Frequent nut consumption associated with less inflammation

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In a study of more than 5,000 people, investigators from Brigham and Women's Hospital have found that greater intake of nuts was associated with lower levels of biomarkers of inflammation, a finding that may help explain the health benefits of nuts. The results of the study appear July 27 in the *American Journal of Clinical Nutrition*.

"Population studies have consistently supported a protective role of nuts against cardiometabolic disorders such as cardiovascular disease and type 2 diabetes, and we know that inflammation is a key process in the development of these diseases," said corresponding author Ying Bao, MD, ScD, an epidemiologist in BWH's Channing Division of Network Medicine. "Our new work suggests that nuts may exert their beneficial effects in part by reducing systemic inflammation."

Previously Bao and her colleagues observed an association between increased nut consumption and reduced risk of major chronic diseases and even death, but few prospective cohort studies had examined the link between nut intake and inflammation. In the current study, the research team performed a cross-sectional analysis of data from the Nurses' Health Study, which includes more than 120,000 female registered nurses, and from the Health Professionals Follow-Up Study, which includes more than 50,000 male health professionals. The team assessed diet using questionnaires and looked at the levels of certain telltale proteins known as biomarkers in blood samples collected from the study participants. They measured three well-established biomarkers of inflammation: C-reactive protein (CRP), interleukin 6 (IL6) and tumor necrosis factor receptor 2 (TNFR2).

After adjusting for age, medical history, lifestyle and other variables, they found that participants who had consumed five or more servings of nuts per week had lower levels of CRP and IL6 than those who never or almost never ate nuts. In addition, people who substituted three servings per week of nuts in place of red meat, processed meat, eggs or refined grains had significantly lower levels of CRP and IL6.

Peanuts and tree nuts contain a number of healthful components including magnesium, fiber, L-arginine, antioxidants and unsaturated fatty acids such as ?-linolenic acid. Researchers have not yet determined which of these components, or if the combination of all of them, may offer protection against inflammation, but Bao and her colleagues are interested in exploring this further through clinical trials that would regulate and monitor diet.

"Much remains unknown about how our diet influences inflammation and, in turn, our risk of disease," said Bao. "But our study supports an overall healthful role for nuts in the diet and suggests reducing inflammation as a potential mechanism that may help explain the benefits of

nuts on cardiometabolic diseases."

More information: Z. Yu et al, Associations between nut consumption and inflammatory biomarkers, *American Journal of Clinical Nutrition* (2016). DOI: 10.3945/ajcn.116.134205

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