

Our World In Medicine

One of the most important factors about people's lives is the information of, the use of, and the growing knowledge of medicine. Medicine is a science that nations all over the world use. It is a science because it is based on knowledge gained through careful study and experimentation. Medicine is also an art form because it depends on how skillfully doctors and other medical workers apply their knowledge when dealing with patients.¹

Medicine is one of the most respected professions. The two important goals of medicine are to save lives and to relieve suffering, which is why it is so respected. But the medical field is not open to anyone who wants to help. It takes many long years of college and medical school to get even a license to work with medicine.² While some doctors are more important than others, almost all of them are on call twenty - four hour a day, seven days a week. Because they have to apply themselves to their job at all times, they are paid at very good wages.

Human beings have been suffering from disease since they first appeared on the earth about two and one -half million years ago. Throughout most of this time, they knew little about how the human body works or what causes disease. But medicine has gone through many stages throughout history.

In prehistoric times, people believed that angry gods or evil spirits caused disease. To cure the sick, the gods had to be pacified or the evil spirits driven from the body. In time, this task became the job of the first "physicians".³ The first - known surgical treatment was an operation called trephining. Trephining involved use of a stone instrument to cut a hole in a patient's skull. Scientists have found fossils of such skulls that date back as far as 10,000 years.

Prehistoric people probably also discovered that many plants can be used as drugs. For example, the use of willow bark to relieve pain probably dates back thousands of years.⁴ Today, scientists know that willow bark contains the important ingredients that is included in making aspirin.

In the Middle East, the Egyptians began making important medical progress. Around 2500 B.C., Egyptian physicians began to specialize. Some physicians treated only diseases of the eyes or teeth. Others specialized in internal diseases. Egyptian surgeons produced a textbook that told how to treat dislocated or fractured bones and as well as tumors, ulcers, and wounds.⁵

The civilization of ancient Greece was at its peak during the 400's B.C. Throughout this period, sick people flocked to temples dedicated to the Greek god of healing, Asclepius, seeking magical cures.⁶ But at the same time, the great Greek physician Hippocrates began showing that disease has only natural causes. He thus became the first physician known to consider medicine a science and art separate from the practice of religion. The Hippocratic oath, an expression of early medical ethics, reflects Hippocrates' high ideals.⁷

The Greek physician Galen made the most important contributions to medicine in Roman times. Galen performed experiments on animals and used his findings to develop the first medical theories based on scientific experiments. For this reason, he is considered the founder of experimental medicine. But because his knowledge of anatomy was based on animal experiments, Galen developed many false notions about how the human body works.⁸

During the Middle Ages, which lasted from the A.D. 400's to the 1500's, the Muslim Empire of Southwest and Central Asia contributed greatly to medicine. Rhazes, a Persian - born physician of the late 800's and early 900's, wrote the first accurate descriptions of measles and smallpox. Avicenna, an Arab physician of the late 900's and early 1000's, produced a medical encyclopedia called Canon of Medicine. It summed up the medical knowledge of the time and accurately described many known diseases. Avicenna's work became popular in Europe, where it influenced medical education for more than 600 years.⁹

The chief medical advances during the Middle Ages were the founding of many

hospitals and the first university medical schools. In the 900's, a medical school was started in Salerno, Italy. It became the chief center of medical learning in Europe during the 1000's and 1100's. Other important medical schools developed after 1100. During the 1100's and 1200's, many of these schools became part of newly developing universities.¹⁰

A new scientific spirit developed during the Renaissance, 1300's to the 1600's. The laws against human dissection were totally relaxed during this period. As a result, the first truly scientific studies of the human body began.¹¹ A French army doctor named Ambroise Paré improved surgical techniques to such an extent that he is considered the father of modern surgery. For example, instead of burning a wound to prevent infection, he developed the much more effective method of applying ointment and then allowing the wound to heal naturally.¹²

The scientific study of disease, called pathology, was developed during the 1800's. Rudolf Virchow, a German physician and scientist, led the development. Virchow believed that the only way to understand the nature of disease was by close examination of the affected body cells. He did important research in such diseases as leukemia and tuberculosis.¹³ Pasteur, a brilliant French chemist, proved that microbes are living organisms and that certain kinds of microbes cause disease. He also proved that killing specific microbes stops the spread of specific diseases.

Koch, a German physician, invented a method for determining which bacteria cause particular diseases. Other research scientists followed the lead of these two pioneers.

Pasteur's early work on bacteria convinced an English surgeon named Joseph Lister that germs caused many of the deaths of surgical patients. In 1865, Lister began using carbolic acid, a powerful disinfectant, to sterilize surgical wounds. But this method was replaced by a more efficient technique known as aseptic surgery. This technique involved keeping germs away from surgical wounds in the first place instead of trying to kill germs already there.¹⁴

Advances in many fields of science and engineering have created a medical revolution in the 1900's. For example, the discovery of X-rays by the German physicist Wilhelm Roentgen enabled doctors to see inside the human body to diagnose illnesses and injuries. The discovery of radium in 1898 provided a powerful weapon against cancer.¹⁵

The development of new vaccines has helped control the spread of such infectious diseases as polio, hepatitis, and measles. During the 1960's and 1970's, the World Health Organization conducted a vaccination program that eliminated smallpox from the world.

Much progress in modern medicine has resulted from engineering advances. Engineers have developed a variety of instruments and machines to aid doctors in the diagnosis, treatment, and prevention of diseases and disorders. Some of these devices have helped surgeons develop amazing new lifesaving techniques, especially in the fields of heart surgery and tissue transplants.¹⁶

Throughout many, many centuries, medicine has been used in hundreds of different forms. But the main goal of every different form was the same, to help the diseased and unhealthy. Every passing day, another scientist or doctor discovers another breakthrough in science and medicine. In years to come, we will have cures to incurable diseases, and people will be living ten to twenty years longer than they are today. Medicine provides us with the needs and hopes for the future, as our technology makes the path for us to follow.

