

Enrique Santana

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Professor Hanson

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Medieval Medicine and the Theory of the Four Humors

In early modern Europe, medicine was linked with astrology, as the stars were believed to significantly influence the body. Medieval authors such as Hippocrates argued that whoever called himself a doctor, yet knew no astrology, was like a blind man. Doctors would consult with the stars and match them with the individual's star sign in hopes of helping them with their diagnosis. Medical practitioners constantly referred to an astrological chart, or lunar table, in order to determine the position of the moon on a given day. With this information in hand, physicians were able to determine whether a particular day was good, bad, or indifferent for the bleeding or purging of a sick patient. Based on the belief that the stars exert an influence on the body, earlier physicians helped develop the "Zodiac Man" which reveals the interrelated nature of medicine and astrology in the early modern world. The illustration of the Zodiac Man associates parts of the human body with that of the zodiac signs. The Zodiac Man is also known as, or called, *Figura de Amistad* and began to appear in Europe in the thirteenth century.

Early stages of medicine referred to astrology and the humoral system to ultimately diagnose and treat patients. Although it took many years for medieval medicine to make its way from Greece to Spain, indigenous treatments traveled significantly from Latin America to Europe thus reinforcing the progression of medicine. The first medical university was founded in the 10th century in Salerno, Italy where Greek manuscripts were studied. The earliest medical writings of Medieval Medicine include that of Hippocrates of Cos who is better known as the

‘founder of medicine’. Hippocrates was famed for the exact purpose of his teachings of a medical practice that consisted of observing the human body rigorously and being able to use distinguished signs/symptoms in order to correlate proper and specific aid and/or treatment. Medieval physicians strategically analyzed symptoms and examined excreta in order to make their final diagnoses. Only after closely observing the body’s signs and symptoms would a medieval physician be able to prescribe detailed diet, rest, sleep, exercise, or baths. An alternative treatment could also be to administer emetics/purgatives or *bleed* the patient in order to help restore balance throughout the body. Furthermore, Hippocrates is credited for introducing the theory of the four humors – blood, yellow bile, phlegm, and black bile. Treatments for illnesses in the medieval era included blood-letting, astrology, and herbal remedies. If ever herbal remedies or bloodletting failed to cure or restore balance in the body, patients and physicians would turn to prayer.

According to Hippocrates, a healthy human body signified there was balance throughout the entire body whereas disease and/or illness meant an imbalance of some sort was taking place. The humoral theory helped indicate whether an illness or *dis-ease* was systematic (affecting the body as a whole) or localized (affecting one specific part/area of the body). The four humors include the following: blood, yellow bile (*choler*), phlegm, and black bile (*melancholy*). Hippocratic text suggests that these essential fluids, or “humors”, combined to regulate proper body function. Disease or illness would represent the body’s excess or lack of one of the humors. This actively demonstrates that a fever would be referred to as systematic seeing as how the disease actively affects the body as a whole. Whereas, podagra, or *gout*, would symbolize a localized imbalance as it is excess of humor in the chest and feet areas respectively. Often times, blood, bile, and phlegm were excreted in order to help restore balance and humors in the body.

Many common healing treatment methods included to cause a certain reaction in and of the body. Common examples would include causing excessive sweating, bleeding, induced vomiting, and evacuating phlegm. The aforementioned examples aid in restoring balance and alleviating any discomforts caused by illness/disease.

The humoral system also made connections and correlations between the body (microcosm) and the greater universe (macrocosm). In addition to the theory of the four humors, Hippocrates is credited for the concept of the four opposing qualities in relation to each humor. In further detail, qualities such as hot, cold, wet, and dry enabled physicians such as Hippocrates to draw connections between microcosm and macrocosm. Each humor, according to the theory of the four humors and shown in the figure below, pertains to one of four elements which then manifests two basic qualities. More specifically, phlegm would be described as a humor that pertains to the element of water and begets cold and wet qualities. On the contrary, blood pertains to that of the air element and brings about hot and wet qualities. Regardless of the humor being compromised, treatment always aimed at restoring full balance throughout the human body. Hippocrates stressed the notion that health requires balance and the reason for this circumstance is that certain humors in the body can be caused to elevate due to factors such as seasonal changes and/or environmental conditions which could ultimately lead to disease if not treated properly and in a timely fashion.

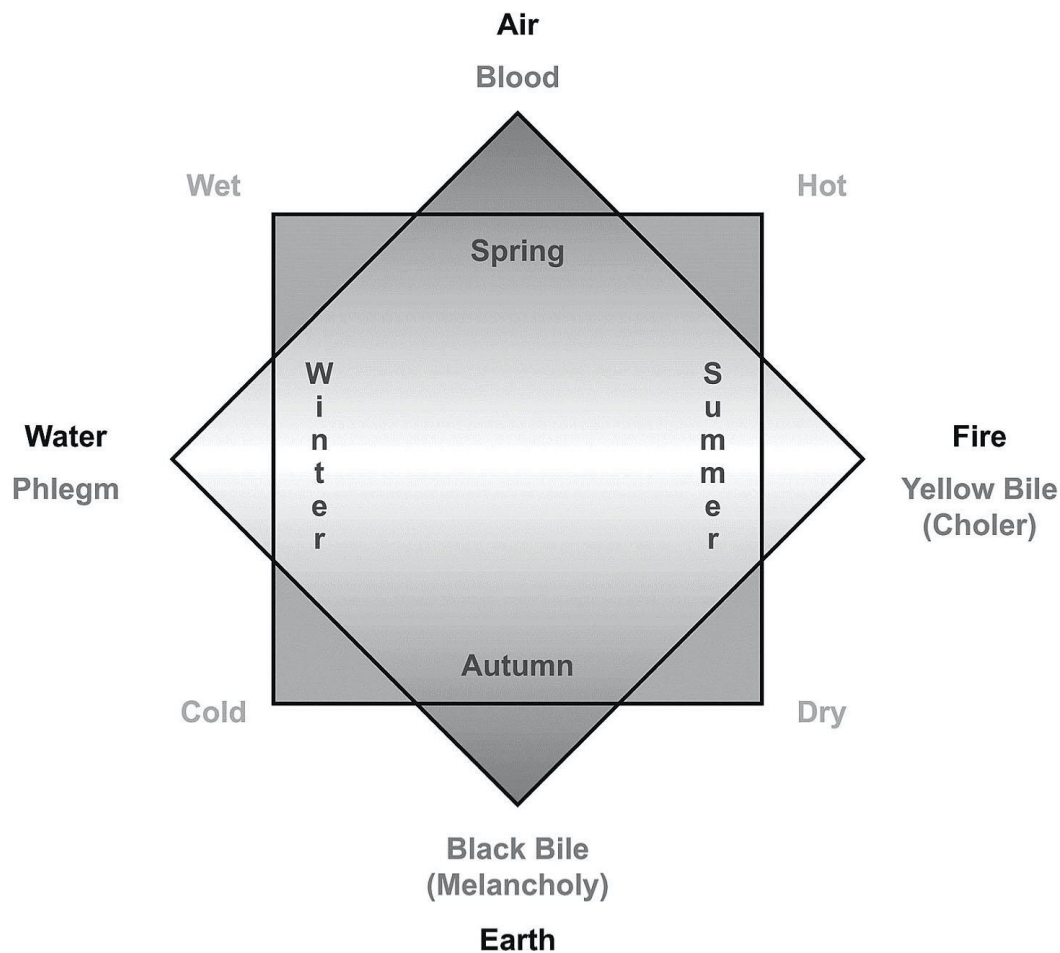


Figure 1.1 The humoral system.

As previously stated, each of the four humours, or humors, correlated with a specific temper, specific organ, specific nature or quality, and a specific element. Black bile, also referred to as melancholy, was labeled as such due to the melancholic (sad / depressed) temper that is caused on patients. Black bile often affected the spleen and has a cold, dry nature. The element pertaining to black bile would be earth. Phlegm, consisting of cold and wet basic qualities correlated with the element of water and was believed to cause imbalance of the lungs. Blood, the humour thought to affect the head during the medieval era of medicine, holds a warm and wet nature and corresponded to the element of air . Lastly, yellow bile represented by the element of fire caused choleric tempers. Simply put, choleric patients were bad-tempered or

irritable. Yellow bile is described to be warm and dry and affects the gallbladder when imbalanced in the body.

As mentioned before, an excess of a humor can beget disease and illness in the body. Along with environmental, physiological, and psychological conditions, there are six “nonnaturals” that also affect the overall health of the human body. The 6 nonnaturals include surrounding air, exercise and rest, sleep and waking, food and drink, retention and excretion, and “accidents of the soul”. At any moment that these conditions are neglected and fail to be properly and/or sufficiently regulated, shifts in humoral balance can and will occur thus leading the human body to a diseased state. Just like today, considering the intake of specific foods is significantly crucial as it takes effect on specific humors of the body. Hunayn ibn Ishaq, also known as Johannitius in the West and primarily known for his work as a translator said, “Foods are two kinds: good food is that which brings about a good humor, and bad food is that which brings about an evil humor.” It is important for individuals to familiarize and distinguish foods that are beneficial to the body along with what foods can be potentially harmful and inhibit balance restoration of the human body. For example, fresh bread and lamb is known to help regulate clean, healthy blood. Furthermore, mustard and garlic is likely to promote yellow bile but can be dangerous as it can lead to an excess of yellow bile. Cabbage and meat of old goats make or produce black bile while pork contributes to an increase of phlegm. In addition to regulating diet and exercise, individuals could take other prophylactic measures in response to seasonal influences on the body; for example, people would be sure to receive a preventative bloodletting in the spring (the season when blood, the hot and wet humor, would rise) to guard against diseases caused by excess blood.

As previously mentioned, Latin American herbal medicine helped reinforce European medical practice from the earlier times by implementing newly discovered plants and leading to countless herbal remedies. Nicolás Bautista Monardes, a Spanish physician and botanist, formally introduced Latin American plant-based medicine in Europe. As a botanist, he used plant details such as textures, smells, and colors to determine its special uses. The color of flowers and other properties of herbs and plants helped indicate its specific usefulness in treating particular diseases. Doctors invested a great deal of work in evaluating the quality of these products and in writing reiterative texts in which they gave precise instructions about how to cut, clean, and process medicinal herbs. The properties of a plant were determined through simple tactics consisting of trying, smelling, or rubbing plants between the fingers. More specifically, bitter plants were known to induce vomiting, dry and warm plants were used as laxatives, dry and moist plants helped stop diarrhea, and cold and dry plants moved bile.

Many indigenous treatments were carried from Latin America to Europe and played a major role in the progression of medicine. The increase of knowledge and information regarding medicine has led to various treatments and remedies for one specific illness and/or *dis-ease*. In other words, looking back now, there can be many cures at hand for an imbalance in the body. In ancient Spanish medicine, broken ribs were treated by rubbing, or, more specifically, *plastering*, dry, ground goat manure baked with wine onto the fractured/broken rib(s). On the contrary, herbal Latin American treatment would call for pushing, stretching, and resetting the bone along with immediately applying a poultice (thick paste like consistency) layer of freshly cut *zacacili* root. If swelling were to arise, herbal treatment would then include picking the injured area with a knife and applying the herb known as *iztaczazalic*. This herb would be mixed in with *tememetatl* root and applied directly onto the swollen region of the body.

Medieval physicians believed illness and disease in the human body to arise in the result of excess fluid in the body. With this theory, medieval physicians were convinced that once the excess fluid was taken from the body, the chosen internal mechanism would then normalize and regulate the body thus removing the illness. Furthermore, surgery was only necessary – during the medieval era – in a life / death condition. The reason being that due to the lack of resources and knowledge at the time, many surgeries often led to death. During the medieval period, the life expectancy or average age of death was noted at only 40 years of age. Although many of the earlier practices of medicine led to unfortunate diagnoses and outcomes, these events were indeed necessary in order to progress in the way the world has in regards to medical treatment. Both unfortunate and unfortunate events that occurred in the medieval era serve as the building blocks of our medical works today.

In conclusion, it is unfortunate how individuals lacked knowledge about germs and believed diseases to be caused only by bad smells, humors out of balance, movement of the sun, stars, and planets, God and the Devil, and invisible fumes or poisonous air. Along with this being unfortunate, it was also necessary in the sense that, without it, medicine may not be where is today. The medieval era was, in a way, the start of the progression of medicine as well as the influence it brought to our lives all around the world. It caused physicians to question theories nonstop, observe the human body rigorously, and treat patients with delicacy and proficiency. Through the influence of the medicine of the medieval era, we can see the growth of medicine as we are in a time of our lives where we rely on medicine more than ever. Now, in the 21st Century with the Corona Virus about, all people around the world have been searching for answers to solve the dilemma this virus has brought to the world. Though there has been an outstanding growth in medicine in which we acknowledge to treat many diseases, viruses, and illnesses,

however, there are still questions that must be answered. The development of medicine is still growing as we know it as there are many illnesses and diseases that need, which is why we must not give up on what we discover and continue with finding new treatments.

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