



Heartland Science

Ohio's Legacy of Discovery & Innovation



Medicine, Health & Science

From the Heimlich Maneuver
to the Speed of Light

Crile Finds Cleveland Clinic

Dr. George W. Crile, a native of Chili, led a group of four Ohio physicians who founded the Cleveland Clinic in 1921. Dr. Crile also founded the American College of Surgeons, the renowned professional organization that helps assure high quality surgical care throughout the country. They agreed to practice medicine together as a team, pooling their knowledge and resources to provide patients with better health care. It was one of the world's first group practices, an approach to delivery of health care that became increasingly popular.



The Cleveland Clinic, located in Cleveland, Ohio, is a not-for-profit multispecialty academic medical center that integrates clinical and hospital care with research and education. The Cleveland Clinic was founded in 1921 by four renowned physicians with a vision of providing outstanding patient care based upon the principles of cooperation, compassion and innovation. *U.S. News & World Report* consistently names The Cleveland Clinic as one of the nation's best hospitals in its annual "America's Best Hospitals" survey. Approximately 1,500 full-time salaried physicians at The Cleveland Clinic and Cleveland Clinic Florida represent more than 100 medical specialties and subspecialties. In 2004, patients came for treatment from every state and 100 countries.

In addition to providing patient care, the Cleveland Clinic trains new physicians in one of the world's biggest freestanding medical education programs. That role will expand in the future, with the opening of a medical school jointly created by the Clinic and Case Western Reserve University. The Cleveland Clinic Lerner College of Medicine of Case Western Reserve University will emphasize training physicians who plan to become medical researchers and doctors interested in both treating patients and doing medical research.

The combined emphasis on treatment and research was one of the guiding lights for the Clinic's founders. Through the years, the Cleveland Clinic has been a world leader in medical breakthroughs, including many that involve cardiovascular disease and cancer, the leading causes of death in the United States.

In the 1940s and 1950s, for instance, Dr. Irvine H. Page made a series of major discoveries that established high blood pressure as a major risk factor for heart attacks and stroke. Dr. George Crile Jr. in the 1950s pioneered new "conservative" surgical techniques for treating breast cancer, achieving the same results with less disfiguring therapies than the then-standard radical mastectomy. George Phalen identified carpal tunnel syndrome, a painful disorder that affects workers whose jobs involve repetitive wrist and hand movements. D. Rupert Turnbull Jr. developed the "no touch" technique to isolate diseased tissue, thus preventing the spread of cancer cells during surgery for colon cancer. It greatly reduced the death rates after colorectal surgery.

In 1956, Dr. Donald B. Effler and Dr. Laurence K. Groves pioneered open heart surgery, stopping and restarting the heart of a 17-month-old with the aid of a heart-lung machine developed by Dr. Willem A. Kolff. Cleveland Clinic cardiologist Dr. F. Mason Sones Jr. developed coronary angiography, which allows doctors to view the heart and its vessels through moving X-rays. Angiography paved the way for the development of coronary bypass surgery and other operations to treat clogged arteries. Dr. Helen Brown had a major role in establishing high blood cholesterol as a risk factor for heart disease, and developed the world's first diet to reduce cholesterol levels.

In 1963, Drs. Ralph A. Straffon, Eugene F. Poutasse, and Willem A. Kolff performed one of the world's first successful cadaver kidney transplants. Dr. Kolff also invented a pioneering artificial heart and in 1957 tested it successfully in a dog. It was the first implantation of an artificial heart in the Western World. Before moving to Cleveland, Dr. Kolff invented the kidney dialysis machine that today keeps 55,000 kidney failure patients alive in the United States.

In 1967, Dr. Rene Favaloro developed coronary bypass surgery, which today is one of the most frequently-performed operations in the United States. Dr. Floyd D. Loop in 1971 introduced the most important refinements in the techniques used for bypass surgery and pioneered ways of lowering the cost of hospitalization for cardiac surgery. The Cleveland Clinic started one of the nation's first heart transplantation programs in 1968, and today is the busiest heart transplant center in the United States.

Dr. Delos M. Cosgrove pioneered aortic valvuloplasty, a procedure that allows surgeons to repair diseased heart valves. Drs. Gene H. Barnett and Donald W. Kormos develop the sonic wand, an imaging technique that allows brain surgeons to pinpoint lesions with unprecedented ease and precision.

Find out more...

- [Cleveland Clinic](http://www.clevelandclinic.org)
(www.clevelandclinic.org)
- [American College of Surgeons](http://www.facs.org)
(www.facs.org)