Arno Motulsky, a Founder of Medical Genetics, Dies at 94

By DENISE GRADY JAN. 29, 2018

Dr. Arno G. Motulsky, a former refugee from Nazi Germany who became a founder of medical genetics, recognizing the connection between genes and health long before mainstream medicine did, died on Jan. 17 at his home in Seattle. He was 94.

His son, Harvey, confirmed the death.

Dr. Motulsky also founded pharmacogenetics, which studies inherited differences in the way people respond to medications.

“It was his vision to study how heredity could be involved in practically everything,” Dr. Francis Collins, a geneticist and the director of the National Institutes of Health, said in an interview. “The relationship between heredity and the response to drug therapy — nobody was thinking about that until he started, 60 years ago. He anticipated it decades before science made it possible to get the answers that he dreamed of.”

As technologies emerged to decode DNA, the fields that Dr. Motulsky helped originate came to the forefront of medicine, leading to improved diagnosis and treatments for a host of diseases.

Research in medical genetics has led to cancer drugs that target specific genetic mutations in tumor cells, as well as statins, which are widely prescribed to prevent heart attacks and strokes by lowering blood cholesterol.

Dr. Motulsky’s path to prominence began in harrowing fashion. He had been one of more than 900 Jewish refugees aboard the German liner St. Louis, which reached the Miami coast in 1939 but was turned away by the United States and sent back to Europe.

He then spent a year in internment camps in France, where many prisoners died from starvation or typhoid, before finally reaching the United States in 1941. Drafted, he was put through medical school by the Army.

In 1957, at the University of Washington’s medical school in Seattle, Dr. Motulsky started one
of the first divisions of medical genetics in the United States.

“There were very few medical centers that considered genetics as being all that relevant to human medicine,” Dr. Collins said. “It was more a study of fruit flies and mice, not humans.”

Dr. Mary Claire King, a geneticist at the University of Washington who discovered the role of certain genetic mutations in breast cancer, said that because of Dr. Motulsky’s work in medical genetics, “the field is now integrated into every other field of medical practice, and has become the soul of precision medicine.”

Dr. Motulsky’s research encompassed genetic contributions to a broad array of conditions, including heart disease, blood disorders, colorblindness, infections and immunity, hypertension and alcoholism. He studied genetic disorders linked to certain population groups, like Ashkenazi Jews, and considered the ethical issues raised by genetic testing and gene therapy.

He was also highly esteemed as a mentor, becoming the subject of a chapter in a 2009 book on mentoring in higher education.

One who studied with him was Dr. Joseph L. Goldstein. It was during a fellowship with Dr. Motulsky, beginning in 1968, that Dr. Goldstein laid the foundation for research on how the body processes cholesterol. The findings led to a Nobel Prize in Physiology or Medicine in 1985, which Dr. Goldstein shared with Dr. Michael S. Brown. Their work led to the development of cholesterol-lowering statin drugs.

“Arno was sort of a maestro of human genetics,” Dr. Goldstein, now chairman of the department of molecular genetics at the University of Texas Southwestern Medical Center in Dallas, said in an interview. He added in an email, “He gave me the confidence to design a large study on lipid levels in survivors of heart attacks and gave me support and resources — at a time when I was only 28 years old.”

Arno Gunther Motulsky was born on July 5, 1923, in Fischhausen, Germany, on the Baltic Sea, to Herman Motulsky, a shopkeeper, and the former Rena Sass.

His parents tried to leave Germany with him and his younger siblings, Leah and Lothar, in 1939, before war broke out in Europe. In an account he gave to the Annual Review of Genomics and Human Genetics in 2016, Dr. Motulsky said his family had hoped to join his father’s brother in Chicago but headed for Cuba instead after hearing that a United States quota system was causing long delays in granting visas.

His father left first. His mother followed soon afterward, taking young Arno and his brother and sister with her aboard the St. Louis in Hamburg on May 13, 1939, bound for Havana. But Cuba refused to accept the refugees, as did other Caribbean countries.

“We asked to land in America, but were denied,” Dr. Motulsky said. “When we sailed close to Miami, U.S. Coast Guard cutters and planes shooed us off.”

Its passengers filled with dread, the ship headed back to Europe on June 6.

“Miraculously, a few days before we would have arrived back in Germany, four other countries — England, France, Holland and Belgium — each agreed to take one-fourth of the passengers,” Dr. Motulsky said.

His family was assigned to Belgium, and he began high school there in June 1939. On May 10, 1940, the Germans invaded. The family had just received United States visas, but it was too late to get away.

“Since I was now 17, I was arrested by the Belgians as an enemy alien — ironically, as a
German — and sent to an internment camp in France,” Dr. Motulsky said. Belgium surrendered a few weeks later.

No longer considered a child, Dr. Motulsky was separated from his mother and siblings, grouped with men and moved from one camp to another, each lacking food and sanitation and rife with disease. The last camp was controlled by Nazi collaborators, the Vichy French, who sent ethnic Germans back home but kept Jews imprisoned.

Finally, in June 1941 — 10 days before his 18th birthday — Dr. Motulsky, carrying an American visa, left France and traveled through Spain to Portugal, where he boarded a ship to the United States.

“Ten days later and I wouldn’t have made it, because Franco did not allow males 18 or older to pass through Spain,” he said, referring to the Spanish dictator. “A few months later, the Vichy French turned over all their internment camps to the Gestapo.”

He joined his father in Chicago in 1941. Two years passed before they learned that his mother, brother and sister had also survived, in Switzerland.

The family was not reunited until 1946. Only Dr. Motulsky kept the original family surname; his parents and siblings changed it to Molton.

“They were told that they couldn’t possibly succeed in the U.S. with a name like Motulsky,” Harvey Motulsky said.

Though he had not finished high school in Europe, Dr. Motulsky had managed to study even while interned, which helped him pass high school equivalency tests in Chicago 1942. He worked days and began taking college courses at night and on Saturdays at Central Y.M.C.A. College.

By 1943, he had been accepted to medical school at the University of Illinois at Chicago. But then he was drafted. The Army needed doctors and sent him to Yale to finish his premedical courses. There, he took a genetics course and, he said, was “hooked forever.”

He returned to the University of Illinois for medical school, entering as a private first class. In 1945 he married Gretel Stern, an accountant, who had left Germany in 1938 and whom he had met at the Y.M.C.A. college. He graduated in 1947 and took further training in internal medicine and hematology.

In 1951, during the Korean War, Dr. Motulsky was called back into the Army and assigned to Walter Reed Army Medical Center in Washington, where he studied inherited blood disorders.

Discharged in 1953, he became an instructor at the University of Washington’s new medical school, in Seattle, assigned to teach internal medicine and hematology. That same year, James Watson and Francis Crick determined the structure of DNA. Dr. Motulsky began to slip what he called “bootleg medical genetics” into his lectures. Interest grew, and by 1957 he was leading the new division in medical genetics.

Dr. Motulsky was an author of more than 400 scientific articles and, with Friedrich Vogel, of a leading textbook, “Human Genetics: Problems and Approaches” (1979). His many scientific honors included induction into the National Academy of Medicine, the National Academy of Sciences and the American Philosophical Society.

In addition to his son, Dr. Motulsky is survived by his daughters, Judy Walker and Arlene Audergon; a sister, Leah Kadden; six grandchildren; and two great-grandchildren. His wife died in 2009.

When Dr. Motulsky talked about the St. Louis and the aftermath of its ill-fated voyage, he
“often spoke about luck, the sheer luck to be alive, when you think of the events of the Holocaust,” Ms. Audergon wrote in an email.

“He’d speak so passionately about how these events had shaped him, made him the man that he is,” she added. “And he was passionate about trying to contribute something with his life, to make a difference.”

A version of this article appears in print on January 30, 2018, on Page B12 of the New York edition with the headline: Arno Motulsky, a Founder of Medical Genetics 60 Years Ago. Dies at 94.

© 2018 The New York Times Company