

clinicians experience on a regular basis ... as a result of other diets, including the prudent diet'. This is not my experience.

Most who wrote to me reported that they had tried numerous other diets, including the prudent diet, without lasting success and no obvious improvement in their health. The common complaint is that a hypocaloric, low-fat, prudent diet produces continual hunger that cannot be resisted for more than a few months by even the most strong-willed. In contrast, the carbohydrate-restricted diet produces satiation at a substantially lower calorie intake as already shown in 1970.^[3] Cases 1 - 5 show this.^[2] Because calories from carbohydrate or from fat/protein may not act identically in the human body,^[4] greater weight loss may be achieved from a high-fat, protein diet than from an isocaloric, high-carbohydrate diet. This is the current focus of a major new study funded by the NuSi Foundation in the US.^[5]

In addition, those with insulin resistance (which may include most of the obese) have a reduced capacity to metabolise carbohydrate safely^[6] and achieve metabolic and other benefits from a low-carbohydrate diet that they will not achieve from an equicaloric low-fat, high-carbohydrate diet.^[7,8] Thus, the prudent diet is not the equal of the low-carbohydrate diet for those with insulin resistance. This is a key differentiator that cannot blindly be ignored forever.

I would challenge the assertion that I am criticising my colleagues and confusing the public. If anyone has been criticised it is me.^[9] I have made reference to a number of properly conducted, randomised, controlled clinical trials (RCTs), the results of which have been published in peer-reviewed journals. As reported, these studies show that the low-carbohydrate diet is 'at least as effective' as the 1977 prudent diet.

Dr Kapp's call for an RCT re-states the key recommendation from my paper. My colleagues and I have spent the last two years preparing and submitting funding proposals for just such RCTs and are currently studying the effects of carbohydrate-restricted diets on metabolism, including liver glucose production during prolonged exercise.

Finally, I continue to be astonished by the patently obvious evidence, visible daily to anyone with a modicum of common sense, that our current nutritional advice is simply not working. Yet, as a profession we meekly refuse to acknowledge the obvious. Instead we continue to apply treatments and interventions that fail miserably to alter the disease trajectories of so many of our sickest patients with type 2 diabetes mellitus, obesity and metabolic syndrome.

Instead, when a small tiny modicum of hope is presented the typical response seems to be to react viscerally by shooting the messenger, as does Dr Kapp.

Timothy David Noakes

Department of Human Biology, University of Cape Town and Sports Science Institute of South Africa, Cape Town, South Africa
timothy.noakes@uct.ac.za

1. Kapp RG. 'A new dietary paradigm?' - prove it. *S Afr Med J* 2014;104(1):5. [<http://dx.doi.org/10.7196/SAMJ.7729>]
2. Noakes T. Low-carbohydrate and high-fat intake can manage obesity and associated conditions: Occasional survey. *S Afr Med J* 2013;103(11):826-830. [<http://dx.doi.org/10.7196/SAMJ.7302>]
3. Stock AL, Yudkin J. Nutrient intake of subjects on low carbohydrate diet used in treatment of obesity. *Am J Clin Nutr* 1970;23(7):948-952.
4. Ebbeling CB, Swain JF, Feldman HA, et al. Effects of dietary composition on energy expenditure during weight-loss maintenance. *JAMA* 2012;307(24):2627-2634. [<http://dx.doi.org/10.1001/jama.2012.6607>]
5. Nutrition Science Initiative. The effect of macronutrient composition on energy expenditure and fat balance - is it true that a calorie is a calorie? http://nusi.org/the-science/current-science-in-progress/energy-balance-consortium-study/#.UqnHsJHAV_Y (accessed 10 December 2013).
6. Petersen KE, Dufour S, Savage DB, et al. The role of skeletal muscle insulin resistance in the pathogenesis of the metabolic syndrome. *Proc Natl Acad Sci USA* 2007;104(31):12587-12594. [<http://dx.doi.org/10.1073/pnas.0705408104>]
7. Volek JS, Phinney SD. A new look at carbohydrate-restricted diets: Separating fact from fiction. *Nutrition Today* 2013;48(2):E1-E7. [<http://dx.doi.org/10.1097/NT.0b013e31828814eb>]
8. Volek JS, Fernandez ML, Feinman RD, Phinney SD. Dietary carbohydrate restriction induces a unique metabolic state positively affecting atherogenic dyslipidemia, fatty acid partitioning, and metabolic syndrome. *Prog Lipid Res* 2008;47(5):307-318. [<http://dx.doi.org/10.1016/j.plipres.2008.02.003>]
9. Bateman C. Inconvenient truth or public health threat? *S Afr Med J* 2013;103(2):69-71. [<http://dx.doi.org/10.7196/SAMJ.6663>]

S Afr Med J 2014;104(2):96. DOI:10.7196/SAMJ.7854

LCHF: Response to Dr Kapp

To the Editor: In his recent correspondence to the *SAMJ*,^[1] Dr Kapp argues that the case studies I reported in the November issue of the *SAMJ*^[2] are 'no more dramatic than the stories of patients we