolic processes. The phlegmatic humour with Cold & Moist qualities, requires the least amount of heat, so is produced first. This is followed by sanguinous (Hot & Moist) bilious (Hot & Dry) and finally melancholic (Cold & Dry), which needs the most heat.

Features and functions of normal, healthy humours

Sanguinous humour

As the overall temperament of the human body is Hot & Moist, the sanguinous humour is present in the largest concentration. Its function is to provide nourishment to every cell tissue and organ within the body.

Normal sanguinous humour manifests itself materially in the red colour of blood. It has no odour, and is hot and sweet to the taste. The sanguinous humour serves as the carrier for the other three humours. It transports them to wherever in the body they are needed, in order to carry out their dedicated activities.

The reason for it being hot is that it is actually hot or potentially hot. Organs richly supplied with blood are hot whereas those whose blood supply is comparatively less are comparatively cold. The reason for it being moist is that it contains ± 90% water. Water has certain qualities needed to maintain body temperature:

- High specific heat (specific heat is the amount of heat needed to raise one gram of a substance by one degree Celsius).
- High thermal conductivity (thermal conductivity is the measure of the ability of a material to transfer).
- High latent heat of evaporation (heat of vaporisation is heat absorbed by a unit mass of a material at its boiling point in order to convert the material into a gas at the same temperature).

As mentioned previously heat and moistness are needed for the maintenance of life. For all life to exist, an ideal balance of heat and moistness is required. This can be observed in nature. Plants need an ideal level of heat and moisture for survival. During spring time, flowers blossom as the heat gradually starts increasing after the cold of winter. If either quality of heat or moistness is deficient, death will ensue.

As we are all uniquely created, the ideal level of heat and moistness needed by each individual will vary according to their temperament. Death, old age, and end stage of disease are associated with qualities of coldness and dryness as it is opposite to life giving heat and moistness. Similarly, in pathological processes, obstruction of blood flow, ischaemia, necrosis etc. are linked to qualities of coldness and dryness.

Functions of the sanguinous humour

- The sanguinous humour provides nutrition to the body, and promotes growth. Burhan al-Din Nafi's describes this humour as: *"... The best nutriments for the body because whatever is lost from the body is replaced by the sanguinous humour".*
- It acts as a vehicle and transports all material to the tissues.
- It keeps the body warm and maintains the body's temperature constant.
- The sanguinous humour is known as the carrier of oxygen. When inspired, air reaches into the alveoli of the lungs, oxygen is absorbed into the sanguinous humour and carried to the tissues. It is said that the arteries are filled with oxygen, which it transports to all the body's tissues.
- It carries the waste products of oxygen i.e. CO^2 from the tissues to the lungs to be expelled from the body.
- It carries all other humoral waste products from the tissues to the excretory organs to be expelled.
- The sanguinous humour carries such material which performs functions of defence against foreign bodies.
- It produces healthy texture and shine in the skin.

The phlegmatic humour

The phlegmatic humour is the second most abundant humour. It is similar to the sanguinous humour in that it does not have a storage reservoir, unlike the bilious and melancholic humours. The reason is that, like the sanguinous, the phlegmatic humour is needed by virtually every organ in the body. The material form of normal phlegmatic humour is sweet (but to a lesser extent than the sanguinous), and moderately cold.

The phlegmatic humour serves the following purposes:

- When there is a shortage of the sanguinous humour in the body, the phlegmatic humour is transformed into the sanguinous humour due to its nature of being incompletely digested.

Burhan al-Din Nafi's says:

"Since the phlegmatic humour can be needed at any place for the nutrition of the body, hence there is no vessel for the storage of the phlegmatic humour, but it has been flown with the flow of the sanguinous humour and it has been spread away in the organs (cells and tissues), so that whenever there is deficiency of the sanguinous humour in tissues it could be readily available."

- To supply the body's organs, particularly the brain and associated nervous tissues, which possess a dominance of the phlegmatic humour, specifically the quality of moistness.
- An ideal concentration of phlegmatic humour is necessary for normal day-to-day activities, physical maintenance and repair.
- To serve as a general lubricant within the body. It prevents friction between and within body structures, so protecting the body's internal organs and structures like the skeletal joints. The phlegmatic humour in the synovial cavities supply nourishment to the intra-capsular parts of the joints and furnish lubrication.
- Likewise the mucous and serous fluid are secreted from various mucous and serous membranes of the body and perform diverse functions e.g. gastro-intestinal tract, naso-respiratory tract, uro-genital tract, pericardial fluid, pleural fluid and peritoneal fluid.
- The intraocular fluids (aqueous and vitreous humour) also furnish nourishment to various parts of the eye and maintain intraocular pressure.

The bilious humour

The bilious humour is stored in the gallbladder, secreted into the lumen of the gastro-intestinal tract, and excreted via the stool and urine in the form of bilirubin, biliverdin and other substances. These and related metabolites give the stool and urine their typical brown and yellow colours respectively. The material form of normal bilious humour is yellow in colour, light and pungent.

The bilious humour has a number of functions:

- To supply nutrition to the body's tissues and organs with a dominance of heat, such as the lungs and the gall bladder.
- To allow thinning of the vascular fluid (specifically its Hot & Dry qualities), in order to penetrate into the narrow capillaries.
- To prevent the formation of blood clots (emboli), by exerting its anti-melancholic and anti-coagulant properties.
- To emulsify fats present in the diet, so aiding digestion.
- To cleanse the intestines of thick and viscous mucus, so removing phlegmatic and melancholic humours.
- To stimulate the musculature lining of the intestines, so promoting efficient defaecation.
- The bilious humour acts as a vermifuge.

The melancholic humour

The melancholic humour is stored in the spleen, which it nourishes. The material form of the normal melancholic humour is a sediment or residue which forms in collected blood when left standing. Its taste varies between bitter and acrid.

The melancholic humour acts to:

- Supply and nourish the tissues and organs such as the bones which have a preponderance of the melancholic humour, specifically dryness.
- Signal the intensity of appetite experienced by the person.
- Provide density and consistency to the vascular fluid.
- Aid the activity of platelets in the blood coagulation process.
- Assist in the formation of melanin, a compound which provides skin pigmentation.

Understanding the features and functions of normal humours is important in understanding the pathology of disease according to the Tibb philosophy. For example, the melancholic humour has coagulation properties. Therefore an excess (or abnormal) melancholic humour may be the cause of vascular lesions causing ischaemia. Similarly,

the phlegmatic humour has lubricating properties. Joint pain in arthritis for example may result due to a corruption of the normal phlegmatic humour, causing it to become too hard or too thin thus eradicating the soothing properties of this humour. The bilious humour being pungent causes a burning sensation in the oesophagus when regurgitated. And the preponderance of the sanguinous humour can lead to conditions related to hyper-volaemia, such as hypertension.

As each humour has specific qualities associated with it, changes to these qualities, brought on by the Lifestyle Factors, will result in the conversion of the normal humoral state to an abnormal one. These abnormal states will lead to clinical disorders if Physis is unable to remove the abnormal humour from the body effectively, and in good time.

Development of abnormal humours

Whilst we do not fully understand the exact mechanisms underlying the clinical manifestation of abnormal humours, their existence can be identified in various pathologies. A poor diet is one of many causes of the development of abnormal states of humours. Refined, processed, genetically modified foods etc. all affect the quality of the humours produced: poor quality foods yield poor quality humours.

Abnormal humour also results from the effect of conventional medication, which interferes with normal physiological and biochemical processes controlled by Physis. In addition, conventional medicine also prevents the elimination of the excess/abnormal humours, in the form of fever, diarrhoea, vomiting etc., resulting in further abnormal humoral states to arise.

Qualitative changes of normal humours can also develop due to oxidation, with heat or coldness, or by mixture with corrupted humours. Listed below are abnormal states of the four different humours:

Sanguinous humour

The sanguinous humour, being Hot & Moist, can be altered by a num-

ber of factors. These include excessive heat (oxidation) or infection (putrefaction). The changes can affect the quality and purity of the humour, resulting in it becoming thicker or thinner, darker or paler, or contaminated. They can also vary the odour and taste of the humour.

Oxidation of the sanguinous humour is due to excessive heat. For example, from improper diets, which often contain an excess of refined sugar and over-processed food items. In addition, a lingering fever may cause the sanguinous humour to thicken, leading to stagnation.

This abnormal humour has qualities of dryness associated with it.

- Signs and symptoms include an emaciated dark, reddish tongue.
- Examples of illness: Inflammatory skin disorders, such as eczema and psoriasis.

Phlegmatic humour

Once it has been utilised and eventually exhausted, the phlegmatic humour is excreted from the body in a variety of forms. These vary in quantity, texture, consistency, colour and taste. This indicates that once the phlegmatic humour is generated it progresses through many different qualitative changes and increasing degrees of abnormality.

The taste of one's saliva is an important indicator of the overall state of one's phlegmatic humour. Saliva consists of both serous and mucous fluid. The taste of normal saliva is mildly sweet or bland, but if one's saliva tastes unduly sweet, sour, acrid or bitter, it may indicate morbid qualitative changes in the phlegmatic humour.

Insipid phlegmatic humour

- This is thin and watery. It is produced from coldness, such as exposure to cold weather, or from drinking ice-cold drinks.
- It is the most Cold & Moist variant of the phlegmatic humour, and is tasteless and odourless.
- Signs and symptoms include: watery, tearing eyes; runny nose; moist, glossy, pale tongue. Examples of illness: Post-nasal drip, phlegmatic asthma.

Salty phlegm

- This arises from being mixed with abnormal bilious humour. It is the hottest, driest and lightest form of the phlegmatic humour. Salty phlegm is Hot and Dry comparative to normal phlegmatic humour. This variety of phlegm being thinner than the normal phlegmatic humour has qualities of heat and dryness, where heat dominates. Being hot, the salty phlegmatic humour reduces the nourishment and soothing protection offered by the phlegmatic humour. Phlegmatic fluids that require a certain degree of viscosity, such as the synovial fluid, when made unduly thin, diminishes the supportive and protective function resulting in increased friction and irritability of the skeletal joints.
- Example of illness: Allergic rhinitis. This manifests as a runny, nose, with thin mucus and red, inflamed nasal mucous membranes.

Phlegmatic humour corrupted by abnormal sanguinous humour

- This is very sweet in nature, and has qualities of moistness. It is due to excessive heat and moisture arising from the digestive and metabolic processing of an improper diet. Example of illness: Metabolic disorders such as diabetes.

Mucilaginous phlegmatic humour

- Is thick and slimy and may be clear, milky and translucent, or white and opaque. It is the result of excessive intake of mucous producing foods. Example of illness: Sinusitis.

Calcerous phlegmatic humour

- Is white and chalky, and has qualities of coldness and dryness associated with it. Example of illness: Arthritis and rheumatic dis orders associated with the elderly.

Bilious humour

- Oxidation of the bilious humour due to excessive heat and dry ness may result in it becoming thick and hard. Example of ill ness: tuberculosis.

Melancholic humour

Abnormal melancholic humour is often the charred, oxidised residue of any of the four humours, including the melancholic humour itself. These abnormal variations are hotter and lighter in quality compared to the normal melancholic humour, so they have a greater penetrating power, and are more corrosive.

Abnormal melancholic humour can be generated from several causative factors:

- Excessive heat in the liver, causing burning, charring or excessive oxidation of the humours.
- Excessive heat generated by certain types of chronic or extreme fevers.
- Excessive cold that congeals and solidifies the humours and secretions in the body, resulting in prolonged stagnation that leads to putrefaction. The residue that is left behind from putrefaction is usually a type of abnormal melancholic humour.

Examples of the possible causes and illness conditions associated with abnormal melancholic humour are listed below:

Abnormal Melancholic from the Sanguinous humour

- Cause – excessive oxidation or putrefaction. Example of illness: Complications of diabetes mellitus, such as gangrene.

Abnormal Melancholic from the Phlegmatic humour

- Cause – oxidation of the mucous and serous fluids of varying composition and consistency. Excessive cold results in stagna tion and coagulation. Example of illness: Angina.

Abnormal Melancholic from the Bilious humour

- Oxidation of the bilious humour renders it very corrosive, caustic and toxic. Example of Illness: Cirrhosis of the liver.

Abnormal Melancholic from the Melancholic humour

- Many cancers arise from abnormal states of the melancholic humour. Example of Illness: Carcinoma of the colon.

PATHOLOGICAL PROCESSES AND PATHWAYS IN TIBB

The Western medicine technique for treating disease is based on identifying the cause, usually a microbial infection, allergen or inflammatory process. After alleviating or suppressing the symptoms, if an infective agent, allergen or other toxic substance is considered the cause, treatment consists of antibiotic, anti-allergen or anti-inflammatory drugs. This is consistent with the 'one disease, one cause' philosophy, or 'doctrine of specific aetiology'.
Tibb has a different approach, based on identifying the putative causes related to the humoral composition of the patient, and the influence of the patient's diet, and other the Lifestyle Factors, and how these make someone susceptible to disease by preparing the terrain.

Tibb considers that illnesses arise from three processes

- From a sudden change or excess in qualities resulting in a qualitative/humoral imbalance – Pathway 1;
- From an accumulation of excess or abnormal humours - Pathway 2;
- From the influence of an infectious or toxic agent.

Pathway 1: Sudden change or excess in qualities - Qualitative/ humoral imbalance

Illnesses that follow Pathway 1 are invariably associated with acute disorders. They arise unexpectedly in people who are in most cases physically healthy, and whose humoral balance is in harmony with their personal temperament. In these people, their Physis is in complete control. Although homeostasis is firmly established and optimum health maintained, it can happen that a sudden change in one or more of the qualities - heat, moistness, coldness or dryness - can occur. It could be from emotional or environmental excess, physical or mental shock, excessively hot food, badly disturbed sleep, or a sudden change in the weather. It is these changes which lead to the signs and symptoms typical of a specific ailment.

As mentioned earlier, signs and symptoms in general are associated with a combination of qualities which invariably begin with an excess of one quality in particular, whether it is heat, coldness, moistness or dryness. The pathological processes (below) arise from an excess of each quality:

Excessive heat - leads to a bilious and/or the sanguinous humour imbalance. This has a negative influence on the functioning of the phlegmatic humour, and to a lesser extent, of the melancholic humour.

Excessive coldness - leads to a phlegmatic and/or the melancholic humour imbalance. This has a negative influence on the functioning of the bilious and/or the sanguinous humour.

Excessive moistness – leads to a sanguinous and/or phlegmatic humour imbalance. This has a negative influence on the functioning of the melancholic and/or the bilious humour.

Excessive dryness – leads to a melancholic and/or bilious humour imbalance. This has a negative influence on the functioning of the sanguinous and/or the phlegmatic humour.

Pathway 1, resulting from a sudden change or excess qualities is common in most cases of self-limiting illnesses, such as headaches, vomiting, diarrhoea and dyspepsia. A typical example is when someone is exposed to a cold environment immediately after warm one - like going outside during a cold winter's day from a warm room in the office or home. A runny nose immediately develops in response to the cold as Physis attempts to balance this quality. Rectifying this by moving back into the warm environment or eating heating foods, supports Physis, so restoring the body to the normal homeostatic state. However, prolonged exposure usually leads to symptoms typical of colds and flu.
Similarly emotions can also elicit a qualitative effect. For example, a heated personal exchange usually results in an elevated stress level. This is linked to the heat quality, so a serious confrontation

often leads to the person involved experiencing nausea, diarrhoea and other stress-related disorders.

Although most Pathway 1 ailments begin with an excess of one of the qualities in particular, they are invariably associated with a combination of dominant and sub-dominant qualities.

For example, cold and flu commonly manifest in the colder season of the year. If this cold imbalance is not corrected, then flu-like symptoms develop, such as a runny nose and a productive cough. These are associated with an increase in mucous production. Such respiratory symptoms are therefore associated with Cold & Moist qualities, with cold being the dominant quality. Similarly, peptic ulcers, which often arise from consumption of excessively spicy foods, are associated with Hot & Dry qualities, with heat being the dominant quality.

These qualitative changes are generally associated with most acute disorders, and these may affect certain functions. Physis can actively restore health once the excess quality situation has been counteracted and corrected. However the effect of these qualitative changes, if not addressed or reversed, can worsen, and lead to marked distortions at the humoral level.

If the effect of the Cold & Moist qualities is prolonged, the humoral balance will be negatively affected, and other, serious, disorders associated with the phlegmatic humour, chronic sinusitis and bronchial asthma for instance, can develop.
Also included in Pathway 1 are flare-ups associated with chronic disorders. Examples abound: an episode of epigastric distress after consuming a highly spiced meal in a patient with peptic ulcer disease, or one of acute inflammation in a gout patient who has binged on alcohol.

Pathway 2: Accumulation of excess or abnormal humours
Illness conditions arising from Pathway 2 are invariably from either excess or abnormal humours. Excess of one of the four humours manifests itself at a quantitative level, resulting from the types of

foods consumed. For example, excessive intake of Hot & Moist foods will result in the production of excess sanguinous humour, leading to signs and symptoms associated with this excess. Similarly excess intake of Cold & Dry foods will increase the melancholic humour, leading to signs and symptoms associated with the melancholic humour.

Listed below are selected signs and symptoms associated with excess humours. Each affects virtually all the body's physiological and metabolic systems, resulting in the signs and symptoms typical of a particular ailment.

Sanguinous humour

- Typical signs: viscous urine, spider naevi, flushed complexion.
- Cardiovascular disorders: raised blood pressure, nosebleed, temporal headache.
- Inflammatory disorders: gingivitis, eczema.
- Musculo-skeletal disorders: general lassitude, drowsiness.
- Other disorders: liver congestion, urinary tract infection.

Phlegmatic Humour

- Typical signs: slow pulse, clammy skin, poor muscle tone, puffy eyelids, pale lips.
- Breathing disorders: phlegmatic cough, rhinorrhoea, sinus congestion.
- Mental changes: lethargy, mental dullness, frontal headache.
- Digestive disorders: indigestion, sluggishness, post-prandial drowsiness.
- Other disorders: amenorrhoea.

Bilious Humour

- Typical signs: rapid pulse, dark urine, restlessness, bloodshot eyes, food intolerance.
- Nervous disorders: insomnia, migraines, unilateral headache.

- Behavioural changes: anger, impatience, excessive thirst.
- Digestive system disorders: mouth ulcers, coated tongue, bitter taste, hepatitis, constipation.
- Skin disorders: rashes, hives, itchy, sensitive skin.
- Organ malfunction: hepatomegaly, gastric hyperacidity, liver problems, ulcers, gallstones.

Melancholic Humour

- Typical signs: weak pulse, cold, dry and rough skin, nervous exhaustion, intellectual cynicism, anxiety, moodiness.
- Nervous disorders: headaches, insomnia, tinnitus, vertigo, food craving.
- Digestive disorders: poor appetite, constipation, irregular eating patterns.
- Respiratory disorders: painful breathing.
- Organ malfunction: hepatomegaly, splenomegaly, portal congestion, colic, intestinal obstruction, bloating.
- Circulatory disorders: poor circulation, cold extremities, viscous blood, emboli formation.
- Musculoskeletal disorders: arthritis, muscle tremors and spasms, muscle stiffness, aching joints, sciatica, numbness in digits.
- Gynaecological disorders: Irregular menses, dysmenorrhoea, irregular menstrual flow, inappropriate lactation.

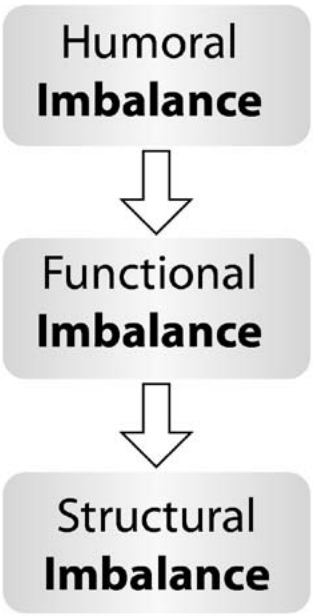
The above signs and symptoms, related to an excess of each of the humours, if not corrected will inexorably alter the person's ideal ratio of humours. This results in both quantitative and qualitative imbalances in humours, which exerts a wide range of outcomes on the functions they affect, as well as structural changes to cells, vessels, tissues and organs. All possibilities are dependent on, and in line with, the group of causes referred to in the chapter: 'Aetiology in Tibb' associated with temperament, qualities, humours and functions.

A humoral imbalance ultimately leads to specific clinical disorders associated with the humour. For instance, the melancholic humour, in excess or abnormal in form, can lead to both a quantitative and

a qualitative imbalance. If not corrected in time by Physis, this ultimately leads to disorders such as osteoarthritis, atherosclerosis and kidney stone. Similar clinical outcomes occur for the other humours.

Accumulation of excess or abnormal humours usually takes place over an extended period of time. It is the outcome of Physis' inability to restore homeostasis. From birth until death, just as our metabolic rate deteriorates, so does the ability of Physis to restore balance. Illnesses that arise from this accumulation are invariably all chronic illnesses such as hypertension, diabetes mellitus, atherosclerosis and arthritis.

Chronic illnesses progress in three distinct stages:



Stage 1- Humoral Imbalance: Operates at the vascular level, involving the body's humours. It results in a marked imbalance in the person's humoral composition, usually occurring when the quality or quantity of specific humours alters due to the impact of one or more distorted Lifestyle Factors. If this process is not quickly reversed, in time the second stage is reached.

Stage 2 - Functional Imbalance: In this stage distortions take place in the body's physiological operations: for example, in the blood circulatory system, digestive enzyme activity, and nerve conduction.

Stage 3 - Structural imbalance: Results when the excess or abnormal humours lead to structural changes to vessels, tissues or organs. This final stage is often associated with serious disease.

When evaluating the pathology of different illnesses, Tibb takes into account the changes in qualities and/or humours that have progressed as far as physiological malfunctioning or structural damage.

Infectious agents

Tibb offers a view of diseases arising from infectious agents which is markedly different to that put forward by proponents of Western medicine. As they did not possess today's impressive microbiological technology at the time, Tibb physicians were unable to recognise the links between pathogenic agents, specifically viruses, bacteria and fungi, and the patient's infections, such as those between M. tuberculosis and tuberculosis, and S. pneumoniae and pneumonia. However, they were aware of the existence and nature of infection, or as they termed it, putrefaction.

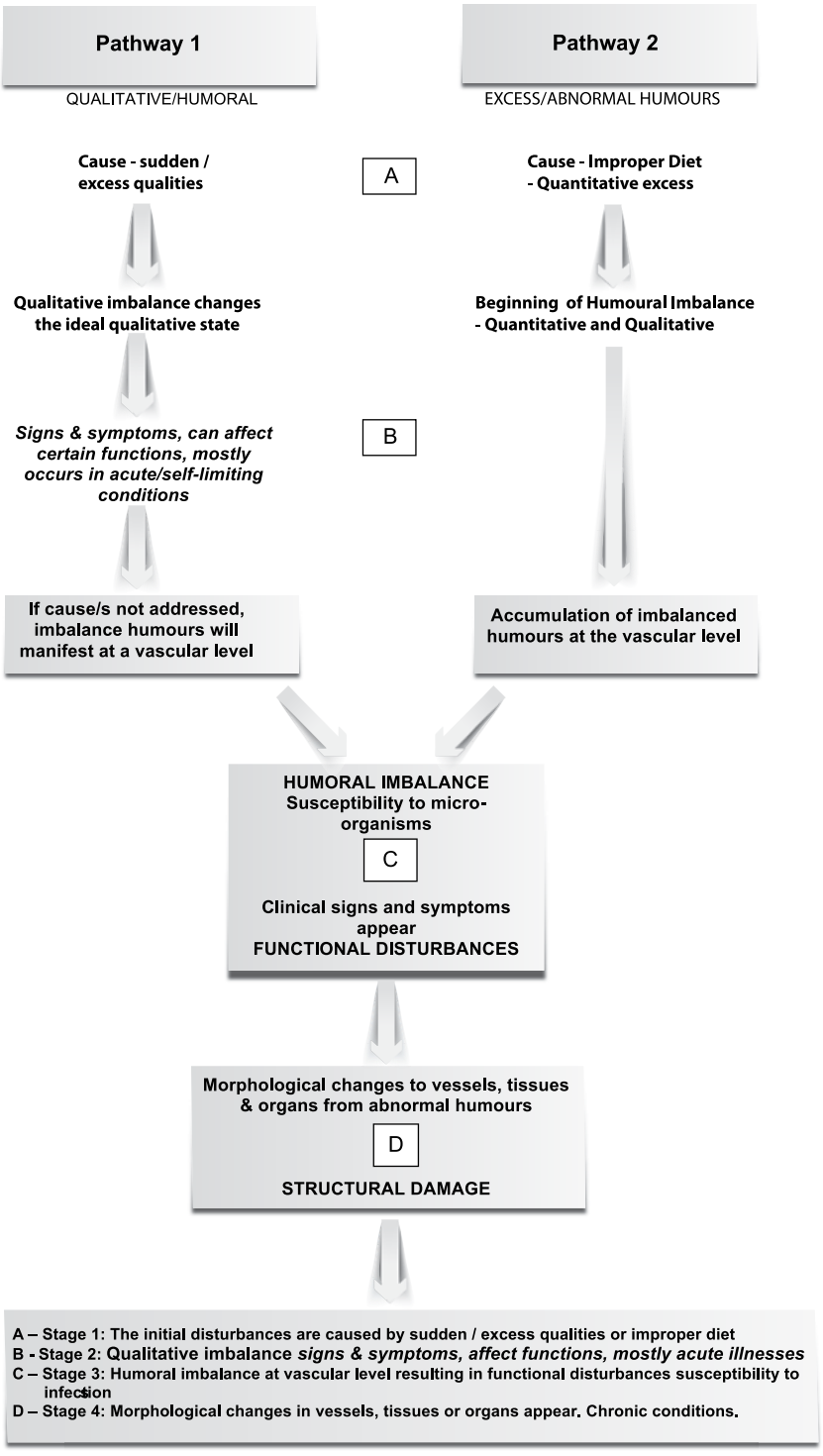
Tibb physicians were also aware that different types of infections prevail according to the season of the year. For example, during winter, which is characterised by a Cold & Moist environment, and so linked to an excess of the phlegmatic humour, streptococcal infections such as pneumonia are more common. Similarly, tuberculosis occurs more frequently in times when Heat & Dryness conditions prevail, which are characteristic of the bilious humour. This infers that there is a link between an infectious agent and seasons during which humoral imbalance facilitate a favourable 'medium' or 'terrain' for the infection to develop in.

In Tibb philosophy, an infection due to a pathogenic microbe is only possible when an imbalance exists at the humoral level. This imbalance provides a benign environment in the body's tissues and fluids which encourage the infective microbes to survive, multiply, spread and prosper. This explains why some people are, for example, susceptible to a particular bacterial infection, whereas other people whose humours are in balance, are not.

There is, therefore, a definite humoral link between the infective agent and the resulting disease. Infection will only take place when there is imbalance in humours which is beyond the ability of Physis and the immune system to correct. Treatment in Tibb therefore focuses on restoring normal humoral harmony, whilst bearing in mind the temperament of the individual, and its working via the immune system.

(The Tibb approach to treating infections is described in the chapter 'Therapeutics in Tibb')

Table 11: Pathological processes and Pathways in Tibb



ILLNESSES ASSOCIATED WITH HUMORAL IMBALANCES

Imbalances result from variation in the different humours, from normal to abnormal, and from excess humours. Most diseases, especially the chronic ones, result from a complex culmination of both qualitative and quantitative imbalances.
Described below are examples of chronic diseases associated with excess and/or abnormal states of the four humours. These also indicate progression of the illness from one qualitative state to another, as well as (where applicable) the signs and symptoms associated with it.

Imbalance of the sanguinous humour

As the concentration of the sanguinous (Hot & Moist) humour is the highest of all humours, illnesses associated with the sanguinous humour are often the result of the increased volume linked to the sanguinous humour. Primary hypertension is a good example of this.

Primary hypertension (Hot & Moist)

Primary hypertension, also termed essential hypertension, is the result of increased blood volume (hypervolaemia), brought on by excess sanguinous humour. The blood volume is influenced by moistness associated with the phlegmatic temperament. Moreover, if a hypertensive patient has a temperament which is either dominant/sub-dominant sanguinous or phlegmatic (that is, sanguinous/phlegmatic, or phlegmatic/sanguinous), the severity of the hypertension will probably be more severe. This is because of increased blood volume arising from the common moistness quality in his/her temperament. Excess moistness is therefore an important target when treating hypertension. This is reflected in the use of diuretics in its management, either alone or in combination with other agents.

Imbalance of the phlegmatic humour

Typical illnesses associated with quantitative and qualitative changes to the phlegmatic humour are rheumatoid *arthritis* and *diabetes*.

Rheumatoid arthritis (Hot & Dry to Cold & Dry)

The onset of rheumatoid arthritis is characterised by abnormal phlegmatic state/salty phlegmatic humour with qualities of heat and dryness. This state lacks the soothing properties of the normal phlegmatic humour, thus resulting in signs and symptoms of acute inflammation in the joints. As the disease progresses, an increase in heat dissipates the moistness of the phlegmatic humour, causing it to thicken. This in turn causes the phlegmatic humour to thicken, with qualities of dryness and heat. The heat oxidises the abnormal *phlegmatic* humour to an abnormal *melancholic* humour, with qualities of coldness and dryness. The formation of fibrous tissue and subcutaneous nodules begins.

Phlegmatic imbalance - Rheumatoid arthritis

Start	**Abnormal phlegmatic humour:**
	Symptoms of acute inflammation - heat, redness, swelling, pain and fever (Hot & Dry Qualities)
	↓
Progression	**Increase heat:**
	Thickening of the phlegmatic humour
	Symptoms of chronic inflammation - mainly severe swelling and pain (Dry & Hot Qualities)
	↓
End stage	**Dried calcified phlegmatic humour:**
	Abnormal melancholic humour
	Nodular End stage (Cold & Dry Qualities)

This scheme shows that the signs, symptoms and clinical features of rheumatoid arthritis vary during the different stages of the imbalanced phlegmatic humour. This means that treatment needs to be tailored according to the particular clinical phase the patient is in.

Diabetes mellitus (Moist & Hot, to Cold & Dry)

This disease is associated with Moist & Hot qualities. If uncontrolled, the excessive moistness will completely diminish heat, so deteriorating the condition towards coldness and moistness. If the condition continues to degenerate, coldness will predominate, causing poor blood circulation. This results in complications like gangrene, which are linked to the qualities of coldness and dryness.

Phlegmatic imbalance - Diabetes mellitus

Start	**Abnormal phlegmatic humour** Acute Diabetes (Hot & Moist Qualities)
	↓
Progession	**Chronic diabetes** (Moist & Hot Qualities)
	↓
Further Progression	**Uncontrolled diabetes** leading to the start of gangrene (Cold & Moist Qualities)
	↓
End stage	**Phlegmatic-Melancholic Humour** Uncontrolled diabetes - gangrene (Cold & Dry Qualities)

Imbalance of the bilious humour (Hot & Moist to Cold & Dry)

Excess bilious humour and/or its abnormal states disturb the temperamental and functional harmony of the liver. These imbalances can lead to its inflammation. If not corrected in good time, the disorder can deteriorate further, causing serious structural damage, a life-threatening situation.

The flow chart illustrates the progression of the liver from its normal healthy state to a state where serious structural damage has developed. It shows the sequence of changes of normal bilious humour to excess levels, to abnormal states of the bilious humour (which includes a melancholic state), and its clinical consequences.

Bilious imbalance - Hepatitis/cirrhosis

Start	**Beginning of excess bilious humour** (Hot & Moist Qualities)
Progression	**Bilious humour accumulation** - acute hepatitis (Hot & Dry Qualities)
Further Progression	**Oxidation of bilious humour** from increased heat leading to abnormal bilious humour: Chronic hepatitis (Dry & Hot Qualities)
Further Progression	**Increased dryness - beginning of structural damage** - Acute cirrhosis. (Excessive dryness)
End stage	**Abnormal Melancholic humour:** Chronic cirrhosis (Cold & Dry Qualities)

The above chart clearly illustrates how a progressive illness linked to excess bilious humour develops. There is the final conversion of the abnormal bilious humour by oxidation into abnormal melancholic humour. The signs and symptoms reflect mild inflammation, progressing to more severe forms. However, the causes and risk factors associated with its onset and progression will, to a large extent, remain the same. Accurate assessment of the patient and the qualitative state is necessary to employ effective treatment.

Imbalance of the melancholic humour

Illnesses associated with the melancholic humour invariably develop from (a) excess melancholic humour, or (b) from abnormal states of the melancholic humour.

Illnesses typically associated with changes to the melancholic humour are *osteoarthritis* and *haemorrhoids*.

Osteoarthritis (Cold & Dry)
Osteoarthritis results from a melancholic imbalance associated with the qualities of Coldness & Dryness. The onset of osteoarthritis is often the result of excess melancholic humour, and/or abnormal states of melancholic humour arising from the other humours.

Haemorrhoids (Dry & Hot/Cold & Dry)
Haemorrhoids develop from a melancholic imbalance, associated with the qualities of Dry & Hot (the type that bleeds) or Cold & Dry (the type that does *not* bleed). The onset of haemorrhoids is also the result of excess melancholic humour and/or abnormal states of melancholic humour arising from the other humours.

PATHOLOGICAL PROCESSES FROM OTHER INFLUENCES

Influence of temperament in pathological processes
In Chapter 2: *Aetiology in Tibb*, the relationship between temperament and clinical disorders was highlighted. For example, an individual who has a dominant sanguinous, sub-dominant phlegmatic temperament is inclined to disorders that have a dominance of moistness, such as diabetes. This principle applies broadly to other temperamental types. Pathology in relation to temperamental predisposition is not absolute.

It is important to note that if the ideal qualitative state associated with a person's temperament moves from the original dominant quality (as a result of poor lifestyle management) into another qualitative state, the person will be inclined to illnesses that are associated with the

new qualitative state as well. This means that even for a short duration the person may be inclined to acute conditions, associated with that quality. Moreover a longer duration will incline the person to chronic disorders associated with the new quality.
Below is an example that supports the above.

Mrs M has a dominant bilious with a sub-dominant sanguinous temperament. Being a typical, active, dominant bilious personality, she develops endometriosis (Heat with Dryness condition) at the age of 35. By the age of 45, she starts gaining weight, slows down somewhat, and as a result develops hypertension (Heat with Moistness condition). By the age of 50, with increased weight gain, and unable to manage additional worries, her metabolism slows down considerably, and she develops diabetes (Moistness with Heat condition). This gradual movement from the ideal qualitative state required by temperament can lead to other illness conditions.

This highlights the relationship between qualitative changes, a person's temperament, the pathological processes which follow, and the resulting clinical consequences. It also stresses the importance of adjusting the Lifestyle Factors according to age, thus maintaining the ideal qualitative state associated with temperament. The movement from one quality into another will have a direct bearing on the development of certain illnesses. Therefore not respecting the qualitative and quantitative changes which occur whilst ageing has profound pathological implications for a person's health.

Pathological processes arising from loss of continuity

Loss of continuity can be defined as a break in the efficient communication and functioning of the different anatomical and physiological systems of the body. This occurs when there is damage, resulting from humoral imbalance, or injury, to the structures of different tissues and/or organs.

As the nervous system coordinates and maintains continuity between all structures of the human body, pathological processes arising from loss of continuity, especially pathologies related to the musculoskeletal system are associated with the spinal column.

Diet and humours in pathological processes

Humours are produced from food and drink. The effect of diet on the production and type of humour, and their relationship to associated

disease is therefore important. Obviously diet increasing a specific humour to excess will result in illnesses associated with the respective humour.

- *Hot & Moist foods* increase the *sanguinous humour*. This may cause or aggravate disorders such as hypertension and dysmenorrhoea.
- *Hot & Dry foods* increase the *bilious humour*. This may cause or aggravate disorders such as hepatitis, pancreatitis and hyperthyroidism.
- *Cold & Moist foods* increase the phlegmatic humour. This may cause or aggravate disorders such as colds and flu, anaemia and syphilis.
- *Cold & Dry foods* increase the *melancholic humour*. This may cause or aggravate disorders such as fibrosis, psoriasis and kidney stones.

Importance of heating foods

The typical Western diet of milk, beef, potatoes, lettuce salads, refined white sugars, cheese, butter and margarine etc. are all cold foods. And cold foods lead to an imbalance of the phlegmatic humour, and cause a list of complaints that are epidemic around the western world – migraine headaches, menstrual cramps, lung and chest problems, arthritis, constipation etc. As the indiscretion in food consumption is continued, in time the other humours also become imbalanced. When such imbalances progress, abnormal melancholic humour is produced, and diseases such as cancer, arteriosclerosis, emphysema, and others arise. Heating foods are necessary for the body to achieve and maintain a complete metabolic digestion of foods. Food is the source of heat, the fuel for the body. The body's digestive process are also in a continuous effort to heat or 'cook' the nutrients so that they may be broken down into component parts, utilized by the body, and then eliminated completely.

The secret of human health and wellness is not only in maintaining a balanced diet, but also in avoiding excess food and drink. The statement: *"the stomach is the home of disease"* is the essence of medi-

cine, made by the Prophet Muhammad (PBUH) more than 1400 years ago. More recently, some prophetic-minded physicians have agreed with this dictum. Hippocrates believed it. Galen believed it. Ibn Sina established it as a law of medicine. Yet today it is ignored. Since the human body's metabolism causes nutrient substances to become the human body (including its disease-fighting mechanisms), the ultimate origin of most illness is in food, or diet.

Movement of illnesses from one qualitative state to another

Regression or deterioration of a person's disease results in movement from one qualitative state to another. An example is the case of people infected with the HI virus. Patients infected with the HI virus suffer from suppressed immunity. As a result, they become susceptible to opportunistic infections irrespective of their temperament. However, differences in temperament provide an explanation why people who are HIV positive respond differently to infections or other illness conditions.

According to Tibb, HIV-positive people with a dominant/sub-dominant *bilious* temperament, associated with Hot & Dry qualities, will present with signs and symptoms such as tuberculosis (TB), night sweats, dry cough, weight loss and other inflammation-related disorders. However, HIV-positive people with a dominant/sub-dominant *phlegmatic* temperament, associated with Cold & Moist qualities, will present with signs and symptoms which include vomiting, diarrhoea, thrush, and weight loss. These people will deteriorate and develop full-blown AIDS more rapidly as increased moistness increases the risk of opportunistic infections.

With time both temperamental combinations, if left untreated, will deteriorate to full blown AIDS, characterised by the wasting syndrome, which is associated with Cold & Dry qualities.

Influence of age and gender on pathological processes

In Chapter 2: Aetiology of Tibb, features of the human life cycle from infancy to senility were examined. The significance of the life cycle

is the qualities associated with each stage of the life cycle and its relevance to pathology. For example, during infancy and babyhood the dominant quality of the period is moistness which results in conditions with excessive moistness such as vomiting and diarrhoea. At the other extreme is senility, with its typical qualities of coldness and dryness. These are associated with the characteristic illnesses osteoarthritis and osteoporosis. Similarly gender differences, where females are somewhat moister than males and will be more inclined to diseases associated with excess moisture, such as depression and a number of reproductive system problems.

Indirect influence of one humour on another humour

Whilst most illness conditions are the result of an excess/abnormal specific humour, an excess of one humour can also have a negative effect on the functioning of another humour. The indirect influence of the phlegmatic humour on the functioning of the bilious humour is illustrated in the pathology resulting in high cholesterol levels.

The word cholesterol is derived from the words *chole* meaning bile, and *steros* meaning freeze. An appropriate concentration of the bilious humour is essential in maintaining required cholesterol levels by ensuring that the 'freezing' of cholesterol does not occur.
Balanced heat and dryness – resulting in efficient bilious humour functioning.

Indirect influence of the Bilious humour

Start	**Optimum Bilious humour functioning** Balanced levels of fat and cholesterol
	↓
Progression	**Excess phlegmatic humour** - Imbalance in heat level
	↓
Further Progression	**Accumulation of fat -** high level of cholesterol
	↓
Further Progression	**Deposition of cholesterol in the arteries**
	↓
End stage	**Atherosclerosis and finally arteriosclerosis**

The development of increased cholesterol levels is not only dependent on the concentration of the bilious humour. It can also result from an increase of coldness/moistness, from Cold & Moist foods (excess phlegmatic humour) and Cold & Dry foods (excess melancholic humour), and/or other Lifestyle Factors which increase the cold/moistness.

Pathological changes due to conventional medication

Many patients present with conditions that result as a side effect or metabolic response to short-term (acute) or long-term (chronic) treatment with conventional medication. Often, multiple regimes of additional medication are prescribed to counteract the side effects caused by the original prescribed drug. An example is the ACE inhibitors, commonly used in the treatment of hypertension. These have side effects of coughing for which theophylline or other antitussives are given to suppress. Another example is the use of thiazides or loop diuretics in the treatment of hypertension, oedema or cardiac failure. A patient may develop gout as a side effect and thus be prescribed

allopurinol. Each time a new medication is added, the side effect profile increases, which often requires management with an additional drug. Also, as aforementioned, suppression of the symptoms only results in the manifestation of abnormal humoral states and more serious illnesses.

QUALITIES AND PATHOLOGICAL PROCESSES

Temperament and qualities in relation to signs and symptoms

An individual's temperament in relation to the signs and symptoms should be taken into consideration. Using arthritis as an example which is associated with Cold & Dry qualities, a person with a dominant/sub-dominant melancholic/bilious combination will most likely suffer from an excess of dryness which is the common quality for this temperamental combination. Similarly an individual with a melancholic/phlegmatic combination will most likely have arthritis associated with excessive cold.

This highlights the influence of the temperament and associated quality, which will, in all likelihood, be the dominant quality associated with the illness condition that a person presents. However, if the melancholic/bilious person mentioned above overindulges in Cold & Moist foods, or prolonged exposure to cold, the dominant quality associated with his/her arthritis can move from dryness to coldness. It is therefore essential to look at the whole picture of pathology, including inherent temperament, any possible changes that may have presented over time, and the current presentation of signs and symptoms before establishing qualitative states to illness conditions.

Qualitative changes affecting tissues and organs

The qualitative changes affecting tissues and organs are similar to those occurring to the ideal qualitative state of an individual. Changes to the ideal qualitative state, especially an excess of the quality associated with a particular organ, will affect that organ the most. For example, the liver which has a dominant quality of heat is affected by excess heat, resulting in illnesses such as jaundice and pancreatitis.

This applies to all the organs which have a dominant quality of heat. This dominance of heat is the result of a higher proportion of epithelial tissues found in these organs.

However, organs which have a larger proportion of tissues, other than epithelial tissue, may also be negatively affected by excess heat quality, depending on the *proximity* of the epithelial tissues. For example, although the stomach is a predominantly muscular organ (being dry, with heat), the *lining* of the stomach contains epithelial tissue (heat, with dryness). This region of the stomach will therefore be negatively affected by excess of heat leading to gastritis. This principle will apply to all the organs and tissues associated with the heart and brain as well.

As indicated above, an excess in quality which is the same as the dominant quality associated with the organ affects that organ the most. However, an excess in quality that is not the same as the dominant quality of the organ could also affect the organ, depending on the site of the different tissues that make up the organ. So as in the above explanation, excess heat will not only negatively affect epithelial tissues, but will also reduce the appropriate moistness required by tissues or organs associated with the brain (Hot & Moist) and nervous system (Cold & Moist). However, this effect will be gradual.

Pathology in Tibb acknowledges the causative influences at both (a) the physical dimension of tissues and organs, and (b) the metaphysical dimension, involving changes in humours and qualities.

Presentation of illnesses with opposite qualities

Another consideration is that patients may present with signs and symptoms of illnesses in which the humoral imbalances and qualitative states are opposite. For example, a person who suffers from primary hypertension (Hot & Moist) may develop colds and flu symptoms which are associated with Cold & Moist qualities. In fact, these anomalies of opposite qualities may be present in a patient at the same time. Management of these patients who present with condi-

tions with opposite qualities will be dealt with in the chapter on Therapeutics.
However, generally it will be found that most chronic illnesses associated with the patient will be in relation to the dominant quality associated with his or her temperament. Acute illnesses, on the other hand may be associated with qualities of immediate exposure often unrelated to his/her dominant quality.

Guidelines for assigning qualities to illnesses
Whilst associating qualities to signs and symptoms of illness conditions may be obvious in some conditions such as hyperacidity/ulcers (Hot & Dry), phlegmatic asthma (Cold & Moist), it is also important to note that qualities associated with illnesses, whether at the onset of the condition or after the condition has manifested itself, is not absolute in all illness conditions.

There are often multiple causes associated with certain illnesses, which could vary from different causes, as indicated below:

- *Dizziness* can be caused by: (a) excessive menstrual bleeding associated with Hot & Dry qualities; (b) anaemia (Cold & Moist); or (c) low blood pressure (Cold & Moist).
- *Epistaxis*, or nose bleed (Hot & Dry), can also be caused by nasal polyps (Cold & Dry).
- *Leucorrhoea* (Hot & Moist) can arise from: (a) general weakness; (b) low blood pressure; (c) anaemia; (d) excessive tiredness; or (d) constipation all of which have varying qualities.
- *Urticaria,* or skin rash (Hot & Dry), can result from eating the wrong foods, or by food poisoning.
- *Insomnia* (Cold & Dry) can be due to aches and pains, worries, stress and excessive heat.
- *Acne* (Dry & Hot) is most common in teenagers, but can occur in any age group. It can result from: (a) suppressed menstruation (Cold & Moist to Moist & Hot); (b) constipation (Cold & Dry); (c) the use of oral contraceptives; and (d) reaction towards cosmetics, and other chemicals.

- *Eczema* (Hot & Moist) can be caused by Cold & Dry to Dry & Hot humoral imbalances, especially when it is treated with cortisone-based medication for extended periods. But it can be caused by reactions to any external applications such as olive oil, mustard oil or by excessive intake of Hot & Dry foods.
- *Alopecia*, or loss of hair (Hot & Dry), can also be caused by: (a) lack of cleansing of the hair; (b) excessive Cold & Dryness on the scalp; (c) general weakness; (d) anaemia; (e) by harsh shampoos; (f) medication.
- *Lack of appetite* (Cold & Moist) can be: (a) the result of excessive bilious humour (Heat & Dryness); (b) the result of constipation (Cold & Dry); or (c) from conscious suppression of the appetite (Anorexia).
- *Diarrhoea* (Cold & Moist) can be the result of: (a) food poisoning; (b) unwise mixing of foods; (c) hepatitis or jaundice; (d) excessive bilious humour. It is often a consequence of: (a) colon cancer (Cold & Dry); (b) Crohn's disease or ulcerative colitis; or c) Irritable Bowel Syndrome (Moist & Hot).

INFLAMMATION: THE TIBB INTERPRETATION

An important aspect of the pathology of many diseases is the development of inflammation. This is the reaction of living tissues to any form of injury. It is a warning sign alerting us to the impending danger of infection in the body. Inflammation is a necessary precursor in the healing and repair of the body. It protects the body by triggering an immune reaction, thereby halting the spread of infection, and ridding the body of damaged and dead cells. The source of the inflammation needs to be found by identifying the trigger factors causing the inflammation.

Triggers of inflammation

- *Physical*, such as trauma, a weak immune system, poor muscle and ligament strength, microbe infections, co-existing chronic medical conditions, and autoimmune reactions.
- *Environmental*, such as air pollution, climatic, temperature

changes, and humidity.
- *Emotions*, such as bereavement, marital separation, academic examinations, or the stress caring for a terminally ill loved one.
- *Chemical*, such as irradiation, and toxins from pesticides or mercury.
- *Nutrition*, such as obesity, and a diet high in saturated and trans fats, high carbohydrate and low protein intake, refined sugar and low levels of antioxidants.

Processes in Inflammation

Step 1: The arterioles supply blood to the injury, resulting in an increase in its blood flow. There are changes in the vascular flow.
Step 2: The capillaries become more permeable, enabling blood proteins and fluid exudate to penetrate into the interstitial spaces.
Step 3: The neutrophils as well as macrophages move out of the capillaries and venules into the interstitial spaces. Both neutrophils and macrophages are white blood cells which have the ability to digest the invading microbes.

Cardinal signs of inflammation
- **Pain** – originally ***"dolor"***
- **Redness** – originally ***"rubor"***
- **Swelling** – originally ***"tumor"***
- **Heat** – originally ***"calor"***
- **Loss of function** – originally ***"rigor"***

Stages of Inflammation
- *First stage* - *Irritation* is a natural, systematic self-defence (Physis) mechanism which attempts to stop or limit the process, and which aids in the healing process.
- *Second stage* – *Suppuration* (the formation of pus) in an effort to expel the toxins out of the body.
- *Third stage* – *Granulation* is the formation of rounded, fleshy masses of tissue which is formed in the wound, which aids in the healing response.

Benefits of Inflammation

- Destruction of microbes
- Detoxification of toxins
- Clearance of infections
- Facilitation of the healing process
- Repair of damaged tissues

Drawbacks of Inflammation

- Inflammatory responses may be harmful, as in anaphylactic shock.
- Inflammation of the peritoneum leads to fibrous bands that cause intestinal obstruction.
- Pericardial inflammation results in the formation of dense pericardium that impairs heart function.

Patho-physiology of Inflammation in the healing process

- *Haemostasis* is the arrest of bleeding by vascular constriction, fibrin clots, and the release of platelets, fibroblasts and epidermal growth factors.
- *The Inflammatory Phase* involves the infiltration of *neutrophils*, *macrophages* and *lymphocytes*. It consists of the acute phase, where histamines dilate the capillaries, arterioles and venules which increase in permeability and blood flow to the site, with the formation of inflammatory exudates to defend the body from further damage and/or invasion of pathogens. The sub-acute phase produces pus in an effort to expel the toxins out of the body in a process called phagocytosis.
- *The Proliferative Phase* involves the proliferation of the epithelial cells, with capillary growth and the formation of collagen and granulation tissue, with the aid of fibroblasts and endothelial cells.
- *The Remodelling Phase* – Tissue regeneration, involving apoptosis, plays a major role in promoting the resolution of the acute inflammatory response, by clearing away unwanted cells, and remodelling the inflamed site by deletion of myo-fibroblasts. The body adapts to its original tissue after the elimination of the

injurious agent, and the effective inflammatory responses are activated to repair the damaged tissue. However, should this not be possible, loss of function, (*functio laesa*) of the damaged part may develop.

Pathways of Inflammation

- A qualitative imbalance - Pathway 1, or:
- A humoral imbalance (excessive or abnormal) - Pathway 2, which results in cellular or tissue damage.

Acute Inflammation - Pathway 1 – Qualitative imbalance

The acute inflammatory response is the immediate defence reaction of the body's tissue affected by injury from infection, chemicals, or physical agents. It is of short duration, usually lasting from a few minutes to several days, with the formation of inflammatory exudates. An exudate is a slow release of liquid which contains proteins and white cells (leucocytes) which pass through the walls of intact blood vessels and into tissues which then become inflamed. This phase may be accompanied by the five cardinal signs of inflammation, which typically lasts for one to three days. Not all of these signs may be present.

The Physis response corrects the negative influence, protecting or reducing the extent of possible damage. The following examples illustrate two different ways that Physis protects the epithelial mucosal tissues from sudden changes that lead to inflammatory conditions, through the secretion of mucosal fluids:

- Someone moving rapidly from a hot or warm environment to a cold environment will present symptoms of runny nose and watery eyes as well as other symptoms associated with colds. This inflammation would be as a result of excessive coldness.
- Someone eating excessively spicy foods will also present with symptoms of runny nose and watery eyes, and possibly perspiration. This inflammation is the result of excessive heat.

Most inflammatory conditions result from excessive heat, but sometimes, and to a lesser extent, from cold. Inflammatory conditions can also be caused by the qualities of moistness and dryness. For exam-

ple, moistness is a typical quality associated with rheumatoid arthritis, and dryness a typical feature associated with osteoarthritis. Both disorders are inflammatory disorders.

In Tibb, inflammation is viewed as a Physis response to a change in the body's structure or activity due to a qualitative change (excessive or sudden), humoral (excessive or abnormal) infectious (from pathogenic microbes), or effect of physical trauma.

Several typical acute, *Pathway 1*, inflammatory conditions are:

- *Acute rhinitis* – also known as hay fever; inflammation of the nasal passages.
- *Conjunctivitis* – 'pink-eye'; inflammation of the mucous membranes of the eyes.
- *Appendicitis* – inflammation of the appendix.
- *Acute bronchitis* – inflammation of the breathing passages of the lung.
- *Cholecystitis* – inflammation of the gall bladder.

Chronic Inflammation - Pathway 2 – Humoral imbalance

Chronic inflammation: is the *prolonged* or *long term response* of the body to a persistent injurious or inflammatory stimulus. More often it is the result of biochemical influences, such as the imbalance of dietary fats, absence of specific substances that adversely affect the production of anti-inflammatory cells, and specific nutrient problems.

Examples of chronic inflammation of *Pathway 2:*

- *Tuberculosis* – qualities of Hot & Dry.
- *Bronchial asthma* – phlegmatic in nature; qualities of Cold & Moist.
- *Bronchial asthma* – melancholic nature; qualities of Cold & Dry.
- *Rheumatoid arthritis* – qualities of Hot & Moist.
- *Osteoarthritis* – qualities of Cold & Dry.

Homeostasis is restored when inflammation is limited by anti-inflammatory responses that are rapid, reversible, localized, and adaptive to

changes in input and integrated by the nervous system. It is possible to have an acute phase during a period of chronic inflammation. This is called a *flare-up*.

Possible outcomes of inflammation

The outcome of an acute inflammatory episode varies, depending on a number of factors. These include the patient's diet, the power of Physis, status of the immune system, and the patient's age. Chronic inflammation occurs mainly from the inability of Physis to restore the humoral balance.

- *Complete resolution or remission*. The body's harmony or Physis is completely restored. This occurs at the temperamental, humoral, functional and structural levels. There is little or no permanent effects are suffered by the patient.
- *Formation of fibrosis*. Thickening and scarring of connective tissue, usually as a consequence of inflammation and physical injury.
- *Formation of an abscess*. A localised accumulation of pus forms around the tissue affected by inflammation. An example is a boil within the skin. Pus is the thick yellow-green matter formed at the site of inflammation. It contains dead white blood cells, bacteria – both dead and alive – and fragments of dead tissue. The cause is the failure of the body's defences to overcome the agent responsible, which is usually a bacterial infection.
- *Progression to a chronic inflammatory condition*. This develops when the acute inflammatory responses launched by the body fail to overcome and destroy the agent causing the inflammation. In other words, the inflammation is unresolved.

Once the roles of temperamental and humoral imbalances and the Physis response in the inflammatory process are understood, we can interpret the causes, the processes and the stages of the inflammatory activity according to Tibb. This understanding helps us to evaluate the inflammatory process as a diagnostic tool. By observing the signs and symptoms of the inflammatory condition, the healthcare provider

can readily identify the causative abnormal/excess humour and quality associated with the inflammatory condition. This allows him or her to assist in the appropriate treatment.

STAGES OF DISEASE

According to Ibn Sina, there are four distinct stages of an illness or disease. These apply to all disorders and episodes of illnesses, whether they are acute, such as headache and diarrhoea, or chronic, such as diabetes and asthma.

The Commencement Stage – '*the beginning*'
This stage is the earliest start of the disease, in which the signs and symptoms are not yet prominent, but the disease starts its progress in the body. This arises either from a temperamental or a humoral imbalance. Physis is still relatively in control, as there are no apparent signs of functional imbalances.

The Progression Stage – *'the increase'*
In this stage the disease process accelerates where functional disturbances are apparent and the beginning of structural damage may be evident. Physis is now under pressure to restore balance with the appropriate systems of the body.

The Cresting Stage – *'the peak'*
The disease process peaks, Physis is now on maximum readiness to overcome the imbalance. During the peak state, the disease can either be overcome by Physis, so that the body returns to a healthy state; or Physis succumbs to the disease, and severe chronic disability or death may ensue.

The Decline Stage – *'the decay'*
The disturbance in the body has been rectified; homeostasis is restored, and health returns.

THE ROLE OF PHYSIS DURING PATHOLOGICAL PROCESSES

Throughout the pathological process, from the moment a person moves away from the ideal qualitative state associated with his/her temperament, Physis does its best to restore homeostasis. Many pathological states as viewed by Western medicine are actually Physis responses initiated by the body to restore the ideal qualitative state of an individual. Symptoms such as sudden fever, sneezing, runny nose, diarrhoea and vomiting are regarded as actual ailments by Western Medicine - and treated as such, rather than considered as a Physis reaction.

Listed below are a few examples of how Physis reacts with a 'healing response'.

- A rise in body temperature occurs, even a fever, when there is a phlegmatic accumulation.
- An increase in heart rate (palpitations) occurs when blood pressure falls to an unacceptably low level, as in shock or when anaemia develops. This action compensates for low blood pressure, so increasing the circulation of blood through the body.
- Perspiration, tears, runny nose, and the build-up of mucus in the upper respiratory and digestive channels occur when hot, spicy foods are consumed. This protects the mucous membranes from possible inflammation.
- The occurrence of vomiting/diarrhoea resulting from an accumulation of toxins/undigested food in the GIT.

Physis not only attempts to restore balance at every step of the disease process, but also acts to minimise the possible damage that might ensue. It achieves this by directing injury towards lesser important organs in order to safeguard the more essential organs.
In anaemic conditions, for example, blood circulation will be re-directed for priority use by the key internal organs (brain, heart, liver). This results in the extremities and non-essential organs and tissues re-

ceiving less blood than they actually need. Similarly, when a ligament has been over stretched or injured, it can no longer stabilise a skeletal joint. This results in the surrounding muscles taking on the stabilising role by contracting and supporting the affected joint.

Listed below are examples of how physis acts to minimise damage as illustrated in the healing routes of physis.

Route 1: Diverting from the upper body to the lower body
This means directing the healing process from the upper part of the body (particularly the head and brain) to the lower part of the body. For example, a nosebleed relieves the pressure in the cranial area.
Another example is offered in persistently high blood pressure. The congestion within the head caused by the increase in volume is rather diverted down to the colon and kidneys. This results in increased urination, particularly at night. This process of shifting the circulation will release pressure from the skull, so saving the patient from possible brain haemorrhage.

Route 2: Diverting from inside the body to outside the body
The diseased matter is diverted from the inside regions that may be affected to the outside of the body (that is, the skin).
For example, in the clinical conditions eczema, psoriasis, and skin allergies, an accumulation of toxins within the body due to excess or abnormal humours, could cause possible damage to internal organs such as the liver, kidneys, and lungs. Physis would automatically shift these toxins towards the skin, saving the internal organs. Assisting this cleansing process should be the role of the physician.
Suppressing it might have serious long term consequences.

Route 3: Diverting from the main organs to the extremities
Diseased matter is diverted from the main organs affected (particularly the brain, heart and liver) to the body's extremities (that is, the limbs). The internal organs are often safeguarded by Physis, which diverts the disease process to the arms and limbs,

which become dysfunctional or even paralysed. In extreme conditions, when toxic humours accumulate, paralysis develops in either the right or left side, or even the lower body.
For example, in severe phlegmatic accumulation, paralysis of the left side occurs; in sanguinous accumulation paralysis of the right side occurs; and in severe melancholic accumulation, paralysis of the lower body occurs.

Route 4: Diverting from inside the body towards the orifices
Toxins accumulated within the body are expelled via the various bodily orifices. Vomiting, diarrhoea, coughing, sneezing, perspiration, nose-bleeds, excess ear wax etc., are all natural elimination processes. Rather than take measures to stop or impede these mechanisms, they should be encouraged. For example, pollen, dust and fungal spores are continually being inhaled into the lungs. There are powerful mechanisms (sneezing, coughing and the muco-ciliary escalator) which exist to remove them. The use of cough suppressants and antihistamines, which suppress these mechanisms, should therefore not be a first line solution.

Route 5: Shifting from dangerous to less dangerous symptoms
Physis always attends to symptoms which are dangerous or life-threatening, whatever the clinical condition. For example, a relatively minor nosebleed relieves the pressure in the cranial area, replacing a relatively major symptom such as a brain haemorrhage. Recognising the Physis response, whether it is aimed at healing or protection, is an important factor in understanding pathological processes and its impact on diagnosis and subsequent treatment.

CHAPTER REVIEW

Although the human body is infinitely complex, the temperamental and humoral theories provide a comprehensive understanding of the pathological processes that lead to temperamental, qualitative, humoral, functional and structural imbalances.

General: Homeostasis, or inner dynamic harmony, concerns both the internal balance (microcosm), and its adjustments to the outside environment (macrocosm). In Tibb, pathology and diagnosis are interpreted from the patient's signs and symptoms, in relation to changes in temperament, structure and function from the normal healthy state. Humours are synthesised from our daily consumption of food and drink. The production of humours is effected from the four basic qualities (heat, coldness, moistness and dryness) of food and the Lifestyle Factors. The primary role of the humours is to maintain temperament at the ideal level throughout the body. Changes in humoral balance which are beyond the ability of Physis to compensate for, or reverse, result, sooner or later, in the onset of a pathological state.

Pathology: Tibb interprets pathological states in the light of the relationship between the three main organs and the qualities associated with each. Pathology in Tibb is completely integrative, using terminology which can also be consistent with Western conventional medicine. Tibb acknowledges that the causes of a disease lie at both (a) the metaphysical level, involving changes in humours and qualities, and (b) the physical level in the tissues and organs. These result from abnormal humour accumulation, or from disorders of anatomical configuration, leading to loss of functional continuity. Pathological states are defined in terms of temperament, qualities, humours, structure and function, all of which are controlled by Physis.

Pathological processes in Tibb occur from a sudden change or excess in qualities, accumulation of excess/abnormal humours, infectious agents, the untoward effects of Western medication, loss of continuity between the different systems, as well as qualitative changes to different tissues and organs. The qualities associated with an illness can change with the deterioration of the condition. Most illnesses can be allocated to one of two pathways; namely, Pathway 1 (mostly acute disorders) or Pathway 2 (mostly chronic) with associated qualities.

Pathological processes and humoral imbalance: This induces various changes in many functions, depending on the body tissue af-

fected. An imbalance can occur for two distinct reasons: either excess of specific humours, or the presence of abnormal forms of the different humours. These imbalances largely occur as a consequence of a person's distorted Lifestyle Factors.

Pathological processes from other influences: As humours are originally produced from the food and drink consumed, diet has a profound influence on humoral imbalance. A diet which increases a specific humour to excess leads to illnesses associated with that respective humour.The typical Western diet encourages a phlegmatic humoral imbalance, which increases the risk of many common chronic disorders. Moreover, a diet which is excess to the body's immediate requirements leads inexorably to a humoral imbalance.
Humoral imbalance also arises from intake of conventional synthetic medication. The body's response to exposure to such 'new-to-nature' chemical entities is to develop a humoral imbalance, which expresses as specific signs and symptoms.
Humoral imbalance also arises from the ageing progression. Changes in the humoral balance from childhood, to maturity, to senility, is accompanied by marked humoral changes, which promote the typical disorders of ageing.

Pathological processes and qualities: Diseases generally begin with an excess of one of the four qualities. If this imbalance is not corrected, then the disease progresses, with characteristic clinical features. These changes are not absolute, but vary between patients of different temperaments, and can be influenced by their Lifestyle Factors.

Phases of disease: A chronic disease develops in three distinct phases. First, a humoral imbalance occurs, which the person's Physis is unable to resolve. Second, functional imbalance follows, during which distortion of the normal physiology manifests. Third, a structural imbalance begins, in which the normal tissues undergo changes in their form.

Stages of disease: Ibn Sina identified four distinct stages of a disease. The first, beginning or commencement, is characterised by minimal signs and symptoms, but the disease process is underway. This is followed by the progressive stage. The disease gains intensity, functional and structural disorder become apparent, and Physis is under severe pressure to restore balance. The third stage is the cresting, or peak, of the disease, when Physis is at full stretch. Either the disease is overcome with normal health restored, or the disease becomes established, leading to disability or death. If Physis is successful, the decline or decay stage is reached. The body's homeostasis is restored, recuperation takes place, and normal health returns.

Inflammation: Tibb regards inflammation as a Physis response to temperamental or humoral changes, aimed at correcting negative influences and reducing damage. Most inflammatory disorders are the result of excess build-up of the quality heat. Inflammatory disorders can also involve disturbances in the other qualities. Tibb interprets and assesses the causes and progression of a disorder from qualitative, humoral, functional and structural changes.

Physis: Throughout the pathological process, Physis does its best to restore homeostasis. It not only attempts to restore balance at every step of the disease process, but also acts to minimise the possible damage that might ensue. Often, the signs and symptoms of a disorder can be the result of a Physis response to the pathological process. The nature of the patient's Physis response is important in understanding pathological processes.

CHAPTER 4: DIAGNOSIS IN TIBB

INTRODUCTION

In previous chapters, the basic philosophy of Tibb was described in detail, as was Tibb's position on aetiology of disease and the nature of the variety of pathological processes. The present chapter outlines the theory and practice of diagnosis according to Tibb, and examines the areas which are similar to that of Western medicine, and how it differs from it.

A major feature of Tibb is the importance it attaches to the art of diagnosis. The saying below encompasses the importance of an accurate diagnosis.

> *"Life is short and the Art of medicine long, the occasion fleeting, experience fallacious and judgement difficult."* [Hippocrates]

Unfortunately, the art of diagnosis has been somewhat overshadowed in present times, largely because of the extensive dependence on technology.

DEFINITIONS AND DESCRIPTIONS

Diagnosis can be defined as the process involved in finding out the cause of a patient's medical concern by considering the signs and symptoms, his or her medical history, and any other relevant clinical, social and psychological factors. The word diagnosis (from the Greek: *gnosis*, to know, learn, recognise) is commonly used in everyday conversation when referring to the analysis of a problem. It is used in disciplines as varied as economics, politics and zoology.
In medicine the term diagnosis includes various activities by which the nature of a clinical disorder is determined. It consists of obtaining information with respect to a patient's medical history and family background, noting the patient's signs and symptoms as well as an in-depth clinical examination.

The physician's diagnosis may need confirming by observation and testing samples of blood, urine, faeces, sputum and diseased tissue obtained from the living patient or at post-mortem (*autopsy*), as well as by using invasive (*endoscopy*) or non-invasive imaging (such as *X-rays, CT scans* and *sonars*).

Diagnosis in Tibb includes the above activities and procedures, interpreting signs and symptoms within the context of qualitative and humoral deviations resulting in changes at a temperamental, functional and structural level.

Clinical sign. A feature of a person's appearance or behaviour which indicates the presence or development of a particular disorder or state of disharmony, which may or may not be apparent to the person examined.

Symptom. An established and unambiguous disturbance in appearance, body functions or personal behaviour which indicates the onset or progress of a specific disease. A *presenting symptom* is a symptom that encourages the person to consult a healthcare specialist.

COMPARISON: TIBB AND WESTERN MEDICINE

Both medical paradigms can trace their origins back to philosophers and practitioners, such as Hippocrates and Ibn Sina. They have evolved, incorporating different viewpoints from other disciplines, especially Western technology. This has resulted in the traditional art of diagnosis being superceded to a large extent by medical technology.

Today's Western medicine is a well-defined and structured monolithic system, with a rigid logical approach based on the clinical study of disease signs and symptoms, clinical and scientific evidence for the efficacy of therapy, and the use of hi-tech diagnosis, surgical intervention and pharmacological agents.

The Western system is maintained by a highly specific, unambiguous and uncompromising agenda which barely acknowledges and invariably excludes any traditional, alternative or complementary medical paradigm. The system is maintained through a stringent, undeviating curriculum in Western-orientated medical schools, and by post-graduate education and specialisation programmes.

Today's technology lets the practitioner assess biochemical imbalances, and detect and quantify changes at the microscopic level, rapidly and accurately. It is very much committed to laboratory assays. For example, biochemical tests (blood sugar, total cholesterol, liver enzymes, etc.) physiological parameters (blood pressure, bone mass index, etc.), or imaging techniques (gastroscopy, X-ray, magnetic resonance imaging, etc.). Western medicine focuses sharply on specific parts of the body – diseases of the heart, of the lung, of the kidney, etc. – instead of on the body as a whole. This approach is reductionist, rather than holistic. Not surprisingly, not only have healthcare practitioners missed the bigger picture in terms of understanding health; they have also largely lost the art of diagnosis.

From the Tibb point of view, clinical diagnosis involves a lot more than just looking at the results of blood tests, X-rays, and chemical and physiological processes in isolation. All the various relevant components need to be gathered together in relation to the total patient, considering all aspects of the patient; body, mind and spirit. In addition, Tibb considers the assessment of a person's temperament to be important in diagnosis, and in the subsequent forms of treatment selected. [*The Tibb system of diagnosis is described in greater detail in a later section*.]

Another aspect of diagnosis where Tibb often differs from Western medicine is attitude to the patient. Over and above looking at the patient holistically, the interaction with him/her – listening with understanding and perhaps even including family members, then discussing the problem and asking for opinions – is equally important.
Each system has its advantages. Western diagnosis provides objec-

tive, detailed and accurate information on the various metabolic processes in the patient's body. In addition, it can reveal abnormal features, such as malignancies. However, Western diagnosis is usually expensive, requiring specialised equipment, facilities, and dedicated well-trained staff. Moreover, the results often take some time to become available, so delaying the onset of therapy. Also, there is often a large amount of data generated, much of which is irrelevant, contradictory or may actually obscure the diagnostic process.

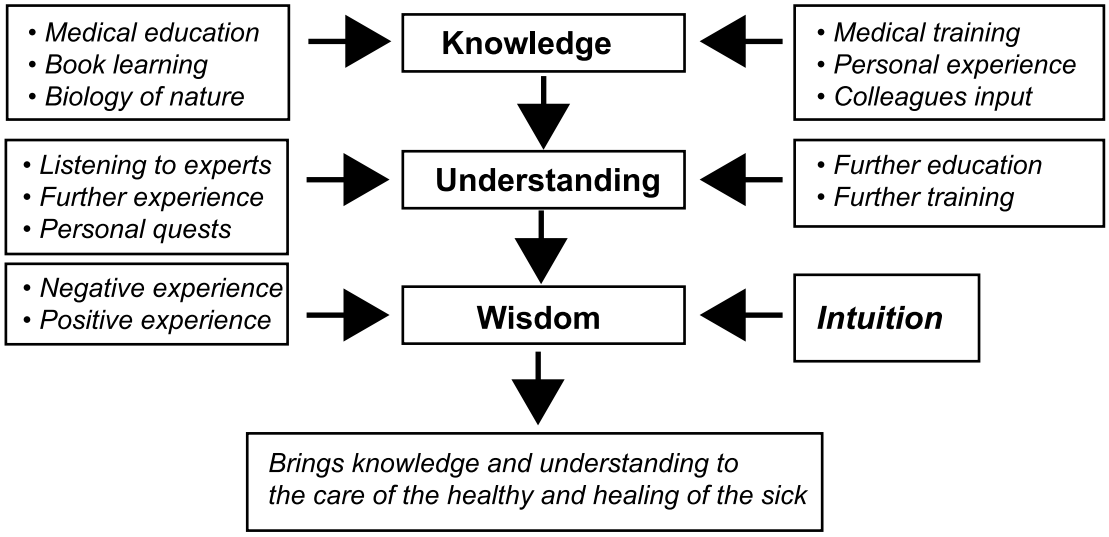
Traditional diagnostic techniques, such as those practiced in Tibb, are usually cost effective, and can be obtained in a short time, so allowing treatment to start early. Furthermore, they often pick up an abnormality or imbalance in the patient very early in the progress of the illness. Although many of the tests are subjective, a trained Tibb practitioner can obtain valuable information that may not be readily obtained from other sources. Diagnosis is not only confined to evaluating signs and symptoms, but also noting patient input, and acknowledging intuition.

The role of intuition in diagnosis

An important difference, regarding diagnosis, between Tibb and Western medicine relates to *intuition*. This is the capacity which allows the 'mind's eye' to visualise what is in fact invisible to the naked eye. Western medicine has to some extent been seduced by its capacity for exquisite analysis and faultless logic, and has suppressed the capacity for acute perception of the clinical condition. As we noted earlier, the practitioner's intuition has been put in servitude to laboratory testing. The experienced Tibb practitioner, on the other hand, sometimes makes a clinical assessment of a disease based on an internal subconscious perception – 'gut feel' – conditioned by years of experience and familiarity with the disorder that cannot be explained. Intuition can play a major role in the process leading to accurate diagnosis. It supports the practitioner's knowledge of the condition, which is then further enhanced by analysis of the clinical picture, by referring to signs and symptoms, then further investigations.

The Tibb diagnostic process

A Tibb practitioner develops professionally in three distinct phases:



Being aware of the type of person the practitioner is dealing with provides additional skills that reinforce the ability to diagnose. Because of the lack of technology, the physicians in years gone by (who also projected a marked capacity for spirituality, and compassion) relied heavily on the powers of observation. They therefore developed acute powers of perception, deduction and intuition to a high degree.
The integration of the philosophical principles of Tibb into modern technology can further provide an effective diagnostic system that is also not only efficient but cost-effective – the art and science of diagnosis combined.

Furthermore, by understanding the kind of person the patient is, the practitioner is already empowered with some knowledge which could indicate the possible origin of the disorder. The correlation between the symptoms presented and the temperament of the illness will assist the practitioner in the diagnosis of the condition.

THE TIBB APPROACH TO DIAGNOSIS

During the times of the major Tibb luminaries Hippocrates, Galen and Ibn Sina, healthcare practitioners did not have access to the impressive diagnostic technology of today. However, they had a comprehensive understanding of temperament, qualities and humours and were able to diagnose effectively not only the illness itself, but also the underlying causes of the illness. The Tibb approach to diagnosis emphasises the need for meaningful interaction with the patient as a prerequisite for accurate diagnosis. This diagnostic process being within the context of:

> *"It is more important to know what sort of a person has a disease than to know what sort of disease a person has".* [Hippocrates]

Within comprehension of the above, Tibb adopts a scientific yet holistic approach to diagnosis, thus arriving at an accurate identification of the nature and cause of disorders, within the context of the temperamental and humoral theories. This translates into identification of the cause/s of illness/es by evaluating a patient's temperament, history, lifestyle factors, signs and symptoms within the context of pathological processes/pathways to clearly identify qualitative and humoral imbalances.

Tibb diagnostic techniques and procedures

During ancient times Tibb practitioners relied entirely on traditional diagnostic approaches of pulse, tongue, urine and stool analysis in order to reach a reasonably accurate diagnosis of patient's illness condition/s. The skills of tongue and more particularly pulse diagnosis required comprehensive knowledge, insight, dedication, intuition and practice. In fact, pulse and tongue diagnosis provided practitioners with exceptional diagnostic abilities to identify not only humoral and qualitative imbalances but also the organs and systems that were affected. Today Tibb practitioners are fortunate to be able to incorporate all the latest diagnostic aids currently used in Western medical practice, i.e. technology of X-rays, sonars and CT scans within the context of the Tibb principles so that structural changes can easily be identified.

However, the relevance of traditional Tibb diagnostic techniques is still important, not only in interpreting the qualities and humoral imbalances but also to provide information regarding the pathological processes linked to systems and organs. Ideally Tibb doctors should only request pathological and image testing to confirm their diagnosis and not resort to blanket tests to exclude normal functions and anatomical structures. A brief overview of pulse, tongue, urine and stool analysis is included later on in this chapter.

Over and above the traditional diagnostic techniques, the following are also incorporated:

Physical examination: This refers to the actual procedures carried out by the Tibb practitioner. The main ones are:

- *Visual inspection* – This is the direct observation of the patient's frame and gait, complexion and skin texture, speech and body language. Temperamental analysis involves this technique.
- *Palpation* – Examining the patient by carefully feeling parts of the body using the hands or fingertips. This helps identifying abnormalities related to the musculoskeletal system and internal organs, such as cysts, hernias, lipomas and nodules.
- *Percussion* – Tapping parts of the body with the finger or an instrument such as diagnostic tuning fork, and sensing the resulting vibrations. This technique can detect fluid accumulation in the lung, or excess gas in the intestines, for example.
- *Auscultation* – Listening with a stethoscope to sounds produced by moving masses of gas or liquid in certain parts of the body.
- *Articulation* – Assessing the range of movement of the spinal joints and the joints of the extremities.

Additional investigations: Whenever necessary additional pathological information, imaging techniques and laboratory and challenge tests are initiated to provide more information of any functional and structural abnormalities. However changes to the tissues and organs brought about by the disorder are interpreted in relation to their specific temperaments and functions.

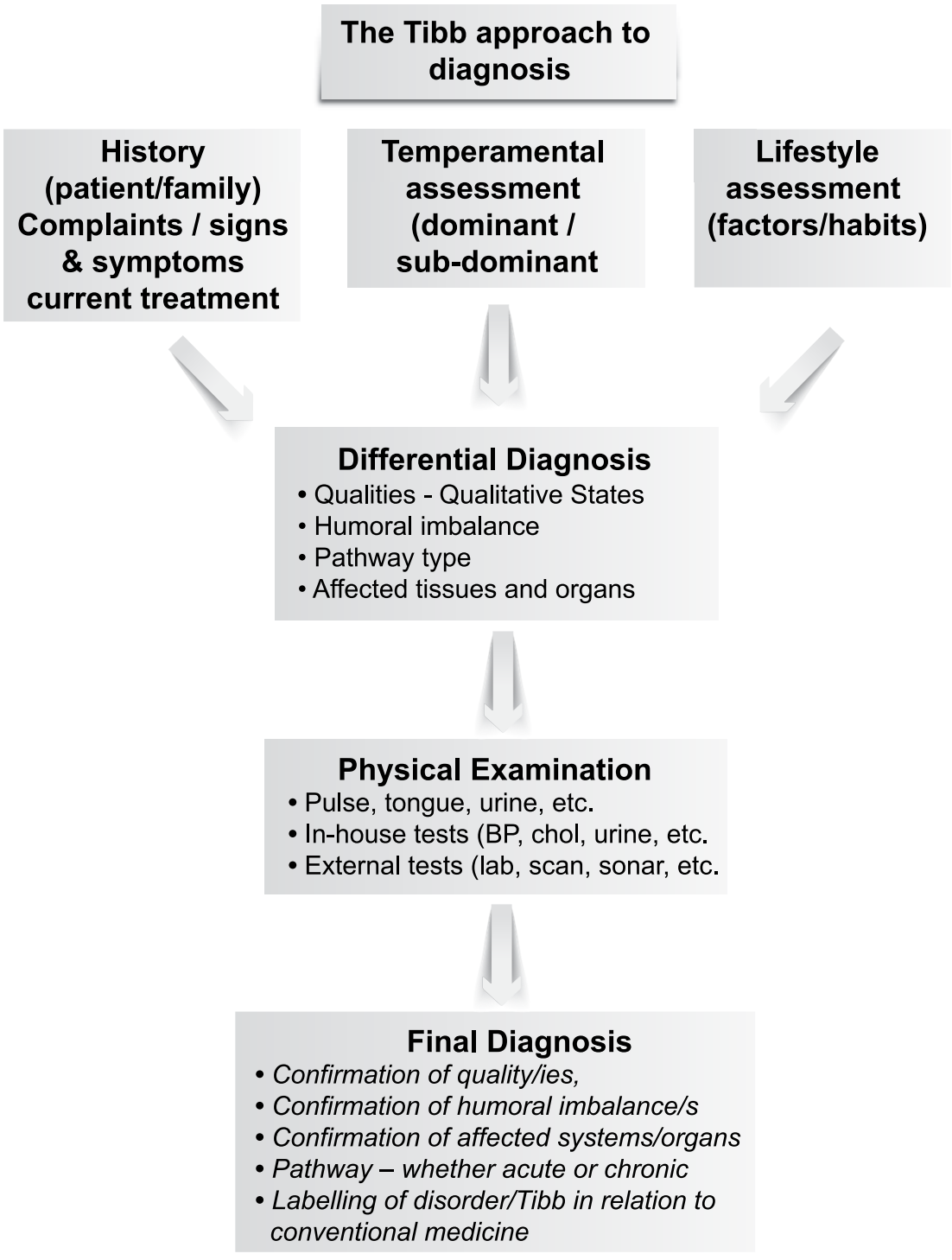
Tibb diagnostic procedure: Includes the following three processes:

- *History, complaints, signs & symptoms, current treatment*. This includes the patient's recent and past medical history, the current medication being taken, and relevant family medical history. The Tibb practitioner should discuss in detail the nature, intensity, frequency and impact of the signs and symptoms in relation to the qualitative and humoral imbalances. Note that physical signs and symptoms may be a manifestation of an underlying emotional or spiritual problem.
- *Determining the patient's temperament*. The patient's temperament predisposes him or her towards specific disorders. How ever, the Tibb practitioner should differentiate the patient's symptoms from aspects of the patient's temperament which may appear contradictory or 'out of sync' with his or her temperament. For example, the phlegmatic patient with severe AIDS will most likely appear emaciated.
- *Lifestyle assessment*. This involves drawing up a 'risk profile' for the patient, based on his or her lifestyle. It includes information on both the major and minor Lifestyle Factors. This identifies which of the Lifestyle Factors has been the cause(s) of the imbalance in qualities or humours. This applies particularly to a patient's daily diet, what exercise and rest are taken regularly, sleep behaviour and how effective is the elimination of natural wastes.

STEPWISE DIAGNOSTIC PROCEDURE

This following diagram describes a stepwise diagnostic procedure which includes history, complaints, signs & symptoms, and current treatment, temperamental evaluation as well as lifestyle assessment.

Table 12: Stepwise diagnostic procedure



After completing the temperamental/lifestyle and background assessment within the context of the signs and symptoms, a differential di-

agnosis in relation to the qualities, humoral imbalance, pathway type (whether acute or chronic) is established.

In order to arrive at a final diagnosis, a physical examination, together with in-house tests (BP, blood glucose, chol, urine etc.) is completed. If necessary, external tests, (lab, scans, sonar etc.) are requested. From the above, and within the context of differential diagnosis, a final diagnosis can be reached confirming the quality/ies associated with the illness condition/s, the humoral imbalances as well as the affected systems/organs.

Additional guidelines for accurate diagnosis:
In order to achieve an accurate diagnosis, the following needs to be taken into account.

- *Incorrect information*. The practitioner should be aware that incorrect information may be proffered by the patient for personal or other reasons. A common example is the amount and frequency of a patient's alcohol consumption. Another example relates to a patient's smoking habits.
- *The patient's emotional state*. The practitioner should take note of both positive and negative emotions.
- *The patient's stress level*. The practitioner should enquire about stressful life events, both major and minor.
- *The patient's transition stage*. The practitioner should note whether he or she is an adolescent, experiencing a mid-life crisis, or is menopausal, for example.
- *Possible connection between symptoms*. Sometimes one symptom is a reflection of another. Backache is a good example, as it may not only be a symptom of a spinal disorder, but of an abnormal menstrual cycle, kidney infection and even cervical cancer as a worst case scenario.
- *The patient should be assessed, not the symptoms*, treating the patient is more important than quantifying the signs and symptoms.

- *The patient's personal opinion*. This often reveals clues about its origin. It could, for instance, disclose triggers and aggravating factors, the organs affected, and possibly humoral imbalance. A recurrent headache, for example, may be associated with poor digestion, or emotional pressure.
- *The patient should be observed*. Whilst listening, note the facial colouring, texture and complexion, features of the face and body, speech characteristics, and general body language.
- *Other information*. The patient should be asked unobtrusively for more details of his condition or opinion, without interrupting the flow.

Throughout the above approach the *role of physis should be considered*, to ensure that an accurate diagnosis is made. The signs and symptoms may at times be a healing response, or an attempt to limit damage to tissues and organs.

Labelling illnesses
Signs and symptoms and what they represent as well as the illness conditions in Tibb differs from Western medicine, in that Tibb views them as reflective of an imbalance at a qualitative or humoral level. For practical purposes, the terminology used for signs and symptoms and the associated illness conditions, should include both the Tibb interpretation (qualities/humours) and also in line with current Western terminology, using 'labels' of illnesses within the Western paradigm.

PULSE ANALYSIS

Overview. Pulse diagnosis, like tongue diagnosis, is an age-old technique which enables the practitioner to deduce valuable information about the inner workings of the patient's body. In effect it lets the practitioner "judge the internal from the external". Pulse and tongue diagnosis are also important in identifying qualities. Pulse diagnosis has been extensively used not only by Tibb practitioners but also by practitioners of Ayurveda and Chinese Medicine. In addition, it has been used to identify the organs or systems of the body that may not be functioning efficiently.

Pulse diagnosis is a valuable and time proven diagnostic tool, used for many centuries in the practice of Tibb. The procedure is highly flexible, requires no investment in equipment, facilities or laboratory support, and for the practitioner, improves in value with training and experience. For the patient, pulse diagnosis is painless, non-invasive, requires little in the way of personal preparation (no fasting; no pre-medication) and does not incur the substantial costs invariably associated with technology-based investigations.

Development of pulse analysis. Ibn Sina, the *'Prince of Medicine'*, devised the form of pulse study which became known as Tibb pulse diagnosis. It was based on what was known at the time in his region, Persia, but incorporated elements from pulse techniques applied in neighbouring areas. Tibb pulse diagnosis therefore has some features in common with other systems, but differs in others. Specifically, Tibb pulse diagnosis is based upon the concept of humours and the qualities associated with the pulse. The Tibb pulse diagnosis, in terms of complexity, falls between the simple form, using only a couple of parameters, and the highly complex version, which entails many years of study and experience.

Physiology of pulse analysis. According to Tibb, every cell in the body sends its own unique signal to the heart via the bloodstream. The response of the heart is carried in the arterial bloodstream as a carrier frequency – *the pulse* – which can be decoded by analysing the pulse.
The pulse is a series of pressure waves within an artery brought about by contractions of the heart – specifically, the left ventricle. The pulse corresponds exactly to the heart beat and heart rate, and is calculated as the number of beats per minute. It is easily detected on arteries which cross bones near the surface.

There are several factors which provide the inherent pulse:
- The *vital power* of the heart itself;
- The *elasticity* of the artery;
- The *resistance* to the flow of the pulse.

Changes in the pulse can be brought about by numerous non-clinical factors – age, season, changing temperament, bathing, exercise, sexual intercourse, pregnancy, foods, intoxicants, medicines, emotional states, pain, habits, infections, and others.

Each pulse beat consists of two movements, and two pauses:

Expansion ➡ pause ➡ contraction ➡ pause

Pulse evaluation is quite complex, and requires extensive personal instruction in order to fully master it. Developing sensitivity to the subtle sensations and elements of the pulse needs much time and practice. The basic text on pulse analysis runs into many volumes. The sensitivity of the examiner's fingertips needs to be enhanced by training and application of oils. Pulse diagnosis is much older than urine analysis in Tibb, and more generally practiced. It is remarkably accurate in allowing the physician to recognise the site, severity, and intensity of a number of internal disease conditions.

Pulse taking technique

To fulfil its potential as a valuable diagnostic tool, pulse diagnosis requires experience, skill and intuition.

The main pulse points used are:

- ***The radial pulse*** – where the radial artery crosses over the radial bone in the wrist;
- ***The carotid pulse*** – where the carotid artery crosses the spine in the neck.

The carotid pulse is not used in Tibb medicine for several reasons. For example, it is less sensitive than the radial pulse; it provides less information; it can be muffled or diminished by the presence of fatty tissue; and it can deprive the brain of blood if applied too enthusiastically.

What the pulse determines. Pulse analysis requires skill, a degree of intuition, and becomes more effective with experience. For best

results, time, effort and patience are needed in pulse analysis. Preparation of the patient is a very important preliminary to pulse analysis. The outcome of what can be achieved from pulse diagnosis depends on whether the Tibb practitioner adopts the relatively simple six parameter method, or the very complex specific organ based determination.

Parameters used in pulse diagnosis

There are six different parameters used in pulse analysis – depth, width, length, strength, texture and rate.

Different qualities in patients are revealed by different features of the pulse parameters. Different zones of the fingertips reflect disorders in specific organs or systems of the body.

Pulse depth. The depth of a pulse means the level at which the pulse is felt, either when gently laying on the fingers, or when exerting some pressure on it. The depth of a pulse is further described according to where it is felt between the surface skin and the inside wrist bone.

- If little or no pressure is needed to feel the pulse, the pulse is called a *superficial* pulse. Sometimes the pulse can be seen when viewed in good light. The pulse in this case is also superficial. The feeling of this pulse has been described as a piece of wood floating on water.
- If the fingers need a lot of pressure to feel the pulse, and is only felt when pressing down about two-thirds down to the wrist bone, then the pulse is a *deep* pulse.
- In between these two levels there is the intermediate pulse.
- The depth of a patient's pulse reveals possible imbalances in his or her qualities.
- A superficial pulse – indicates dryness.
- A deep pulse – indicates moistness.

Pulse width. The width of a pulse is a measure of the diameter of an artery. It does not measure the length of pulse under the three finger tips.

- If the artery is very full and large in diameter, the pulse is called *wide*.

- If the artery is thin and small in diameter, the pulse is called *fine*.
- An in-between pulse is neither *wide* nor *fine*.
- The width of a patient's pulse reveals possible imbalances in his or her qualities:
  A wide pulse – indicates *moistness;*
  A fine pulse – indicates *dryness*

Pulse length. The length of a pulse refers to the distance immediately below the fingers where the pulse can be definitely felt.
The length of the pulse is defined as:

- Short – *one finger;*
- Medium – *two fingers;*
- Long – *three fingers.*

The length of a patient's pulse reveals possible imbalances in his or her qualities:

- A long pulse – indicates *heat;*
- A short pulse – indicates *coldness;*
- A moderate pulse – indicates a balance of *heat and coldness.*

Pulse strength. The strength of a pulse is a measure of the force with which the patient's pulse 'hits back' at the practitioner's fingers.

The strength of the pulse is defined as:

- Forceful – *a strong pulse;*
- Forceless – *a weak pulse;*
- Medium strength – *in between the strong and weak pulse.*

Describing the strength of a patient's pulse is largely a matter of the broad experience gained by the practitioner.
The strength of a patient's pulse reveals possible imbalances in his or her qualities:
A forceful pulse – indicates *heat;*
A forceless pulse – indicates *coldness.*

Pulse rate. This measures the beats per minute of the patient's pulse. This measurement should be made over at least 15 seconds, and preferably 30 seconds, to avoid an inaccurate figure. The average pulse rate in the resting adult is 60 to 80 beats per minute. However, this rate may be increased markedly by exercise, emotion, blood loss through injury, and illness. Generally, the pulse in a female is several beats per minute higher than a male of the same age and body mass. The basic descriptions for the patient's pulse rate are:

- Slow – *below 60 beats per minute;*
- Average – *between 60 and 85 beats per minute;*
- Fast – *above 85 beats per minute.*

The patient's pulse rate reveals possible imbalances in his or her qualities:

- A slow pulse – indicates *coldness;*
- A fast pulse – indicates *heat;*
- A balanced pulse – indicates that the qualities are normal.

Pulse texture. This refers to the feeling of softness or hardness of the patient's radial artery wall. This characteristic is also called 'compressibility'. Pulse texture can also be described as *pulse tension*; just as when an elastic band is stretched it is tense, and when it is resting it is flaccid. A similar analogy is provided by a guitar string – when stretched or tense then a vibrant sound is heard, whereas when relaxed no real note is forthcoming.

The basic descriptions for the patient's pulse rate are:

- Hard – *the pulse feels taut and stretched, and difficult to compress. This indicates an excess of dryness;*
- Soft – *the pulse feels flaccid or relaxed, and easy to compress. This indicates an excess of moistness;*
- Balanced – *the pulse feels 'just right'* .

Describing the texture of a patient's pulse is largely a matter of the broad experience gained by the practitioner.

Pulse parameters and associated qualities

The parameters associated with qualitative states are listed below.

Hot & Moist
Pulse texture – *Fast*
Pulse depth – *Intermediate*

Moist & Hot
Pulse texture – *Soft*
Pulse depth – *Deep*

Cold & Moist
Pulse depth – *Deep*
Pulse rate – *Slow*
Pulse texture – *Soft*

Cold & Dry
Pulse depth – *Superficial*
Pulse texture – *Hard*
Pulse rate – *Moderate to slow*

Dry & Hot
Pulse depth – *Superficial*
Pulse width – *Fine*
Pulse strength – *Forceless*

Hot & Dry
Pulse strength – *Forceful*
Pulse rate – *Rapid*
Pulse depth – *Superficial*

Identifying affected organs & systems from pulse

Pulse diagnosis also enables the identification of a patient's organs and systems that are not functioning optimally. This identification is done by assessing the position of the pulse on each of the three fingers at a specific area, or *zone*, as indicated in the diagram – *see Annexure 3.*

Each of the practitioner's finger pads – distal (index), middle and proximal (ring) – is divided into five zones. Each zone is associated with a particular organ or system. Every zone is allocated a different number:

Distal pulse – from zones 01 to 05
Middle pulse – from zones 06 to 10
Proximal pulse – from zones 11 to 15

Each of the 15 zones indicates the organ/s and/or system/s that are affected or not functioning optimally.

Relationship between pulse sites and humoral balance. Most of the illnesses identified on the distal pulse are linked to an excessive or abnormal state involving the melancholic humour. That is, *excessive dryness.*

Most of the illnesses identified on the middle pulse are linked to an excessive or abnormal state involving the bilious humour. That is, *excessive heat*.

Most of the illnesses identified on the proximal pulse are linked to an excessive or abnormal state involving the phlegmatic humour. That is, *excessive moistness*.

Method for determining the zone. Focus on the distal finger first, with the two other finger tips away from the patient's wrist. Determine which zone the pulse beat falls into. Note this zone. Repeat the exercise, but using the middle and proximal fingers instead.

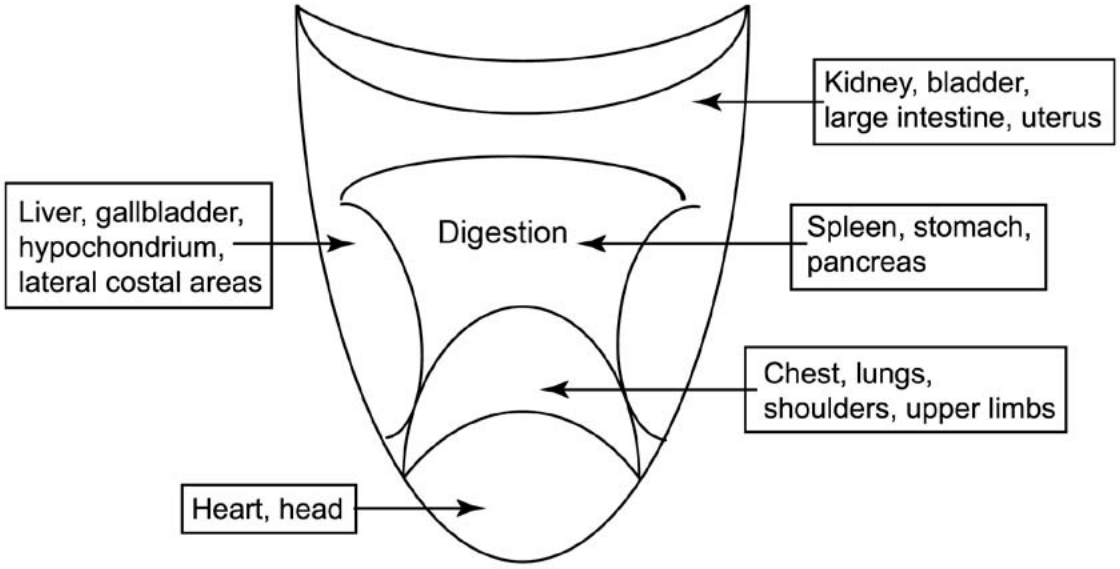
TONGUE DIAGNOSIS

Background. Inspecting the tongue and analysing its appearance and texture is an age-old procedure which is common to many forms of traditional medicine. It has been used in Tibb for centuries. It is a useful technique to employ, mainly because it can confirm a provisional diagnosis arrived at via other techniques. Tongue diagnosis is a rapid, painless and cost-effective technique, requiring little if any preparation.

Tongue analysis is valuable for two reasons: (a) the tongue is a reliable indicator of the patient's current illness; (b) it lets the practitioner identify imbalances in the patient's qualities.

The tongue as a hologram. According to holographic theory the tongue symbolises the entire body, in the same way as the sole of the foot does in reflexology and the iris of the eye in iridology. Different areas of the upper surface of the tongue which are visible to the practitioner represent or symbolise correlating body organs and organ

systems. For example, the inner central region represents the organs of digestion – namely, the stomach, spleen and pancreas. The tip of the tongue symbolises the heart and head. The full symbolic map of the tongue can be seen in the diagram below.



Tongue diagnosis is more relevant to the upper part of the body, which includes the heart, head or stomach. Also, as the tongue is itself in the upper part, it is more effective and reliable in diagnosing patient disorders affecting this region.

Structural features. There are five features of the tongue which are useful in diagnosis:

Shape

- This should pick up any abnormalities.
- Is the tongue normal in shape?
- Or is it short or long?
- Is it thin or swollen?
- Does it show signs of damage (for example, teeth-marks)?
- Are there any cracks or fissures? If so, where are they, and how long and deep?

Colour

- Is the colour first seen the true colour of the tongue – or only that of the coating?
- Are the sides of the tongue pale, normal or red? Or, as sometimes occurs, pale blue, purple, crimson or even black?

Coating thickness and colour

- Is it white, yellow or somewhere between?
- Or, as it sometimes is, very dark, even black?
- Is the coating thick, or is it possible to see the tongue through the coating?
- Does the coating cover all or part of the tongue's upper surface?

Moisture content

- Is there a thin layer of moisture or saliva covering the tongue?
- Or is the tongue visibly dry?

Movement

- Is there any trembling visible?
- Does the tongue look stiff?
- Does the tongue deviate to one side?

Tongue abnormalities and related qualities. The physical dimensions, coating, movement and colour of the tongue reveal valuable information about the patient's state of health.

Body shape

- If the tongue is swollen, then there is an excess of the quality moistness.
- If the tongue is thin, then there is probably an excess of the quality dryness.
- If there are racks in the tongue, this could be due to an excess of the quality heat. This feature, however, may be hereditary.

Tongue colour

- If the tongue is pale in colour, then there is an excess of coldness.

- If the same tongue is pale and moist, then a Cold & Moist condition is suggested.
- If the same tongue is pale and dry, then a Cold & Dry condition is suggested.
- If the tongue is red in colour, then an excess of heat is indicated.
- If the same tongue is free from a coating, then a Dry & Hot condition is suggested.
- If the same tongue has a yellow coating, then a Hot & Dry, or Hot & Moist, condition is suggested.
- If the tongue is purple, then poor blood circulation, or stagnant blood flow, is indicated. This can be present in the local area, or due to a systemic problem.
- If the same tongue is a bluish purple, then the poor circulation is due to coldness.
- If the same tongue is a reddish purple, then the poor circulation is due to heat.
- A crimson tongue suggests a severe Dry & Hot condition.

Tongue coating

- If the tongue colour is yellow, then a build-up of heat is suggested.
- If there is a non-transparent white coat, then a build-up of coldness is suggested.
- If there is a thick white coat, a Cold & Moist conditions, or an accumulation of phlegm is suggested.
- If the whole tongue has a thick white coating, excessive moisture in the brain is suggested.

Tongue movement

- If the tongue deviates or leans to one side, then this suggests that a transient ischaemic attack (TIA), stroke, or paralysis such as hemiplegia has occurred recently.
- If the tongue is stiff, then severe heart disease is probably present.
- If the tongue continually trembles, then the patient may be suffering from anxiety (especially if it is dry and red) or weak

digestion (especially if it is pale and moist).
- Tongue abnormalities and organ disorders. The tongue offers clues to disorders in specific organs.

Liver and gall bladder
- The tongue is swollen, with red spots. A Hot & Dry disorder is present.
- The tongue has an orange tinge. A Dry & Hot, or Cold & Dry disorder is suggested.
  The tongue is purplish in colour, or has purple spots. A Cold & Dry disorder is present.

Heart
- The tongue has a red tip. A Dry & Hot disorder is suggested.
- The tongue has purple spots. A Cold & Dry disorder is suggested.

Lungs
- The tongue has a shallow dip on it. This suggests chronic lung disease.
- The tongue has purple spots. A Cold & Dry disorder is suggested, perhaps blood stasis in the upper limbs.

Stomach, spleen and pancreas
- Cracks are evident on the tongue. An excessive dryness is suggested, possibly due to diabetes.
- There is a lack of coating on the tongue. This suggests both excess heat and dryness.
- The tongue has a yellow coat. This suggests a Hot & Dry, or Moist & Hot, disorder.
- The tongue has a glossy coating. This suggests an excessively dry condition, indicating severe weakness of the digestive sys tem.
- The area of the tongue showing an abnormality may also offer clues regarding the patient's state of health. If the posterior (back) part of the tongue is covered in a thick, moist white or yellow coat, then a Moist & Hot or Cold & Moist

disorder is suggested. In particular, a disorder of the kidneys, urinary bladder or large intestine is likely to be present.

URINE EXAMINATION

Background. Urine analysis provided the original Tibb practitioners with valuable information on disorders of the hepatic and uro-genital systems. However, with the advent of advanced diagnostic technology, urine analysis today provides comprehensive information instantly by using the appropriate diagnostic tools, such as urine sticks.

Parameters. According to Ibn Sina the following qualities or parameters can be observed in a sample of urine:

Colour	Quantity
Odour	Clarity/turbidity
Texture	Specific gravity
Sediment	Acidity (pH)

Table 13: Features of urine analysis and its link to qualities.

Qualities	Normal colour	Quantity	Odour	pH	Specific gravity	Abnormality
Cold & Dry	White or greyish-red	Oliguria	Bad +/-	< 5	> 1.030	*None noticed*
Hot & Dry	Dark yellow	Oliguria	Strong	5 - 6	> 1.030	*Pain, burning, proteinuria, haematuria*
Dry & Hot	Reddish yellow	Oliguria	Bad	< 5	> 1.030	*Proteinuria, haematuria*
Hot & Moist	Golden yellow	Polyuria	Less	6 - 7	1.015-1.030	*Dysuria, nocturia*
Moist & Hot	Whitish yellow	Polyuria	Less	≥ 7	< 1.015	*Bedwetting, nocturia*
Cold & Moist	White / transparent	Polyuria	None	> 7	< 1.005	*Nocturia, bedwetting, incontinence*

Listed below are illness conditions linked to qualitative imbalances:

- *Oliguria:* an abnormally small amount of urine is produced (as in *kidney disease*). This is indicative of heat/dryness.
- *Polyuria:* frequent and large amounts of urine are produced (as in *diabetes*). This is indicative of moistness.
- *Proteinuria:* the appearance of protein in the urine (as in *kidney damage*). This is indicative of dryness/heat.
- *Haematuria:* the appearance of blood in the urine (as in *kidney injury*). This is indicative of dryness/heat.
- *Dysuria:* pain or difficulty in passing urine (as in *urinary tract infections*). This is indicative of heat.
- *Nocturia:* urination at night (as in diabetes). This is indicative of moistness.

People with different temperaments have different urinary features. The different urinary parameters can reveal underlying clinical disorders.

STOOL ANALYSIS

Background. Stool, or faeces, is the semi-solid waste material eliminated through the rectum and anus. It is formed in the colon. The stool consists of (a) the undigested residue of food, mainly cellulose; (b) gut bacteria; (c) various secretions, especially mucus; (d) bile pigments, (e) varying amounts of water, which give the faeces its liquid, semi-solid or solid consistency. The basic principles of stool analysis revolve around the physical features of the faecal mass. The typical colour of normal faeces is due to the presence of the bile pigments, namely, *bilirubin* and *biliverdin*. The different shades of the faecal colour are due to the relative proportions of these two bile pigments.

Table 14: Characteristics of normal stool

Characteristic	Normal stool
Colour	Yellowish brown
Odour	Not overtly offensive
Viscosity / texture	Soft, homogenous
Quantity	Depends on food intake
Frequency of bowel movement	Regularly; once or twice daily

Features. Normal faeces should be passed (*evacuated*) relatively quickly, without irritation or subsequent irritation, and without too much wind (*flatus*), foam, or any blood (*melaena*).

Stool characteristics often vary according to the temperament of the patient:

- **Cold & Dry** – hard to black-grey; sometimes with a bad odour; sometimes tainted with fresh blood.
- **Dry & Hot** – low in quantity; hard; sometimes ball-like; black ish-brown; sometimes reddish-yellow; constipation often present; sometimes bleeding present with the stool; offensive odour.
- **Hot & Dry** – dark yellow to reddish in colour; occasional diarrhoea or mucus.
- **Hot & Moist** – yellow; loose to normal; sometimes burning; loose stool
- **Moist & Hot** – very pale to light yellow; sticky; mucus and phlegm present; soft texture; excessive in amount; long time to eliminate.
- **Cold & Moist** – light colour, occasionally black brown to black; soft; diarrhoea often present; frequently constipated.

Disease indicators. There are a number of disorders which can be identified from the properties of faeces:

Clinical abnormality	Cause according to Tibb	Humoral imbalance
Constipation	Due to dryness	Cold & Dry, and Dry & Hot
Diarrhoea	Due to moistness	Moist and Hot, and Cold & Moist
Dysentery	Due to heat	Hot & Dry, and Hot & Moist

CHAPTER REVIEW

The Western system of medicine is supported and underpinned by a highly specific, unambiguous and uncompromising agenda which barely acknowledges and invariably excludes traditional or alternative healing paradigms. The system is maintained through a stringent, undeviating curriculum in Western medical schools, and by post-graduate education and specialisation programmes. One of the important differences between the Western system and Tibb relate to diagnostic theory and practice.

This chapter on the principles and techniques of Tibb diagnosis provides insight into the relevance of both the temperamental and humoral theories in diagnosis. The introduction of specific diagnostic techniques used in Tibb, such as pulse and tongue diagnosis, is an added dimension that can assist in conducting an effective diagnosis. This is often used together with current Western diagnostic techniques.

Diagnosis: The objectives of diagnosis in Tibb are to (a) determine the patient's temperament; (b) the nature of the humoral imbalance; (c) the body tissues or organs affected by the disorder; and (d) the specific pathway that the patient's disorder is following. It involves initially assessing the personal and family history, patient complaints, the presenting signs & symptoms and current treatment. Determining the patient's temperament is the next step, followed by an inspection

of the patient's lifestyle factors. In addition, diagnosis also notes patient input, and acknowledges intuition. Viewing the patient holistically and interacting with the patient – listening to the patient, discussing the problem – is very important in Tibb diagnosis.

Tibb diagnostic techniques interpret the qualities and humoral imbalances observed, which provide information regarding the pathological processes affecting different body organs and functioning systems. However, Tibb doctors do, if necessary, call upon pathological and image testing for confirmation. They avoid blanket tests, as is often the case in Western medicine.

Diagnostic techniques: The initial physical examination in Tibb diagnosis includes (a) visual inspection, or direct observation, of the patient's frame, gait, complexion and skin texture, speech and body language; (b) palpation, or carefully feeling parts of the body using the hands or fingertips; (c) percussion, or tapping different parts of the body, and sensing the resulting vibrations to detect fluid accumulation; (d) auscultation, or listening with a stethoscope, to body sounds produced in different parts of the body; and (e) articulation, or assessing the range of movement of the spinal joints and the joints of the extremities.

A component of Tibb diagnosis is concerned with the possible build-up of humoral imbalances in specific parts of the body which could conceivably lead to blockages in flow. This is often the case in injury or deterioration of anatomical structures.

The main diagnostic techniques in Tibb involve the pulse, tongue, urine, and, to a lesser extent, the stool. Tibb diagnosis can also bring in Western techniques, such as biopsy, laboratory assays and urinalysis.

Pulse diagnosis: The pulse is the outcome of the vital power of the heart, the elasticity of the artery, and the resistance to blood flow. Pulse diagnosis is a valuable and time proven diagnostic tool, used

for many centuries in Tibb practice. It lets the practitioner “differentiate the internal from the external”. Pulse diagnosis provides extensive information on the temperament of the patient, and can identify the organs or systems of the body that are not functioning efficiently. From the patient’s perspective, pulse diagnosis is cost-effective, painless, non-invasive, and requires little in the way of personal preparation. For the practitioner it is highly flexible, requires no investment in equipment, facilities or laboratory support, and improves in value with both training and experience.

Tongue diagnosis: The tongue can be regarded as a hologram of the whole body. Different areas of the upper surface of the tongue which are visible to the practitioner represent or symbolise the patient’s body organs and organ systems. Tongue analysis provides an indicator of the patient’s current illness and imbalances in the patient’s qualities. There are five features of the tongue which are useful in diagnosis: shape, colour, coating, moisture content, and movement. The tongue offers clues to disorders in specific organs.

Urine & stool examination: Urine examination provides useful information on the hepatic and uro-genital systems. It makes a link between the nature of the patient’s urine and qualitative balance. Different disorders are related to changes in the features of the patient’s urine. Stool analysis relates to the physical features of the faecal mass. There are several disorders which can be identified from the properties of faeces.

CHAPTER 5: THERAPEUTICS IN TIBB

INTRODUCTION

Therapeutics is the division of medicine that deals with the different approaches to the treatment (*therapy*) of illnesses in order to heal them, or prevent their recurrence.Technological and clinical advances over the past fifty years have resulted in tremendous changes in the realm of therapeutics. In the time of Hippocrates, Ibn Sina and Galen, the key focus of treatment was to assist Physis in the patient's healing process. It was acknowledged that the illness was brought about by poor pepsis (Greek: *digestion*). That is, the inefficient or delayed elimination of toxins from the body was responsible for the occurring illness. The therapeutic process therefore centred largely on the elimination of toxins resulting from improper pepsis, which had developed during the pathological processes of humoral imbalances within the body.

The practice of Western medicine today, because of available technology and pharmaceutical drugs, focuses largely on removing the *effects* of the accumulation of humoral imbalances within the patient, which usually manifest as physical and/or mental symptoms. Western pharmaceutical agents are generally designed to oppose the symptoms associated with these humoral imbalances. Also, surgical procedures, such as bypass surgery most often deal with the structural changes in organs and tissues that have developed.

Whilst there is undeniably a degree of success associated with these procedures, a different approach intended to prevent the accumulations of toxins in the first place is of special significance in the therapeutic processes in Tibb. The use of medication (*pharmacotherapy*) is only one of the many therapeutic options in Tibb. These includes Lifestyle Modification and Emotional Support, incorporating dietotherapy, exercise, breathing, meditation, and counselling; as well as eliminative therapies such as sneezing, enema, purgation, massage, somatic balancing technique, and therapeutic cupping.

Even though modern medicine is increasingly recognising the importance of a holistic approach to medicine, invariably most illnesses are treated within the Western medicine paradigm, through the use of symptom-suppressing medication, or with surgery. However, the Tibb approach to treatment avoids aggressive, intrusive and invasive methods that is aimed at addressing not only the symptoms but also the causes of disease. Tibb stresses the importance of making appropriate therapeutic choices depending on the imbalances at a temperamental, qualitative, humoral, functional or structural level. It further recognises that treatment for many illnesses is aimed at elimination, as it accepts the Hippocratic principle of pepsis. It also recognises the role of Physis and the body's healing processes, and how Tibb therapeutics should support and enhance the Physis response.

This chapter aims to provide insights into the rationale, application and clinical benefits of the multifaceted therapeutic interventions available to the Tibb practitioner. Mention will also be made of *surgical techniques* which were developed during Tibb's watch, and eventually became the standard in Western medicine as practiced over the last few centuries. Tibb, therefore, has been at the forefront in developing a wide spectrum of healing techniques, which are now largely accepted in clinical circles, either as stand-alone procedures, or as part of the emerging healing paradigm of Integrative Medicine.

Therapeutics in Tibb can be divided into four categories:

- **Pharmacotherapy:** The use of herbs and other natural ingredients to treat ailments.
- **Lifestyle modification and emotional support therapy:** This includes changes to the behaviour of the patient through dietotherapy, physical exercise, breathing, meditation and re laxation, visualisation, colour therapy, music therapy, psychotherapy and counselling, aromatherapy.
- **Eliminative (Regimental) therapies:** This includes eliminative techniques such as sneezing, emesis, perspiration, hydrotherapy, diuresis, enema, purgation, massage, somatic balancing technique, leeching (hirudotherapy), venesection and cupping.

- **Surgery:** Used extensively for amelioration of eye problems, cauterisation of haemorrhoids and wounds, excision of malignant masses, [*This topic will not be covered in depth in the book*.]

This chapter on Therapeutics will focus on the theoretical aspects of the various therapeutic options and not on the practical application of the different therapies.

DEFINITIONS AND DESCRIPTIONS

Therapeutics is the division of medicine which deals with the different approaches to the treatment (*therapy*) of illnesses in order to heal them, or prevent their recurrence.
Allopathic simply means allo-(opposite) medical practice. The term has, however, been co-opted by Western medicine to mean conventional medicine, as opposed to homeopathic medicine. However, for much of the world's non-Western population this does not apply.
Medicine. The word 'medicine' is derived from the Latin *medere*, to heal. A medicine is a substance, mostly taken internally, used for the alleviation or removal of disease; or the art and science of preserving health and curing or alleviating disease. It is distinguished from surgery and obstetrics. The term 'medicine' has the same meaning in both Tibb and Western medical care.
Western medicine refers to the medical paradigm practiced predominantly in the North Atlantic nations, but also in developing countries where it is also known as orthodox medical practice.
A drug in this chapter refers to a synthetic or semi-synthetic substance used in Western medicine to prevent, treat or diagnose illnesses. It excludes recreational or illegal ('street') drugs or herbal remedies.
Surgery is the branch of healing that treats injuries, trauma, internal malfunctions or structure-related diseases by planned operation on the body, or manipulation of a specific part thereof.
A physician is someone versed in, or practicing, the art of healing,

including medicine and surgery. The term is derived from the Greek *physis*, nature.

A doctor is a healthcare practitioner qualified in the art and science of medicine or surgery. The term is derived from the Latin *docere*, to teach.

Pharmacotherapy. The treatment or prevention of disease (e.g., diabetes) or the symptoms of an illness (e.g., menstrual illnesses) through the use of drugs or herbal remedies.

Pharmacology is the science of the properties of drugs and other active agents such as herbs, extracts from animal material and minerals, and their effect on the body.

A pharmacopoeia is a book, database or other record which contains a list of drugs which are used in medical treatment. It includes details of their contents, formulation, methods of preparation, dosages, standard of purity, shelf-life and storage conditions.

COMPARISON: TIBB AND WESTERN MEDICINE

There is increased awareness worldwide that the clinical signs and symptoms that accompany a particular ailment or disease cannot simply be dealt with by taking medication, especially prescription drugs. Although initially successful, the dosage of the drug most often has to be increased to counteract a diminishing efficacy. In addition, other drugs may have to be added into the treatment regimen in order to increase effectivity of the drug, or to deal with the side effects that invariably accompany long-term usage.

A person with constant or frequent headaches, for example, cannot be treated effectively by simply taking analgesics. These may be effective, but they only deal with the symptom of the illness, not the cause. Sooner or later the patient's stomach, liver and kidney will succumb to the impact of long-term exposure to the very active, and unnatural, ingredients which are present in most analgesic products. (*The difference between Tibb and Western medication will be elaborated under the section on Pharmacology)*.

Patients are increasingly seeking health solutions that address the root causes of their health condition, as well the symptoms. Once the causes have been accurately identified, most individuals would like to be actively involved in restoring harmony for optimum bodily functioning.

It should be stressed that treatment of the symptoms of an illness is by no means wrong or misguided. What would be wrong would be to think that by suppressing the symptoms we have dealt with the problem itself.

From the Tibb perspective, if a person suffers from an illness, then the healing process should relieve the patient of any troublesome symptoms as quickly as possible, then identify and remove the causes of the illness, restore the ideal humoral and temperamental balance, and finally, increase the strength of the vital organs and tissues, to ensure efficient functioning and prevent recurrence.

When treating illness by the Western medicine route, it is often only at the second and third stages, where there may already be functional and structural damage, that the illness is actually identified, and clinical intervention initiated.

From the Tibb perspective, an illness can be stopped before it manifests into a full blown disease. Moreover, when the illness is investigated, whether at the humoral, functional or structural stages, treatment will take into account the Lifestyle Factors that are involved in the onset and progression of the illness.

In Tibb, treatment consists of restoring internal homeostasis to the patient's humoral qualitative state, as well as renewing the ideal temperament at every level (cell, tissue, organ and total system), depending on the underlying disturbance in the body. This leads to improved functional activity, then to repair of any resulting tissue or organ damage.

PHYSIS AND THE BODY'S HEALING PROCESSES

Before we examine Tibb therapeutics, we will revisit the central role of Physis in the healing process. The recognition of the role of Physis will make us appreciate the rationale behind the modes of therapeutics practiced in the Tibb system of medicine.

Throughout our life, we are constantly exposed to innumerable hostile external forces and internal changes that can result in injury or cause illness by attacking and overcoming our immune system. These not only disturb our internal harmony, but activate our Physis, which has a predominant role in the defensive and reparative processes. Physis contributes to the body's self-regulatory mechanisms, and encourages self-repair in the body. As part of this, we have a range of very elaborate mechanisms of self-repair. These are highly effective in counteracting those forces that create illness and cause injury. *They are our self-healing systems – our built-in ability to maintain health and combat illness.* Historically, the human race has not always had access to medical help in dealing with the myriad of diseases that beset us, so self-healing mechanisms are extremely important as part of our genetic make-up.

The body's capacity for self-healing is evident at all levels of complexity in the human being. The following examples amplify this point:

- *At the sub-cellular level*, our genetic material, DNA, is frequently exposed to damage from environmental radiation, dietary toxins, and toxic chemicals. This damage could have disastrous consequences for our body. Luckily, we are equipped with highly efficient mechanisms which repair this damage, and ensure the accurate transfer of information from one generation to the next.
- *At the cellular level*, the membrane surrounding all living cells in the human body is constantly being scrutinised for structural damage. If any is detected, it is repaired if possible, or other wise the damaged area of the membrane is replaced. This healing system is a spontaneous, continually operating expression of the cell's Physis. By performing continuous maintenance, the cell's internal harmony is preserved.

- *At the tissue level*, the same self-healing characteristics are evident, although more complex in nature. We are all familiar with the healing of skin wounds. The process is a sequence of activities in the area surrounding the wound. Initially, white blood cells are immediately attracted to the wound, in order to counteract infection. This is followed by an inflammatory response to clear the damaged area of tissue. Later, cell proliferation begins in earnest, sealing up the wound with new tissue.
- *At the organ level*, an example of Physis ability to repair is indicated in the human liver is capable of regenerating a large proportion of itself if removed or damage by viruses, toxins or chemicals.
- *At the structural level*, when the musculoskeletal system is negatively affected from poor posture and/or fatigue, Physis will attempt to compensate posture by movements such as stretching.

The human body, therefore, is capable of self-healing at all levels of functional and structural organisation, from the sub-cellular to the entire body's organ systems. We have a wide range of mechanisms to achieve and maintain our own bodily health.

In the practice of Tibb, any illness that is acquired after birth can be completely reversed, depending on the extent of tissue or organ damage, the age of the patient, the ability of Physis, patient compliance to treatment and the Lifestyle or Lifestyle Factors.

"For every disease there is a cure" [Diocles]

As we are only too well aware, this process is more readily achieved in the young than in the old. The older the patient, the longer the structural damage will take to correct. Alas, in some patients the structural damage may have gone too far, and lasted too long. In this case, effective treatment may take a long time to reverse the structural damage.

THERAPEUTIC GUIDELINES FOR CLINICAL DISORDERS

Many clinical disorders are associated with either an excess of one or more basic qualities or with an accumulation of humours, both normal and abnormal, treatment is therefore aimed at assisting Physis in restoring qualitative or humoral balance, and where necessary to remove blockages to flow and restore continuity between different structural and metabolic systems within the body.

By applying the insights gained from Tibb, the healthcare practitioner aims to restore health comprehensively and permanently, thus avoiding relapse or recurrence of the disorder.

The approach in therapeutics is to take into account that the Pathway to illnesses is either via a qualitative route (*Pathway 1*) or humoral imbalance (*Pathway 2*). This approach determines whether the clinical condition is due to a (a) qualitative, (b) humoral, (c) functional, or (d) structural imbalance. It also recognises the progress of the condition, and whether the disorder can be readily reversed. It is therefore necessary to address whichever imbalance is deemed responsible for the disorder, and then to counter the imbalance be it qualitative or humoral, or both. In addition the presence of infection needs to be taken into account.

Tibb clearly realises that treatment cannot be solely directed at targeting isolated tissues, organs or systems of the body. It acknowledges the existence of a ‘network’ between the many components of the human body, and recognises this in its therapeutic approaches.

Treatment of multiple symptoms – one underlying cause

Patients commonly present with multiple symptoms which are regularly considered as separate, individual illnesses by western medicine. For example, a phlegmatic/sanguinous patient presenting with sinus congestion, frontal headaches, indigestion, amenorrhoea, and depression would be considered as having multiple conditions with unrelated symptoms by virtually all conventional medicine practitio-

ners. By contrast, a Tibb practitioner will conclude that these symptoms are all signs of an excess of the phlegmatic humour.

Treatment of conditions due to sudden change/temporary excess in qualities

As most acute conditions will be the result of a qualitative imbalance (heat, cold, moistness and dryness), it is necessary to identify the quality responsible for the signs and symptoms associated with the illness.

Treatment for these conditions is thus aimed at targeting the quality responsible for the illness by restoring the qualitative imbalance with therapeutic options, be they lifestyle modification or pharmacotherapy that will be opposite to the quality which is the cause.

The treatment approach is in the true allopathic tradition, as mentioned by Al-Jawyziyya:

> *"... repelling harmful effects of the cold with the hot, the hot with the cold, of the moist with the dry and the dry with the moist... Each quality withstands the opposite and its fierceness is repelled by the other quality. This is the basis of all treatment, and a basis for the preservation of health; even more, the whole science of medicine makes use of this principle..."*

The above strategy should provide relief. Once the qualitative imbalance is restored, Physis would then be capable of healing the ailment.

Treatment of conditions associated with humoral imbalances

Within the context of an individual and Lifestyle Factors, varying degrees of excess/abnormal humours always exist in the body. As long as the body is not overburdened with the wrong diet and other factors resulting in humoral imbalances, Physis has the capacity to deal with these abnormalities. It is only when excess or abnormal humours reach a level beyond the ability of Physis to rectify that they start manifesting themselves into disorders.

The humoral imbalances are dealt with through the processes of con-

coction and elimination. Concoction means *"to prepare by mixing together"*, in this case it refers to, *"the adjusting a physical substance to make it suitable for expulsion from the body"*.

Hakim Chishti, in his *"Traditional Healers Hand Book"*, describes the concoctive and eliminative process as being two separate processes. Chishti explains that the humours first have to be concocted or ripened, after which the concocted humours need to be eliminated with appropriate laxatives. The approximate concoctive period for the bilious humour is *3 to 8* days; the phlegmatic humour is *17 to 30* days, and the melancholic humours from *40 to 90* days, using medication, lifestyle changes and other therapeutic measures.

However there are a number of arguments against these periods of concoction:

- Firstly, Physis is constantly working to concoct and eliminate excessive or abnormal humours – an on-going process.
- Secondly, the various abnormal states of the different humours will require different degrees or periods of concoction. For example, a salty phlegmatic humour, which needs thickening, may require a few days to concoct compared to a calcerous phlegmatic humour which may take longer, possibly even months, to soften, in readiness for elimination.

At the Tibb Medical Centre in Cape Town, research conducted with herbal infusions, formulated to facilitate the concoction and eliminative processes have shown positive results in patients with excess/abnormal sanguinous, bilious, phlegmatic melancholic humours within a few days/weeks. This highlighted the continuous attempt of Physis to restore homeostasis.

The research has also provided guidelines when treating illnesses associated with humoral imbalance:

- Avoiding all factors that can produce/increase the humoral imbalance. For example if the condition is linked to the excess

phlegmatic humour, Cold & Moist foods should not be consumed.
- Attending to the patient's painful or life threatening symptoms such as pain, fever or hypertension.
- Assisting Physis in the concoction and elimination of excess/abnormal humours with appropriate therapies and/or medication.
- If necessary prescribe medication/tonics together with lifestyle modification to support the affected systems associated with chronic conditions.

Treatment of conditions arising from loss of continuity

In Chapter 3 – Pathology; illnesses arising from a loss of continuity were described. These manifest either from the accumulation of abnormal humours, or from physical trauma which result in tissues and organs damage, or from internal blockage to humoral transport and distribution. These clinical conditions require eliminative therapies such as therapeutic cupping and massage, or somatic balancing techniques to assist Physis in returning the person to a state of dynamic continuity.

Treatment of multiple chronic conditions

Often patients will present with multiple conditions with more than one imbalance and also having opposing qualities. This is especially common in older patients. For example, a patient with primary hypertension associated with an excess sanguinous humour (Hot & Moist) qualities can present with osteoarthritis, which is normally indicative of excess/abnormal melancholic humour (Cold & Dry qualities).
In this scenario the following is recommended:

- Evaluating the patient holistically is essential as attention has to be given to which condition is the more serious: hypertension will take priority over osteoarthritis.
- Treatment for hypertension could continue systemically with appropriate medication, and if necessary cupping. Osteoarthritis can be treated locally with cupping, massage, and suitable medication.

- However, if both conditions are associated with differing excess or abnormal humours, these need to be concocted and eliminated. The humour with the shortest period will be concocted and eliminated first.

Treatment of infections

As mentioned in the Pathology chapter, infection due to micro-organisms is only possible when an imbalance occurs at the humoral level, beyond the ability of Physis, via the immune system, to restore homeostasis. This imbalance provides a suitable "environment" in the body's tissues and fluids for the microbes to multiply and prosper. The approach therefore is not only targeting the infectious agent, but also aimed at strengthening the immune system as well as addressing the humoral imbalance. As all humoral imbalances qualities associated with them, this needs to be addressed. The following protocol applies:

- Assisting Physis, by strengthening the immune system with immune booster medication, with ingredients that have anti-bacterial and anti-viral properties.
- Qualitative lifestyle adjustments to oppose the quality associated with the humoral imbalance. Special emphasis needs to be placed on ensuring that the humoral imbalance is not further aggravated with food and drink that will produce/ increase the humour.

The above strategy should overcome the infection. However, in severe life-threatening infections, the use of antibiotics should be considered.

Consideration of the Lifestyle Factors

Treatment will only be comprehensive and long-lasting if it includes the appropriate Lifestyle Factors which ultimately address the underlying cause of the problem. This approach must be applied for the total duration of the treatment.

Other factors in Therapeutics

- Do not inflict pain, or otherwise harm the patient, either directly or indirectly, regardless of the treatment protocol that is recommended. This includes the use of the Lifestyle Factors, dietotherapy, and therapies such as cupping and massage.
- The Tibb practitioner is a teacher. (The word ‘doctor’ also means teacher). He or she has a duty to inform and educate the patient, as a fundamental part of patient empower-ment. The Tibb practitioner is expected to educate the patient in healthcare matters, so that optimal health can be achieved.
- The whole person should be treated in the recognition that ailments have physical, mental, emotional and spiritual dimensions. The practitioner should direct therapy appropriately at these.
- The practitioner should direct treatment at identifying the underlying causes, then dealing with them appropriately. Therapy should not aim at solely suppressing the immediate symptoms.
- The practitioner should be aware of the healing crisis that manifests during treatment for a number of diseases. The patient’s symptoms may in fact deteriorate briefly before the healing process begins in earnest.
- When applying treatment bear the following in mind:
  a) Begin treatment early.
  b) Start with powerful remedies if there is a risk of rapid deterioration.
  c) Maintain treatment until the disorder clears up.
  d) Avoid foods which are difficult to digest.

PHARMACOTHERAPY

Pharmacotherapy is without a doubt the most important therapeutic option for the treatment of the majority of most disorders. The use of herbs and other natural products goes back as far as civilisation itself. In the search for food, and to cope successfully with suffering, humans learnt to distinguish between plants which were useful as

food, and those with healing properties. Some plants became widely used as food, whilst others showed benefit in people suffering from various ailments and injuries. This mutually advantageous relationship between the plant kingdom and humankind has resulted in many plants being used as valuable remedies.

"God in his infinite goodness and bounty hath by the medium of Plants, bestowed almost all food, clothing and medicine upon man" [Gerarde's Herbal (1636)]

Pharmacotherapy has been around for thousands of years. Virtually every society and culture has adopted it in one form or another. Even today, in spite of the massive inroads achieved by Western medicine and synthetic drug usage, around 80% of the world's population uses herbal medication to a greater or lesser extent. It was only with the arrival of the first industrial revolution in the 18th Century and the advent of Western medicine in the 20th that herbal medicine was progressively relegated to a minor role, especially in the developed world.

Pharmacy in ancient times

It is generally accepted that our civilisation dawned in the *Middle East* region, ten to twelve thousand years ago.

A holy book, the *Avesta*, describes three types of medicine – incantations, surgery, and the use of medicinal plants. Healers of the time considered that for every disease there is a plant to remedy it. In the Avesta seventy categories of remedies were identified, all derived from plants.

In *Assyria* and *Babylonia* three thousand years ago, a detailed pharmacopoeia of more than 2000 plants and animal derivatives was created.

In *Ancient Egypt*, medicine was highly specialised, using cures that were simple, natural, adapted to the patient, and which were used empirically; that is according to past clinical and cultural experience.

In fact, until quite recently most of the knowledge and use of herbs could be traced directly back to the ancient Egyptians, whose priests were skilled in phytotherapy.

In early *India,* the four pillars of medical treatment were: the healer, the patient, the nurse and the remedy. To the healer, *"for a remedy to be considered a real pillar on medicine, it should compose of plants grown in excellent soil, picked on a good day, and should be administered in the proper dose at the right time"*.

In *China* several centuries ago, there was a very rich medical tradition based upon more than 8000 pharmaceutical formulations. One pharmacopoeia in particular recorded more than 1870 substances, around 1070of which were herbal in origin.

In Persia, a thousand years or so ago, Ibn Sina (980-1030 CE), one of the major luminaries of Tibb, detailed the vast range of herbal and non-herbal remedies available at the time. This was presented in one of the five volumes of his monumental opus, the *'Canon of Medicine'*.

Much of the information contained in the *Canon* draws on several sources, especially Greek texts of the philosopher-physician Dioscorides (40-90 CE). Translated into Arabic, these texts were the way Ancient Greek knowledge was conserved; otherwise it would have been lost completely. Later, the Arabic was translated back into other languages, most specifically, Latin. This enabled the teaching of Ibn Sina and the ancient Greek and Roman medical pioneers to be restored and shared throughout the Western World. Other physicians, especially Al-Rhazi (854-925 CE), Al-Zahrawi (936-1013 CE) and Al-Biruni (973 – 1050), also contributed significantly.

At the time, the cataloguing of traditional remedies into pharmacopoeias was carried out in various regions, with detailed explanations of how they exerted their beneficial actions on the basis of their intrinsic qualities, their practical usage, and any unwanted effects that could be expected. Herbal remedies shown to be therapeutically effective have retained their place in health practices, whereas those that failed

to deliver clinically have generally fallen by the wayside.

Eventually the entire body of Arabic medical knowledge and tradition was introduced into Europe by Christian doctors returning from the Crusades. Indeed, during the Middle Ages trade in herbs became a substantial and lucrative international commerce.

In the late 11th century the first European medical school was set up in Salerno, Italy. The teaching syllabus was firmly based on the teachings of Hippocrates, Galen and Ibn Sina, and relied extensively on Arabic translations. Other medical schools followed soon after: Montpelier in France, and Bologna and Padua in Italy, for instance. Arguably the best-known advocate of Western holistic medicine was Nicholas Culpeper (1616-1654 CE), a 17th century herbalist and astrologer. His medicine was essentially that of Hippocrates, Galen and Ibn Sina, and this was subsequently used throughout Europe until the end of the 19th century.

Pharmacotherapy of herbal remedies

When the normal and natural harmonious state of the body is disturbed, then a clinical disorder is likely to develop. In this situation, Tibb, and many other modalities, aim to remove the cause of such disharmony by selecting one or more therapeutic options. Amongst these interventions, the rational and systematic use of herbal remedies to restore health and invigorate the body is most commonly adopted.

Pharmacotherapy with natural ingredients especially herbs has invariably been the first line of treatment of physical and mental disorders and the restoration of optimum health. Extracts from different parts of a herb such as the roots or leaves are used, but not isolated as specific, individual chemicals. The concept of a single active ingredient, which is proposed by Western medicine, is rejected by Tibb, because different phytochemicals present in many herbal extracts will interact to enhance the desired therapeutic effects and minimise toxicity.

A great deal is known about the pharmacological actions of a few traditionally popular herbs, such as garlic, ginger and turmeric, because they have been used for a long time. The efficacy of these and many other individual herbal and other natural remedies has been established empirically over time, through extensive clinical experience and observation. However, the modes of action of many, if not most, effective herbs have yet to be elucidated.

As the use of herbal remedies expands globally, the demand for better understanding of their pharmacological action is escalating. Many have now been identified, confirmed and documented. Garlic, for example, has multiple clinical benefits, confirming what has long been known by pharaohic Egyptian, ancient Greek and other healthcare practitioners.

Modes of action

Thanks to increased interest and improved technology, the modes of action of many categories of plant constituents have been recently uncovered. These include amongst others, alkaloids, anthocyanins, anthraquinones, cardiac glycosides, cyanogenic glycosides, coumarins, flavonoids, minerals, mucilage, phenols, saponins, tannins, vitamins, volatile oils etc.

Some of these findings are elaborated in the table below:

Table 15: Categories of active plant constituents

Alkaloids	These possess a vast range of activities including analgesic (opioids), anti-cholinergic (atropine), anti-parasite (quinine), anti-cancer (*vinca alkaloids*), anti-asthma (ephedrine), anti-hypertensive (reserpine).
Anthroquinones	These possess laxative and anti-inflammatory action, with potential antimicrobial, anti-tumour and immune-modulatory activity.
Essential oils	These are the basis of aromatherapy with many therapeutic actions.
Flavonoids	These possess anti-inflammatory, anti-oxidant, anti-viral, cardio-protective, anti-cancer and other activities.
Glycosides	Hepatoprotective, anti-inflammatory, anti-cancer, wound healing, cardiac tonic and other activities.
Mucilages	Anti-inflammatory, anti-oxidant, demulcent and anti-tussive activity
Phenolic compounds	Anti-septic and anti-inflammatory properties
Saponins	These are plant steroid glycosides which interact with human cell membranes, affecting their permeability. They possess immuno-modulatory, anti-tumour properties and influence hormonal activity.
Tannins	These affect Ca^{2+} availability in smooth and cardiac cells, have anti-hypertensive potential, and exhibit anti-initiating and anti-promoting activity in tumour formation.
Terpenoids	Terpenoids have membrane depleting properties on the lipid bilayer of bacteria and therefore exert antimicrobial properties via a membrane disruption mechanism
Vitamins and Minerals	Most plants have a range of vitamins and minerals which contributes to a person's daily requirements.

Each of these categories has a wide range of pharmacological actions, and many overlap in terms of their activity. In addition, most herbs contain not only one but usually several active ingredients under the same category. Listed below are examples of a few common herbs which contain some of the above categories, bearing in mind that each category may have several active ingredients:

- *Garlic* contains flavonoids, alkaloids, saponins, tannins and cardiac glycosides.
- *Ginger* contains phenolic compounds, flavonoids, alkaloids, glycosides, saponins and tannins.
- *Basil* contains terpenoids, alkaloids, flavonoids, tannins, saponins and ascorbic acid.

The many categories (together with the different active ingredients within a category), contained in a single herb allows for a wide range of pharmacological activity, across multiple physiological systems of the body – cardiovascular, digestive, respiratory, etc. They not only address the signs and symptoms of the illnesses associated with the different systems, but also restore homeostasis at a cellular/sub-cellular level. In addition to their active constituents, medicinal herbs also contain numerous metabolic precursors in the form of primary constituents, such as carbohydrates, fats and proteins, as well as secondary metabolites. The therapeutic benefits these collectively confer are unbelievably complex and pose formidable challenges to pharmacological research. Even with the technological advancements of today there is a very limited understanding of how the body's genetically programmed in-built wisdom, that is, physis, operates.

The wide range of active substances present in herbal remedies, whether administered singly or in combination, acts positively on several clinical disorders, which on first appearance appear unrelated etiologically.

Garlic, for example, has proven benefits in patients suffering from multiple clinical disorders. In the past it was extolled as an invigorating heart tonic, as a reliable laxative, and as a topical anti-microbial agent. More recently, its ability to reduce raised blood pressure, prevent stroke, lower cholesterol, control inflammation, counteract skin and intestinal infections and possibly reduce tumour progress has been confirmed.

The basis for these claims lies in the active substances found in garlic, which contains several sulphur-containing substances, such as allicin, as well as numerous representatives from Table 15 above. Individually, any one active substance from garlic most likely has a narrow spectrum of clinical activity. However, collectively they act holistically on several disorders which are seemingly unrelated to each other.

Another example is *Cannabis sativa*. Many well-controlled human studies confirm that this plant confers numerous and wide-ranging medicinal benefits. Cannabis contains numerous active agents, such as tetra-hydro-cannabinol (THC) and its many variants. Individually, one active agent may have only one limited pharmacological effect. However, when several are combined, they act holistically on several, often unrelated, physiological and metabolic disorders.

Specific cannabinoids, plus one or more active agents from table 15 (above) act collectively in the nervous system, and so exhibit potent analgesia, ease depression, reduce anxiety and relieve symptoms of multiple sclerosis. Those afflicted by Alzheimer’s dementia may also benefit. Other components are effective on the digestive tract in easing irritable bowel syndrome (IBS), stimulating appetite, and counteracting nausea. Yet other cannabis components offer promise in opposing tumour development.

The Development of Western pharmacology

As a genuine scientific discipline, Western pharmacology is little more than 150 years old. It emerged as an independent science in its own right following advances in chemistry, physiology and biology in the late 19th and early 20th centuries, mainly in the West. It is a broad science of the biological properties of natural substances, synthetic chemicals and drugs, and their effects on the body's structure, function, and metabolism. Modern pharmacology emerged out of two distinct lines of scientific endeavour: (a) identification, extraction and modification of active ingredients found in plants, such as quinine and aspirin; and (b) the application of powerful techniques in synthetic organic chemistry, as with beta blockers, benzodiazepines and cancer medication.

Subsequent advances led to the isolation, purification and utilisation of active substances from medicinal plants, such as quinine, and several alkaloids, such as morphine, extracted from opium collected from poppy plants. Further advances in synthetic chemistry lead to the synthesis of new-to-nature derivatives, which were considered less toxic and more predictable in their pharmacological activity. For example, a basic chemical process, acetylation, is used to convert morphine to heroin, and salicylic acid to aspirin.

Further advances in organic chemical synthesis supplied a steady stream of new chemical entities, many of them with significant marketable pharmacological activities. Barbiturates, for instance, appeared in 1902, to be superseded fifty years or so later by the benzodiazepines. The sulphonamides were introduced in 1935, followed by penicillin in 1942, the corticosteroids in 1952, and the phenothiazines in 1957. Since this era, the number of new chemical entities introduced into the practice of Western pharmacotherapy is virtually incalculable.

Research and development of Western drugs was initially conducted mainly in academia. The first universities to study pharmacology as a discrete life science were in Dorpat, Estonia (1847) and Michigan, USA

(1890). Schmiedeburg, a student of another pioneer, Buchheim, now regarded as the true founder of Western pharmacology, published the first scientific text, *Outline of Pharmacology* in 1878. Abel researched adrenaline, histamine, and insulin during the period 1897 to 1926, and his student Reid-Hunt discovered acetyl choline in 1906. However, due to financial constraints, academia could no longer continue researching and developing new drug entities, and this eventually led to the formation of commercial companies dedicated to discovering, characterising and developing new pharmaceutical products. The pharmaceutical industry – 'Big Pharma' – was born in the 1930s.

Listed below are some chemically based synthetic Western drugs used in conventional pharmacotherapy, sourced from medicinal plants:

Table 16: Western drugs used in conventional pharmacotherapy

Botanical	Active	Desired activity
Deadly night-shade *[Atropa bella-donna]*	Atropine	Low heart rate and heart block; pupil dilation in eye surgery; antidote for some poisons;
Indian snakeroot *[Rauvolfia serpentina]*	Reserpine	Anti-psychotic; anti-hyperten-sive;
Ephedra *[Ephedra sinica]*	Ephedrine	Stimulant; decongestant; appetite suppressant
Tea bush *[Camellia sinensis]*	Theophylline	Bronchodilator in asthma; heart stimulant; nervous system stimulant

Madagascar periwinkle [Catharanthus roseus]	Vinblastine Vincristine	Anti-cancer agent
Coffee bush *[Coffea liberica]*	Caffeine	Nerve stimulant; exercise recovery; hair growth stimulant
Pacific yew [Taxus brevifolia]	Paclitaxel	Anti-cancer; Kaposi sarcoma
Poppy *[Papaver somniferum]*	Noscapine Morphine	Anti-tussive; (poss.) anti-cancer activity Relief from moderate-severe pain
Autumn crocus *[Colchicum autumnale]*	Colchicine	Anti-gout, anti-inflammatory agent; (poss.) anti-cancer activity

Basic theory

Western synthetic drugs generally act to either stimulate or depress normal body biochemical and physiological functions. They may act systemically and non-specifically upon all cells within the person's body, as with chemotherapy. Alternatively, the drug may exert its effect locally in specific cells or tissues, or upon the affected organ alone, as with the proton pump inhibitors.

Furthermore, the drugs may exert their action on the surface of the cell, or on membranes, ion channels or other structures within the cell. They may also act by inhibiting key enzymes in a biochemical cascade within a membrane or organ which are essential for regulatory or metabolic performance.

Pharmacological studies revealed that minute amounts of specific substances could have extensive effects on the body's physiological systems, and slight changes in their chemical structure would result in radically different responses. The structure of the cell responsible for

the effect was termed the receptor. This was viewed as a biological switch, activated or blocked by specific chemicals.

Langley (1852-1926) originally introduced the concept of the drug receptor, visualising it as a switching mechanism which could be turned off and on by specific drugs. From this time onwards, many pharmacologists in various countries, such as Dale (1875-1968), Loewi (1873-1961), and Ahlquist (1914-1983) were involved in the rapid progress of Western pharmacology.

The receptor theory was the impetus to development of numerous drugs, which stimulate, inhibit or block these receptors as a prelude to pharmacological action. Western drugs have also been developed which inhibit the passage of electrolytes and neuro-hormones across cell membranes. The table (below) lists a selection of chemically based synthetic drugs based on the receptor theory:

Table 17: Pharmacological action of Western drugs based on the receptor theory

Site	Action	Examples	Clinical usage
Membrane receptor	Stimulation	Dopamine agonists Beta agonists	Treatment of Parkinson's disease Bronchodilators for asthma
Membrane receptor	Inhibition	Beta blockers Anticholinergics	Lowering high blood pressure Treatment of mental disorders
Membrane receptor	Blockage	Serotonin re-uptake Dopamine re-uptake	Treatment of depression Anti-psychotic medication
Key enzymes	Inhibition	Angiotensin antagonists ATP Proton pump inhibitors	Blood pressure reduction Reduce stomach acid secretion
Membrane channels	Blockage	Calcium antagonists Anaesthetics	Lowering of blood pressure Paralyse nerve transmission

As the body's metabolic and physiological processes are highly complex, tightly regulated systems under the control of physis, interfering with a particular process may achieve a desired clinical outcome, but have unintended consequences elsewhere in the body. There is therefore no doubt that Western drugs based on the receptor theory will manifest as early side effects, later as adverse drug reactions, and sometimes as toxic effects on, for instance, foetal development.

The unavoidable consequences of drugs based on the receptor theory, working against physis, are shown in the following examples:

A receptor inhibitor drug is the proton pump Inhibitor omeprazole (*Nexium*) – which opposes the cellular mechanism responsible for the production of gastric hydrochloric acid. By working against physis (as hydrochloric acid is necessary for digestion), food is incompletely digested, leading to side effects and complications, such as leaky gut syndrome, constipation, osteoporosis.

A receptor blocking drug is the beta blocker atenolol (*Tenormin*). With age, inadequate diet and a poor diet a person's blood circulation is unbalanced, resulting in a decrease in peripheral blood flow and an increase in blood pressure. Atenolol blocks the beta receptor site in the heart muscle. It also blocks beta receptor sites in other tissues and organs, resulting in side effects like bronchospasm, confusion and depression centrally. The real underlying problem is not addressed properly, and other problems are created. Not only is the underlying problem of hypertension addressed, additional side effects are created.

Stimulating drugs are dopamine agonists such as bromocriptine (*Parlodel*). In Parkinson' disease there is a progressive loss of the neurotransmitter dopamine, so conventional treatment often involves administering a dopamine agonist. Side effects like hypotension, confusion and heart rhythm disturbances often ensue.

Listed below are the short- and long-term side effects of some categories of Western drugs.

Table 18: Short- and long-term Adverse Drug Reactions of some Western drugs

ADR Type Drug	Common	Uncommon	Chronic use	Late developing	Long term
Anti-retrovirals [*Protease inhibitors*]	Abdominal pain Diarrhoea Flatulence	Dizziness Headache Insomnia Mood swings	Hepatitis Alopecia Anaemia Rash	Raised cholesterol Ingrown nails Gynaecomastia	Liver failure
Anti-hypertensives [*ACE inhibitors*]	Hypotension	Headache Dizziness Fatigue		Hyperkalaemia Renal impairment	Persistent cough Congenital abnormalities
Anti-asthma drugs [*Bronchodilators*]	Tachycardia	Effects on the heart			Deterioration of lung function
Anti-inflammatories [*Corticosteroids*]	Hypertension	Eye damage Depression Anxiety	Peptic ulceration Hypogonadism Hypothyroidism	Hyperglycaemia Diabetes mellitus	Osteoporosis Skin damage

Safety of Tibb and other herbal remedies

There may be many different activities present in a single herb or, as with many herbal remedies, a combination of several herbs working in combination or synergistically for optimum effect.

In Tibb, physis is responsible for maintaining homeostasis between the many physiological and metabolic functions operating within and between the various body systems. With today's technological advancements we know that these functions, are carried out by various neurotransmitters, enzymes, hormones, cytokines and other signalling factors which communicate through receptor sites – all under the control of physis. Collectively they act holistically on several disorders, which may at times be seemingly unrelated to each other.

This can be illustrated by inspection of *Rauwolfia serpentina*.

Rauwolfia contains many different phytochemicals, including glycosides, flavonoids, tannins and alkaloids, of which more than 50 have been identified. When using the whole plant, high blood pressure is effectively lowered by the major active alkaloid, *reserpine*. However, there are other alkaloids within the plant which also exert

distinct pharmacological actions; adrenergic blocking activity (from *ajmalicine*), antiarrhythmic activity (from *chandrine*), and hypnotic activity (from *yohimbine*). In addition, the herb contains the alkaloid *rauwolfine*, which increases blood pressure, thus preventing blood pressure from dropping too low. When reserpine alone is used it is effective in reducing blood pressure. Unfortunately, there are several possibly serious side effects such as depression, nausea, headaches and dizziness. This has led to the use of reserpine being severely restricted in clinical use. If the whole plant is used, very few if any side effects result, highlighting the safety of using the whole plant as opposed to isolated active ingredient.

Whilst the above example highlights the side effect associated with a potent medicinal herb such as *Rauwolfia serpentina*, the same rationale may well apply to herbal supplements such as curcumin (sourced from turmeric) - obviously to a lesser extent.

Pharmacotherapy in Tibb

Pharmacotherapy in Tibb is intricately linked to its fundamental philosophical principles and is consistent with the temperamental and humoral theories. Over the centuries, these principles have enabled Tibb practitioners to understand the nature, relevance and practice of aetiology, pathology, diagnosis and treatment. Tibb pharmacotherapy aims to (a) eliminate the causes; (b) normalise the humoral balance; and (c) restore qualitative harmony to tissues and organs.

Whilst there have been numerous compilations of Tibb pharmacopeia's over the past centuries, Volume 2 of Ibn Sina's *Canon of Medicine* is still the most comprehensive. It describes more than 670 ingredients, mainly herbs, but also a number of animal and mineral ingredients. Staple foods such as grains, bread, milk, honey, dates and beans are also included. This volumes highlights the following features:

Temperament. The temperament/quality of ingredients in Tibb is as important as their pharmacological actions. For example, garlic,

fenugreek and cinnamon are described as having Hot and Dry qualities. Coriander, borage, cardamom are Cold and Moist; basil and tamarind are Cold and Dry; and agrimony, ginger and black pepper are Hot and Moist.

Properties of drugs. Ibn Sina described the pharmacological action of specific drugs in relation to their physical properties, and their effect on humours. These include their potential for coagulation or dehydration, whether they are heavy or light, dense or tenuous, viscous or mucilaginous, oily or viscous, and also whether they are fragile in nature.

Degrees of activity. Ibn Sina categorised ingredients into four degrees of activity, or *Orders,* depending on their overall effect on the human body. They take into account: (a) The potency of the substance's pharmacological action; and (b) The intensity of the quality or temperament associated with the specific ingredient.

- *Ingredients in the first Order:* These include pharmaceutically active foods (*nutriceuticals*) and dietary ingredients. They have only a minor pharmacological action but do contribute to health maintenance and the healing process e.g. quince, almonds, coconut.

- *Ingredients in the second Order:* Have a definite pharmacological action which is exerted as long as the active ingredient circulates in the bloodstream. Adverse effects may arise from these ingredients, especially in the elderly and children, e.g. agrimony, cinnamon and ginger.

- *Ingredients in the third Order:* Have the capacity to overwhelm the functions of the body. Large dosages of products containing these ingredients can lead to serious side effects e.g. lobelia and artemisia.

- *Ingredients in the fourth Order:* Are highly potent, potentially toxic and possibly life-threatening, as they can either increase or decrease the functions of the body beyond the extent that supports life. Products containing these ingredients are always administered

with other agents, which act to reduce their toxicity e.g. arsenic, opium and cannabis.

- For the *maintenance of health*: Ingredients from the first Order and to a certain extent the second Order should be selected.

- For the *treatment of most conditions*: Ingredients from the second and third Orders should be selected.

- For the *treatment of very serious conditions*: Ingredients from the fourth Order may be selected, especially if the condition is potentially life threatening. However, they should not be used for extended periods.

Differences between Tibb pharmacotherapy and other herbal medication

In addition to the qualitative and humoral imbalance associated with an illness condition, another important difference between Tibb pharmacotherapy and other disciplines is the temperament or quality of the medication.

For example, the pharmacological action of *Commiphora mukul* is often included in cough and colds formulations, as it counteracts the specific symptom of runny nose; however, it also has Hot & Dry qualities which oppose the Cold & Moist symptoms.

This is a general rule in Tibb pharmacotherapy that the medication's temperament is opposite to the qualities associated with the condition. In fact, the term 'allopathic medicine' (*allo*: Greek, opposite) originates from this understanding. That is, both the pharmacological action and temperament of the medication are important in relation to the clinical features associated with the ailment. This awareness of the importance of a medication's temperament or quality in relation to the disease's qualities is unique to Tibb herbal products.

The Tibb approach therefore offers a rational approach to therapy. It logically and systematically describes the wide range of pharmacologically active drugs, whether derived from plant, animal or mineral sources. It includes (a) the drug's action in redressing any qualitative/

humoral imbalance underpinning the clinical disorder, and (b) the degree of effect, or potency, which it exerts.

Differences between Tibb and Western medication

There are real, substantial and clinically important differences between Tibb pharmacotherapy and Western pharmacological drug treatment. The main features are:

- Holistic approach. Tibb embodies a holistic approach, based on the temperamental and humoral theories in its application of pharmacotherapy. The herbal remedy ingredients possess many active constituents (alkaloids, saponins etc.) which work at the cellular and humoral level, supporting, protecting and enhancing the body's vital physiological and biochemical processes. Essentially, Tibb adopts *a multi-targeted approach*.
- Natural form. New-to-nature, synthetic chemicals, which comprise many Western drugs, have a specific but limited pharmacological action, which is to interfere with normal physiological and biochemical processes, so disturbing inner homeostasis. Tibb herbal remedies, on the other hand, act at three levels.
    - Firstly, they help to restore qualitative, humoral and temperamental balance, which has been upset during disease or disorders such as fatigue and IBS.
    - Secondly, they act pharmacologically on specific physiological and metabolic processes, by interaction with receptor mechanisms.
    - Thirdly, they regulate internal body processes, by working with physis. In doing so they enhance inner healing.
- Spectrum of action. Tibb herbal remedies, being based upon the whole plant, contain not only the active component, but also its precursors and its metabolites. These collectively ensure smooth pharmacological action and avoid excessive effects on basic metabolism. However, Western medication usually has a single, major effect, with little control exerted over the prevention of excessive action.

- **Multiple actions.** One agent alone may be able to attenuate specific symptoms in a disorder arising from a single cause, as many Western drugs successfully do. However, many disorders, especially those of a chronic nature, are the result of disharmony arising from multiple causes. In these cases, a herbal remedy with several different modes of action is more likely to be successful in ameliorating the symptoms of the disorder
- **Synergy.** The active components present in a herbal remedy act in synergy. Experience and observation strongly suggest that the general pharmacological response to a herbal combination is not based solely on one active component, but on the overall synergistic activity arising from several compounds. This property is very important when the disorder is so severe or intractable that no single ingredient is sufficiently effective. Western drugs, on the other hand, are usually given in combination to either boost the desired effect by acting on different physiological mechanisms, or so that one component drug counteracts the side effects of the main drug.
- **Metaphysical action.** Unlike Western medicine, which acts purely in the physical dimension, Tibb herbal remedies claim to exert a proportion of their effect in the metaphysical context.
- **Side effects.** Because of the above differences, Tibb medication, has a limited side effect profile compared to Western drugs.

Combining Tibb medication with Western drugs

For various reasons there has been a substantial increase in the consumption of herbal remedies in recent times. They are often combined with one another, and are commonly used simultaneously with Western drugs, taken for a wide range of acute, chronic and recurring disorders.

As there is a significant and increasing number of people taking herbal remedies simultaneously with Western drugs, there is a distinct and real possibility of herb-drug interaction, analogous to the Western drug-drug interaction that is now well established and extensively documented.

The original indication that an herbal agent could interact significantly with the action of a Western drug was the observation, 20+ years ago, that the consumption of grapefruit juice markedly reduces the metabolism of the immunosuppressant ciclosporine in patients following transplantation. We now know that the metabolic enzymes (comprising the cytochrome P_{450} system) of the patient's liver were being inhibited, so higher levels of the active drug were being maintained for a longer period of time.

The herbal component does not combine with a drug to form a toxic intermediary. In most cases changes to the absorption of a drug, or its metabolism within the body, is most likely the basis for interaction. Several herbs can induce or inhibit enzymes, resident in the liver or intestinal tract walls, which are responsible for drug metabolism. These enzymes, mainly of the cytochrome P_{450} type, are made less effective, so the level of non-metabolised drug rises within the systemic blood circulation, and clearance of the unchanged drug and its metabolites is reduced.

The interaction of herbs and drugs is only to be expected; if a herb triggers a pharmacological response, then it could conceivably interfere, to a greater or lesser extent, with a Western drug's activity. This has important ramifications for drug therapy, as many people are taking not one, but several, potent Western drugs. The potential for herb-drug interaction is therefore immense when the number of herbal products coming into popular use is considered.

The mechanisms by which a herbal product interferes with a drug, or *vice versa*, are not fully understood in most cases. There are, however, a number of possible activities which explain the interaction; these are divided into *pharmacokinetic* and *pharmacodynamic* interactions.

Pharmacokinetic interaction

Inhibition of absorption. The herb or drug acts on the other active agent to reduce or minimise its absorption. A number of agents have been identified:

- Pectins, resins, tannins may bind to certain antibiotics, preventing unimpeded absorption of the drug.

- Garlic (*Allium sativum*) interacts with several drugs, by reducing their absorption into the body.

Enhancement of absorption. This is usually the result of increased gastric emptying or shorter gut transit time.

- Laxatives can increase these processes.
- Certain saponins can increase gastric emptying, so enhancing the rate of gastric emptying.

Increase in drug metabolism. The herbal product promotes an increase in metabolic enzymes in the liver, so boosting the breakdown or elimination of drugs.

- St John's Wort reduces the plasma concentrations and increases clearance of a wide range of drugs.

- Echinacea affects the metabolic clearance of caffeine and certain anti-anxiety drugs.

Binding of drug by the herb component. Some antibiotics are chemically bound to certain botanical substances. This prevents or inhibits absorption through the intestinal wall, as the drug-herb complex is either too big to absorb, or too poorly soluble in the intestinal fluid.

Pharmacodynamic interaction

Electrolyte depletion. Laxatives and diuretic drugs can reduce sodium and potassium levels in the body, and so lead to adverse cardiac effects.

The pharmacological effect is intensified. Certain herbs have specific pharmacological effects. If a drug is being co-administered, an additive or perhaps synergistic effect can arise.

- Hypoglycaemic drugs and herbal products used to treat diabetes may act together.

- Herbs which contain the alkaloids caffeine and ephedrine, or similar, may increase nerve stimulant drug action.

Herbal medicine is one of the oldest forms of medicine used for the treatment of physical as well as psychological maladies. The specific mechanisms of action of many of these remedies are undergoing rapid and accelerating study, with the objective of ensuring that their clinical effects are maximised. Today, production methodology and extensive research studies ensure that herbs and other components used to make herbal medication are stable, well formulated and safe when administered to the patient. Herbal products exert their beneficial action in numerous pharmacological routes, many only recently discovered.

Despite the massive inroads made by modern Western medicine, herbal and natural therapies are experiencing a revival in usage, partly as a result of extensive research in their modes of action and clinical efficacy. Another notable reason for this renewed interest and increasing demand is due to the side effects often associated with Western medication.

Western drugs exert their effects in only a limited number of ways. They stimulate, or inhibit, or otherwise interfere with the functioning of drug receptors; or reduce the activity of certain enzymes involved in key biochemical or metabolic processes; or they affect cell membrane permeability to certain ions. In contrast, herbal remedies differ in their mechanism of effect as they contain a wide range of active agents, their precursors and metabolites, which allow for close regulation of physiological and biochemical processes.
Most herbal products have been around for millennia, and the efficacy of individual formulations has been established empirically by extensive clinical experience and by observation. Whilst some of the pharmacological actions of herbal medicines have been clearly detailed and identified through time and tested use and recently through technological advancements; there are many others of which we only have an inkling of modes of action.

In Tibb, Pharmacotherapy is without a doubt an important therapeutic option, based on the fundamental principles embedded in the temperamental and humoral theories. Ibn Sina's pharmacopoeia laid the foundations for Tibb pharmacology, allotting each herb to one of four categories, or orders, of clinical efficacy and patient safety. In addition, unique to Tibb as compared to other herbal remedies is the concept of qualities in relation to illness conditions.

Tibb Pharmacotherapy makes available to the intricate wisdom of physis, many active constituents within herbal formulations, thereby allowing the body's intrinsic healing ability to restore homeostasis at the temperamental and humoral level - 'treatment comes from the outside healing comes from within'.

LIFESTYLE MODIFICATION AND EMOTIONAL SUPPORT THERAPY

The modern Western way of life leads inexorably to the accumulation of toxins in the body. These can be natural, as in people suffering from constipation or poor eating habits; or they can be artificial, due to the build up of 'new-to-nature' chemicals in the air we breathe, the water we drink, and the food we consume. As we noted earlier, Hippocrates introduced the concept of pepsis, whereby the body preferentially selects the parts of our daily food and drink that the body can use, and rejects the constituents which are of no immediate benefit. These are eliminated from the body as natural waste. An additional aspect is that healing in many cases with lifestyle modification and emotional support therapy can be reasonably carried out by the person experiencing ill-health, without recourse to the intervention of a healthcare professional. This form of personal empowerment is a very important aspect of Tibb.

1. Dietotherapy

> *"Leave your drugs in the chemist's pot if you can heal the patient with food"* [Hippocrates]

Rationale

The rationale behind dietotherapy is to advice on appropriate foods that restore humoral and qualitative harmony. This is achieved with a diet that has qualities opposite to the signs and symptoms associated with the illness. Disorders associated with a combination of qualities are mostly acute conditions which arise from a qualitative imbalance, or Tibb's Pathway 1).

Dietotherapy is used to counter sudden qualitative changes by consuming foods that restore the balance of qualities. An example is treatment of the acute disorder the common cold, which is qualitatively Cold & Moist. Consumption of hot chicken soup, and hot honey and ginger drinks is traditionally used to balance the sudden qualitative distortion of the disorder. The patient is also advised to abstain from foods that will aggravate the disorder, such as cold or iced drinks and dairy products.

This approach applies equally to chronic disorders such as diabetes, which is a qualitative imbalance in moistness. The Tibb recommended treatment includes Hot & Dry and Cold & Dry foods and drink, which help normalise the humoral balance.

Guidelines for dietotherapy

Limit intake of food during disorders. This is achieved by reducing the number of meals, or by limiting the size of the meal. Furthermore, emphasis should be more on the value of nutritious foods.

Influence of temperament on dietotherapy. The temperament of an individual should also be taken into account when applying therapy. For example, in treating a melancholic/bilious patient's arthritis (a Cold & Dry disorder) which has an overall quality of dryness, changes to the diet should be aimed at increasing moistness. In the same vein, a melancholic/phlegmatic patient, having an overall quality of coldness, his/her arthritis will be more as a result of excess cold, therefore lifestyle factors should be aimed at more heat.

Categories of food. The overall qualities of food categories, such as proteins (which lead towards dryness), carbohydrates (which lead towards moistness) or fats (which lead towards heat) also need to be taken into consideration. For example, disorders characterised by dryness (that is, Hot & Dry or Cold & Dry disorders) should limit the intake of *proteins*, and those with an overall quality of moistness (Hot & Moist – Cold & Moist disorders) should avoid carbohydrates.

The qualitative nature of different foods. Although both mutton and bananas are qualitatively Hot & Moist, one is a meat and the other a fruit. The qualitative effect of these foods will therefore differ. This is because the overall quality of meat has more dryness, compared to fruits, which have more moistness.

Metabolism of foods. All foods and drinks undergo the processes of digestion and metabolism. The efficiency of metabolism therefore needs to be taken into account, because the strain on the digestive system varies from food to food. For instance, the energy and time required to digest fruits is much less than for meats.

Temperature of food. The qualitative effect of the temperature at which food and drink is consumed has a particular influence. A good example is water. When consumed at room temperature it has a moderate cooling and moistening effect. However, when consumed chilled, cold water will have a cooling effect, whilst ice will have a drying effect.

Constituents of food. The nutritional constituents contained in different foods need to be taken into account. They have, for instance, different amounts of calories, vitamins and minerals, and white flour provides far less nutritional value than oats, which has the same Hot & Moist quality.

By-products of food. The end result of the foods consumed once metabolism and digestion have occurred is relevant. For instance, the link between unsaturated fats and the increase in cholesterol levels, or the increased production of uric acid after consuming red meat, should be taken into consideration.

The taste of food. Another consideration is that taste is indicative of the qualities of foods. For example, consuming sour foods lead automatically towards dryness and coldness.

Seasonal changes. The season during which dietary changes are recommended has an effect. For example, foods with heating qualities will have a greater influence when consumed during summer as opposed to winter.

2. Physical Exercise

The therapeutic benefit of reasonable, controlled and regular exercise is well documented.

Physical exercise is invaluable in aiding numerous chronic clinical conditions, from hypertension and lipid disorders, to osteoporosis and digestive disorders.

Rationale

From a therapeutic point of view, movement results in an increase in heat quality, whereas rest results in the opposite. The rationale behind the benefits of physical exercise and rest should be seen in this context. Exercise as a therapy is used to augment heat and dryness qualities. Success or otherwise depends on the intensity of the exercise. The higher the intensity, the greater is the amount of heat generated. Light exercise such as walking and moderate aerobics is generally suitable for all types, and beneficial in most disorders.

Clinical application

When physical exercise is used for therapeutic benefit, the healthcare professional needs to take into account:

- The qualities (especially the dominant ones) associated with the illness. For instance, ailments associated with heat are adversely affected by strenuous or excessive exercise.
- The motivation of people of different temperament towards exercise as therapy. Phlegmatic people, for example, are not generally inclined to exercise regularly, whereas those of a melancholic temperament might be more enthusiastic.

- The patient's practicality or suitability to follow an exercise programme. Factors such as occupation, lifestyle circumstances, age, extent of illness and even emotions have to be considered.

3. Breathing and Meditation

Breathing, meditation and mind-body integration exercises are currently in vogue. Their benefits though, are undisputed, especially in the stressful and pollution riddled climate we live in. Faulty breathing is known to underlie the onset and development of a number of clinical disorders.

Breathing

> *"Air is the source of life, and also provides the source for the activation of energies to form body fluids and maintain life"* [Ibn Sina]

Rationale

The fundamental purpose of breathing is to provide the lungs with a constant supply of air from which the essential oxygen can be absorbed into the blood and circulated to all the body's tissues and organs. Breathing exercises are beneficial for all types of illness. In fact, conscious breathing exercises coupled with other therapies such as meditation and colour visualisation affect mood and emotions significantly. The main outcome is the relaxation effect, which aids the recovery process significantly. Controlled relaxation and breathing oxygenate the body, improves circulation and further provides benefits similar to the state of sleep, which has a cooling and moistening effect. The added benefit is that the effect produced from these exercises increases stimulation of Physis through active focus on healing.

Breathing directly influences our body's the unconscious *(autonomic)* processes. Unlike other functions of the autonomic nervous system, breathing is the one over which we can exert conscious control. Inadequate breathing adversely affects *aerobic respiration*, which is the main driving mechanism for the body's energy provision. An optimum oxygen level is especially beneficial to our brain cells. Regular, con-

trolled breathing exercises programs our subconscious to breathe correctly, even when we are not aware of it.

Poor breathing adversely affects Physis function. Inspiration of air which is inadequate in volume, or oxygen-poor, or laden with toxins inevitably leads to metabolic disharmony, resulting in a wide range of ailments.

Several traditional healing paradigms, such as yoga, use breathing techniques to aid healing and improve health. Western medicine now, belatedly, recognises this and often advises better breathing as supportive therapy.

The benefits of improved breathing technique are well documented. They range from relief of chronic headache and tiredness, to reduction in blood pressure and heart rate, to alleviation of anxiety and sleep disorders. The focus of breathing exercises, of which Tibb has several, is to restore overall calmness, control, focus and stability – that is, internal harmony or homeostasis. The persons most likely to benefit from improved breathing are those of a bilious or melancholic temperament.

Meditation

Meditation is both a form of mental therapy for stress-related disorders, and a means of calming the mind.

Meditation has been used for centuries in the East, and more recently in the West, as an effective approach to spiritual enlightenment. It is an integral part of Ayurvedic medicine, Yoga, and T'ai Chi.

Rationale

Many emotional ailments originate from stress and the emotional trauma arising from the times in which we live. Materialism, information overload, the inordinate demands of consumerism, lack of religious conviction and spiritual awareness, the socio-economic challenges that confront us, etc., all have major health implications, and

play havoc with our emotions. Meditation in one form or another is a time honoured method for dealing with such stress.

It requires no special equipment, and can be practiced in any suitable time and place. It allows a person to redress where a person's thoughts and emotions negatively control daily behaviour.

During meditation, alpha waves are produced in the brain, which in turn encourage the parasympathetic section of the autonomic nervous system to prevail. This leads to the suppression of the 'fight, fright, flight' response, and the attainment of profound rest. At the same time, the brain and mind become more alert and vigilant. Lactate is a substance produced by anaerobic metabolism of glucose in the skeletal muscles. During states of anxiety and stress there is a substantial rise in the level of lactate in the blood. Meditation has been shown to reduce these levels markedly.

Emotional disorders are predictably the outcome of the constant strain on the brain and peripheral nervous system. This leads to disorders associated with the brain and the nervous system.

Clinical application

Meditation beneficially affects muscle tone, breathing efficiency, brain activity and problem solving. Physiologically it reduces stress hormone levels, elevated blood pressure and heart rate, and generally improves blood circulation. People with hypertension and headaches related to poor blood supply to the scalp often benefit.

Meditation can affect a person's mental well-being. Anxiety, self-pity, low self-esteem, feelings of inadequacy, for example, often benefit from regular meditation sessions.

Another positive effect is that prescription drug use is reduced dramatically. When combined with breathing exercises, the benefit is raised significantly. The most appropriate breathing exercise in meditation is a Slow and Deep Breathing which elicits a calming effect.

4. Visualisation

This technique applies imagination to create a sense of well-being, encouraging the replacement of negative attitudes and behaviour with positive ones.

Rationale

Visualisation has been applied therapeutically in the East for millennia. More recently in the West it has been used in conjunction with bio-feedback and other relaxation techniques. It affects the cerebral cortex of the brain, which is involved in information processing. In particular, it influences the right hand side of the brain, which is concerned with imagination, creativity, and intuition, as opposed to the left hand side, which is more concerned with logic, mathematics and language. It may also involve the pituitary gland, so exerting a hormonal effect.

Clinical application

Experience of visual techniques has shown that they beneficially affect chronic pain, high blood pressure, skin disorders such as eczema and depression. People with unwanted habits, such as smoking, excessive drinking, and overeating, also derive benefit.

5. Colour therapy

Colour therapy is a type of holistic healing that uses the visible spectrum of light and colour to affect a person's mood and physical or mental health.

Rationale

Colour affects mood and influences behaviour, and a person's choice in colour points to their particular temperament. The theory of colour therapy *(chromotherapy)* states that all matter, including living tissue, is composed of energy. Each particle vibrates at its own specific frequency. A deviation from the respective frequency is believed to cause either depletion or excess of the ideal frequency, resulting in disease.

In Tibb the frequencies can be compared to the qualities of heat, moisture, coldness and dryness. Tibb understands the influence of

qualities in relation to temperaments, which places emphasis on the *quality of the colours* and its relation with the temperaments, as well as its *corresponding effects* on the body by the autonomic nervous system.

Clinical application

Colour therapy often benefits those with mental problems, specifically depression, anxiety and eating disorders. Emotional problems, such as certain phobias, post-traumatic stress disorders and skin conditions like eczema, dermatitis and, psoriasis also respond.

6. Music Therapy

The rhythms and harmonies of music exert a powerful impact on our senses.

Music (or *Sound*) Therapy involves the sharing of musical experiences between the patient and therapist, or as an adjuvant for home therapy.

Rationale

Music, rhythm and sound have long been associated with healing. Unfortunately, the use of music as a healing option has been somewhat subdued by Western medicine, which questioned its scientific basis. However, recent research has revealed that it is a valuable option when treating mental and emotional disorders. Music is a means of resolving inner conflicts, and restoring personal confidence and self-esteem. It can be considered an 'ice-breaker' for other therapies, such as psychotherapy.

Tibb recognises that attitudes and responses to music vary considerably, as part of a person's temperament. Some are deeply affected, whilst others are not. The rationale behind the use of music therapy is associated with the effect of different types of music on both a person's temperament and the clinical disorder being treated. A person with a bilious temperament responds differently to certain types of music compared to someone who is phlegmatic. The effect of music

on the patient's qualitative balance needs to be taken into account when applying music as a treatment. For example, a person with a Cold & Dry condition should avoid listening to music that is sad or depressing, as it will aggravate the disorder.

Clinical application

Actually *making* music lets a person express a spectrum of emotions, ranging from joy and tranquillity, through to anger and frustration Music therapy seems to be particularly valuable in treating numerous disorders as well as specific groups of patients. They include children with behavioural, sensory and learning difficulties which prevent the child freely expressing him- or herself. People with severe mental and emotional problems generally respond positively, as do the elderly, aged and terminally ill. Others who benefit are those who are grieving, mothers-to-be, and physically challenged people.

Conducted by a qualified therapist, music therapy is completely safe. Treatment is most beneficial if there is a good relationship between patient and therapist, as the experience is designed to help the patient reveal deep, submerged conflicts and stress-related problems.

7. Psychotherapy and Counselling

This therapeutic approach describes a number of techniques which help patients to deal with mental and emotional disorders.

Rationale

Emotions are our natural way of expressing our reaction to changes in our internal or external environment. All emotions, from happiness, gratification and euphoria to anger, worry, sadness, shyness, fear, and crying, have an effect at psychological and spiritual levels.

The humoral link to psychological problems is of special significance in Tibb. The brain is qualitatively moistness (phlegmatic) which can be imbalanced through increased moistness (phlegmatic) or dryness (melancholic) disorders.

The potential role of spiritual healing should be considered by the healthcare worker, and perhaps included in the treatment. Appropriate treatment needs to be selected depending on the patient's religious conviction, the putative cause of the problem, and the symptoms presented.

Different temperaments are inclined to different emotional states. Depression is common in melancholic people, and anger and aggression in bilious people, for example. Likewise, sanguinous people are often troubled by anxiety and depression, and phlegmatics by fear and panic attacks.

Clinical application

Psychotherapy and counselling benefit those with mental ailments, especially depression, anxiety and eating disorders; emotional problems, such as phobias and post-traumatic stress disorder; and skin conditions like eczema, dermatitis and psoriasis.

8. Aromatherapy

This therapeutic technique uses oils topically, either alone or in combination with therapeutic massage, to alleviate numerous chronic disorders.

Plant essences have been used for thousands of years for healing purposes, and there has been a recent reawakening of interest in aromatherapy. Essential oils are used in a variety of ways, and often as part of massage therapy. Over fifty individual oils are used in Aromatherapy.

Rationale

Essential oils are synthesised in many plants, shrubs or trees. Their role is to protect the plants, etc., from grazing animals, parasites and microbes, and from the encroachment of other plants. Specific plant oils provide therapeutic benefits, and often having antiseptic, antimicrobial, sedative and tonic properties.

Tibb recognises the role of essential oils, Eucalyptus and rosemary

oils are known to be effective nasal decongestants. Sage has a beneficial effect on blood circulation.

Essential oils help restore Physis or harmony to the person, thus enhancing the body's natural defences such as the immune system. Aromatherapy therefore benefits numerous ailments affecting different parts of the body.

Knowledge of the qualitative nature of the oils is important to the practitioner. Common aromatherapy oils, together with their qualities, include: *rosemary* and *eucalyptus* (Hot & Dry), *lavender* and *chamomile* (Dry & Hot), *peppermint* and *clary sage* (Hot & Moist), *Ylang-ylang* and *coriander* (Cold & Moist), *grapefruit* and *rose* (Cold & Dry).

Clinical application

Applying essential oils is gentle, and suitable for people of all ages, and generally free of adverse reactions if used properly. However, pregnant women should exercise caution with this treatment.

Aromatherapy is effective in treating stress related symptoms such as insomnia and anxiety. It also benefits people with gout or arthritis, such as painful limbs, muscles and joints, respiratory complaints, burns, rashes, and infections of the mouth, throat and urinary tract.

Aromatherapy has proven beneficial in chronic disorders. It has been found to have prophylactic properties – that is, it may prevent the development of certain disorders.

ELIMINATION

In Tibb, true healing can only happen when the elimination of waste, toxins and excess/abnormal humours are effectively dealt with, either through natural or induced modes of elimination.

Natural modes of elimination

These include the following:

- Respiration – the elimination of carbon dioxide and other toxic gases through the lungs.
- Defaecation – the passing of stool, the residue of digestion, via the lower digest tract. The liver is the main organ involved in this process, working together with the gall bladder.
- Urination – the excretion of urine from the urinary bladder.
- Perspiration – excretion via the skin, removing toxins dissolved in the sweat and sebum.
- Menstruation – the periodic discharge of blood and fragments of the endometrium lining via the vagina.
- Emotional routes – excitement, anger, worry, sadness and fear play a part in the elimination of toxins from our body.

There are other natural mechanisms by which unwanted materials are rejected by the body. These include: coughing and sneezing, vomiting, flatulence, tears, ear wax, and ejaculation.

Body temperature and elimination

An infant's average body temperature is slightly higher than that of an adult. This higher body temperature is necessary to process all the by-products emerging from the infant's rapid growth. As a result, the infant experiences a whole range of elimination episodes – vomiting, diarrhoea, fever and sweating, and frequent urination.

Another example is the body's immune system. This works best at a temperature which is higher than normal. The body's natural response is thus fever when the immune system is hard at work to ward off infection or re-establish homeostasis. Unfortunately, many disorders which present with fever as a symptom tend to be treated with potent antipyretics. The temperature is lowered, but at the expense of the body's built-in defence mechanisms.

Induced modes of elimination

Induced modes of elimination also known as regimental therapies, are supervised therapies for removing toxins and excess or abnor-

mal humours which may be present at a vascular level or have been incorporated into body tissues. These therapies assist Physis in restoring homeostasis and maintaining continuity between the different physiological systems.

The science and art of medicine which is essential for the elimination of excess/abnormal humours has been extensively elaborated on by Ibn Sina.

Ibn Sina's guidelines on elimination. According to Ibn Sina, elimination procedures not only dislodge or divert the diseased matter from the site of illness, but also direct this matter to the appropriate exit routes for elimination.
From Ibn Sina's *'Canon of Medicine'*, the following guidelines are noted:

- Elimination procedures vary in their degree of harshness. Purgation is harsher than laxatives are.
- Some elimination procedures benefit from the use of herbs during the concoctive and eliminative process.
- Main organs and tissues should not be risked by using potent drugs.
- Organs that are diseased or dysfunctional should be treated more carefully.
- Medicines or herbs which are irritant or injurious should be avoided.

Examples of these principles in practice are:

- Purgatives and enemas attract diseased matter towards the intestines, from where they are expelled in the faeces.
- Sneezing originates in the upper respiratory tract, diverting toxins, microbes etc. towards the nostrils for expulsion.
- Diuretics divert toxic material towards the kidneys, where it is removed via the urine.
- Perspiration, massage and cupping direct toxins, etc., towards skin for elimination in the sweat.

Factors affecting elimination efficiency. The principles of evacuation embrace several aspects of the patient. Factors to be evaluated before applying an eliminative procedure include the patient's temperament, age and sex. Also important are the patient's lifestyle quality, physique, overall health state and presenting symptoms. The practitioner will also assess the nature of the humoral imbalance to be eliminated.

INDUCED MODES OF ELIMINATION

The main induced modes of elimination are:

- Sneezing
- Emesis
- Perspiration
- Hydrotherapy
- Diuresis
- Enema
- Purgation
- Massage
- Somatic balancing technique
- Leeching *(hirudotherapy)*
- Venesection
- Cupping

1. Sneezing

The nose is the gateway to the brain and to consciousness.

Rationale

Medication, as nasal drops/oils, sprays or snuffs, given to induce sneezing, cleanses accumulated phlegmatic humour and wastes from the head, face and neck. Induced sneezing also improves memory and eye sight, and voice quality. Medication administered nasally helps to correct disorders affecting the cerebral, sensory and motor functions.

Historically, the use of 'snuffs' was a common practice. In fact the customary response of 'bless you!' to a person who sneezes is reflective of the importance of sneezing as a blessing for good health.

Clinical application

Several ailments, mainly of the upper respiratory tract, respond positively to sneezing. They include nasal allergies, polyps and sinusitis,

and loss of smell (anosmia). Other disorders not directly linked are certain headaches, trigeminal neuralgia and Bell's palsy.

2. Emesis

Emesis, or vomiting, is the reflex action by which the stomach contents are expelled through the mouth.

Emesis can be induced by certain irritant substances such as ipecac, mustard and salt. It is valuable when there is congestion in the lungs, which causes repeated attacks of bronchitis, cough, cold or asthma. The objective of this therapy is to induce vomiting to get rid of the excess phlegmatic humour. Emesis is common in infants to eliminate the phlegm from the stomach and lungs.

Rationale

Tibb considers that vomiting purifies and invigorates the stomach. It is also useful in sharpening eyesight, and helps to eliminate headaches. Emesis is applied when there is an accumulation of abnormal humours, especially the phlegmatic in the stomach and respiratory organs. Ghee, a clarified butter/oil combination, has traditionally been used as an emetic, as it avoids oesophageal corrosion. Hippocrates recommended that vomiting should be induced on two consecutive months, after meals.

Clinical application

Inducing vomiting can help alleviate a number of ailments which affect the upper respiratory and digestive tracts. Allergic rhinitis, congestion of the nasal passages and sinuses, infections, especially coryza, and phlegmatic asthma often respond. Digestive ailments characterised by a build-up of phlegm, such as chronic indigestion and tonsillitis will likewise improve.

3. Perspiration

Perspiration is the process by which toxins are eliminated through the skin.

Rationale

The skin is the largest organ in the body. Perspiration leads the humours to fluidity, making it easier for them to flow out of the system. It opens up the pores and rids the body of impurities through the sweat glands.

Types of perspiration

There are two types:

- Insensible perspiration – the formation of sweat that evaporates almost immediately from the skin, so is not visible;
- Sensible perspiration – sweating which is visible on the skin as drops of liquid.

There are several ways of inducing perspiration. Steam baths (Turkish; *hammam*) and sauna are popular methods, with intense physical exercise and the use of hot packs or insulated blankets as common alternatives.

Heat is the main quality associated with perspiration. Depending on the method used (sauna or steam), the extent of loss of moisture can be beneficial or harmful. Steam baths can be of benefit in most disorders, whereas saunas should be used with caution in qualitatively Dry & Hot and Hot & Dry disorders.

Clinical application

Sensible perspiration is most effective in removing toxins, both natural and synthetic. Steam or Turkish Baths are recommended when problems arise from impurities in the body, such as drug or anaesthetic gas residues. Profuse sweating by these means helps to carry impurities out through the pores of the skin. This type of perspiration may also be a short-term answer to water retention in the body.

Several ailments benefit from induced perspiration, including skin disorders such as psoriasis, obstruction of sweat and sebum ducts which lead to body odour, and undue fever. Some symptoms of arthritis, especially body aching, often benefit.

4. Hydrotherapy

Hydrotherapy is the use of water for health promotion or treatment of diseases, with variations of temperatures, pressure, duration, and site.

Hydrotherapy has been used for many centuries, especially in Greek, Roman and Arabic communities.

Rationale

Hot water dilates blood vessels, so increasing blood flow to the skin and muscles. At the same time it reduces the flow of blood to the internal organs. It soothes and relaxes. Cold water constricts the flow of blood to the skin and muscles, but increases blood flow to the internal organs. It also inhibits the biochemical reactions responsible for uncontrolled inflammation. Cold water stimulates, easing muscle tension and spasms. Hydrotherapy has a generally positive effect on Physis, so has a general tonic effect on people who practice it.

Clinical application

Hydrotherapy improves blood circulation so increasing oxygen and nutrient flow. It boosts the immune system in its efforts to combat toxin accumulation so benefiting patients with a wide range of ailments, from acne to arthritis, and sleep disorders to headaches. It is very effective in dealing with stress-related disorders of the mind and body.

5. Diuresis

Diuresis is the increased excretion of urine via the kidneys.

The processes which lead to diuresis are helpful in eliminating abnormal bilious humour and wastes from the liver and circulation through the kidneys.

Rationale

The use of natural diuretics such as tea or spring water reduces the risk of kidney stones forming. In Western medicine there is a large number of synthetic diuretics which are administered for the treatment of oedema, heart failure, hypertension and other Cold & Moist disorders. However, the relatively rapid loss of fluid can lead to electrolyte imbalance, especially loss of the mineral potassium. These often result in muscle cramps, and sometimes heart arrhythmias.

Clinical application

A number of common kidney-related ailments respond favourably to diuresis. Amongst these are hypertension, peripheral oedema, the nephritic syndrome, renal calculi, kidney infection and urinary tract infection.

6. Enema

An enema is a volume of fluid which is infused through a tube via the anus into the rectum.

An enema contains soap, sesame or olive oil, and is used to dislodge impacted faeces which form in severe cases of constipation.

Rationale

An enema cleanses accumulated toxins, especially those associated with the melancholic humour, from the lower digestive tract Regular enemas of this type are thought to reduce the risk of colon cancer developing. Enemas are used for various specific reasons, and are especially good for melancholic disorders.

Clinical application

As an enema has a preponderant local action, the ailments which respond are those originating in the lower digestive tract, such as irritable bowel syndrome, severe constipation and colitis. Other disorders which may respond are backache and sciatica, and a regular enema is often of value in reducing unwanted weight gain.

Enemas are more suitable when purgation is not ideal and where faecal obstruction exists in the colon. Enemas should not be given to someone with digestive or respiratory disorders or to young children.

7. Purgation

Purgatives, aka laxatives or cathartics, act to increase the frequency of bowel movement, or encourage the formation of a softer or bulkier stool.

Rationale

Purgation helps the body move undigested dietary material more effectively, so preventing the occurrence of blockage as ileus or convolvulus. The time of exposure of the inner lining of the lower intestine to toxins for abnormally long periods is reduced.

Purgation is the cleansing of excess of three humours - bilious, phlegmatic and melancholic – from the tissues, plus the purification of the blood toxins. A number of different herbs can be used as purgatives. Commonly used natural purgatives are aloe vera, jelapa, senna and its derivatives, milk of magnesia, ispaghula husk, and other bulking agents. When taking these agents, it is important to adhere to a restricted diet. Purgation can be done twice a year whereas the use of laxatives which is less harsh should be done at least once a month.

Strength of the purgative

- For bilious disorders, the purgative should be *light*.
- For melancholic disorders, the purgative should be *moderate*.
- For phlegmatic disorders, the purgatives should be *moderate* to *strong*.

Clinical application

A number of ailments respond favourably to purgation. They include skin disorders such as vitiligo and psoriasis, digestive complaints like constipation and hyperacidity, and anal fissures.

8. Massage

Massage is the therapeutic hands-on manipulation of the muscles and other soft tissues of the body.

> *"The way to health is to have a scented bath and an oiled massage every day"* [Hippocrates]

Massage has been practiced in the Middle and Far East for at least 5000 years, and is arguably the oldest therapy known. The relaxing and healing powers of massage have been well documented. It first relaxes, then stimulates, and finally invigorates both the mind and the body. It confers both physiological and a psychological benefits.

Rationale

Constant manual pressure on the skin transfers deep into the body's tissues, affecting blood vessels and lymph channels. It also affects nerve fibres, so influencing the nature and number of messages which are being transmitted to the brain. Deeper pressure stimulates systemic blood circulation and the digestive system. Massage also influences immune functioning.

Tibb recognises the importance of touch in the care of the body. It accepts that massage therapy is able to support and enhance Physis in its healing role. The focus of massage is removal of accumulated toxins and/or qualities of coldness and moistness that have penetrated the tissue or muscle area.

Tibb advocates the use of botanic oils in therapeutic massage. They are chosen not only on the basis of their pharmacological activity but also on their heating, cooling, drying and moistening qualities. Different oils possess different pharmacological actions (*see aromatherapy section*). The qualities possessed by these oils vary widely. Olive oil, for example, is Hot & Moist, whereas sesame oil is Cold & Dry. Combining different oils changes their qualitative nature, so the massage therapist matches the oil used to suit the patient's temperament and presenting disorder.

Treatment is aimed at alleviating symptoms and restoring the qualitative imbalance underlying the ailment. As well as the patient's ailment, the massage therapist considers the patient's temperament, age and sex, and the type of massage indicated.

Clinical application

Massage provides many benefits, as it leads to a better functioning Physis. These benefits the whole body: they occur across the spectrum of physiological systems. Improved blood and lymph circulation usually leads to less spasm and tension, and better skeletal muscle tone, Troubling headaches often resolve, as does peripheral oedema. There is a significant calming of the mind, which improves sleep quality.

The skin, not surprisingly, responds well to regular massage. The sweat and sebaceous gland function better, the build-up of dead surface tissue is reduced, and the formation of subcutaneous adipose tissue is reduced. Overall, cosmetic improvement leads to a healthier appearance and increased self-esteem.

9. Somatic Balancing Technique

> *"Get knowledge of the spine, for this is the requisite for many diseases".* [Hippocrates]

Hippocrates realised that spinal alignment problems could develop into chronic ailments. He confirmed this observation with a primitive thermal scanning technique using mud, noting which areas of the skin dried first. From this he deduced which spinal level controlled a particular internal organ.

Rationale

It was only in the mid-1900s that Dr Andrew Taylor Still, the 'Father of Osteopathy', took this further, and described in considerable detail the functional relationship between the patient's spine and his or her internal organs. His therapeutic technique of Somatic Balancing, which is consistent with Tibb philosophy, gently readjusts the spine,

pelvis and limbs, so releasing both physiological and physical blockages that have developed due to humoral imbalances. This allows Physis to re-establish “continuity” and restore health. Tibb considers the Somatic Balancing Technique as one of the established eliminative therapies.

Clinical application

Different vertebrae are associated with different internal organs. For example, the thoracic T3 vertebra is linked to the lungs, bronchial tubes, pleura and chest, whereas lumbar L2 vertebra is linked to the appendix, abdomen and upper leg. Further examples are shown in the table:

Table 19: Relationship between vertabrae and specific ailments

Spinal Region	**Vertebra No.**	**Part of Body served (selected)**	**Some ailments resulting from dysfunctional imbalance**
Cervical	C1 C6	Head, face, sympathetic NS Neck, tonsils, shoulders	Headaches, insomnia, hypertension, Cough, stiff neck, inflammation of tonsils
Thoracic	T1 T6	Arms, hands, oesophagus Stomach	Asthma, dyspnoea, pain in hands and arms Digestive disorders: Indigestion, heartburn
Lumbar	L1 L5	Large intestine Lower legs, ankles, feet	Constipation, diarrhoea, some hernias, Leg cramps, cold feet, swollen ankles
Sacral	---	Pelvic girdle, buttocks	Disorders of lower body, spine deformities

Spinal Region	Vertebra No.	Part of Body served (selected)	Some ailments resulting from dysfunctional imbalance
Coccyx	---	Rectum, anus	Haemorrhoids, pruritus

As this technique will restore continuity between the nervous and other systems it will benefit conditions of the musculoskeletal system, such as lower back pain, sciatica, tendonopathies, fibromyalgia, whiplash injuries as well as conditions such as asthma, gastrointestinal disturbances, menstrual irregularities, and migraine.

10. Leeching *(hirudotherapy)*

Hirudotherapy is the clinical, controlled use of leeches, applied to remove blood where it has accumulated under the patient's skin and mucous membranes.
Also known as leeching, hirudotherapy has been used for millennia for bloodletting, and in the treatment of a wide range of ailments. Hippocrates used it to treat various disorders such as thrombosis, which were related to an imbalance of the sanguinous humour, and Galen was himself an enthusiastic hirudotherapy practitioner for pain relief. The technique is now experiencing a revival in its practice, especially for treating post-surgical complications, osteoarthritis of the knee, and for cosmetic improvement.

Rationale
The leech used, *Hirudo medicinalis*, is a species of small parasitic worm, with blood suckers at each end. Its saliva contains a natural anti-coagulant *(hirudin)* which prevents the formation of blood clots *(thrombosis)*. This makes it particularly effective for removing coagulated blood which has pooled under the skin and mucous membranes.

Clinical application
Together with cupping and venesection, hirudotherapy is one of Tibb's major eliminative therapies.

As a method of bloodletting, it is used to restore humoral harmony where an excess of blood is the underlying problem, for instance certain types of headache. Leeches are particularly effective for removing blood which is denatured, so are used for the relief of haemorrhoids and to improve cosmetic appearance by clearing black eye shadows. In practice they are applied to the skin and mucous membrane. Hirudotherapy is now extensively used following micro-surgery to restore blood flow in blocked blood vessels. Although usually well tolerated, the technique can cause local inflammation and infection.

11. Venesection

Venesection, aka phlebotomy, is the removal of venous blood from the circulatory system via surgical incision or puncture of a vein, usually in the brachial flexion of the arm, in order to remove excess blood. It is used for the treatment for certain blood disorders, diagnosis and blood donation.

Venesection has been practiced by almost all cultures and societies at some point in their medical history. It is based on beliefs about health and disease originally held by the ancient Greek philosopher/clinicians. They thought that many diseases were caused by an overabundance, or *plethora*, of the dominant sanguinous humour, and these plethoras could be treated by reducing food intake, induced vomiting and venesection.

Venesection was very popular from ancient times until well into the nineteenth century, and considered to be part of the treatment for practically every ailment. It subsequently became less popular, largely due to controversy about the amount of blood removed.

Rationale

The practice is based on the humoral theory. Blood is equivalent to the sanguinous humour, and derived from the food and drink consumed. When the four humours are in balance, then good health prevails. Conversely, if out of balance, then diseases will develop. Venesection was therefore a logical way of restoring humoral balance. After it was carried out, measures were taken to promote inner healing, with supplements and herbs.

Clinical application

Venesection is generally practiced by a skilled surgeon to reduce pathologically high haemoglobulin levels, *polycythaemia vera*, or to treat the hereditary iron storage disorder, *haemochromatosis*. It is a preliminary procedure before infusing therapeutic fluids, certain drugs and 'cleansed' blood. In general surgery it is routinely employed as part of catheterisation and cardiography. If the patient is too young, old, or weak to tolerate venesection, wet cupping is often used instead.Therapeutically, donating blood at least yearly appears to lower the risk of a heart attack, as it reduces raised blood pressure. As a technique used today it is effective, works rapidly, and has minimal side effects such as dizziness and tiredness.

12. Cupping

Background

Therapeutic cupping (aka *fire cupping*) is the practice of applying a partial vacuum by means of heat or suction in bell-shaped vessels (suction cups) to specific and different parts of the skin. The tissues beneath the cup swell and drawn up into the cup, so increasing blood flow to this area. This draws impurities and toxins away from the nearby tissues and organs towards the surface for elimination. The time the suction cups are left in place varies according to the patient's age and physical constitution, and the medical disorder being treated.

> *"Cupping is the most helpful act for human beings to cure themselves with"* [Prophet Muhammad [PBUH]

Historical development of cupping

Cupping has been practiced since ancient times, at least 2500 years. It was applied by the Babylonians, the Egyptians in Pharaonic times, and by the early Chinese. In these times, cupping was carried out using bamboo tree sections, bulls' horns or metal cups. Air was removed originally by sucking, and later by burning tapers or cotton to remove air enclosed in the cup.

Hippocrates describes cupping in his *Guide to Clinical Treatment*, and recommended it for the treatment of angina, menstrual disorders and numerous other ailments. Later, Galen was a committed practitioner of the procedure.

After a long period of decline in its use, cupping was revived in the Islamic age. Strict adherence to rules of application was demanded, with close attention paid to the practical process, timing and the nature of the patient's disorder.

In Europe, cupping was advocated by many medical pioneers, including Paracelsus and Ambrose Paré. This technique has been used by practitioners of Western medicine for many centuries to treat a range of diseases.
Traditional healers in many parts of the world use cupping or versions of it. Some healers in North America use sea shells instead of cups, and others use buffalo horns. In parts of Europe, Asia and Africa hollow animal horns are used effectively as cupping devices.

Types of cupping

There are two major forms of cupping:

Dry cupping: The practice of applying a cup under partial vacuum to specific parts of the body. In this procedure no blood is drawn. This procedure always precedes wet cupping.

Wet cupping: The skin immediately below the cup is cross-cut lightly several times – *lacerated* – so that blood may actually be drawn by the vacuum from the skin into the cup.

The time the suction cups are left in place varies according to the patient's age and physical constitution, and the medical disorder being treated.

Dry cupping is always used before wet cupping is considered. Wet cupping is only applied when repeated use of dry cupping has proven to be ineffective clinically. The use of whichever form of cupping is at the discretion of the practitioner.

Cupping and Traditional Chinese Medicine

Chinese healers describe the process of cupping as directing the *chi energy* to flow towards the cupping area and promote healing. Cupping warms local tissue and promotes the free flow of Chi energy and blood, so dispelling cold and dampness. Cupping also stimulates acupuncture points, and releases biological opioids called endorphins.

"When energy flows, illness goes" [Chinese aphorism]

Cupping therapy has been further developed as a means to open the *meridians* of the body. Meridians are the conduits through which energy flows to every part of the body, so reaching all tissues. Many healers consider cupping as the best way of opening those meridians.

In practice, cupping is used to treat *Bi syndrome* caused by wind and dampness, resulting in pain from musculo-skeletal, respiratory and gastrointestinal disorders. Cupping is often combined with bloodletting for joint trauma.

Rationale

Tibb accepts cupping as one of the oldest and most effective methods of mobilising toxins from the body's tissues and organs. It supports its use in treating the pain and discomfort of disorders of the lungs and other internal organs, muscle spasms, joint pains, and numerous other ailments.

Cupping assists Physis in the healing process by drawing inflammation and pressure away from the vital organs, especially the heart, brain, liver, lungs and kidneys, towards the skin. Increasing blood circulation to the area where the cup is placed improves nutrition flow to that particular region.

Clinical application

The clinical benefits of cupping have been extensively researched and documented. The benefits of cupping continue for several days after the procedure. It demonstrates extended action.

Cupping acts in support of a number of organ systems:

- The *liver* – by increasing blood perfusion, so helping remove the metabolic load imposed by the disease.
- The *immune system* – by acting on the blood-forming (reticulo-endothelial) system to help it oppose the actions of invading microbes.
- The *nervous system* – by helping to reverse ischaemia, which can lead to circulatory disorders in the brain, such as memory disturbances, epilepsy and emotional disorders.
- The *renal system* – by helping to reverse the ischaemia which underlies many kidney disorders.

Cupping is performed on the skin surface, so has little direct influence on the arterial blood supply. However, it does influence the lymphatic and venous systems, which contain 'used' blood and toxins.

As cupping acts to support and enhance Physis, the list of disorders which benefit from the technique is comprehensive, ranging from microbial infections, musculoskeletal and circulatory disorders, digestive system ailments, skin lesions and malfunctions of the endocrine system.

SURGERY

Historical background

In the Egypt of the Pharaohs (1,600 BCE), major operations are not mentioned, although simple surgical procedures treating fractures and joint dislocations for example, were carried out routinely. Circumcisions and the removal of eye cysts or tumours were recorded as per-

formed with a range of bronze practical instruments. Good recovery was claimed, as the wounds were often cauterised and treated with herbs such as willow, which has antiseptic and analgesic properties.

In the time of Hippocrates, one of the early pioneers of Tibb medicine, major surgery as we know it today was rarely if ever carried out because of the risks involved. The non-availability of anaesthesia, surgical techniques and instruments, infection control and pain relief militated against extensive surgery. Even so, minor surgery was carried out quite routinely, especially in and after the many periods of conflict and natural disaster, where the need for surgical intervention was immediate and urgent.

> *"What medicine will not cure, the knife will cure; what the knife will not cure, the cautery will cure; what the cautery will not cure, may be considered incurable"* [Hippocrates]

Amputations of wounded or gangrenous limbs, for example, were carried out using techniques and instruments which were still available many centuries later. Cauterisation of open wounds was also widely used.

Routine surgery with ligature and cautery for haemorrhoids and open wounds was commonly carried out. Operations were supported by the liberal use of honey, wine and vinegar, the application of plants such as laurel and olives, as well as the use of frankincense and myrrh. Post-operative care was reasonably high, even by our present day standards. Certain invasive procedures, such as draining the chest of someone with emphysemia or pleurisy, were carried out, as was the removal of malignant or benign tissue masses.

Apart from Hippocrates and the physicians of his school on Cos, such as Praxagoras, others were also noted to have performed surgical procedures. They included Erasistrasus and Herophilus, who helped reveal the mysteries of the human anatomy.

Galen, several centuries later, drew much on the ideas and experience of Hippocrates. He specialised in the subject of anatomy. Major advances in this area were made, though not all of them were that accurate, as history would later prove. No notable advances in surgical techniques were made as he was prohibited from study of the human body for theological reasons.

In the time of the Golden Age of Muslim culture, the practice of medicine and surgery assumed a central role. Over a few centuries, Islamic physicians and surgeons assiduously developed a vast and comprehensive *Materia Medica*. In a dynamic climate of receptiveness to new concepts and techniques, major advances were made in the understanding of the human body in sickness and in health, and also in the practical aspects of surgery. These advances were fortuitously aided by the novel introduction of hospitals, which allowed surgery to be conducted in a sanitary, pleasant and safe environment, thus encouraging better recovery and recuperation.

Abu al Qasim al Zahrawi is to this very day recognised as a valuable contributor to the theory and practice of surgery. He is considered as the greatest medieval surgeon, and regarded as the “Father of Surgery”. His epochal encyclopaedic book, *Kitab al-Tasnif*, was the basis for the resurgence of surgical practice, and his influence in, for example, techniques and instruments in ophthalmologic practice, persists to this day. The Latin translation of this book was highly influential in reviving surgical practice during the European Renaissance, and offered a valuable and reliable reference work for several centuries.

Al-Zahrawi invented numerous advancements in surgical instruments and described in detail the operations in which they could be used. Common disorders like cataracts and trachoma became treatable with these new techniques and instruments. Many authorities affirm that the contributions of this pioneer were the impetus to have routine surgery taken away from the grasp of charlatans and amateurs, and established its true place in rational medicine.

Other important contributors to advancements in surgery were Ibn Al-Haitham and Haly Abbas, whose texts on various diseases amenable to surgery were the standard reference books in the West until recent times.

Two surgical interventions which were routinely carried out in the Golden Age and continue to this day are *cauterisation* and *therapeutic cupping*. Although the underlying concepts behind the techniques remain the same, both have been modified to reduce the incidence of unwanted consequences such as infection and excessive pain.

A major limitation to surgery in ancient times was the real and severe risk of post-surgical infection. This threat limited surgery to amputation following severe trauma, bone-linked disorders such as fractures, and life threatening conditions like kidney stone. Surgeons in the Golden Age acknowledged these obstacles, and dealt with them in several ways. One was scrupulous attention to cleanliness, cleaning the operating field with herbal agents like rose water, various resins, vinegars and medicinal wine. Frankincense and myrrh were popular as aids in surgery, as was the use of opium and digitalis as painkillers and hemlock as an anaesthetic.

Unfortunately not much progress has been made in Tibb as far as surgery is concerned, compared to the significant progress made in Western medicine. Could this possibly be because of Western medicine's disregard to the Hippocratic principles of "pepsis" which has resulted in an accumulation of toxins/humoral imbalances resulting in blockages, abscess, growths and various other structural changes requiring surgical intervention.

TIBB AND INTEGRATIVE MEDICINE

Overview

There has been a huge cultural shift worldwide in the way people view healthcare, and this has given rise to Integrative Medicine (IM). This is a holistic form of healthcare that combines complementary

and Western medicines in the treatment of acute, chronic, and recurring disorders. As well as the physical aspects of the patient, it is also concerned with the psychosocial and spiritual dimensions. IM merges Western and complementary diagnostic procedures as a preliminary to therapy. Treatment deals initially with the presenting symptoms, largely by use of Western drug therapy, and subsequently addresses the underlying disorder by applying selected forms of complementary medicine. Tibb is a well-established healing system which has traditionally been practiced widely in many countries. It is ideally situated as a partner for Western medicine for a number of reasons: it focuses on supporting inner self-healing processes; it advocates realistic lifestyle-linked changes in behaviour; it involves the patient in both diagnosis and treatment; and it can provide a number of therapeutic options of proven efficacy. Furthermore, it is consistent with Western medical therapy, as they both share a common ancestry. IM is especially effective in dealing with chronic, refractory or recurring disorders. It focuses on support and stimulation of the person's Physis, the body's innate healing mechanisms, rather than just alleviating symptoms of the disorder. It achieves this by combining realistic lifestyle changes, individualised therapies and selected herbal therapy. Active involvement and motivation of the patient is a key factor in accurate diagnosis and successful therapy, and in achieving and maintaining optimum health.

Description

IM critically selects the best, scientifically proven therapies from both Western and complementary systems for the treatment of both chronic and acute clinical disorders.

> *"The deliberate practice of medicine that selectively incorporates concepts, values and practices of complementary, alternative and orthodox medicine into comprehensive diagnosis and treatment plans".* [Dr Andrew Weil]

The primary function of IM to the patient is the prevention of disease. An important element to the healing process is that it is patient, not

disease, centred, so a partnership between the patient and the practitioner is desirable. In turn, the practitioner should be aware of best available clinical practice, and of the relative contribution that both medical paradigms are capable.

The increasing application of IM

For several years there has been a discernible move away from Western medicine towards the so-called alternative and complementary medicine (CAM). There are a number of reasons for this disillusionment with Western medicine. The cost of Western medicine has been escalating significantly; the adverse drug reactions encountered by the patient; the poor quality of the doctor/patient interaction; the acceptance that behaviour modification is a plausible option in treating chronic disorders; the general movement towards more natural, less harmful way of healthcare.

As a result of this movement, a great deal of interest in CAM theory and practice has developed. Traditional therapeutic and healing systems, such as Ayurveda, Tibb and Chinese Herbal Medicine, and more recent arrivals, such as homeopathy and chiropractic have emerged into the mainstream. Aspects of CAM therapy, such as acupuncture, hydrotherapy and herbalism now enjoy widespread application.

Features

IM focuses on improving the patient's health or maintaining wellness, rather than just alleviating the presenting disease. Furthermore it accepts that the patient's Physis is a potent natural self-healing mechanism which restores stability, or homeostasis, and that this should be supported and stimulated, not inhibited or ignored, as it often is in Western medicine. It also acknowledges that the patient's emotions, mind, spirit and even community, as well as his or her body, also have a significant part to play in the healing process, recuperation from illness and health maintenance.

Diagnosis in Integrative Medicine

By applying the philosophical principles of Tibb, especially tempera-

ment and humours, to the diagnostic capabilities of Western diagnosis, we are able to not only measure the changes but to also understand why the changes occur. With today's technology, functional and structural imbalances in clinical conditions, together with their associated symptoms, are easily diagnosed and have been appropriately identified and labelled.

For example, Tibb diagnosis explains why hepatitis is associated with the qualities of heat and dryness, why the symptoms of colds and flu are associated with Cold & Moist qualities, and why the symptoms of insomnia, dry cough and constipation are linked to excessive dryness.

Integrative Medicine in clinical practice

IM adopts natural, minimally invasive procedures wherever possible, especially for chronic or recurrent disorders. It uses procedures, both Western and complementary, which are proven effective on an empirical or scientific basis, and backed up by acceptable clinical practice. It recognises the pre-eminence of Western medicine in the treatment of acute, emergency and life-threatening disorders. In addition, it accepts the major role of complementary medicine in chronic and recurring diseases, and disorders brought about by an imprudent lifestyle.

Tibb as a partner for Integrative Medicine

Tibb is well placed as the complementary component in the partnership with Western medicine, as it provides a wide range of lifestyle adjustments (particularly diet and exercise), habit changes, pharmacotherapy and physical practices which have proven health benefits. Addressing the causes of chronic disorders has always been a central tenet of Tibb. For example, a recent study confirmed the benefit of lifestyle adjustment – specifically diet and exercise – to the marked improvement of patients exhibiting unequivocal signs and symptoms of the metabolic syndrome. Hypertension, dyslipidaemia, obesity and glucose intolerance were significantly reduced by lifestyle changes carried out by the subjects. Tibb restores to medicine the precepts and practice of Hippocrates and Ibn Sina that have been largely dissi-

pated in the past 300 years or so, beginning with Descartes, and ending with the doctrine of specific aetiology. Another factor in favour is the similarity of Tibb to Western medicine, in that it is more 'metabolic' orientated, rather than 'energy' orientated, as is the case with some of the traditional Eastern systems of medicine.

CHAPTER REVIEW

Therapeutics in Tibb can be divided into four categories: pharmacotherapy, lifestyle modification, eliminative therapies, and surgery. This chapter deals with each of these, with particular attention paid to the Tibb philosophy of temperament, qualities and humours, and the nature and contribution by Physis.
The treatment of illness via Western medicine differs from the Tibb approach in that most conditions are dealt with by taking medication, which in many cases results in troublesome side effects. These then often require yet more drugs to deal with the side effects that invariably occur in the longer-term.

In contrast, Tibb treatment aims to restore homeostasis with a wide range of therapeutic options to restore the patient's humoral qualitative state, as well as renewing the ideal temperament, depending on the underlying disturbance in the body's internal harmony. This leads initially to improved functional activity, then to repair of any resulting tissue or organ damage. Tibb treatment also recognises a patient's temperament as a key factor in treatment.

Physis and healing: Tibb attaches great importance to assisting our inner doctor, Physis, in maintaining homeostasis in the body. Physis is our inborn potential for self-healing, which exists and operates in all living beings from the sub-cellular level up to the complete functioning organism. This is achieved by adherence to the Tibb Lifestyle Factors and avoidance of agents, such as certain Western drugs and practices, which compromise its full action. All Tibb therapies are geared to supporting and enhancing Physis in the healing processes, and avoiding or minimising the actions of certain substances or technique

which oppose, diminish or ignore its activity.

Therapeutic guidelines: Tibb is an eminently practical healthcare paradigm. It offers guidelines for the successful application of its various therapies, translating its philosophical principles into everyday practice. It deals specifically with illnesses such as microbial infections, or those arising from sudden or temporary changes in qualitative and humoral balance. It offers realistic advice on the treatment of complex illnesses, or where there are multiple chronic conditions.

Pharmacotherapy: Is the treatment of physical and mental disorders with herbs mainly and their derivatives, but also with animal products and essential minerals. It is widely practiced form of treatment extending far back into recorded history. It is probably the most important therapeutic option today for the majority of the world's population, either as stand-alone therapy, or as part of traditional healing systems. Herbal medicine was side-lined due to the emergence of synthetic chemical drugs early in the 20th Century but is now experiencing a significant revival. It is one of the major Tibb therapeutic interventions, alongside dietary modification, lifestyle adjustment, and physical therapies. Ibn Sina laid the foundations of Tibb pharmacotherapy, describing a vast range of effective remedies, and these became the model for numerous pharmacopoeias. The use of herbal remedies is expanding rapidly, and demand is increasing, for more information of their pharmacological action. This is not yet available for many effective herbs, especially as research in this area poses numerous challenges not faced by the study of Western drugs. Herbs contain many active agents, their precursors and derivatives, from alkaloids to glycosides, and flavonoids to saponins, and often combine several different plant species, this variety of active agents not only ameliorates the signs and symptoms of a disease but help restore internal homeostasis within the body's organs and tissues. Tibb pharmacotherapy is based on the fundamental principles of the temperamental and humoral theories and aims to assist physis in restoring qualitative and humoral imbalances. Herbs in Tibb are characterised into degrees of activity, or orders, according to their qualitative nature and ef-

fect on the patient, a feature which is unique to Tibb. Tibb pharmacotherapy differs from its Western counterpart in several key respects. Western drugs, in many cases are derived synthetically from herbal extracts, and act according to the receptor theory. Although this allows for a more specific pharmacological action, it does expose the patient to increased risk of adverse drug reactions. In addition, it fails to acknowledge physis' critical regulating and healing roles, and with many drugs actually oppose and negate them. Tibb herbal remedies, conversely, act to support and enhance physis. They act holistically as a result of their natural synergistic and metaphysical properties. As the mechanisms of action largely differ to those of Western drugs, Tibb pharmacotherapy allows for effective integration with these for enhanced clinical effect, although the possibility exists of pharmacokinetic and pharmacodynamic interaction between herb and drug.

Lifestyle modification and emotional support therapy: These gentle, non-intrusive and self-help therapeutic options include dietotherapy, physical exercise, breathing, meditation and relaxation, visualisation, colour therapy, music therapy, psychotherapy and counselling, The rationale and the clinical application of each of these therapies is dealt with.

Eliminative therapies: Elimination is the process of detoxification of accumulated waste products, and removal of excess/abnormal humours from the body. According to Ibn Sina, elimination procedures not only dislodge or divert the diseased matter from the site of illness, but also direct this matter to the appropriate exit routes for elimination. From the Tibb perspective, the correct treatment of disease is to assist the natural eliminative functions of the body. Ibn Sina provides detailed guidelines for the elimination of waste from the body, and qualified these with reasonable safety concerns, especially when potent drugs are administered. Tibb recognises the role of Physis in effective, regular elimination, and sees its actions in the light of humoral/qualitative imbalance. The body's natural elimination routes are reviewed, especially respiration, urination and perspiration. Induced modes of elimination including sneezing, emesis, hydrotherapy, diuresis, enema, purgation, massage, somatic balancing technique, hirudotherapy, venesection, and therapeutic cupping, is discussed. The

rationale behind each of these, together with the expected benefits for the various illnesses, is included. Cupping, for instance, is detailed in its various formats, its practical application, clinical benefits, target illnesses, and precautionary guidelines. The underlying mechanism of action is the support of Physis, by restoring the body's homeostasis, and normalising temperament, structural and function of the various systems of the body.

Surgery: Although this aspect of therapy is outside the scope of this chapter, it should be acknowledged that surgical techniques hold an important position in Tibb. Amputation and wound treatment were common practices in ancient Egypt and Hippocratic Greece, and as anatomical knowledge improved, so surgery advanced. Muslim physicians refined the techniques of, and subsequently developed a range of surgical operations, especially of the eye. The Latin translation of Islamic surgeons was highly influential in reviving surgical practice during the European Renaissance, and offered a valuable and reliable reference work for several centuries.

Integrative Medicine: This incorporates elements of complementary and Western medicine into diagnosis and treatment of diseases. It focuses on health and healing by supporting the body's innate healing abilities. The complementary arm of IM can resort to specific therapeutic techniques like acupuncture, or broadly adopt particular medical paradigms such as Tibb. IM has a role to play in the treatment of acute disorders, mainly via the conventional, Western, arm of treatment, and chronic disorders, mainly via the complementary route. It should be considered for the increasingly prevalent chronic diseases of lifestyle. For a number of reasons Tibb can be regarded as an excellent partner in IM.

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ANNEXURE 1:
ARABIC TRANSLATION OF ENGLISH TERMINOLOGY

Terminology	*Arabic Terminology*
Air	**Baad / Reeh**
Animals-Plants-Minerals	**Mawaleed-e-Salaasah**
Balanced	**Motadil**
Bile	**Safraa**
Bilious	**Safravi**
Canon of Medicine	**Al - Qanoon Fi - al - Tibb**
Carbohydrates	**Nishastajaat**
Cause	**Sabab**
Causes	**Asbaab**
Cold	**Barid**
Coldness	**Barudat**
Disease	**Maradh**
Dry	**Yabis**
Dryness	**Yabusat**
Earth	**Khaak / Ardh**
Elimination	**Istafraagh**
Energies	**Arwaah**
Energy	**Rooh**
Environmental Air	**Hava-e-Muheet**
Faculties	**Quwaa**
Faculty	**Quwat**
Fire	**Aatish / Naar**
Food and Drink	**Makulaat wa Mashrubaat**
Formal Cause	**Sababe Tammami / Sauri**

Galen	**Jalinoos**
Health	**Sehat**
Heat	**Hararat**
Hippocrates	**Buqraat**
Hot	**Haar**
Humour	**Khilt**
Humours	**Akhlaat**
Imbalanced	**Ghair Motadil**
Inflammation	**Waram**
Lipids	**Shahmiyaat**
Main Organs	**Aadhaa-e-Raeesah**
Material Cause	**Sabab-e-Maaddi**
Melanchole	**Sauda**
Melancholic	**Saudavi**
Metabolic Faculty	**Quwat-e-Tabiyyah**
Moist	**Ratab**
Moistness	**Ratubat**
Organs	**Aadhaa**
Patient	**Mareedh**
Phlegm	**Balgham**
Phlegmatic	**Balghami**
Physician	**Tabeeb**
Physis	**Tabiyat**
Primary Matter	**Maadda-e-oola**
Protein	**Lahmiyaat**
Psychic	**Quwat-e-Nafsaniyah**
Qualities	**Kaifiyaat**

Quality	**Kaifyat**
Retension	**Ehtebaas**
Sanguine	**Dam**
Sanguinous	**Damawi**
Six Lifestyle Factors	**Asbab-e-Sittah Zarooriyah**
Sleep and Wakefulness	**Naum-o-Yaqzah**
Temperament	**Mizaj**
Tissues	**Aadhaa-e-Mufradha**
Vital Faculty	**Quwat-e-Haiwaniyah**
Vitamins	**Hayateen**
Water	**Aab / Maa**

ANNEXURE 2:
PERSONALISED LIFESTYLE PROGRAMME FOR DIFFERENT TEMPERAMENTAL COMBINATIONS

The factors underlying a person's health and disease are closely linked to lifestyle. Listed below are eight personalised lifestyle programmes for the different temperamental combinations. This is in keeping with Tibb philosophy, namely, giving equal importance to health promotion and illness management. While the lifestyle programmes are based specifically on the person's temperamental combination, the different stages of his or her life, from infancy to old age, also need to be taking into account.

Each lifestyle programme includes the following:

- The dominant quality associated with the temperamental combination,
- Examples of the different lifestyle factors that can increase this quality,
- The various illnesses that each temperamental combination is prone to,
- Guidelines on optimum health promotion and maintenance through lifestyle factors for each temperamental combination.

1. Dominant *bilious* with sub-dominant *sanguinous*

This combination has a temperamental quality between bilious (Hot & Dry) and a sanguinous (Hot & Moist) temperament. This results in an overall dominant quality of ***heat****, which is common in both the temperaments.*

Any change in the ideal level of heat, especially an increase in heat, negatively affects this combination the most. An increase in dryness or moistness will also have a negative effect, whilst an increase in coldness will have the least negative effect.

An increase in heat can result from:
Summer - very hot weather and environment - Hot and Dry food and drink – anger - strenuous exercise - excessive awakening.

Illnesses that this combination will be susceptible are those of the bilious temperament:
Stress - Migraine - Bronchitis - Hay fever - Nausea – Overactive thyroid – Endometriosis

This combination will be inclined to a lesser extent to illnesses of the sanguinous temperament:
Congestive headache - High blood pressure – Diabetes - Urinary tract infection - Rheumatoid arthritis - Pre-menstrual tension.

Health maintenance for this temperamental combination:
***Positively** affected by:*

- Fresh air and a cool, properly ventilated environment.
- Including more fruit and vegetables than meat in your diet.
- Increase daily water intake.
- A good night's sleep (6 to 8 hours).
- A 5 -10 minute relaxation break after lunch.
- Meditation and breathing exercises are helpful, especially during times of emotional turmoil.
- Exercise in the early morning and late afternoon

***Negatively** affected by:*

- Weather, environment, work and leisure activities that increase heat and dryness.
- Excessive intake of alcohol, tea and coffee.
- Excessive movement and strenuous exercise.
- Lack of sleep (less than five hours on a regular basis) and late nights.
- Extreme emotions of anger, excitability, irritability and suppression of anger.
- An excess of a Hot & Dry diet especially in hot weather.

Advice: In humid weather it benefits the person to reduce the intake of Hot & Moist food and drink. The excess humidity can be counteracted by effectively applying the six factors and by including Cold & Moist and Cold & Dry foods.

2. Dominant *bilious* with sub-dominant *melancholic*

This combination has a temperamental quality between bilious (Hot & Dry) and melancholic (Cold & Dry) temperament. This results in an overall dominant quality of ***dryness****, which is common to both temperaments.*

Any change in the ideal level of dryness, especially an increase in dryness will negatively affect this combination the most. An increase in heat or coldness also has a negative effect, whilst moistness have the least negative effect.

An increase in dryness can be as a result of:
Summer - very hot weather/environment - late winter - dry food and drink – anger – sadness - strenuous exercise - excessive awakening - irregular elimination of wastes.

Illnesses that this combination will be susceptible to are those of the bilious temperament:
Stress - Migraine - Bronchitis - Hay fever - Nausea - Overactive thyroid - Endometriosis

This combination may also be inclined to a lesser extent to illnesses of the melancholic temperament:
Insomnia - Osteo-arthritis - Hyperacidity – Constipation - Piles – Flatulence - Colic - Gout

Health maintenance for this temperamental combination:
Positively *affected by:*

- Fresh air and a cool, properly ventilated environment.
- Including more fruit and vegetables than meat in the diet.

- Increasing daily water intake.
- A good night's sleep of 6 to 8 hours.
- A 5 -10 minute relaxation break after lunch.
- Meditation and breathing exercises are helpful, especially during times of emotional turmoil.
- Exercise in the early morning and late afternoon.

***Negatively** affected by:*

- Weather, environment, work and leisure activities that increase heat and dryness.
- Excessive intake of alcohol, tea and coffee.
- Excessive movement and strenuous exercise.
- Lack of sleep (less than five hours on a continuous basis) and late nights.
- Extreme emotions of anger, excitability, irritability, excessive speech and suppression of anger.
- An excess of a Hot & Dry diet especially in hot weather.

Advice: In late winter and autumn, the intake of Cold & Dry food and drink should be reduced. The excess cold and dryness is counteracted by effectively applying the six lifestyle factors and by including foods from Hot & Moist and Cold & Moist foods

3. Dominant *sanguinous* with sub-dominant *bilious*

*This combination has a temperamental quality between sanguinous (Hot & Moist) and a bilious (Hot & Dry) temperament. This results in an overall dominant quality of **heat**, which is common in both the temperaments.*

Any change in the ideal level of heat especially an increase in heat will negatively affect this combination the most. An increase in moistness or dryness will also have a negative effect, whilst coldness will have the least negative effect.

An increase in heat can be as a result of:
Summer - very hot and humid weather or environment - hot and moist, to hot and dry, food and drink - anger -strenuous exercise - excessive awakening.

This combination will be prone to illnesses of the sanguinous temperament:
Congestive headache - High blood pressure – Diabetes - Urinary tract infection - Rheumatoid arthritis - Pre-menstrual tension

This combination may also be inclined to a lesser extent to illnesses of the bilious temperament:
Stress - Migraine - Bronchitis - Hay fever - Nausea – Overactive thyroid – Endometriosis

Health maintenance for this temperamental combination:
***Positively** affected by:*

- Keeping cool in hot weather and warm in wet weather.
- A diet that contains equal amounts of protein, fruit/vegetables and salads. Seafood is excellent.
- A 15 to 30 minute morning walk or jog.
- Gardening and aerobic exercises.
- Six to seven hours sound sleep. Early to bed and early to rise is best for everyone but especially for the dominant sanguinous temperament.
- A 5 to10 minute relaxation break after lunch.
- Maintaining a high fibre diet for regular bowel movements.
- Increasing water intake for optimum kidney function.
- Cupping or blood donation 2 to3 times a year in summer or spring reduces excess blood dominance in a sanguinous person.

***Negatively** affected by:*

- Weather, environment, work and leisure activities that increase heat and moistness - especially in humid weather.
- Inadequate rest and strenuous exercise.
- Sleeping more than 8 hours, or less than 3 hours, a night.
- Worries, anger and excessive excitement.

- A large intake of white flour products as this will result in irregular bowel movements. The colon should be kept clean.
- An excess of a hot and moist diet.

Advice: In summer reduce the intake of Hot & Dry food and drink. The heat and dryness of summer can be counteracted by effectively applying the six factors and by including Cold & Moist and Cold & Dry foods.

4. Dominant *sanguinous* with sub-dominant *phlegmatic*

This combination has a temperamental quality between sanguinous (Hot & Moist) and phlegmatic (Cold & Moist) temperaments. This results in an overall dominant quality of ***moistness****, which is common to both temperaments.*

Any change in the ideal level of moistness especially an increase, negatively affects this combination the most. An increase in heat or coldness will also have a negative effect, whilst dryness will have the least negative effect.

An increase in moistness can be as a result of:
Rainy season, humid weather or environment - hot and moist, to cold and moist, food and drink - excessive sleep/rest - depression and fear - lack of exercise.

This combination will be prone to illnesses of the sanguinous temperament:
Congestive headache - High blood pressure – Diabetes - Urinary tract infection - Rheumatoid arthritis - Pre-menstrual tension.

This combination will be susceptible to a lesser extent to illnesses of the phlegmatic temperament:
Asthma – Tonsillitis – Sinusitis – Anaemia - Anorexia

Health maintenance for this temperamental combination:

***Positively** affected by:*

- Keeping cool in hot weather and warm in wet weather.
- A diet that contains equal amounts of protein, fruit/vegetables and salads. Seafood is excellent.
- A 15 to 30 minute morning walk or jog.
- Gardening and aerobic exercises.
- Six to seven hours sound sleep. Early to bed and early to rise is best for everyone but especially for the dominant sanguinous temperament.
- A 5 to10 minute relaxation break after lunch.
- Maintaining a high fibre diet for regular bowel movements.
- Increasing water intake for optimum kidney function.
- Cupping or blood donation 2 to3 times a year in summer or spring reduces excess blood dominance in a sanguinous person.

***Negatively** affected by:*

- Weather, environment, work and leisure activities that increase heat and moistness - especially in humid weather.
- Inadequate rest and strenuous exercise.
- Sleeping more than 8 hours, or less than 3 hours, a night.
- Worries, anger and excessive excitement.
- A large intake of white flour products as this will result in irregular bowel movements. The colon should be kept clean.
- An excess of a Hot and Moist diet.

Advice: In winter reduce the intake of Hot & Moist food and drink. The coldness and moistness of winter can be counteracted by effectively applying the six factors to maintain body heat, and by including Hot & Dry and Cold & Dry foods.

5. Dominant *phlegmatic* with sub-dominant *sanguinous*

*This combination has a temperamental quality between phlegmatic (Cold & Moist) and a sanguinous (Hot & Moist) temperament. This results in an overall dominant quality of **moistness**, which is common in both the temperaments.*

Any change in the ideal level of moistness especially an increase

in moistness will negatively affect this combination the most. An increase in cold or heat, will also have a negative effect, whilst dryness and heat will have the least negative effect.

An increase in moistness can be as a result of:
Rainy season, humid weather or environment - Hot and Moist, to Cold and Moist, food and drink - excessive sleep/rest - depression and fear - lack of exercise - continuous blood loss.

This combination will be susceptible to illnesses of the phlegmatic temperament:
Asthma – Tonsillitis – Sinusitis – Anaemia – Anorexia – Low Blood Pressure

This combination will be inclined to a lesser extent to illnesses of the sanguinous temperament:
Congestive headache - High blood pressure – Diabetes - Urinary tract infection - Rheumatoid arthritis - Pre-menstrual tension

Health maintenance for this temperamental combination:
***Positively** affected by:*

- Having only one or two full meals daily. Because of low digestive ability phlegmatic people should make a habit of eating two main meals per day, with at least a 6-8 hour gap between meals. If feeling hungry in-between meals, a little fruit or salad should be taken. The diet should be high in fibre and protein including eggs, meat, sea foods and liver. In winter or on cold and rainy days /nights, cold foods should be taken in smaller quantities as these increases phlegm.
- Starting the day with a glass of warm water with two tablespoons of honey. Drink 1 ½ to 2 litres tap water per day but avoid drinking water half an hour before and up to one hour after meals.
- Exercising on a daily basis.
- Breathing exercises for 10 to 15 minutes in the morning.
- At night a 15-20 minute brisk walk after supper is very beneficial.
- Retiring early for the required 8 hours sleep promotes moisture.

It is also the temperament of phlegmatic people, as they have a tendency towards excessive sleep.
- Rising before sunrise is advised to avoid an increase of phlegm.
- Additional physical activity to supplement body heat.

***Negatively** affected by:*
- Weather, environment, work and leisure activities that increase cold and moistness. Because of the low heat, phlegmatic people are particularly vulnerable to a cold environment as well as cold and rainy weather. Heat management through proper clothing and seeking a warm environment cannot be stressed enough.
- Excessive rest and a lack of exercise and movement. Unnecessary rest during the daytime should be avoided.
- Sleeping during the day and especially 1 hour before sunset is very harmful as this aggravates the phlegm and leads to heaviness of the head, sinus congestion and dullness of the brain.
- Fear, shyness and depression are the emotional excesses of phlegmatic people and should be managed accordingly.
- A diet low in calories and nutritional values, with no proteins and fats but high in carbohydrates.
- Cold & Moist diet, especially in a cold environment.
- Menstruating women should avoid a cold diet. This also applies to women who have given birth (1 month post-natal period).

Advice: In winter excess of cold and moistness can be counteracted by effectively applying the six factors by including Hot & Dry and Cold & Dry foods.

6. Dominant phlegmatic with sub-dominant melancholic

*This combination will have a temperamental quality between phlegmatic (Cold & Moist) and melancholic (Cold & Dry) temperaments. This results in an overall dominant quality of **cold**, which is common to both temperaments.*

Any change in the ideal level of coldness will negatively affect this

combination the most. An increase in moistness or dryness will also have a negative effect, whilst heat will have the least negative effect.

An increase in cold can be as a result of:
Early/late winter - cold environment - rainy season - cold and moist food and drink - depression and fear - worries, sadness - excessive sleep - lack of exercise - continuous blood loss - irregular eating and sleeping habits - prolonged suppression of natural urges - irregular elimination of wastes.

This combination will be susceptible to illnesses of the phlegmatic temperament:
Asthma – Tonsillitis – Sinusitis – Anaemia – Anorexia – Low Blood Pressure

To a lesser extent this combination may also be inclined to illnesses of the melancholic temperament:
Insomnia - Osteo-arthritis - Hyperacidity – Constipation - Piles – Flatulence - Colic - Gout

Health maintenance for this temperamental combination:
***Positively** affected by:*

- Having only one or two full meals daily. Because of low digestive ability phlegmatic people should make a habit of eating two main meals per day, with at least a 6-8 hour gap between meals.
  If feeling hungry in-between meals, a little fruit or salad should be taken. The diet should be high in fibre and protein including eggs, meat, sea foods and liver. In winter or on cold and rainy days/nights, cold foods should be taken in smaller quantities as these increases phlegm.
- Starting the day with a glass of warm water with two tablespoons of honey. Drink 1 ½ to 2 litres of tap water per day but avoid drinking water half an hour before and up to one hour after meals.
- Exercising on a daily basis.
- Breathing exercises for 10 to 15 minutes in the morning.
- At night a 15-20 minute brisk walk after supper is very beneficial.

- Retiring early for the required 8 hours sleep promotes moisture. It is also the temperament of phlegmatic people, as they have a tendency towards excessive sleep.
- Rising before sunrise is advised to avoid an increase of phlegm.
- Additional physical activity to supplement body heat.

***Negatively** affected by:*

- Weather, environment, work and leisure activities that increase cold and moistness. Because of the low heat, phlegmatic people are particularly vulnerable to a cold environment as well as cold and rainy weather. Heat management through proper clothing and seeking a warm environment cannot be stressed enough.
- Excessive rest and a lack of exercise and movement. Unnecessary rest during the daytime should be avoided.
- Sleeping during the day and especially 1 hour before sunset is very harmful as this aggravates the phlegm and leads to heaviness of the head, sinus congestion and dullness of the brain.
- Fear, shyness and depression are the emotional excesses of phlegmatic people and should be managed accordingly.
- A diet low in calories and nutritional values, with no proteins and fats but high in carbohydrates.
- Cold & Moist diet, especially in a cold environment.
- Menstruating women should avoid a cold diet. This also applies to women who have given birth (1 month post-natal period).

Advice: In late winter and autumn the intake of Cold & Dry food and drink should be reduced. The cold and dryness of late winter and autumn can be counteracted by effectively applying the six factors to maintain body heat and by including Hot & Dry and Hot & Moist foods.

7. Dominant melancholic with sub-dominant phlegmatic

*This combination will have a temperamental quality between melancholic (Cold & Dry) and phlegmatic (Cold & Moist) temperament. This results in an overall dominant quality of **cold**, which is common to both temperaments.*

Any change in the ideal level of cold, especially an increase, will negatively affect this combination the most. An increase in moistness or dryness will also have a negative effect, whilst heat will have the least negative effect.

An increase in cold can be as a result of:
Early/late winter - cold environment - rainy season - cold and moist food and drink - depression and fear - worries, sadness - excessive sleep - lack of exercise - continuous blood loss - irregular eating and sleeping habits - prolonged suppression of natural urges - irregular elimination of wastes.

The illnesses that this combination are susceptible to will be those of the melancholic temperament:
Insomnia - Osteo-arthritis - Hyperacidity – Constipation - Piles – Flatulence - Colic - Gout

To a lesser extent this combination may also be inclined to illnesses of the phlegmatic temperament:
Asthma – Tonsillitis – Sinusitis – Anaemia – Anorexia – Low Blood Pressure

Health maintenance for this temperamental combination:
***Positively** affected by:*

- Breathing exercises in the early morning and late afternoon.
- Protecting against dry weather by applying a moisturizer, cream or oil (olive oil) to the skin
- A Hot and Moist diet.
- A 10 to15 minute walk after supper.
- Water intake should consist of at least 2 litres a day.
- Exercises like jogging and a brisk walk.
- Change of environment (picnics, etc.) every 2 to 3 months.
- Meditation is very helpful in most melancholic people.
- Getting to bed early, around 22:00 to get 6 to 8 hours sleep.
- A 5 to10 minute relaxing break after lunch.

***Negatively** affected by:*

- Weather, environment, work and leisure activities that increase coldness and dryness. In autumn avoid cold nights and the mid-day heat.
- Dewy conditions, during autumn, late winter and (00:00 - 06:00) as this aggravates the melancholic humour.
- Too much tea, coffee, sour drinks, artificially flavoured and fizzy and iced drinks.
- Too little water.
- Eating more cold than warm food. Using frozen of refrigerated foods and drinks.
- Excessive waking during the night.
- Excessive worries, sadness, loneliness, thinking and being overly philosophical.
- Unnecessary suppression of stools and urine.
- Excessive use of anti-allergic, antipyretics, antihistamines and other cold and dry medications.
- Excess of Cold & Dry food in the diet.

Advice: In winter reduce the intake of Cold & Moist food and drink. The cold and moistness of winter can be counteracted by effectively applying the six factors to maintain body heat and by including Hot & Dry and Hot & Moist foods.

8. Dominant melancholic with sub-dominant bilious

*This combination has a temperamental quality between melancholic (Cold & Dry) and bilious (Hot & Dry) temperament. This results in an overall dominant quality of **dryness**, which is common to both the temperaments.*

Any change in the ideal level of dryness especially an increase in dryness will negatively affect this combination the most. An increase in cold or heat will also have a negative effect, whilst moistness will have the least negative effect.

An increase in dryness can be as a result of:
Summer - very hot weather/environment - late winter - dry food and drink – anger – sadness - strenuous exercise - excessive awakening - irregular elimination of wastes.

The illnesses that this combination are susceptible to will be those of the melancholic temperament:
Insomnia - Osteo-arthritis - Hyperacidity – Constipation - Piles – Flatulence - Colic - Gout

This combination may also be inclined to a lesser extent to illnesses of the bilious temperament:
Stress - Migraine - Bronchitis - Hay fever - Nausea – Overactive thyroid – Endometriosis

Health maintenance for this temperamental combination:
***Positively** affected by:*

- Breathing exercises in the early morning and late afternoon.
- Protecting against dry weather by applying a moisturizer, cream or oil (olive oil) to the skin.
- A Hot and Moist diet.
- A 10 to15 minute walk after supper.
- Water intake should consist of at least 2 litres a day.
- Exercises like jogging and a brisk walk.
- Change of environment (picnics, etc.) every 2 to 3 months.
- Meditation is very helpful for most melancholic people.
- Getting to bed early, around 22:00 to get 6 to 8 hours sleep.
- A 5 to10 minute relaxing break after lunch.

***Negatively** affected by:*

- Weather, environment, work and leisure activities that increase coldness and dryness. In autumn avoid cold nights and the mid-day heat.
- Dewy conditions, during autumn, late winter and (00:00 - 06:00) as this aggravates the melancholic humour.
- Too much tea, coffee, sour drinks, artificially flavoured and fizzy and iced drinks.

- Too little water.
- Eating more cold then warm food. Using frozen of refrigerated foods and drinks.
- Excessive waking during the night.
- Excessive worries, sadness, loneliness, thinking and being overly philosophical.
- Unnecessary suppression of stools and urine.
- Excessive use of anti-allergic, antipyretics, antihistamines and other cold and dry medications.
- Excess of Cold & Dry food in the diet.

Advice: In order to maintain the adequate moistness of the body, water intake should be increased to 3 litres per day in spring and summer, with the inclusion of Hot & Moist and Cold & Moist foods.

ANNEXURE 3: PULSE DIAGNOSIS AFFECTED ORGANS/SYSTEMS

1.Brain and Nervous system
Disorders: Insomnia, restlessness, stress, hyperactivity.

2.Throat and upper respitory system
Disorders: Breathing difficulties, melancholic asthma.

3. Heart and vascular system
Disorders: Angina, arrhythmia.

4. Stomach and small intestines
Disorders: Indigestion, hyperacidity, irregular bowel activity.

5. Colon, uro-genital, lower back and legs
Disorders: Consitpation, piles, flatulance, dysmenorrhoea, PMS, painful ovulation, lower backache, sciatica.

6. Stomach and small intestines
Disorders: Oesophagitis, gastritis, peptic ulcers, belching, nausea, vomiting, excessive thirst.

7. Hepatic system, spleen and pancreas
Disorders: Liver disorders, hepatitis, chronic fatigue, high cholestrol, spleen and pancreatic disorders.

8. Skin
Disorders: Eczema, urticaria, acne, dermatitis, boils, ect.

9. Brain emotional and mental
Disorders: Confusion, lack of concentration, ADHD, anger.

10. Eyes
Disorders: Conjunctivitis, glaucoma.

11. Stomach and small intestines
Disorders: Sluggish digestion, poor appetite, diabetes, phlem in the stomach.

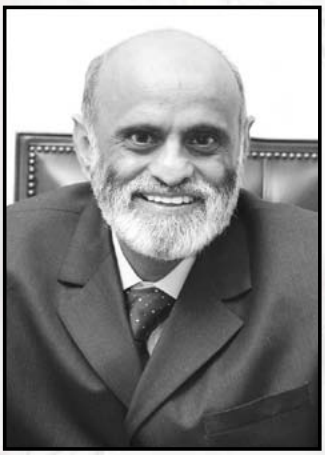
12. Respiratory system and heart
Disorders: Asthma, pneumonia, cardiac insufficiency, cardiac oedema, bradycardia, cardiac / lung failure.

13. Joints, ligaments and tendons.
Disorders: Arthritis.

14. Mouth, tongue and throat
Disorders: Slurred speech, bleeding gums, loose teeth, tonsillitis, sore throat.

15. Nose, face and frontal brain
Disorders: Sinus congestion, ADD, poor memory, mental fatigue

About the author:



Prof Rashid Bhikha qualified as a pharmacist in the late sixties. He founded Be-Tabs Pharmaceuticals in 1974 which was at the time, South Africa's first black-owned pharmaceutical manufacturer. In 1997, after extensive research into Tibb, he founded the Ibn Sina Institute of Tibb to promote the training and practice of Tibb in South Africa. In 2004, he completed his PhD in Education on "African Renaissance in Health Education: Developing an Integrative Programme of Unani-Tibb Training for Healthcare Professionals in Southern Africa" at the University of the Western Cape, where he established the training of Unani-Tibb (Greco-Arab Medicine). In addition to the many papers he has presented locally and internationally he has also authored numerous books. While Prof Bhikha's dedication towards the development of Tibb has earned him numerous awards, his commitment to social upliftment earned him the prestigious Inyathelo Lifetime Philanthropy Award in 2009.

Book Reviews

The author has made tremendous effort to collate information on Tibb in a systematic manner which will definitely benefit not only health care professionals from Conventional Systems and allied healthcare workers, but also become a handy reference book for practitioners of Tibb (Unani System of Medicine). ***Dr. Ghazala Javed, Central Council for Research in Unani Medicine (CCRUM), Ministry of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy (AYUSH), Government of India***

The work is excellent to put forth the knowledge of this centuries old medical science to the present medical world. ***Prof. M M Wamiq Amin, Dean, Faculty of Unani Medicine, Aligarh Muslim University, India***

The book reveals philosophical aspects of Tibb, especially the concept of Tibb and holism, and should be of interest to anyone wanting to explore the history and philosophy of Tibb. ***Prof. Hakim Abdul Hannan Prof. Tasneem Qureshi, Faculty of Eastern Medicine, Hamdard University, Pakistan***

The beauty of this book is that in a concise manner, the basic principles, preclinical and therapeutic information, which was spread over multiple books, has been documented in a single book in well-organized and systematic chapters. ***Prof. Shakir Jamil, Jamia Hamdard University, India; Former Director General of the Central Council for Research in Unani Medicine***