

## IN MEMORIAM: UC San Diego Family and Preventive Medicine Professor Frank Garland, PhD 1950 – 2010

*His studies shed light on link between Vitamin D and Cancer*

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Kim Edwards

UC San Diego Professor of Family and Preventive Medicine, Frank Garland, PhD, died Tuesday, August 17 in La Jolla, California, after a year-long battle with illness. Garland was also Technical Director of the Naval Health Research Center.

A San Diego native, Garland was born on June 20, 1950. He received his PhD degree in epidemiology from the Johns Hopkins University and began a distinguished career in vitamin D research for cancer and disease prevention.

"Frank Garland's untimely death is a great loss to this division where he has been a superb teacher of epidemiologic research methods in general, and the potential benefits of Vitamin D in particular," said Elizabeth Barrett-Connor, MD, professor and chief of the Division of Epidemiology in the UCSD Department of Family and Preventive Medicine. "His studies and research by many other scientists now suggest that Vitamin D not only prevents some common cancers, but also reduces the risk of other common diseases. Frank will be missed as a scholar, mentor, and friend."

Garland's brother and co-investigator, Cedric Garland, PhD, professor of family and preventive medicine at UC San Diego said their interest in vitamin D began in July 1974. "We had just driven cross-country to attend a seminar in Baltimore. On the very first day, some cancer mortality rate maps were shared. We both immediately noticed a pattern; a pattern that launched both our careers. Our entire academic lives are based on that single moment."

At that seminar, the Garland brothers noticed that the mortality rate maps of breast and colon cancer were twice as high in many counties of the northern tier of states than in the southwest. These geographic differences led to their theory that vitamin D and calcium were preventing adenocarcinoma of the colon and breast in the sunnier parts of the United States. This theory broke away from the conventional belief that sunlight was a dangerous cause of skin cancer which should be completely avoided.

The Garland's theory, first published in 1980 in the *International Journal of Epidemiology*, proposed that vitamin D and calcium are capable of preventing cancer, setting the course for a three-decade-long career devoted to vitamin D research.

"Over the past three decades, the Garlands' seminal hypothesis has been largely confirmed by numerous additional studies," said Edward Giovannucci, MD, ScD, professor of nutrition and epidemiology, Harvard School of Public Health. "Improving vitamin D status remains one of the most promising natural ways to combat incidence and death from some cancers."

Frank Garland's descriptive study of sunlight and cancer mortality initiated two well-known studies published by members of the Garland team and other colleagues in the medical journal *The Lancet*. The first study was a 19-year historical cohort study in Chicago which found that people whose vitamin D and/or calcium intakes were in the top fifth of the population had half the incidence of colon cancer as those in the bottom fifth. This was the first study to find an effect of oral intake of vitamin D or calcium on cancer risk.

The second key paper by Garland and his colleagues analyzed vitamin D concentrations in volunteers in Washington County, Maryland. This cohort study collected blood from 25,000 volunteers and showed for the first time that people with high concentrations of 25-hydroxyvitamin D in the serum had very low risk of colon cancer.

These Garland papers are cited in more than 95 percent of other vitamin D-related papers. The papers have led to major advances in the understanding of the role of vitamin D in cancer prevention including its role in prevention of cancer of the ovary, kidney, bladder and endometrium.

In 2006, the *International Journal of Epidemiology* re-published Garland's 1980 article concerning vitamin D and cancer mortality based on his geographic observations. The republication was followed by a set of scientific commentaries on the importance of this seminal research.

"Frank's devotion to the pursuit of scientific truth about vitamin D and realization of its potential benefit to humanity is a major factor in the emergence of vitamin D as an increasingly accepted tool for reducing incidence rates of cancer, and more recently, Type 1 diabetes in children," said Cedric Garland.

In addition to his brother, Cedric, Garland is survived by his mother, Eva Caldwell Garagliano, also of San Diego.

Friends and family are invited to a visitation, on Friday, August 27, 7:00 p.m. to 8:00 p.m. at All Hallows Catholic Church, 6602 La Jolla Scenic Drive South, La Jolla, California. Funeral services and reception will follow on Saturday, August 28, also at All Hallows Catholic Church. Greeting/service begins at 10:15 a.m.; reception runs from noon to 1:30 p.m.

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