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Dr. Bao is Associate Epidemiologist at Brigham and Women's Hospital and Instructor in Harvard Medical School. She has conducted extensive research in determining the role of insulin resistance and dysregulated energy metabolism in the pathogenesis of gastrointestinal cancer and other chronic diseases, through a comprehensive and integrative application of nutrition, biomarkers, genetics, and metabolomics.

Dr. Bao has also led large studies exploring the health benefits of nuts on chronic diseases, including a landmark study demonstrating that regular nut consumption is associated with reduced overall mortality as well as mortality due to cardiovascular disease, cancer, and other chronic diseases. In the past decade, Dr. Bao has led or contributed generously to important national and international collaborative endeavors, and has contributed high quality first- and senior-authored publications in such journals as *The New England Journal of Medicine*, *Journal of the National Cancer Institute*, and *American Journal of Clinical Nutrition*.

Tree nuts and cardiovascular mortality

Accumulating evidence indicates that nut consumption may have various health benefits. In a recent large cohort study, we found that people who ate nuts on a daily basis lived longer than those who did not. The greatest benefit was seen for cardiovascular mortality. People who ate nuts five or more times a week had a 29% reduction in deaths from heart disease. These findings are consistent with a wealth of observational and clinical trial data to support health benefits of nuts on cardiovascular disease. Possible mechanisms include antiatherogenic, antiinflammatory, and antioxidant properties of nutrients in nuts, such as unsaturated fatty acids, tocopherols, and phytochemicals. Indeed, studies show that nut consumption has beneficial effects on intermediate markers of cardiovascular disease, including lowering LDL cholesterol and ameliorating endothelial function. Overall, the existing data strongly suggest that frequent nut consumption protect against cardiovascular disease.

Learning objectives:

1. Evaluate current literature on tree nut consumption and cardiovascular mortality
2. Understand different epidemiologic methods used in this research area
3. Discuss potential biological mechanisms underlying this association