



# William Keasley Welch



Keasley Welch was born in 1920 in Bridgeport, Connecticut, and at the age of seven moved to Pittsburgh, Pennsylvania with his family. He acquired an early education in Pittsburgh. He then attended Duquesne University and the University of Pittsburgh, from which he graduated with a B.S. degree in 1939. In 1943, he graduated from Yale Medical School, then interning at Yale-New Haven Hospital. He soon decided to pursue a neurosurgical residency under the direction of Dr. Wilder Penfield at the Montreal Neurological Institute, at that time the leading institution in the world for neurosurgery. Dr. Penfield was making major discoveries in the organization of the cerebral cortex and the ability to excise epileptogenic tissue to improve seizures in patients with intractable seizures. To be included

as a member of that community was indeed a major accomplishment. It was at Montreal that Dr. Welch developed his interest in epilepsy surgery. Dr. Welch met many fellow Americans there, a majority of whom later went on to neurosurgical prominence in the United States. While working towards an M.S. degree in neuropathology at McGill, he also met his wife, Elizabeth MacRae, who was the head nurse of the Operating Room at the Montreal Neurological Institute. After finishing his residency, he served as an instructor in neuropathology at the Institute.

From 1950-1952, Dr. Welch was an associate neurosurgeon at the Henry Ford Hospital in Detroit. Subsequently, during the Korean War between 1952 and 1954, he served in the United States Army Corps. He was in charge of the neurosurgical service at Letterman General Hospital at the Presidio in San Francisco, where he did important investigations on brachial plexus injuries and their surgical management.

After Army service, Dr. Welch became the first full-time director of Neurosurgery at the University of

Colorado in Denver. There he became interested in pediatric neurosurgery and cerebrospinal fluid (CSF) physiology. During this time, he initiated an important collaborative effort with Dr. Hugh Davson at University College, London, whose work in cerebrospinal fluid physiology established that field as a legitimate and an important field of physiology. Dr. Welch's collaboration with Dr. Davson continued for many years, until the latter's death. The two of them, along with Malcolm Segal, co-authored *The Physiology and Pathophysiology of the Cerebrospinal Fluid*, a textbook that remains today as a classic work in the field.

In 1970, a Harvard Medical School search led by Dr. Francis Moore brought Dr. Keasley Welch to the Children's Hospital and the Brigham & Women's Hospital in Boston. Here he succeeded Dr. Donald Matson as the second Franc D. Ingraham Professor of Neurosurgery. His surgical achievements then include the first use of embolectomy within the cranial vessels to prevent a stroke and the first buttressing of the optic chiasm that had prolapsed into an empty sella. Along with such colleagues as Drs. Cesare Lombroso and Giuseppe Erba, he pioneered the care of patients with pediatric epilepsy. He was also instrumental in establishing the epilepsy unit at the Children's Hospital. He continued his research in cerebrospinal fluid physiology, and demonstrated that hydrocephalus arose owing to impaired re-uptake of cerebrospinal fluid. In collaboration with Dr. Antonio Lorenzo, he described and documented many aspects of cerebrospinal fluid formation which are still considered basic today. Dr. Welch's contributions to the fields of pediatric epilepsy, and to an understanding of the mechanism of CSF production and absorption are unparalleled to this day.

Dr. Welch retired from his position as Neurosurgeon-in-Chief in 1987. His legacy includes the training of many distinguished neurosurgeons, and innumerable international physicians. He died on February 2, 1996. There is a pediatric research fellowship named in his honor – a tribute to his dedication to the advancement of knowledge of neurological diseases. Dr. Welch is survived by his wife Elizabeth and their five daughters.

Respectfully submitted,

Peter McL. Black, *Chairperson*

Gary Fischer

Clarence Greene

Ken Winston