

## **Paleo nutrition for metabolic syndrome? Food for thought**

**Background** The popular “paleo diet” is modelled on the nutritional patterns of our ancestors from the Paleolithic era (2.6 million to ~10,000 years ago), before the advent of modern (industrial) agriculture. Archeological, anthropological, and genetic evidence suggests that Paleolithic nutrition consisted of meat, fish, eggs, vegetables, fruit, and nuts in variable proportions and did not include dairy, grain products, or legumes. Current pre-industrial hunter-gatherer societies, consuming Paleolithic-like nutrition, are largely free of the degenerative diseases of Western civilization. It has been hypothesized that our physiologic architecture, which came of age over millions of years, cannot adapt rapidly enough to the changes in dietary habits occurring since the agricultural revolution. The ensuing mismatch has been proposed to contribute to the epidemic of chronic disease, which the world faces today. If this hypothesis holds true, one would expect Paleolithic nutrition to ameliorate risk markers of chronic disease, particularly in people who are (genetically) predisposed to develop any of these disorders. Manheimer and coworkers applied Cochrane review methods to evaluate whether current randomized trial evidence supports the postulate that Paleolithic nutrition improves risk factors for chronic disease more than do other dietary interventions in people with one or more components of the metabolic syndrome. Details about this study and its findings are published in *The American Journal of Clinical Nutrition* (“Articles in Press” page, listing for August 12, 2015).

**Study Design** This study was a systematic review and meta-analysis of previously published randomized controlled trials comparing the impact of Paleolithic nutrition with that of control diets on metabolic risk factors for diabetes and heart disease in obese people. The outcomes the authors examined were blood pressure, glucose, cholesterol, waist circumference, and triglycerides.

**Results** Data from 4 trials compared paleo-nutrition to 4 distinct but broadly similar control diets, all based on national or international dietary guidelines for people with diabetes. The 4 control diets focused on increased consumption of whole-grain cereals and low-fat dairy products, restriction of saturated fat to less than 10–15% of total daily energy, and the allowance of refined vegetable oils and processed foods. The meta-analyses showed that the paleo diet resulted in greater short-term (2 weeks to 6 months) improvements in metabolic syndrome components compared with control diets. The quality of the evidence was judged as moderate, primarily because the number of people studied was relatively small.

**Conclusion** The investigators found evidence to suggest that the Paleolithic diet can improve metabolic syndrome components more than currently recommended control diets. These beneficial effects and their longer-term sustainability warrant further evaluation. Moreover, state-of-the-art nutritional science readily explains the metabolic benefits of a (modest) restriction of carbohydrates, a lack of high-glycemic index products, a low  $\omega$ -6 over  $\omega$ -3 fatty acid balance, and a reduction of salt intake in patients with insulin resistance and the metabolic syndrome. In contrast, it is less clear whether the avoidance of whole grains and dairy products is a prerequisite for optimal control of metabolism. Additional studies should carefully examine the health significance of avoiding these food groups in the context of Paleolithic nutrition.

**Reference**

Manheimer EW, van Zuuren EJ, Fedorowicz Z, Pijl H. Paleolithic nutrition for metabolic syndrome: systematic review and meta-analysis. Am J Clin Nutr 2015 Aug 12 (Epub ahead of print; DOI: 10.3945/ajcn.115.113613).

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