



HUMORALISM

HUMORALISM (*tebb-e jālinusi/tebb-e yunāni*), or Galenism, a medical philosophy that considers illness as an imbalance in the body's four elemental humors (*ča-hār ket̄t̄*), which are identified as blood (*ḵun, dam*), phlegm (*balḡam*), yellow bile (*ṣafrā*), and black bile (*sawdā*). Each of these humors is believed to possess two natures: hot (*garm*) or cold (*sard*) and dry (*ḵošk*) or moist (*tar*). Blood is considered hot and moist; phlegm, cold and moist; yellow bile, hot and dry; and black bile, cold and dry (Jorjāni, ed. Sa'idi, pp. 7, 12-14; Nasr, pp. 219-20). The human body is brought into being from the mixing of these four humors, which are renewed through the digestion of foodstuff (Jorjāni, ed. Sa'idi, pp. 7-8, 14-16; Gruner, pp. 214-20). A unique equilibrium exists among these humors in a healthy body, which in turn maintains an individual's distinctive temperament (*mezāj, ṭab*). Although, theoretically, every individual has a unique temperament, Persian tradition identifies four characteristic categories (*čaḥār feṭrat*), including lymphatic or phlegmatic temperament (*mezāj-e roṭubi*), melancholic temperament (*mezāj-e sawdā'i*), choleric temperament (*mezāj-e 'aṣabi*), and sanguine temperament (*mezāj-e demawi*; Schlimmer, pp. 530-31). An imbalance in the humors and, by extension, temperament (*mezāj*), is the principal cause of illness.

To maintain the correct humoral balance there is a power of self-preservation or adjustment called *qowwat-e modabbera* (vital force) in the body. If this power weakens, imbalance in the humoral composition is bound to occur. This view holds the normal, healthy body in a precarious balance that can be upset at any time by harmful influences from the environment, diet, and standard of



living. More than anything else, it is food that is credited for maintaining this balance, since healthy food contributes to the renewal of the humoral equilibrium by replacing the loss that it undergoes, and unhealthy food gives rise to bad humors that the body seeks to expel (Gruner, pp. 214-20). It is not surprising therefore that the Persian word for expectorant matter that is emitted during illness is synonymous with the word for humors (*aklāt*, sing. *kelt*). Avicenna (q.v.) stipulated that all four of these humors arise at the site of the liver in quantity or predominance according to the nature of the food eaten and the degree of completeness of their digestion. The nature of the foodstuffs was generally classified as hot (*garm*) and cold (*sard*). Certain food items such as lamb, honey, mint, and black tea were considered hot, while beef, melon, peach, and green tea were considered cold (Jor-jāni, pp. 129 ff.; Moḥammad Mo'men, pp. 165-67, 234, 367-68, 849). During digestion, blood humor came into being first and was formed of the choicest parts of nutrients. It was followed by the phlegm humor during the second-level digestion. Yellow bile, which consists of coarser and less refined food parts, is in the third stage of digestion; and finally the black bile, composed of the least digestible and useable parts of nutrients, is generally undigested (Gruner, pp. 163, 214-20).

The Hippocratic theory of Humoralism was the first known natural explanation in recorded history that was given for the emergence of disease rather than crediting the supernatural. With the absence of a priestly autocracy in 5th-century B.C.E. Greece and a prevailing culture of individualism, heretical theories that stepped away from the view of disease as a punishment from the gods could thrive. The Hippocratic Corpus, in which the theory of humoralism was first introduced to a literate audience, consists of about sixty treatises, the bulk of which were written between 430 and 330 B.C.E. (for Ar. trs., see Ebn al-Nadim, ed. Tajaddod, p. 347, and Sezgin, III, pp. 23-47). Although the work was originally attributed to Hippocrates of Cos (Boqrāt, b. ca. 460 B.C.E), it is now known that it is actually the work of a large number of medical authors belonging to different schools of medical thought (Hippocrates, pp. 10-11). The Corpus viewed health and illness as a form of balance and imbalance of fluid (*chymoi*), a term that is usually translated as humors but whose primary meaning is juice or flavor. The author of *On the Nature of Man*, one of the Hippocratic treatises, argued that health was a state in which the four humors were in correct proportion, strength, and quantity to each other and that illness emerged when the humors were deficient, in excess, or separated from one another (Nutton, 1995, p. 24). Two fluids in



particular, bile and phlegm, were seen as being the causes of diseases, because they seasonally appeared to flow out of the body during a person's illness. Winter colds were attributed to an overabundance of phlegm, and summer dysenteries and vomiting to bile (Hippocrates, p. 262). Bile and phlegm gave rise to diseases when they became too dry, too wet, too hot, or too cold. The Hippocratic writers saw these changes as being brought about in a variety of ways, including by food and drink, exercise, wounds, smell, hearing and sight, sexual intercourse, and the hot and the cold themselves. Since Homer's time, blood was observed to be expelled from the body during menstruation and was associated with life. As a result, the Greek healer followed nature's example and removed blood from the patient when it was observed that an excess caused illness. Indeed, the removal of excessive humors was at the heart of Hippocratic therapeutics. Medicines were prescribed for these fluids to be brought up or for patients to be bled through bloodletting (q.v.; Hippocrates, p. 263). Black bile is one of the last essential humors to have found its way into the Hippocratic Corpus and was regarded as being very harmful. It was visible in vomit and excreta and was probably some form of dried blood (Hippocrates, p. 263). Besides being linked to the four seasons, the four humors came to be linked to the four ages of man, that is, infancy, youth, maturity, and old age; and to the four primary qualities of hot, dry, cold, and wet (see [Figure 1](#); Hippocrates, pp. 160-61). A variation on the format of Humoralism was put forth by Philiston of Locris and his pupil Plato (427-347 B.C.E.) which linked the four elements of air, water, earth, and fire with the four humors (Nutton, 1993, p. 286).

During the Roman period, Galen (Jālinus) of Pergamon (129-ca. 200 C.E.), philosopher and surgeon to the gladiators, provided the first synthesis of all major opinions on Humoralism by combining the humoro-cosmological conceptions of Plato in *Timaeus* with the variety of Hippocratic opinions available in the corpus. The result was the alignment of the four humors with the four elements, which Galen maintained could be combined in man into temperaments. Only one temperament was a perfect mixture of all four humors; the rest had an excess of one or more humors. The humoral excess in categories of temperament created a predisposition to certain types of diseases but was not morbid, as the Hippocratic corpus stipulated (Nutton, 1993, pp. 286-87). The appeal of Galen's Humoralism to his successors in Europe and the Islamic world stemmed from his ability to link man and his humoral microcosm to the macrocosmic world of elements.



Persian contact with Greek physicians throughout the Achaemenid period makes it likely that the Iranian world was aware of Hippocratic traditions (see [GREECE x](#)). The Greek medical influence was particularly strong among the Hellenized Arsacids (q.v.), who ruled Persia after the Macedonian domination of the country in the wake of Alexander's conquest of the Achaemenid empire (330 B.C.E.). There is even evidence that Persian-Zoroastrian traditions, which regarded the human body as reflections of earthly elements, might have played a formative role in the Humoral theory (Elgood, 1934, p. 9). Solid proof of Humoral praxis in Persia does not emerge until the Sasanian period (226-652 C.E.), with the influx of refugees from the Byzantine empire and the founding of the Gondēšāpur School of Medicine and its ancillary hospital in southwestern Persia (see [GONDĒŠĀPUR](#)). The deposition and condemnation of Nestorius, patriarch of Constantinople, in the Council of Ephesus in 431 led to the exodus of a significant number of Nestorians, including physicians, from Edessa into Persia; and, by the end of the 6th century, these immigrants had transferred the main body of Hellenic medical knowledge to their hosts (Whipple). Newly translated works not only influenced local practice but also, in turn, caused Greek medical theories to be interpreted and polarized according to indigenous concepts of Zoroastrian dualism. This newly evolved physiological model was exemplified by the Hippocratic concepts of cold and dry humors, which were seen as evils that the physician had to assail by means of good dietary and pharmacological treatments (Bellamy et al., p. 90). While the physical existence of a school of medicine at Gondēšāpur in pre-Islamic times remains a matter of academic debate, the role of Nestorian physicians in disseminating Hippocratic and Galenic precepts among the Persian elite cannot be disputed. The presence of these physicians even influenced early Islamic medical conceptions. It is claimed in some late sources that Ḥāreṭ b. Kalada Ṭāqafī, the physician of the prophet, traveled twice to Persia, was trained at Gondēšāpur, and engaged in a dialogue on medicine with the Sasanian king Kōsrow I Anōšīravān (r. 531-98; Pellat, p. 354; Conrad, p. 101).

The advent of Islam and the conquest of Persia by the Arabs ushered in a golden age in Persian medical culture and assured the continuation of Humoralist medicine. The academics at Gondēšāpur continued to flourish in the service of the caliphate and to disseminate Hippocratic teachings. In addition, the replacement of the Persian scientific lingua franca with Arabic ushered in an era of translation that increased in momentum in the 9th century. The internationalization of Persian medicine, witnessed in the



academy at Gondēšāpur, and the emergence of Arabic as the language of learning and science were prelude to the synthesis of the various trends in the medical sciences which would be achieved by Persian scholars in the period following the expansion of Islam. This trend was epitomized by the 9th-century author Abu'l-Ḥasan 'Ali b. Sahl b. Rabban Ṭabari, a Nestorian Christian convert to Islam, whose family, originally from Marv, had settled in the Caspian province of Ṭabare-stān, where his father had been a respected physician and scholar (Brockelmann, *GAL SI*, pp. 414-15; Browne, pp. 38-39; Hamarneh, pp. 353-57). Ṭabari learned most of his medical art from his father and also mastered the Syriac and Greek languages. His *Ketāb-e ferdaws al-ḥekma fi'l-ṭebb*, completed in 850, is widely believed to have adapted the Syriac translations of Hippocratic, Galenic, and Aristotelian medical theories into Arabic (Conrad, pp. 112-14; Sezgin, III, pp. 236-39). This work is the first known attempt at creating a medical encyclopedia which incorporated all the branches of the medical sciences known in the 9th-century Islamic world, including Indian Ayurvedic traditions (Bellamy et al., p. 91; Meyerhof).

A contemporary of Ṭabari, Abu Bakr Moḥammad b. Zakariyā' Rāzi (Rhazes; ca. 251-313 /865-925) was the first Persian physician to use Humoralism to distinguish one contagious disease from another through his clinical characterization of smallpox. Previously, all contagious diseases had been lumped together under the same general category of epidemics (*wabā'*) without any distinction between the types of contagion. In describing the oncology of smallpox, Rāzi proposes that it is predominant among children because the blood of infants is more moist than that of adults, a condition which makes their blood more likely to ferment and putrefy, giving rise to the pox (Rāzi, pp., 29-31; cf. Gorgāni, ed. Sa'idi, pp. 279-80). Another physician who played an important role in the dissemination of Humoralism in the Islamic world was 'Ali b. 'Abbās Majusi (q.v.; known in the West as Haly Abbas), who came from a Zoroastrian family of Arrajān (or Ahvāz). His *Kāmel al-ṣenā'at al-ṭebbiya*, also known as *al-Ketāb al-malaki*, is a schematized presentation of Galenic theory, characterized by brevity and freedom from magical and astrological ideas (Elgood, p. 381).

The resurgence of a native Persian literary tradition in the province of Khorasan allowed Humoralism to expand beyond the Arab-speaking literary elite of Persia to the Persian-speaking masses. This was epitomized by Ḥakim Meysari's *Dāneš-nāma*, written between 977 and 980. It is the first known medical work written in Persian, in which the author emphasizes that his



students and readers must have a good knowledge of the “noble physicians,” including Hippocrates and Galen. In addition, Meysari’s observations on the origins of epidemics draw important trends from the Galeno-humoral theories of elemental and natural causation, including the irregularity of seasons in temperature, rains, winds, or astrological events (Meysari, vv. 4447-50).

Avicenna (q.v.) was the first Persian physician to build on the Galeno-Hippocratic tradition rather than dogmatically adhering to its every precept. His view of disease, as articulated in his *Ketāb al-qānun fi’l-ṭebb*, a large medical compendium in five books known in the West as the *Canon of Medicine*, was one that integrated the Hippocratic views of humoral primacy with Galenic precepts of temperamental predispositions to disease. Avicenna differed from Galen on the role of the sanguineous humor as being the only nourisher of the various organs, since he felt that all organs, by virtue of their qualities, had their own distinct temperaments and therefore had their own unique humoral supply. As a result, Avicenna maintained that blood not only transported sanguineous humor but others as well (Gruner, pp. 76-92). It was Avicenna’s position on the poly-humoral quality of blood that in all probability popularized the practice of bloodletting and leaching, particularly among the readers of the *Canon* in the West, as a means of treating people with diseases associated with bilious or phlegmatic humoral excess. Avicenna added the precept that the humors could be divided into two larger categories (primary and secondary) based on their location (intracellular vs. extracellular) and their ability to be transformed into nourishment. Within the secondary category of humors, there were also the two major categories of sanguineous humor, which predominated in blood, and serous humor, which nourished tissues and lubricated joints and organs involved in movement. Ever the practical clinician, Avicenna created an organized schema whereby the normal versus abnormal humors could be differentiated by virtue of their visual quality and taste. He considered normal serous humor sweet, but salty serous humor abnormal and due to an abundance of bilious humor, which made its temperament hot and dry (Gruner, p. 81).

Humoralism underwent very little conceptual change following Avicenna’s death. In his encyclopedic *Daḳira-ye k̄vārazmšāhi*, Sayyed Esmā’il Jorjāni (1042-1136) expands Avicenna’s humoral precepts covering the temperamental qualities of every organ, their clinical manifestations, and their pathological predispositions by dividing them into physiological categories (hot, cold, dry, humid). Each category has its distinctive trait; the



“hot” eye, for example, was purported to have rapid movements and conspicuous ruddy blood vessels, and to feel warm if touched (*ba lams*), in contrast to the “cold” eye, which is presented with opposite traits. Each in turn would be predisposed to distinct diseases (Jorjāni, ed. Sa’idi Sirjāni, pp. 11, 333-35, tr. p. 18). The humoral concept put forth by Avicenna lasted well into the Qajar period and dominated the practice of orthodox medicine in Persia until the advent of the clinico-pathological movement from Europe in the latter half of the 19th century (Tholozan, pp. 36-37). With the passing of medical licensure laws in the first decade of the 20th century, Humoralism was forced to recede from the territory of orthodox and legally sanctioned medical practice, but it continued to thrive in the realm of folk medicine, where it has survived to this day (Good, pp. 25-58).

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