Scientist, 98, challenges orthodoxy on causes of heart disease

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Fred Kummerow, a professor of comparative biosciences at the University of Illinois, describes his work, which contradicts commonly held notions about the role of dietary cholesterol. Credit: L. Brian Stauffer

Twenty years ago, at the age of 78, Fred A. Kummerow retired from the University of Illinois. That didn't mean his research days were behind him, however. Now in a wheelchair most of the time, Kummerow still maintains a laboratory on campus where he and his colleagues chip away

at the basic assumptions that guide most research into the causes of heart disease.

Now an adjunct professor of comparative biosciences, Kummerow has an uncommon view of the dietary and lifestyle factors that contribute to atherosclerosis and sudden cardiac death. He shared those views in an interview with Hannah Wilson, an editor for Clinical Lipidology, a publication of the London-based Future Medicine publishing company.

Contrary to advice offered to most patients, Kummerow maintains that dietary cholesterol, like that found in eggs, meat or milk, is not a danger to the heart.

"In fact, these foods contain all of the amino acids that are necessary to build the lipoproteins that carry fatty acids and cholesterol to every one of the 50,000 trillion cells in the body," Kummerow said.

Testing for cholesterol levels such as LDL, HDL and other lipids "was established in 1961 by the American Heart Association and the field has not advanced much in the basic research needed to solve the problem of heart disease since that time," Kummerow said.

"Based on the misconception that high cholesterol was responsible for heart disease, pharmaceutical companies started developing drugs to lower the levels of cholesterol in patients with hypercholesterolemia," he said. "In my view, the biggest setback in heart disease treatment has been the overuse of statins for the treatment of high cholesterol."

Doctors continue to subscribe to the idea that dietary cholesterol is a danger to heart health, even though studies show that more than half of heart attacks occur in patients who have normal, or low, cholesterol levels, he said.

In his own research, Kummerow analyzed the arteries and plasma of patients who had undergone heart bypass operations. He found that the blood plasma of the heart patients contained elevated levels of oxidized cholesterols, called oxysterols. These cholesterol derivatives are the real culprit in the development of heart disease, Kummerow said. Frying foods in overused oil or smoking cigarettes can oxidize cholesterol, creating these derivatives.

Further studies of the foods that contain oxysterols have established a direct link between these foods and heart disease, Kummerow said.

"My findings indicate fried foods, powdered egg yolks used as an ingredient to make processed foods, excessive use of vegetable oils and cigarette smoke are the greatest culprits in heart disease," he said. "Fried foods and powdered food substitutes are dietary sources of oxysterols, which alter the phospholipid membranes of our arteries in ways that increase the deposition of calcium, a key hallmark of atherosclerosis."

Kummerow also is a long-time advocate for the elimination of artificial trans fats (those generated by the hydrogenation of oils) from the food supply. His research has shown that dietary trans fats accumulate in the tissues and interfere with the production of prostacyclin, a naturally occurring factor in the blood that keeps it fluid, preventing dangerous blood clots.

The interview in *Clinical Lipidology*, "Correlation Between Oxysterol Consumption and Heart Disease," is available online.

More information:
www.futuremedicine.com/doi/full/10.2217/clp.13.34