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NUT CONSUMPTION AND MORTALITY: NEW DATA FROM THE UNITED STATES OF AMERICA

An excess of saturated fats, sugar or trans-fats may contribute to age-related diseases and thus increase mortality rates. Healthy dietary habits have become the key to improving overall health. Researchers found an inverse association between nut consumption and total mortality and specific cause of mortality.

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There is a vast literature that describes the effects of several dietary factors and energy content of the diet on the health general status. High energy intake increases the risks of cardiovascular disease (CVD), type 2 diabetes (T2D), stroke, cancers and it is likely to also affect neurodegenerative disorders[1]. Regarding specific dietary components, saturated fats, cholesterol and trans-fats may contribute to age-related disease[2], while diets high in simple carbohydrates increase the risk of T2D[3]. Other data suggest that health benefits can be obtained from dietetic patterns rich in certain food categories such as fruits and vegetables[4], fish[5] and nuts[6]. In fact, understanding the relationship between individual dietary components and cardiometabolic disease (at the population level) is key to identifying priorities, guiding public health planning, and informing strategies to alter these dietary habits and improve overall health.

Globally, the associations between suboptimal diet and health outcomes have been estimated by various investigators[7,8]. In the United States, numerous analyses have estimated the association between suboptimal dietary habits and cardiometabolic health overall[9] or for a limited number of dietary factors (e.g., sodium and sugar-sweetened beverages)[10]. However, there was no specific data evaluating the link between the consumption of individual dietary factors and death by specific causes in the United States, taking into account differences in age, sex, race/ethnicity, and socioeconomic status.

To overcome this lack in the literature, Micha and collaborators explored in a recent original investigation, the association of 10 specific dietary factors thought to be related to health (fruits, vegetables, nuts and seeds, whole grains, unprocessed red meats, processed meats, sugar-sweetened beverages, polyunsaturated fats, seafood omega-3 fats, and sodium), and death by heart disease, stroke and T2D (i.e. cardiometabolic death) among US adults[11]. This set of dietary factors was selected out of a pool of 17 factors that had associations with stroke, coronary heart disease (CHD), adiposity, T2D or systolic blood pressure. Factors that overlapped with other effects and factors with inadequate evidence were removed.

Researchers performed a comparative risk assessment model to estimate cardiometabolic deaths that were related to substandard intakes of 10 dietary factors. The model also featured information that focused on dietary habits and population demographics by age, sex, race and education; dietary factors relating to stroke, heart disease or T2D death; ideal intake for each of the 10 dietary factors and the number of cardiometabolic deaths by age, sex, race and education. They analyzed participants from the 1999-2000 and 2001-2002 National Health and Nutrition Examination Survey (NHANES, n = 8,104; 48% men), as well as the 2009-2010 and 2011-2012 NHANES (n = 8,516; 48% men).

According to Micha and colleagues, intake of each dietary factor was suboptimal for 2002 and 2012. In 2012, there were 702,308 cardiometabolic deaths among adults in the United States. Of those, 506,100 occurred from heart disease, 67,914 from type 2 diabetes and 128,294 from stroke[12].

Nearly one in two deaths (318,656; 45.4%) were associated with suboptimal intakes of the 10 dietary factors in 2012. High sodium was

related to the largest number of diet-related cardiometabolic deaths (66,508; 9.5%), followed by the low intake of nuts and seeds (59,374; 8.5%) and high amounts of processed meats (57,766; 8.2%). The lowest number of deaths was caused by low intake of polyunsaturated fats (16,025; 2.3%) and high intake of unprocessed red meats (2,869; 0.4%).

The highest death rates among those with CHD were linked to a low intake of nuts and seeds (54,591; 14.7%), the researchers wrote. Stroke-related death was most often attributed to low consumption of vegetables (28,039; 21.9%) and fruits (28,741; 22.4%). Death caused by hypertensive heart disease was most often attributable to high levels of sodium (7,505; 21.4%), and death from type 2 diabetes was most commonly associated with a high intake of processed meats (11,900; 17.5%).

Researchers found that high sodium intake was related to the largest number of diet-related cardiometabolic deaths, followed by low intake of nuts and seeds, and high amounts of processed meats.

These results come from several other large epidemiological studies that have found an inverse association between nut consumption and total mortality or specific cause of mortality.

The beneficial effects of nuts have been explained through their nutritional composition: rich in many essential nutrients such as unsaturated fatty acids, fiber, vitamins and minerals and in several bioactive compounds like phytosterols and phenolic compounds. These results can also confirm that, included in a healthy dietary pattern, nuts can be considered a death-preventing dietary factor.

Results derived from this study may help to identify priorities and to update public health guidelines that exert an improvement in population dietary habits.

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IN MEMORIAM
CONSTANCE GEIGER

We were very sad to hear of the death, on May 5, of Dr. Constance J. Geiger, member of the INC World Forum for Nutrition Research and Dissemination. We loved working with her and she will be dearly missed.

Constance was Research Associate Professor and served as Chairperson of the Division of Foods and Nutrition at the University of Utah, where her research in labeling and public policy issues received national and international awards.

She contributed to more than 20 US and international research papers and projects focusing on the health benefits of mixed nuts and pistachios. As Director of the Board of Directors of the Academy of Nutrition and Dietetics she provided direction for programming and research grants. She also developed and managed her own consulting company, Geiger and Associates.

There is a scholarship fund in her name for students in the field of nutrition at the University of Utah College of Health.

Our thoughts are with her family and friends.