



A Science of Medicine
The Art of Care

The Origin of Tissues within the Holistic nature of Tibb

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Overview

The holistic nature of the human being begins early in the developmental stage of the three germinal layers of organ formation, namely the **ectoderm**, **mesoderm** and **endoderm**, and persists until the complete and total formation of the independent foetus. This complex integration of different systems within the body persists throughout life.¹

Tibb also recognises that these three embryonic layers are the link with the **brain**, **heart**, and **liver**, and which are the seat of the **psychic**, **vital**, and **metabolic** faculties. Other organs are servants to these organs, for example: the brain is served by the nerves; the heart by the arteries; and the liver by the veins.²

Tibb considers that there is a perfect link between the physical, emotional, social and spiritual aspects of the human being.

The principal organs of the **brain**, **heart**, **liver** originate from the three embryonic germinal layers of the **ectoderm**, **mesoderm**, and the **endoderm**,

There must be complete integration in terms of both information and energy transfer. Any imbalances of the humours can lead to physical, emotional, social and spiritual imbalances.

Conventional medicine concurs with this concept, in that the three self-regulatory systems - the nervous, immune, and endocrine systems – function in accordance with the brain, heart and liver, and which communicate and store information, together with other complex feedback processes. Any imbalances of the regulatory systems can adversely affect the body.

The Body as a Complete Integrated Whole

The foetus is exposed to the effect of the mother's lifestyle factors, particularly from a nutritional perspective, as humours are manufactured from the process of digestion in the liver. The baby will therefore be subjected to an imbalance of the humours at birth if the mother's humours are unbalanced.

Throughout the various stages in a person's life, many factors influence the equilibrium of the humours, including lifestyle factors of the environment, air and breathing, food and drink, movement and rest, sleep and wakefulness, emotions and elimination and retention. Other factors also play a role, such as race, heredity, and gender, geographical location, climatic and atmospheric conditions.

The relationship between the organs and tissues of the body with Tibb depends on the maintenance of their ideal qualitative state, which is defined in terms of the qualities of heat, moistness, coldness and dryness. Any excess in these qualities will affect their structure and functioning.

Every tissue and organ has a specific quality and which is determined according to their functional requirements and the role they play in the body.

The aim of Tibb is to help the innate natural healing ability (physis) to assist and support the body to maintain the most optimum qualitative state, or to restore it when it is lost, through healthy lifestyle choices which are suitable for the individual temperament. Interventions include therapies to restore the natural balance, as well as facilitating the elimination of excess humours, such as exercise, regular massage, steam bath, fomentation, emesis, purging, enema, cupping, diaphoresis and diuresis, as well as dieto-therapy and pharmacotherapy.

The Holistic Nature of Tibb

The holistic nature of Tibb, within the context of the Simple Organ Theory, personifies the very essence of existence – from the psychic, vital, metabolic and generative faculties, to the complete integration of both information and energy transfer. This preserves the intricate balance of the humours, thereby preserving the health, wellbeing and preservation of the individual and the species as a whole.

Hippocrates maintained that the human body is composed of three parts, namely: the **solid** part, which is known as the **organs**; the **liquid** part, known as the **humours**, and **gas**, known as **pneuma** (vital energy). He understood the importance of viewing the body as a complete, integrated whole.

The human body has a temperature of about **37 degree Celsius**, and consists of **60-70% moisture**. The structure of the human being, with this respective concentration of heat and moisture, has an overall temperament of **hot and moist**. Life depends on innate heat, and growth depends on innate moisture.³

“Life is sustained by heat, and grows by moisture; heat is supported by moisture and feeds on it.”

(Avicenna)

At birth the balance of the ideal qualitative state is relative to the person’s ideal humoral composition according to the requirements of the temperament. What is considered to be balanced in one person may be considered an imbalance in another, due to the different humoral compositions.

Development of the Three Embryonic Germ Layers

The development of the three germ layers, namely, the ectoderm, endoderm and mesoderm, provide the foundation of all the organs and tissues of the body.

In the Simple Organ Theory, animal cells are regarded as the first and basic unit of body, from which the organisation of different cell types are formed, according to its particular role and functions in the body.

Cells constitute tissues; tissues form simple organs, and simple organs are organised into compound organs. The **brain, heart** and the **liver** are the major organs that perform the physiological functions of the body, and which are the centre of life of the **nerves, muscles**, and **glands**, respectively.⁴

The nervous, muscular and epithelial tissues bind together with the help of the connective tissue, to make up the organs of the compound body, such as the stomach, intestine, lungs and kidneys.

Development of the Three Embryonic Germ Layers (continued)

During embryology the three humours are represented by the three germinal layers.

- **Melancholic-mesoderm** is associated with the **heart**, and which represents the **muscular** tissues in the body. This has a dominant quality of **dryness**.
- **Bilious- endoderm** is associated with the **liver**, and which represents **glands and glandular tissues**. This has a dominant quality of **heat**.
- **Phlegmatic-ectoderm** is associated with the **brain**, and which represents **mucous membranes**. This has a dominant quality of **moistness**.

However, it must be noted that no simple qualities exists in the universe. Qualities work in combination with each other, such as hot and dry, hot and moist, cold and moist, and cold and dry.

The Sanguinous humour is the carrier of blood to all the other humours. Blood is a mixture of all of the humours, but because of its dominant red colour, it is called blood.

According to the simple organ theory:

- **Dryness** overcomes **moistness**.
- **Heat** overcomes **dryness**.
- **Moistness** overcomes **heat**.

The Ectoderm – Psychic Faculty - Nervous tissue - Brain



The **Ectoderm** is the **outermost** layer and it is the first of the three primary germ layers of the embryo to develop, forming into nervous and epithelial tissue. The ectoderm is comprised of three separate layers: the external ectoderm, the neural crest and the neural tube. The latter two are the precursors to the nervous system and the brain. From it are developed: the epidermis and associated structures (nails, hair, enamel of teeth and sweat glands), the external sense organs, such as the ear and eye; the lining of the nasal cavity and the mucous membrane of the mouth and anus. It also forms the posterior pituitary and the adrenal medulla.

The ectoderm gives rise to the nervous system, skin and sense organs.

Tibb believes that the ectoderm it is linked with the **brain**, which has a dominant quality of **moistness**, and is responsible for controlling all **nervous tissue**.

The seat of the **psychic faculty** is the brain. The psychic faculty performs its function through the perceptive (sensory) afferent nerves of the **external senses** of sight, hearing, taste, smell and touch, and **internal senses** of cognition, memory, common sense and imagination. The psychic faculty regulates the **nervous system** and **nervous tissue** (moist and hot to cold and moist).

The Mesoderm – Vital Faculty - Connective and Muscular tissue - Heart



The **mesoderm** is the **middle** layer, which gives rise to the heart, kidneys, blood and connective tissue. According to Tibb the mesoderm is linked with the heart (dry and hot). The seat of the **vital faculty** is the heart. The vital faculty performs its functions by the process of breathing and the functioning of the heart. The vital faculty regulates the **immune system** as well as cellular response. It produces **mechanical energy**, which is responsible for movement, as well as muscular **tissue** (dry and hot).

The mesoderm, the **middle** layer, develops into the dermis, cardiovascular, lymphatic, and muscular/skeletal systems it gives rise to the heart, kidneys, blood and connective tissue.

Tibb believes that the mesoderm is linked to the **heart** and it has a dominant quality of **dryness**, and that the heart is responsible for controlling the **muscular tissue**.

The mesoderm is formed during gastrulation from cells that migrate inwards and stop between the endoderm and ectoderm. It gives rise to: the notochord (forms the vertebral column), and the somites (portions of mesoderm that give rise to muscle and connective tissue); the coelom (body cavity), the outer covering of the internal organs, such as the peritoneum (the membrane that covers most organs of the GIT and part of the abdominal cavity); the pleura (the membrane covering the lungs and chest wall), and the pericardium (the membrane covering the heart).

It also forms muscle; the urogenital organs (kidneys, ureters, bladder, gonads and reproductive ducts of the testes and ovaries). The mesenchyme (loose, migratory cells), forms the dermis (inner skin layer); the skeletal system (bones and cartilage); and the circulatory system (heart, blood, blood vessels, lymphatics and lymphoid organs). It also forms the adrenal cortex.

Cells in the mesoderm may end up migrating, and differentiate into an endoderm (epithelial) tissue. The gonads, for instance, have qualities of Heat & Moistness, which is linked to the endoderm.

The Endoderm – Metabolic Faculty - Epithelial tissue - Liver



The **endoderm** is the inner layer, which develops into the lining of most of the gastrointestinal tract and the organs which serve it – especially the liver, gall bladder and pancreas.

The Liver has many functions, amongst which includes the production of **immune-boosting** factors. The liver is the only internal organ that will regenerate itself if part of it is damaged.

The seat of the **metabolic faculty** is the liver. The metabolic faculty controls nutritional use and regulates the **endocrine and exocrine systems**, which is responsible for enzymes and hormones. It performs its function of metabolism through its attractive, retentive, digestive and repulsive inherent capabilities that exist within this faculty. The metabolic faculty controls **epithelial tissue** (hot and dry to hot and moist).

Tibb believes that the endoderm is linked to the **liver** and it has a dominant quality of **heat**, and that the liver is responsible for controlling the **epithelial tissue**.

The endoderm develops during the process of gastrulation, when part of the blastula wall undergoes invagination inside the blastocoele, forming a tube, called archenteron (primitive intestine). This is the **origin of the GIT** and the organs which serve it.

The cells of the inner side of the tube form the endoderm and the epithelial tissue. It forms: the inner lining of the digestive tract (excluding the mouth, pharynx and end of the rectum), and the respiratory tract (trachea, bronchi, alveoli); the tonsils; the glands (thyroid, parathyroid, thymus, anterior pituitary); and the accessory digestive organs of the liver, pancreas and gall bladder; the lining of the urinary bladder, urethra and vagina; and the auditory structures.

It governs the endocrine, digestive and urinary/excretory systems. The endoderm also gives rise to the gonads, which is responsible for reproduction.

The Origin of Simple and Compound Organs

Organs or members are formed primarily from the mixing of the normal humours, just as the humours are formed from the mixture of the digested material, and the digested material is formed primarily from the mixture of the elements.³

An organ is a solid structure, which is formed from the solid part of primary matter, and it is derived from the courses particles of the humours.

According to Tibb, organs can be classified according to their origin. It is believed by some scholars that each organ carries out a specific function. It is divided into two categories, namely, simple and compound organs, but it can also be classified according to its function as well as its origin.

Simple organs

The smallest part of the organ exactly resembles the whole part of the organ.

- It is **homogenous** throughout - the organs are of a **uniform quality**, composition and structure. Simple organs are made up of primary combinations, example:

- A small piece of **flesh** resembles flesh in its entirety; **fat, arteries, veins, nerves, tendons, ligaments, viscera, bone, marrow, cartilage, and hair.**
- Simple organs originate from the seed (semen) of the male, when the foetus is being formed. Thereafter the blood of the mother nourishes the embryo and takes part in the formation of the organs.
- Other scholars believe that all simple organs, except flesh and fat, originate from the semen in the zygotic stage. The **flesh** originates from the denser portion of the blood, and **heat** coagulates it; while **fat** originates from the greasy portion of the blood, and **cold** coagulates it. Therefore fat melts when heat is applied.⁵

Compound Organs

These are composed of many simple organs and tissues, such as the **face, hands, feet**, etc.

- It is **heterogeneous** throughout – the organs are **dissimilar in nature.**
- These organs are also referred to as **mechanical** organs, which are the effect of forces on matter, thus producing a specific function, such as organs of the **brain** the **heart** and the **liver.**

Compound Organs are divided into Four Major Types:

Natural organs, **psychic** or mental organs, c) **vital** organs, and **essential** vital organs:

a) Natural organs

These are compound organs pertaining to the natural faculty and natural functions, namely the 1) nutritive organs and the 2) genital organs:

(1) **Nutritive organs** are divided into two types, namely, digestive organs and excretory organs:

- **Digestive organs:** oral cavity, teeth, salivary glands, pharynx, oesophagus, stomach, intestine, gall bladder, pancreas, and the spleen.
- **Excretory organs:** kidneys, ureters, urinary bladder, and the urethra.

(2) **Genital organs**, according to male and female organs.

- The male organs - the testes, epididymis, vas deferens, seminal vesicles, ejaculatory duct, penis, and the prostate.
- The female organs - the ovaries, uterus, uterine tube, vagina, and the vulva.¹

b) Psychic or mental organs

- Central organs, namely, the brain and spinal cord.
- Peripheral organs, namely, the cranial nerves, spinal nerves, nerve ganglia, ear, eye and nose, tongue, skin, and muscles acting under motor faculty.

c) **Vital organs**

These are the organs responsible for the circulation of blood, and respiration, namely, the heart, arteries, veins, capillaries, larynx, trachea, bronchi, bronchioles, lungs, thorax, pleurae, and diaphragm.

d) **Essential vital organs**

The **brain**, the **heart**, and the **liver** are responsible for the preservation of the individual. The **testes** and **ovaries** are responsible for the preservation of the species.

The Influence of Elements, Humours and Temperaments on the Body

Everything in the universe (macrocosm), including the human being (microcosm), is made up of the elements of primary matter, namely that of air (gas), water (liquid), earth (solid) and **fire** (plasma). The two **light elements** of **air** and **fire** enter more into the formation of the breaths, and contribute to their **movement**, as well as to the movement of the organs. The two **heavy elements** of **water** and **earth** enter more into the construction of the organs and fluids of the body, and contribute to its **stability**.³

The proportion in which these elements are united with the body influence its action and humoral composition. This forms the basis of each individual's unique constitution and personality, as well as susceptibility towards illness. Tibb describes this as temperament, namely:

Sanguinous (hot and moist), ***Phlegmatic*** (cold and moist),
Melancholic (cold and dry) and ***Bilious*** (hot and dry).

There is a dominance of one temperament, and a sub-dominance of another, as well as a combination of the other temperaments to a lesser extent.

Humours are referred to as body fluids, and the human body has a mixture of the four humours, namely:

The humours of ***blood***, ***phlegm***, ***black bile*** and ***yellow bile*** are associated with the ***elements of air, water, earth and fire***, respectively.

The humours are also associated with a particular season of the year, as well as the various stages of age and maturity, during which too much of the corresponding humour could exist in the body,

Humours form the basis of all cells, from which tissues and complex structures of human beings, animals, plants and minerals are formed. The humours form the building blocks for the four major types of tissues, namely, connective tissue, muscular tissue, epithelial tissue and nervous tissue. Organs are made from a combination of the four tissues, each of which has a specific temperament, according to the specific ratio of the types of tissues.

- Humours maintain temperamental **balance** (qualitatively);
- Provide **nutrition** for the maintenance of the body's complex structure by replacing body's tissues, and
- Provide the **energy** requirements for the various activities of the body.

Preservation of Health

The elements are constantly changing and interacting with each other in response to lifestyle factors of: environment, air and breathing; food and drink; movement and rest; sleep and wakefulness; emotions, and elimination and retention. In addition to the various lifestyle influences, there are also other contributing factors which include: geographical conditions and seasons; residential environment; occupation; habits; age; gender; micro-organisms, and other natural forces.

The ratio of the humours in the body directly influences the proportion of **heat, moisture, coldness and dryness** in the body. As heat is essential for life, any reduction of heat will not only impair digestion and assimilation, it will also result in the accumulation of toxic by-products that are not being adequately eliminated. The domino effect of the build-up of toxins in the body will alter the humoral composition in the body, resulting in illness if the humours are not restored back to their ideal composition/qualitative state.

Tibb believes that **disease** is a natural process and that its symptoms are an expression of the reactions of the body to toxins.⁶

Physis has the intrinsic ability of the body to **preserve health**, and to **heal** itself, thereby restoring **homeostasis**.

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.⁶

Overview of the Temperaments ⁽⁷⁾

The **Sanguinous** humour (blood), which is of a balanced nature, is ***hot and moist***, sweet and red, and exceeds the other humours in proportion to quantity. It gives strength and colour to the body. It provides motive energy. The receptacle for this humour is the **veins, arteries and capillaries**.

The **Phlegmatic** humour (phlegm) is next to blood, as far as the relative quantity present in the body is concerned. It is ***cold and moist***, watery and white, and moderate in strength, heat and thickness of the blood. It has expelling properties, and its role is to expel substances that are not required by the body, such as by-products of infections and toxins. The phlegmatic humour controls the bilious humour and it has a cooling and moistening affect in the heart. If an abnormality of the blood arises, heat will dissolve the phlegm humour into blood. It strengthens the function of the lower brain and the emotions, but has an adverse effect on the intellect. It also maintains proper fat metabolism and the balance of body fluids, electrolytes and hormones. The receptacle for the Phlegmatic humour is the **lungs**.

Conclusion

The **Melancholic** humour (black bile) consists of two parts: a ***thick, earthy aspect***, which is the ***coldest*** part (black and sour), and which is prone to coagulation (it thickens the blood), and a more ***fluid, vaporous substance*** that is also called Atrabile. It has the propensity to ascend and affect the brain. When it exists in normal quantities, it stimulates the memory and makes the nature homely, practical, pragmatic and studious. If, however, Atrabile becomes excessive, it can cause the condition called melancholy. The coldest part of the Melancholic humour is adherent and viscous, and if not eliminated properly, can settle on or in tissues, thus causing morbid deposits, which can form tumours. The receptacle of the Melancholic humour is the ***spleen***.

The **Bilious** humour (yellow bile) is less plentiful in the body. It is ***hot and dry***, yellow or red and bitter. It is closely associated with the nervous system and acts to increase its rate of function. It has a warming effect on the body. It moderates moisture and prevents the body from becoming heavy, sleepy and dull. It stimulates the intellect and increases physical and mental activity and courage. The receptacle of the Bilious humour is the **gall bladder**.

The development of the three germ layers, namely, the ectoderm, endoderm and mesoderm, provide the foundation of all the organs and tissues of the body from which the organisation of different cell types are formed, according to its particular role and functions in the body. Ectodermic tissues build nerves, and their centre is the brain. Mesoderm tissues build muscles, and their centre is the heart. Endodermic tissues build epithelial cells, and their centre is the liver.

Tibb recognises that these three embryonic layers are the link with the brain, heart, and liver, and which are the seat of the psychic, vital, and metabolic faculties. Other organs are servants to these organs, for example: the brain is served by the nerves; the heart by the arteries; and the liver by the veins.

The holistic nature of Tibb, within the context of the Simple Organ Theory, personifies the very essence of existence – from the psychic, vital, metabolic and generative faculties, to the complete integration between the brain, heart and liver, in terms of both information and energy transfer. Any imbalances of the humours can lead to physical, emotional, social and spiritual imbalances.

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