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Consumption of certain grain food patterns is associated with improved shortfall nutrient intakes in US adults: A NHANES 2005-2017 analysis

Yanni Papanikolaou¹ and Victor L Fulgoni III² ¹Nutritional Strategies Inc., Canada ²Nutrition Impact, LLC, USA

The objective of this study was to identify the most commonly consumed grain patterns in US adults (≥ 19 y; N=14,384) and compare nutrient intakes with particular focus on shortfall nutrients identified by the 2015 Dietary Guidelines Advisory Committee to those not consuming grains. The USDA food coding system was used to define key categories of grain foods. Cluster analysis using data from What We Eat in America 2005-2017, the dietary intake component of NHANES identified 8 grain patterns: They are Bread/rolls, quick breads, cereals, pasta/cooked cereals/rice, crackers/salty snacks, cakes/cookies/ pies, mixed grains and no grains. Adults consuming crackers/salty snacks, cereals, pasta/cooked cereals/rice, quick breads and mixed grains had greater dietary fiber intake vs. no grains (16.4 ± 0.3 , 19.4 ± 0.6 , 18.1 ± 0.4 , 18.0 ± 0.5 vs. 16.3 ± 0.2 g, respectively, all p<0.05). Adults in all eight grain patterns had significantly higher iron intake compared to no grains. Calcium intake was increased in the cereals group relative to no grains (1158 ± 219 vs. 939 ± 23 mg, p<0.05), while magnesium intake was greater in adults consuming cereals/rice vs. no grains (335 ± 7 and 341 ± 5 vs. 296 ± 7 mg, p<0.05) but lower in adults consuming cakes/cookies/pies (271 ± 7 mg). Vitamin A, RAE and vitamin D (D2+D3) intake was higher in adults consuming cereals, pasta/cooked cereals/rice and mixed grains vs. no grains (vitamin A: 828 ± 27 , 736 ± 24 , 652 ± 10 vs. 575 ± 25 µg; vitamin D: 6.8 ± 0.2 , 5.1 ± 0.2 , 5.0 ± 0.1 vs. 4.1 ± 0.2 µg, all p<0.05) A variety of grain food pattern intake was associated with increases in several shortfall nutrients in American adults.

Biography

Yanni Papanikolaou previously worked for the Kellogg Company as Director of Nutrition Marketing in the USA and Associate Director for Nutrition and Regulatory Affairs in Canada. At Kellogg he led strategy development and leveraged nutrition science to influence government bodies on policy development and in the creation of evidence-based consumer and health professional messaging. He holds a Masters of Health Science in Public Health Nutrition and is completing a PhD at University of Toronto focusing on nutrition and brain health. He is an accomplished, peer-reviewed author in scientific/medical journals and books chapters and has presented at major nutrition conferences worldwide.

papanikolaou.yanni@gmail.com

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