

## LETTER TO THE EDITOR

# Reply to NJ Krilanovich

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Dear Sir:

We thank Krilanovich for his comments regarding our recent study (1). Low-carbohydrate diets have withstood recent scientific scrutiny (2, 3) and may soon become the "diet of choice" for effective weight loss. We challenged the view that the metabolic advantage of these diets is related to ketosis, and we showed that dietary protein ( $\approx 1.2$  g/kg body wt) generates the metabolic milieu for efficient weight loss (1). That is, dietary protein—not ketosis or dietary fat or carbohydrate—corresponds to reduced hunger and elevated energy expenditure during active weight loss (1, 4).

The protein-sparing modified fast (PSMF) developed in the 1970s by Bistrian et al (5) permits the consumption of only lean meat, fish, and poultry at a level to provide 1.2–1.4 g protein/kg ideal body wt. Dietary carbohydrate is prohibited, dietary fat is restricted to that present in the protein source, and vitamin and mineral supplementation is necessary. Although Krilanovich agrees that ketogenic diets high in saturated fat and cholesterol (eg, the Atkins diet) may be unhealthful, he suggests that ketogenic PSMF diets would be the preferred diet for weight reduction because these diets promote "rapid weight loss and low hunger." Yet, the rate of weight loss with a PSMF diet,  $\approx 1$  kg/wk at energy intakes near 800–900 kcal/d (6, 7), is similar to that reported for nonketogenic, low-carbohydrate, high-protein diets (1, 8), and both diets appear to effectively control hunger (4, 8, 9).

Thus, there is no apparent advantage to restricting dietary carbohydrates to a level that is ketogenic. Vegetables and low-fat dairy products contain numerous nutrients and phytochemicals that reduce the risk of chronic disease; therefore, the restriction of these foods in the diet is simply not wise. Furthermore, a recent article provides evidence that ketosis increases blood methylglyoxal concentrations 2-fold (10). Methylglyoxal and its byproducts are considered a significant cause of blood vessel damage. We continue to claim that the use of ketogenic diets for weight loss is not warranted.

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