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Dr. Wilder Penfield

Dr. Wilder Penfield was one of Canada's foremost neurosurgeons. He is best known for the discovery of a surgical treatment for epilepsy, a brain disorder characterized by sudden and recurrent seizures. He was also the founder and first director of the world-famous Montreal Neurological Institute.

Penfield was born in 1891 in Spokane, Washington. He moved with his mother to Hudson, Wisconsin, in 1899 when she and his father separated. There, he graduated from high school as head of his class, then obtained a degree in literature from Princeton University in 1913. Besides being a good student at university, he excelled in sports and was named class president and voted "best all-round man" by his classmates.

Important influences

It was at Princeton that Wilder Penfield decided to pursue medicine - the profession of both his father and grandfather - because, he said, "it seemed to be the best way to make the world a better place in which to live." In 1914, he won a Rhodes Scholarship to study at Merton College, Oxford, where he began his studies in medicine and science.

At Oxford, Penfield met two great medical teachers who would both be strong influences on his life. One was the renowned British neurophysiologist, Sir Charles Sherrington, who first introduced him to the study of the brain. The other was Sir William Osler, an eminent Canadian professor who was serving as the Regius Professor of Medicine. Osler welcomed Penfield to his home in Oxford after Penfield was wounded when a German torpedo blew up the ship on which he was crossing the English Channel to serve in a Red Cross hospital in war-torn France.

After two years at Oxford, Penfield entered the Johns Hopkins Medical School in Baltimore, Maryland, where he received his MD in 1918. He then served as a surgeon to the Presbyterian Hospital, part of Columbia University, and spent seven years working at the New York Neurological Institute.

Realization of a dream

During his postgraduate years in Oxford and London, Dr. Penfield had turned from experimental neurophysiology towards neurosurgery. He was keen to study the influence the brain's physiological activity and thus become a "neurologist-in-action." He quickly came to realize that to carry out effective research on the human brain, he would need to organize a facility where neurologists, neurosurgeons and neuropathologists could work together as a team. He thought he could best realize his dream in Canada, so in 1928, he joined the faculty of McGill University in Montréal and also became neurosurgeon at the



[Source](#)

Wilder and Helen Penfield as newlyweds in Paris, 1917



Source
Montreal Neurological
Institute, 1934

Royal Victoria and Montreal General Hospitals.

A few months after his arrival in Montréal, Wilder Penfield was asked to remove a tumor from the brain of his sister. After finding that the tumor was malignant and far advanced, he operated again but could not safely remove all of the malignant cells. The operation allowed his sister to enjoy a normal life again, but the symptoms returned and she died three years later.

His sister's case spurred Dr. Penfield to pursue his research on the brain. In 1934, thanks to a substantial grant from the Rockefeller Foundation and support from the government of Quebec, the city of Montréal and private donors, he founded the Montreal Neurological Institute. It quickly became an international centre for teaching, research and treatment related to diseases of the nervous system and brain disorders. Wilder Penfield was its director until 1960.



Source
The Penfield family in 1935.
Left to right: Ruthmary,
Priscilla, Wilder Jr., Jeff,
Helen, Wilder



Source
The "Old Guard" -- the first
group of young
neurosurgeons trained by
Dr. Wilder Penfield and Dr.
Bill Cone in Montréal before
the opening of the Montreal
Neurological Institute, 1934.
Seated L-R: Arthur Elvidge,
Wilder, Bill Cone. Standing
L-R: Arne Torkildsen, Lyle
Gage, Joseph Evans,
Jerzy Chorobski

"Montreal Procedure"

Recalling his operation on his sister, Dr. Penfield began working on a new surgical approach to treat severe epilepsy. The patient was given a local anaesthetic so they would remain conscious during the operation. Penfield then removed the skull cap to expose the brain tissue. As he probed the brain, the patient could describe his feelings so Penfield could identify the exact location of the seizure activity. He could then remove that tissue and hopefully end the patient's seizures.

More than half of the patients treated with this new method, which became known as the "Montréal Procedure," were cured of seizures. Word spread quickly and patients began arriving from around the world. Dr. Penfield himself performed the operation more than any other neurosurgeon in the world.

This technique also allowed Dr. Penfield to create maps of the sensory and motor sections of the brain, showing their connections to the various limbs and organs of the body. These maps are still used today. In 1951, he published this work, along with Herbert Jasper, as the landmark *Epilepsy and*



Source
Dr. Wilder Penfield and wife
Helen with their
grandchildren, about to
depart for the Granby Zoo,
1956

the Functional Anatomy of the Human Brain.

Dr. Penfield's work brought him many honours both within Canada and abroad. His scientific papers and the handbooks and monographs he wrote with associates became standard reference works on the function of the human brain.

Second career

During the last 15 years of his life, Wilder Penfield enjoyed a second career as a writer of historical novels and medical biography. It was his firm belief that "rest, with nothing else, results in rust" and he led by example. He wrote several books, including one that he completed in 1974 when he was 83. It was called *The Mystery of the Mind* and was an account for laymen of his

studies of the brain over almost 40 years.

Dr. Penfield also devoted himself to public service, particularly in support of university education. His close friendship with Governor General George Vanier and his wife resulted in the creation of the Vanier Institute of the Family, which Penfield helped found "to promote and guide education in the home - man's first classroom." He also became widely known for promoting early second-language training.



Source
Dr. Wilder Penfield and patient, circa 1945

In 1967, Dr. Penfield was made a Companion of the Order of Canada. In 1994, he was inducted into the Canadian Medical Hall of Fame. Penfield's most lasting legacy was the establishment of the Montreal Neurological Institute. This hospital, together with a brain-research facility, continues to provide a centre for students and physicians to study the brain. It has also served as a model for similar hospitals throughout the world.

To Wilder Penfield, the brain and the nervous system represented the most important unexplored field in the whole of science. "The problem of neurology," he once wrote, "is to understand man himself."

Wilder Penfield died in 1976, revered by the nation he had served for nearly 50 years.



Source
Dr. Wilder Penfield's preface to his autobiography *No Man Alone: A Neurosurgeon's Life*

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Date Created: 2006-09-25

Date Modified: 2008-07-21