

Medical Advances

Over the Years

The discovery in Canada of life-saving insulin by Banting and Best in 1922 as a treatment for diabetes, not only offered new hope for millions of victims but drove home a message to scientists and laymen all over the world that Canadian medical researchers were among the best anywhere.

The Nobel Prize awarded to Sir Frederick Banting resulted in several major long-term benefits. It spurred an unprecedented interest in medical research in Canada and attracted financial support for researchers, foundations and other groups.

In the decades since that discovery, medical research has continued to expand in Canada where, in the past 20 years alone, the number of medical schools with research facilities has doubled.

These research efforts have resulted in a number of Canadian breakthroughs including:

The first "cobalt bomb" for the treatment of cancer.

Discovery of the anti-cancer drug vinblastine.

Research uncovering a carcinoembryonic antigen "marker" and a radioimmunoassay method of early detection of cancer.

A simple method of preventing fatal Rh disease in infants and reduced infant mortality through improved nutrition.

Work by Dr. Arthur Vineberg, who devised the first heart bypass surgical procedure.

The electron microscope, which was first made in Toronto.

Pioneer work in the surgical use of lasers and in the development of uses for non-invasive diagnostic equipment.

New knowledge of the brain and pioneer surgical techniques, including the treatment of epilepsy by Dr. Wilder Penfield.

Intimate new understanding of stress and its impact on the body by Dr. Hans Selye.

Isolation of the parathyroid hormone and discovery of methods for isolating the pituitary and placental hormones by Dr. J.P. Collip.

The world's first cardiac surgery using hypothermia or lowering of the body temperature, by Dr. William Bigelow and colleagues who developed the first heart pacemaker for continuous use in human beings.

Dr. C.P. Leblond's discovery of how iodine is taken up by the thyroid gland which led to new treatments for thyroid disease.

Development of the first spinal pacemaker to stimulate growth in children with spinal deformities by Dr. W.P. Bobeckko.

Discovery of the sex chromosome by Dr. Murray Barr.

Cell culture research by Dr. Raymond Parker that was vital to eventual development of a vaccine for polio.

The isolation of estrogens by Dr. R.D. Haard.

Isolation by Dr. Henry Friesen and colleagues of the human prolactin and discovery of new diseases related to it.

Today, major research into a variety of complex medical problems ranging from heart and brain to autoimmune diseases is being conducted by Canadian medical researchers.

Intensive work in major clinical trials is under way using the anti-rejection drug cyclosporine for both organ transplants as well as in attempts to cure or arrest juvenile diabetes.

At University Hospital in London, Ontario, where international trials that revealed the value of acetylsalicylic acid in preventing heart attacks and strokes were co-ordinated, renowned neurosurgeon Dr. Charles Drake, carries out brain surgery that has made this centre one of the foremost in the world for such procedures.

At the same hospital specialists, in collaboration with Biomedical Instrumentation Inc., a Toronto, Ontario research and development firm, are producing a sophisticated cardiac mapping device expected to greatly advance the surgical treatment of potentially-fatal heart rhythm disorders. The computer-assisted device enables doctors to rapidly locate electrical short circuits in the hearts of patients suffering from diseases like Wolff-Parkinson-White syndrome.