

# Muslim Heritage in Medicine

Subjects: Medicine, General & Internal

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Many Greco Arabic Muslim scientists have contributed to the medicine field.

Keywords: Greco-Arab ; medicine ; Muslims

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## 1. Introduction

Greco-Arab and Islamic medicine, refers to medicine developed during the “Golden Age of the Arab–Islamic Empire”, which extended from Andalusia (Spain) and Maghreb states (North Africa) in the west to Central Asia and India in the east, with the central lands of Egypt, Bilad al-Sham (Greater Syria), and Iraq playing an important role. It spanned a period of roughly nine centuries, from the middle of the seventh to the end of the fifteenth century, by which time it had broken up into three distinct empires, the Ottoman, the Safavid, and the Mughal. Islamic medicine was initially built on tradition, mainly the theoretical and practical knowledge developed in Arabia, Mesopotamia, Persia, Greece, Rome, and India. The founder of the Arab–Islamic medicine is believed to have been the Holy Prophet (Peace Be Upon Him) himself <sup>[1]</sup>. The statement of Holy Prophet (Peace Be Upon Him) that “there is no disease that Allah has created, except that He also has created its treatment” encouraged Arabs and Muslims to engage in medical research and seek out a cure for every disease known to them <sup>[2]</sup>. Arabs and Muslims were known to have advocated the traditional medical practices of the Prophet’s time, such as those mentioned in the Quran and Hadith. Later on, Arab and Muslim scholars translated the voluminous writings of Galen and Hippocrates, as well as writings of the Indian physicians Sushruta and Charaka and the Hellenistic scholars in Alexandria, from Greek and Sanskrit into Arabic and then produced innovative medical knowledge and practice based on those texts.

Arab and Muslim scholars systematically organized the vast and sometimes inconsistent Greco-Roman and Indian medical texts by writing encyclopedias and compendia. In addition, they made many of their own significant advances and contributions to medicine, notably in the fields of anatomy, botany, embryology, immunology, obstetrics, ophthalmology, pathology, pediatrics, physiology, psychiatry, psychology, pulsology, surgery, urology and pharmacy <sup>[3]</sup>. In the following contents, the contribution of following Greco-Arabic Muslim scientist has shared with special reference of medicine.

1. Abu Nasr Sa`ed Al-Baghdadi (died 624 H).
2. Jabir Ibn Haiyan (Geber, died 803 AD).
3. Abu Yousuf Yaqub Ibn Ishaq al-Kindi (Alkindus, 800-873AD).
4. Al-Abbas ibn Said al-Jawhari (800-860 AD).
5. Abu al-Hasan Ali Bin Sahl Rabban al-Tabari (838-870AD)---Teacher of al-Razi.
6. Ibn Wahshiyyah the Nabataean (860-935 AD).
7. Abu Bakr Mohammad Ibn Zakariya al-Razi (Rhazes, 864–930 AD).

## 2. Al-Baghdadi

Abu Nasr Sa`id ben Abi Al-Khare ben Issa ben Al-Masihi was one of the remarkable people, the most imminent <sup>[3]</sup>, and the elite between professors in the manufacturing of medicine. The following contents will discuss about his publication.

**Kitab Intikhab al-iqtidab:** Al- Baghdadi mentions that the reason behind writing manuscripts is to be an introduction for the beginner and a reminder for those who finish medicinal sciences. In this book he also mentioned different group of medicines as antiemetic, anthelmintic, antiurolithiatic, diuretic hepatoprotective and laxative medicines. This book discussed a lot of medical subjects that can be classified as the following:

1. Thorough in medicine.
2. Diseases and their reasons.
3. Medicines and rules for how to treat and use them.
4. The diversities between diseases.

## 5. Commandments

**a. Thorough in medicine:** He talked about the humors, the elements, the organs, blood vessels and their kinds then he talked about the formation of bones for the human body as well as the cartilages, the joints and the muscles.

**b. Diseases and their reasons:** He talked about the types of diseases and their kinds, their reasons and sign and symptoms. He also talked about the effect of air, seasons, inhabitants, soil, and food on the body from one side and on the diseases from the other side.

**c. Medicines and rules for how to treat and use them:** He talked about the rules of choosing the medicines, and choosing the right time for using them. Then he talked about the types of medicines and their mixtures and strength and adopted rules when formulating medicines.

**d. The diversities between diseases:** He has mentioned the difference between catarrh and cold; epilepsy and spasm; vitiligo and leprosy has mentioned in this book.

**e. Commandments:** At the end, fantastic range of wills and tips essential in the management of patients have written as a set of rules that must be performed by a physicians before and during treatment of patients. He wrote,

*"The power of the patient is stronger than the disease, there is no need then for a physicians or medicine but particularly the strengthening of the body's immune. Physicians first control pulse and the eyes of the patient. Pulse plays an important role in the knowledge of the condition of the heart, and the eyes and their focus gives us the situation of brain. If physician can treat the patient with food, there is no need for the drug. If you can treat the patient with mild medicine, there is no need for strong one. If you can treat the patient with one medicine, there is no need for more than one. Don't prescribe the drug before expert it. The experience of the drug should be check primarily on healthy volunteers. When you need to treat 2 diseases at same patient, you must begin deal with the most dangerous one to save the life. When patient desire something like foods, drink, give him it. You must take care about the patient desire of method of treatment. You must relieve the patient's pain. You must know the whole clinical history of patient. You must know the disease before begin the medication".*

## 3. Ibn Haiyan

He identifies poisons by their traits, natural origins, modes of action, dosages, and methods of administration and choice of antidotes for particular poison <sup>[4]</sup>.

## 4. Al-Kindi

Al-Kindi was a renowned ninth century Arab doctor who introduced the application of mathematics into medicine, particularly in the field of pharmacology <sup>[4]</sup>. This includes the development of a mathematical scale to quantify the strength of drugs, and a system that would allow a doctor to determine in advance the most critical days of a patient's illness, based on the phases of the Moon.

## 5. Al-Jawhari

Kitab al-Sumum It is a five-volume manual on toxicology which discussed that how poisons can be detected by sight, touch, taste, or the toxic symptoms they cause <sup>[4]</sup>. Descriptions are provided of poisoned drinks, foods, clothes, carpets, beds, skin lotions, and eye salves, as well as narcotics and universal antidotes.

## 6. Al-Tabari

**Firdous al-Hikmat** is one of the Al Tabari first ever medical encyclopedia which incorporates all the branches of medical science consists of seven parts. Some of them show his experience in surgery. He used the available known metal tools, made of iron, that were used for thermocautery, incisions, punctures, venesection, scarification and extraction of arrows <sup>[4]</sup>.

- Part one: *Kulliyat-e-Tibb* throws light on contemporary ideology of medical science.
- Part two: Elucidation of human body organs, rules for keeping good health and comprehensive account of certain muscular diseases.
- Part three: Description of diet to be taken in disease and health.

- Part four: All diseases from head to toe. It further contains twelve chapters. I) General causes of disease eruption ; II) Diseases of head and brain, III) Diseases related to eye, nose, ear, mouth and the teeth, IV) Muscular diseases (paralysis and spasm), V) Diseases of chest region, throat and lungs, VI) Abdominal diseases, VII) Liver diseases, VIII) Gall bladder and spleen diseases, IX) Intestinal diseases, X) Types of fever, XI) Miscellaneous diseases, XII) Pulse and urine examination
- Part five: Description of flavor, taste and color
- Part six: Drugs and poison
- Part seven: Deals with diverse topics. Discuss climate and astronomy. Also contain a brief mention of Indian medicine <sup>[1]</sup>.

## 7. Ibn Wahshiyyah

*Al-Sumum wal-tiryaqat*: It discusses the general human anatomy and the four humors, detailing how they are affected by purgatives and lethal drugs. He even warns against poisonous or poisoned matter and prescribes antidotes <sup>[1]</sup>.

## 8. Al-Razi

### a. *Al-Kitab al-Mansuri*

This 10-volume book discussed general medical theories, diet and drugs and their effect on the human body, mother and child care, skin diseases, oral hygiene, climatology and the effect of the environment on health, epidemiology, and toxicology <sup>[1]</sup>. The seventh volume dealt with general surgery and bone fractures included surgical treatment of umbilical and inguinal hernia, tumours of the breast, skin and legs and the removal of leg varices. In this volume, he also mentioned surgical tools used by him previously known as the cautery, hooks, needles, pricers, retractors, scalpels and scissors that were made of iron or copper. Some new surgical tools invented by him as for the removal of nasal polyp he used the knotted rope, which passed from the nose to the mouth. He also introduced different shapes of scalpels in surgery of the tumours, suture thread made of the intestine of animals, the catgut. He was first one to use pure alcohol for wound cleaning and dressing. The most marvellous addition is the use of the soporific sponge for inhalation anaesthesia. It was a sponge saturated with dissolved powder of *Papaver somniferum* L. (opium), *Hyoscyamus niger* L. (hyoscyamus) and *Mandragora officinarum* L. (mandragora), placed on the nose and mouth before any operation <sup>[4]</sup>. Razi further mentioned that *Masikul bawl advia* (*Acorus calamus*, *Alpinia galanga* and *Quercus incana*) are useful urinary incontinence <sup>[5]</sup>.

### b. *Kitab al-Jadari wa'l Hasbah*, (The Book of Smallpox and Measles)

Al-Razi considered smallpox to be basically an infection of the blood, in which the blood boils and releases vapors that get trapped in vesicle like blisters underneath the skin. He thought that the fluid in smallpox blisters was like immature blood being fermented and ripened into a richer blood, much like the making of wine, with the blisters being like bubbles found in wine <sup>[6]</sup>. This book clinically and scientifically distinguishes between smallpox and measles. He stated: "*The eruption of smallpox is preceded by a continued fever, pain in the back, itching in the nose and nightmares during sleep. These are the more acute symptoms of its approach together with a noticeable pain in the back accompanied by fever and an itching felt by the patient all over his body. A swelling of the face appears, which comes and goes, and one notices an overall inflammatory color noticeable as a strong redness on both cheeks and around both eyes. One experiences a heaviness of the whole body and great restlessness, which expresses itself as a lot of stretching and yawning. There is a pain in the throat and chest and one finds it difficult to breathe and cough. Additional symptoms are dryness of breath, thick spittle, and hoarseness of the voice, pain and heaviness of the head, restlessness, nausea and anxiety. (Note the difference: restlessness, nausea and anxiety occur more frequently with 'measles' than with smallpox. At the other hand, pain in the back is more apparent with smallpox than with measles). Altogether one experiences heat over the whole body, one has an inflamed colon and one shows an overall shining redness, with a very pronounced redness of the gums* <sup>[1]</sup>."

### c. *Al-Hawi Fi-Tibb*

A collection of medical notes that al-Razi had read and observations from his own medical experience throughout his life. *Al-Hawi Fi-Tibb* consists of 23 volumes that include diseases of different body organs along with their diagnosis <sup>[2]</sup>. Views about polypharmacy He cautioned against unnecessary use of drugs, and particularly polypharmacy: He wrote, "*If the physician is able to treat with nutrients, not medication, then he has succeeded. If, however, he must use medication, then it should be simple remedies and not compound ones.*" Unlike the polypharmacy promoted by some other Islamic authors in the 9th century, al-Razi rarely recommends compound remedies of few ingredients.

**Treatment of gout:** He wrote, "Where gout is accompanied by high fever, the recipe contains seeds that cause diuresis without giving out much heat, such as those of white colchicum (*Colchicum autumnale* L.), water melon (*Citrullus lanatus* (Thunb.) Matsum. & Nakai) and cucumber (*Cucumis sativus* L.). These, in equal parts, are mixed with one third of a part of opium, and an oral dose of four dirhams (12g) of the mixture with the same amount of sugar is analgesic and effective within the hour. Where there is no high fever, the ingredients, in an oral remedy, are: colchicum (*Colchicum autumnale* L.), opium (*Papaver somniferum* L.), borax, colocynth (*Citrullus colocynthis* (L.) Schrad.), ammi (*Ammi majus* L.), aristolochia (*Aristolochia gigantea* Mart.), and mountain thyme (*Thymus serpyllum* L.)..... I have heard amazing accounts, amongst which the physician is prescribed for gout a potion prepared with two mithqals (4.5g) of colchicum, half a dirham (1.5g) of opium and three dirhams (9g) of sugar. The drug is said to be effective within the hour, but I need to verify this".

**Diagnosis of meningitis:** He stated, "When the dullness (*thiqal*) and the pain in the head and neck continue for three and four and five days or more, and the vision shuns light, and watering of the eyes is abundant, yawning and stretching are great, insomnia is severe, and extreme exhaustion occurs, then the patient after that will progress to meningitis (*sirsâm*) ... If the dullness in the head is greater than the pain, and there is no insomnia, but rather sleep, then the fever will abate, but the throbbing will be immense but not frequent and he will progress into a stupor. So when you see these symptoms, then proceed with bloodletting. Once I saved one group [of patients] by it, while I intentionally neglected [to bleed] another group. By doing that, I wished to reach a conclusion. And so all of these [latter] contracted meningitis [7].

**Diagnosis of Tuberculosis:** According to Al Razi "To diagnose the patient of TB - give the patient meals in three different times and record the temperature, if the temperature rises, it is the confirm diagnosis of TB [8]."

**Deodorants and antiperspirant:** In this book Al Razi has mentioned natural antiperspirant and deodorants. He also differentiates between odor remover and anti sweating agents. He wrote,

"To perfume body, one should coat his body with leaves of Cypress-tree (*Taxodium distichum* (L.) Rich.) and the oil of its flowers, and eat Cubebe Pepper (*Piper cubeba* Bojer.) and Cassia-tree (*Cinnamomum cassia* (L.) J.Presl.), in the morning before eating.....nothing can remove stinking sweat like Rehani Syrup i.e. grape juice (*Vitis vinifera* L.) with carnations (*Dianthus caryophyllus* L.), and eating Artichoke (*Cynara scolymus* L.) and Asparagus (*Asparagus officinalis* L.), and all plants that expel thick urine, like Sabin, which is very strange, if one has some of it every day. Then the smell of sweat will be as that of Sabin. The same applies to the smell of urine. So stink will be removed completely..... "By which the body is perfumed by its essence like spices and perfumes. Some of them block pores of the body, like burnt lead, alum, slag of silver and zinc. They all prevent sweat from armpit and feet, so there will be no stink ..... Body should be rubbed by cooked wild-thyme (*Thymus glaber* Mill.), butchers broom (*Ruscus aculeatus* L.), rose (*Rosa canina* L.), sweet marjoram (*Origanum majorana* L.), moss (*Muscus arboreus*) and sweet flag (*Acorus calamus* L.)..... we take one ounce of cinnamon-tree (*Cinnamomum verum* J.Presl.) and Indian valerian (*Valeriana wallichii* DC.) and azzfar al-teebe (covering of a kind of shellfish), two ounces of each one, and half ounce of lake mud, graphite slag and washed ceruse (Venetian ceruse / white lead), one ounce of with judean wormwood (*Artemisia judaica* L.) and Roman valerian (*Valeriana officinalis* L.) and three ounces of saffron and dried rose. Then the dry components are crushed with butchers broom water and saffron, and dissolved by old rehani syrup and used (for odor removing and anti-sweating purpose)" [9].

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