

The important scientific discoveries of the renaissance: medicine



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Life without medicine does not even seem possible, but the medical knowledge society has today must come from somewhere. It must have begun at a time when ideas were being put to good use, and everyone believed them. The time period ranging from 1350-1550 marked the span of the Renaissance (“re-birth”). It was during this time in Europe that cities that had just recovered from the Black Plague were starting to re-build and gain strength in their country again. In addition to this, there was a major progress of medical knowledge and renewed interest in the ancient ideas of the Europeans before them. This was made possible by technological advances, accidental discoveries, and continued learning.

The entirety of medical development didn't make a drastic change in Europe right away, but the effects that could be felt later started with a few basic conceptions in the beginning; from the time before the Renaissance to the processes scientists discovered that had a big impact on the advancements we have today. Medicine's distinctive ideas and most important written sources of authoritative teaching did not originate in western Europe but were drawn from Greek antiquity and the world of Islam. The understanding of ancient medical knowledge, as of other branches of science, was of course conditioned by social and cultural factors that changed over time. For example, what began in Greece even before the Renaissance was where some of the oldest examples of Greek scientific writing and observations to base medical treatment were found; in medical treatises (written studies of a subject). Treatises like the ones about the “epidemics” of that time show that some authors were exceptionally aware medical observers who acquired

notable ability to describe the signs and course of disease in individual patients.

ii After taking in most of this new knowledge, Greek approaches to medicine began to include diverse and contradictory approaches. A natural result was the emergence of so-called medical sects: rationalists, empiricists, and methodists. The rationalists were those who believed that the primary task of medicine was to use reason to investigate causes of health, disease, and physiological theories. ii Those in the empiricist position said that theory is completely useless for therapeutic purposes; that the task of a medical practitioner is to treat his patients; and that his only reliable guide in doing so is experience. iv The methodists proposed that medical treatment could be successfully carried out on the basis of a few simple rules that could be mastered in six months. v But, of course, Greek medicine reached its fullest development with Galen, who was unquestionably one of the greatest scientists of the period.

vi His contributions to anatomical knowledge remained unsurpassed for nearly fourteen-hundred years. ii With all this rapid development of western Europe society is a time period referred to as the “ twelfth-century Renaissance”, which lead up to the Renaissance in the following century. This was when a population increase, economic growth, urbanization, the development of more “ sophisticated” forms of secular government and administration, the growth of professional specialization and of occupations requiring literacy, the multiplication of schools, and the enlargement of philosophical, scientific, and technical learning were mixed. All of these had marked an impact on the study and practice of medicine. So, by the middle <https://assignbuster.com/the-important-scientific-discoveries-of-the-renaissance-medicine/>

years of the twelfth century, the process that provided western European medicine with a rich, specialized literature helped renew centers of learning, and a flourishing tradition of practice sprung up, some of which was already well advanced. The needed work for late medieval and Renaissance medical culture had already successfully been organized.

viii By the late thirteenth century, many medical practitioners possessed formal qualifications, and they stated that wealth somehow had to do with the ranking in the medical hierarchy in the sense that learned physicians were normally a good deal better off than empirics. ix This meant that no matter how smart the people were, it all depended on how much money patients earned and they would have to see themselves which doctors they could afford. At this time, male practitioners started discovering more on surgery and the human body. Woman, just as well as men, practiced medicine and surgery, some even emerging as learned medical authors who wrote in Latin, drawing on the body of source materials common to all literate medicine of the period.

x It seemed that many people were interested in becoming doctors or medicinal practitioners because the medical training provided in universities was lengthier, more systematic, and more thorough than anywhere else. It offered direct access to the widest range of authoritative medical information. Ambitious practitioners sought out university training, despite its duration and expense, because it let them begin their careers in a position in terms of economic opportunities as well as intellectual and social status. xi Galen was the Greek “ Father of Medicine” and built on the work of other Greek doctors, adding his own theories developed from his own
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medical experience and from dissections of the bodies of both humans and animals. He wrote over 60 books, which remained the key information source of medical training throughout the Middle Ages. Few doctors tried to challenge Galen's ideas, partly because his work was so detailed and convincing and partly because they had been trained to accept, rather than challenge, traditional beliefs.

xii Chiara of Montefalco was a member of a community of nuns with connections to both the Franciscans and the Augustinian Hermits. Her reputation for sanctity and the supposed discovery of symbols of Christ's passion in her heart and gall bladder at the time of her death led to the development of a cult and the attribution to her of numerous miracles, most of them involving physical healing. iii The life of St. Francesca Romana reveals something of the attitude of a deeply religious person in the fifteenth century to the use of medicine. As she grew older, she developed a passionate concern for the poor and especially the sick. As a result, although she at first wanted to use all use of the medicine for herself, she expanded her energies in giving it to others, and she devoted thought to giving the right kind of medicine for each case.

She herself practiced healing, usually by prayer and touch alone but sometimes by also employing ointments or liquids. xiv Albertus Magnus worked on animals to study the process of treating the human anatomy, and he achieved his knowledge from the passages of anatomical descriptions in philosophical works. Medical authors like him repeatedly said that the characteristic of medical understanding of the body was an ultimately practical idea. Physiological theory provided a general conceptual basis for <https://assignbuster.com/the-important-scientific-discoveries-of-the-renaissance-medicine/>

explanations of illness and prescriptions for treatment. Both were, for example, taken away from the theory of temperament of the role played by the balance of the elementary qualities of hot, wet, cold, and dry in the body. Readers of his work encountered the idea that study of anatomy would enable the physician to identify diseases in the hidden internal organs of living patients.

xv Gentile da Foligno studied the flexibility and sense experience and expressed dissatisfaction with the claim of “ all the masters” that the separate complexions matched to the various parts of the body could be differentiated by touch. He pointed out that, “ If a living animal that has been cut into and eviscerated while it is still alive is touched, then the innate complexion of each part will not be apparent to you, since the actual heat of all the organs together will be apparent, therefore you won’t be able to judge by touch that the nerves and ligaments and bones are of cold complexion, because these are very hot to the touch in a living animal. ” These perceptions of difficulties did not lead to the disapproval or any general misunderstanding of the complexion theory. vi Peter the Venerable was a learned monk who was much more familiar with medical ideas and terminology than the average patient and correspondingly more ready to second guess his medical advisors. He wrote a letter to his master, Bartholomeus, explaining that having pressures from the monastery business forced him to postpone his regular bimonthly bloodletting.

This meant that when he was sick, he would have to let out a lot of blood to get rid of the disease, or so he thought. When he did get sick, he tried many methods such as taking hyssop, cumin, licorice, and figs, but they did no

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good. Although it wasn't a time to be making trial and error "experiments", this did help people know what did and did not help when you were ill. xvii Girolamo Fracastoro developed the theory of contagion that owed much to ancient atomism.

This theory stated that some diseases might affect the "total substance" of the body rather than its temperament. This meant that diseases and illnesses people get affect the entire body, and not just one specific part. viii Pietro d'Abano was an Italian philosopher, astrologer and professor of medicine who carried his enquiries so far into the sciences of abstruse and hidden nature, that, after having given most proofs by his writings concerning physiognomy, geomancy, and chiromancy, he moved on to the study of philosophy, physics, and astrology; which studies proved so advantageous to him, that, not to speak of the two first, which introduced him to all the popes of his time, and acquired him a reputation among learned men. He also thought that people said the only part of medicine that offered any certainty was surgery, because surgery alone had obvious physical results. xix He was in the army, though, when he made his first major discovery. He found out that by giving a wounded soldier an ointment he put together instead of oil, they ended up feeling little pain and their wounds without inflammation or swelling on their injury.

He also figured out a method that prevented bleeding after amputations, which was to press a red-hot "cautery" against the stump of the limb. This method sealed the blood vessels, preventing the patient from bleeding to death. But as time went on he figured out an even less painful way, by tying a silk thread around each blood vessel, which stopped the bleeding just as <https://assignbuster.com/the-important-scientific-discoveries-of-the-renaissance-medicine/>

effectively. xx Andreas Vesalius was one of the key figures of the medical world who became professor of Surgery and Anatomy at the University of Padua when he was only 23. At Padua, Vesalius carried out many detailed dissections, usually of executed criminals, and this work was the basis of his great book *The Fabric of the Human Body*. This book revolutionized the way anatomical dissections were carried out and taught and it also showed that careful dissection could lead to new understandings of the structure of the human body.

xxi Leonardo Da Vinci is the man who most clearly exemplified the time of the Renaissance, by firstly training to be an incredible artist. But he also studied all branches of science, including chemistry, astronomy and botany and he dissected human bodies in order to draw detailed illustrations of human anatomy, which made an important contribution to the development of medical understanding. xii William Harvey published his new theory that the heart acts as a muscular pump which circulates blood around the body in the blood vessels. Discoveries during the Renaissance laid the foundations for a change in thinking leading to the view that the body is made up of specialized systems that work together; the basis of medical knowledge that we still see today.

xxiii Some of the most famous scientific discoveries of medicine were made possible by the people listed above, or they were accidentally discovered by everyday people. Many important medicinal discoveries included what the bark of the Quina tree, laudanum and tobacco plants did, the use of cauterizing, the theory of the Four Humors, how blood is pumped around the body, herb remedies, the brain and its senses, and correct anatomical

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drawings. The bark of the Quina tree contained an ingredient called quinine which is still used in the treatment of malaria. The leaves of the tobacco plant were thought to have medicinal properties, and laudanum, an opium-based painkiller, was used for many disorders. Cauterizing, on the other hand, was discovered to stop the bleeding of a wound by burning it with red-hot metal. xxv The theory of the Four Humors was a different discovery, and it explained why people became ill.

Finding out how blood is pumped through the body was helped by William Harvey, who taught that it was the heart doing the work and pumping blood through our veins. xxvi Herb remedies were mostly experimented with by women who specialized in medical treatments. Some herbs and minerals cured illnesses, such as mercury and rye. xxvii Medicine and its practitioners are part of the history of education, of occupations and the emergence of professions, and how people manage health and disease. And attitudes, beliefs, and doctrines in medicine may show cultural assumptions about the human body, illness and wellness, and the characteristics and relations of the sexes, and the stages of human life from infancy to old age.

This is why it is important to reflect on the information we can learn from those in our past, such as everything during the time of the Renaissance, so now, in the present, we can take what we learn to achieve even more.