

Temperament of Aza-e-Mufrida (Simple Organs) - Scientific Validation of Unani Concepts

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Abstract

Background- Mizaj is second one factor after Arkan, in order of the seven important factors. It is one of the cardinal theories upon which the Unani system of Medicine is based and differentiating from others system of medicine. In present there are many views about types of simple organs and their mizaj. The temperament is an intrinsic state which enables an individual to survive and to procreate comfortability and is responsible for distinctive morpho-bio-physio-immuno-psychological identity of an individual.

Aims and Objectives- to put forth a concrete and clear concept of Mizaj of different simple organs in light of Unani concept as well as modern perspectives.

To make people aware about applied aspect of Mizaj aza in respect of restoring Health and prevention and treatment of Diseases

Material Methods- Temperament of Aza mufradah (simple organ) depends upon the specific character of Rutubat Ustaqussiyah of the cells which makes the internal environment of cells. Activity of organ, rate of metabolism, oxygen consumption, amount of Ruh (jauhar-e-Ruh and akhlat latifa) in organ are major criteria's of temperament assessment. Health and diseases are depend upon temperament (Structures and physiological functions) of organ. With the knowledge of temperament and distemperament of organ we can restore the heath and treat the diseases.

Conclusion & Future Perspective- After Scientific validation and knowing of different temperament of simple organs of human body, There will be many doors are open regarding prevention, diagnosis and treatment of diseases because temperament is a subjective and objectives parameter which play a key role in preventive, therapeutics and lifestyle recommendations.

Keywords: Unani system of medicine, Aza mufrida, Rutubat Ustaqussiyah, Mizaj Aza

Introduction-

In Unani system of medicine the human body (from cell to body system) is composed of four basic elements: earth, air, water and fire having cold, hot, wet and dry temperaments respectively. The body fluids of organs are composed of four humors: blood, phlegm, yellow bile and black bile. Hence word temperament is often

used in psychological sense but in medical sense it implies the blend of humours. Accordingly temperament is created by mixing humours and is named after dominant humour in the body¹. Galen, one of the ancient Unani physician, used to refer word temperament to bodily dispositions, which determined a person's susceptibility to particular diseases as well as behavioural and emotional inclinations. The terminology of Mutadil in Unani medicine is derived from the word 'adal fil qismat' which means justice in natural distribution². Health or Mizaj Motadil Tibbi is, the one where in the contrary qualities and the quantities of participating elements in a compound are not equal but are just suitable and perfectly balanced according to the properties and functions of that compound.³

Equable temperament of an organ as compared to other organs of the body (Mu'tadjl 'uzwi bi'l-qeyas ilaal-kharij): Ibn Sina says; this is the mizaj (temperament) which must be furnished to each and every organ of the body. This mizaj is specific for each organ, and owing to this, one organ or one tissue differs from that of another organ or tissue (the protein of one tissue differs from that of another tissue). For example each of the bones (bony tissue), muscles (muscular tissue), fats (adipose tissue) and a'sab (nervous tissue) are furnished with specific mizaj which differs from one tissue to another. Furthermore, the mizaj of muscles is not suitable for bone and vice versa.³

The sequence of Consolidation of Aza as per the Umoor Tabiyah:

Arkan → Akhlat → Aza

According to **Ibne sina**, Arkan provide primary components for the human body, etc. and the various entities of varying forms in the universe depend for their existence on their mizaj and Akhlat (humours) is a changeable form of Arkan (element) and Akhlat are proximate principles of for human body. However, the more proximate are aza baseetah (cells and tissues), which are composed of akhlat, whereas aza aliyah (organs) are composed of aza baseetah.³

Classification of Aza:

1. Aza Mufradah (Simple organ – cell and tissue)
2. Aza Murakkabah (compound organs or members)

Aza Mufradah (Simple organ): Also known as Aza basitah or Aza mutashabih al ajza (simple organs). It is defined as the organ, the smallest part of which exactly resembles the whole⁴. A simple organ is therefore, homogenous in structure throughout e.g. a piece of bone is still a bone.

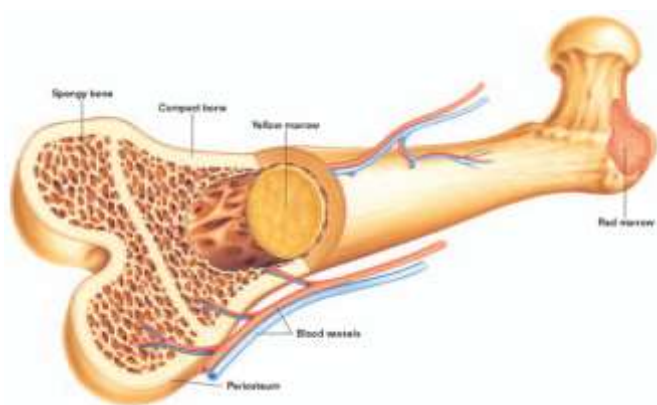
Aza Murakkabah (Compound organ) - The Aza murrakibah are those which are heterogeneous and are composed of many aza basitah and others substances. These are known as Aza Aliyah (Mechanical organs).e.g. - Heart, liver, stomach, intestine, brain.

In fact, these are the Aza murakabbah which are conventionally called as Aza or the organs. **Aza Basitah**

(Simple organ):

Aza basitah are as follows-

1. Izam (bones) or bony tissue



2. Ghazarif (cartilages) or cartilaginous tissue.

3. Rabat (ligaments)

4. Watr (tendons)

5. Asab (nerve) or nervous tissue.

6. Ghisha (Membranes)

7. Flesh

8. Fat

Source of Image-<https://fbresearch.org/leukemia-improving-efficiency-of-bone-marrow-transplants/>

Although the Greek Arab physicians have not observed the cells in the form and shape in which it is being observed today with the help of microscope. Nevertheless, they were aware of the concept that the aza-e-mufredah are composed of some minute particular maddah (matter), particle (cell) which is specific for each tissue.

Allama Nafis says, “There are specific maddah for each simple organ and there is specific Surat-e-nauiyah, due to which it becomes specific nau. This surat-e-nauiyah is common to the whole organ as well as any part of it.”

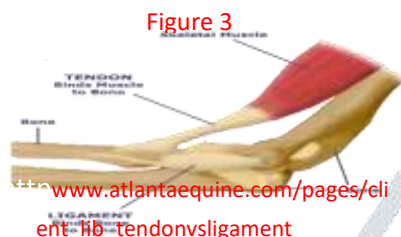
1).Bones (Izam)- Mizaj of bone is *Barid Yabis (Cold & Dry)*- Bone tissue is a mineralized connective tissue., that deposit a matrix of Type-I collagen⁵ and also release calcium, magnesium, and phosphate ions that ultimately combine chemically within the collagenous matrix to form a crystalline mineral, (Figure 1) known as bone mineral, (Consolidated Sauda) in the form of carbonated hydroxyapatite⁶. Mizaj of bone is barid yabis because it is a hard organ,⁹ having organ is comparatively less than soft organ. The amount of blood and oxygen in bone is 5-6 ml/100 g min being equivalent to an oxygen delivery of about 1ml/100 g*min. Water quantity is also in less amount. It is 20-25 %. In bones the numbers of cells comparatively less than other organs and cell is an origin site of energy production. So due to this there are also less energy produce from the bones which is an indication of barid mizaj of bone⁸.

2. Cartilage (Ghudruf)

Mizaj- Barid Yabis (Cold & Dry) -Cartilage is one of the types of connective tissue in our body.

It consists of cells called chondrocytes mixed with collagen and sometimes elastin fibres meshed into a matrix. (Figure 2), It is avascular, Aneural. Therefore the production of heat is very low and also Contain comparatively less quantity of water. Cartilage matrix is an **amorphous gel** that contains large amounts of **proteoglycans** and **collagen fibrils (Type II)**. Proteoglycans and collagens fibril both are comes under variety of Balgam (Phlegm). So the Mizaj of cartilage in comparison of other organ is Barid yabis.)

3. **Ligaments & Tendons- Mizaj- Barid Yabis(Cold & Dry)⁹** – Ligament is a band of fibrous connective tissue that binds bone to bone to bone. Tendon is a band of fibrous connective tissue that binds muscle to bone or other movable structure. Tendons and ligaments have a very poor blood supply meaning that they do not have any blood vessels.

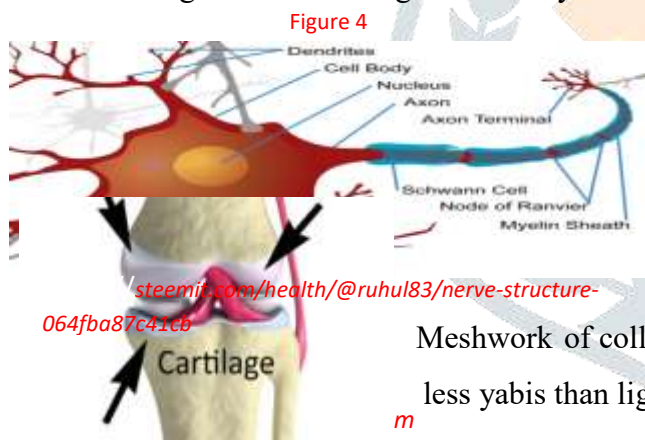


Water content also less in quantity. But tendon and ligament are less than barid than cartilage. (Fig 3)

4. **Nerve**

Mizaj- Barid Ratab (Cold & Dry)

The origin site of Asab (Nerves) is brain and spinal cord. It receive coldness from the brain and spinal cord⁶. It is a soft organ than other organs. Sensory nerve more barid than motor nerve while Mizaj of motor nerve is



Haar ratab⁷. Because it generate motor activities of muscles. The endoneurium of nerve consists of an inner sleeve of material called the glycocalyx and an outer, delicate,

Meshwork of collagen fibres which indicate the coldness of nerve. But it is less yabis than ligaments. (Fig 4)

Nerve tissue is composed of:

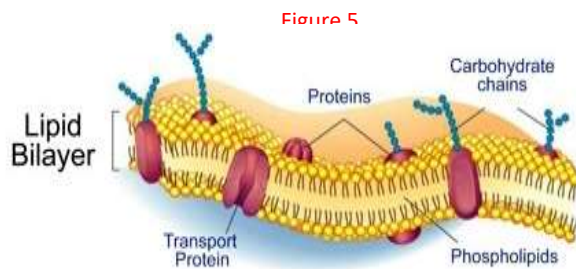
Water..... 80 percent.

Solids..... 20 per cent.

The solids are mainly composed of proteins, lipids, small amounts of organic extracts and inorganic salts. Proteins are about 38 to 40 per cent of the total solids. They include different globulins, nucleoproteins, and a characteristic albuminoid called neurokeratin. The lipid contents are 50 to 54 per cent of the total solids.

5. Membranes- Mizaj- Barid Ratab (Cold & Moist)

The Mizaj of membranes is Barid Ratab because it is formed by lipids including phospholipids,



glycolipids, and cholesterol. (Fig 5) High level of lipids and water are the reason of Barid ratab mizaj of membranes in comparison of other organs. Mizaj of mucous membrane is Haar than others membrane due to activeness¹⁰.

6. Flesh

Flesh include muscles, fascia, tendon, ligaments, and connective tissue and so forth all together. Flesh is that which fills up the space left within the members, thus imparting firmness and solidity.

Flesh is so well at tempered because the heat of breadth and blood within it is balanced by the coldness of the nerve. Drier and moister elements are equally presents in its account for its being well tempered. Muscles cooler than flesh due to their tendons and ligaments as well as nerve⁸.

7. Fats (shahm & sameen)

Mizaj of fat in respect of bil madda is cold while bil Quwa Mizaj of fat is Hot⁹.

According to *Ibne-Sina*- Mizaj of shahm and sameen is Haar because it is a best source of Body heat production. Fat is a poor conductor of heat, so a layer of stored subcutaneous fat (just under the skin) and in 'adipose tissue' provides the body with warmth. Fat is easily metabolized into energy, supplying almost twice as much energy per gram than carbohydrates.

Ali Ibne Abaas Majusi and Teacher of Ibne Sina , Abu Sahl Masihi include Hair, Nail and Magz (medulla) in Aza Mufradah.

Hair, Nail and Medulla

Hair & Nail –Both are Avascular & Aneurual, Rooh is absent in hair and nail so mizaj is barid.

Medulla- Medulla is constant in nature and there are no movement found in medulla and having less Blood vessels. It covered with bone. Membrane of medulla is derived from the meninges of brain. It receive coldness from bone and meninges. So the mizaj of medulla is barid¹⁰.

Discussion-

Basic criteria of Temperament of the organs- Temperament of Aza mufradah depends upon the specific character of Rutubat Ustaqussiyah (intracellular fluid)) of the cells which makes the internal environment of

cells and that of the entire body depends upon the Rutubt tajawif and Rutubat uruq. Rutubat ustaqussiyah (Fluid) is also called as Rutubat ghariziyah (Innate fluid) or Rutubat ula (protoplasm). It is specific for each tissue. Therefore the temperament of the cells can be find out by testing Rutubat ustaqussiyah and that of whole body by testing Rutubat tazawif blood and various tissue fluid in the laboratory. The temperament depends upon the homeostasis of this rutubat (fluid) or Khilt (humour).

Therefore, the ancient physicians took the aid of four qualities- Heat, cold, moistness and dryness to express the temperaments of the organs. In doing so they classified all the organs of the body in four categories as under-

Hot organs- Aza harrah (Hot organ) are those which are very active and in which the rate of metabolic activity is very high. This is determined by;⁴

1. The rate of blood circulation, **Abu Sahl Masihi** has pointed out that the organs whose blood supply is very rich are hot and those whose blood supply is poor are cold.
2. High` rate of oxygen consumption, this is determined by the following formula,

$$\text{O}_2 \text{ used by the organs (tissue)/O}_2 \text{ content of arterial blood} \times 100$$

3. Excess of those compounds which produce more energy and heat. This leads to excess of heat production.

Cold organs- Aza baridah are those organ which are less active in comparison to hot organs, the oxygen consumption is poor and blood supply is very low therefore the Production of heat is less in amount. Such as- Hairs, cartilages, bones, ligaments, tendons, fibrous membranes, nerves, nail, and teeth etc.

Moist organs- Moist organ are those which contain more water in comparison to other organs. The organ which contain more fats also known as cold organ. These are fats, brain, spinal cord, testes and ovaries, spleen, kidneys, glands, mucous membrane, stomach, intestine, uterus, lungs, heart, muscles, arteries, vein, skin etc.

Dry organ- Aza yabisah are those which contain comparatively less quantity of water and contain high level of minerals these are Hairs, teeth, bones, cartilage, tendons, ligaments, and nerves etc.

So, we can say that there are following points which determine the temperament of organs-

1. Activity & Blood supply of organ.
2. Quantity of Rooh (Jauhar rooh and Akhlat latifa)
3. Rate of metabolism
4. Specific character of Rutubat ustaqussiyah of the cells of each kind of tissue, which makes the internal environment of the cells.

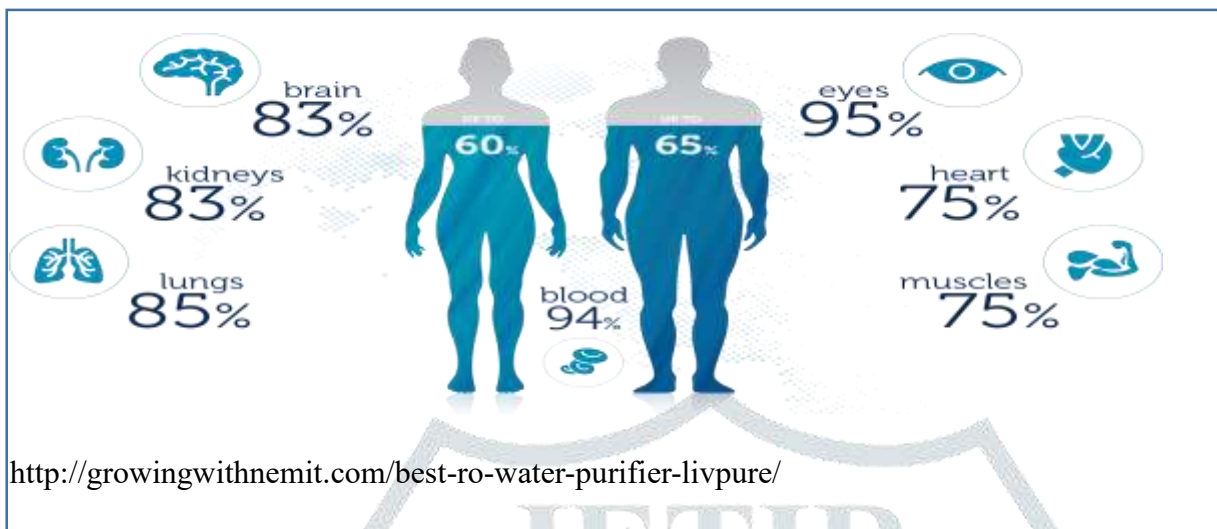
5. Mizaj depends upon the composition of protoplasm such as ions, amino acids, monosaccharides and water, and macromolecules such as nucleic acids, proteins, lipids and polysaccharides.
6. Solidity of organs.

AMOUNT OF BLOOD, WATER, OXYGEN CONSUMPTION IN DIFFERENT ORGANS-

- + Quantity of blood, water and oxygen consumption is a basic factors which determine temperament because through these factors all physiological function are perform from cellular level to the whole body system.
- + Amount of blood denote the quality (Kaifiyat) of organs. High percentage of blood in organ indicate hottnes (hararat). Low percentage of blood flow in organs indicate coldness (Barudat). (Table 1)
- + High quantity of water indicate coldness (Barudat) and vice versa. Here we can see percentage of blood, water and oxygen consumption in different organs. (Table 2)
- + High use of oxygen indicate hotness of organ. (Table 3)

Table 1- Percentage of Blood-

Organs	ml /mt	ml /mt/100 grams	% of Total Blood flow
Brain	700	50	14
Heart	200	70	4
Kidneys	1100	360	22
Liver	1350	95	27
Muscles (Inactive)	750	4	15
Bone	200	3	5
Skin	300	3	6

Table 2- Percentage of Water**Table 3 - Oxygen Consumption:**

Circulation	O ₂ Consumption ml/mt	Total O ₂ Consumption
Splanchnic	58	27
Renal	16	7
Cerebral	46	20
Coronary	27	11
Skeletal muscles	70	30
Skin	5	2
Other organs	12	5

CONCLUSION

The physiological functions of organs differ as they differ in their structures as well as temperament. There are certain organs which are considered as hot while certain as cold.. Those organs in which the blood supply is frequent with large amount of blood and abundant chemicals reactions, have hot temperament, the organs which are in contrast to the above defined organs are temperamentally cold, the organs which contain considerable “moist” and those which are void of them or have meagre quantity, possess cold temperament. Notwithstanding the details of the description of order of temperament qualities of organ of the body made available exhaustively by the ancient scholars. But today it is fully known from chemistry how elements

interact with each other and compounds are formed. Therefore, connecting of qualities with elements, which cannot be proved experimentally, is not a correct and rational approach in defining temperament. There is a need to have a fresh look into the matter and the order of temperament degree of metabolic activity and water content for hararat / barudat and ratubat/ Yubusat respectively. It has become necessary as the present state of knowledge on this matter does not come in conformity with what has been described by the ancient scholars on purely logical grounds. The metabolic activity of an organ can be measured by assessment of oxygen and nutrients consumption/blood supply per minute under different physiological states (rest and maximum work load). Similarly the water contents of different organs and parts of the body could also be estimated. After proper assessment of Mizaj we can restore the health, diagnose the diseases and to treat the diseases in future.

References:

1. Ahmad S, Unani Medicine: Introduction and Present Status in India, The Internet Journal of Alternative Medicine. 2007 Volume 6 Number 1.
2. Ibne Sina, Kulliyat Qanun, Daftar al-masih, Delhi, 1930, pp 39,45
3. Azmi A. A,(1995), Basic Concepts of Unani Medicine-A Critical Study, 1st Edition, Department of History of Medicine, Jamia Hamdard, New Delhi, pp. 57-59, 73-79.
4. Qarshi Allauddin, Afadiya kabeer majmal, translated by kabiruddin, Idara kitba-us-shifa, dariya ganj, New Delhi.
5. Hall, John (2011). *Textbook of Medical Physiology* (12th ed.). Philadelphia: Elsevier. pp. 957–960. ISBN 978-08089-2400-5
6. Ishtiyag, syed, AL umoor al tabiyah, principle of human physiology , first edition, 1980 AD, p 41
7. <https://en.wikipedia.org/wiki/Bone>.
8. Nafees, Burhanuddin, Tarzuma wa shara Kulliyat nafishi, Idara kitb-us-shifa, New Delhi, 1934 pp 51-55
9. Chandpuri Kausar, Mojiz alqanoon, taraqqi urdu beuro, 1988, New Delhi, pp 53-55
10. Gruner,O.C, A treatise on the cannon of medicine Of Avicenna, Luzac and company, London, 1930. pp 65-70