

Donald B. Zilversmit, PhD (1919–2010)

Donald B. Zilversmit, PhD, was recognized as a world leader in lipid research, and was a Dutch-born U.S. nutritional biochemist, researcher, and educator. He spent much of his career at Cornell University as Professor in the Division of Nutritional Sciences.

Dr. Zilversmit had a way of coming up with novel perspectives on biological phenomena. Perhaps the best example of this is his work on the lipid transfer proteins in plasma and in cells. He was intrigued by the question of how lipids, minimally soluble in aqueous media, could nevertheless move from membrane to membrane within the cell. In 1968, he described the exchange of phospholipids between isolated mitochondria and microsomes and went on to purify a protein from the cytosol that markedly accelerated that exchange. These pioneering studies opened up a new and fruitful line of research. In 1975, he showed that lipoprotein-free plasma contained a protein responsible for exchange of cholesterol esters among lipoproteins, which we now know as cholesterol ester transfer protein (CETP). Inhibitors of CETP are now under intensive investigation as a means of raising HDL.

Zilversmit was born in Hengelo, Netherlands, and began studies at Utrecht University but escaped before the German invasion in World War II. He came to the U.S. in 1939 to finish his studies at the University of California, Berkeley, but decided to join the Dutch Canadian Army as a medic in 1940, the year he earned his bachelor's degree. Following his service in the Army, Zilversmit earned his PhD at Berkeley in 1948 and joined the faculty at the University of Tennessee Medical College in Memphis from 1948 to 1966. He was the first to explore the turnover rates of phospholipids, using ^{32}P , and among the first to use ^{14}C in the study of glucose and glycogen metabolism. His interest in kinetics continued throughout his career. In the 1960s, he published classic papers showing that most of the cholesterol in atherosclerotic plaques originated in plasma lipoproteins. Later, he carefully quantified the rates of entry of lipoproteins and their component lipids into the normal artery wall.

He received a Career Investigator Award from the American Heart Association in 1959. Zilversmit joined the faculty of Cornell's Graduate School of Nutrition in 1966 and remained until retirement. He was awarded an honorary degree from Utrecht University in 1980 and was elected to the National Academy of Sciences in 1989.

Zilversmit authored or co-authored more than 300 publications and made major contributions to the understanding of the relationship between diet and cardiovascular disease. He greatly contributed to the understanding of atherogenesis, including basic mechanisms in lipid transport and exchange. He also pioneered the development of mathematical analysis for the interpretation of kinetic data. He co-founded the *Journal of Lipid Research*.

He retired in 1990 and, with characteristic intensity, turned all of his energy to the pursuit of one of his life-long passions, the philosophy of science.

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