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LETTER COMMENT

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To: McAuley KA, Hopkins CM, Smith KJ, McLay RT, Williams SM, Taylor RW, Mann JI (2005) Comparison of high-fat and high-protein diets with a high-carbohydrate diet in insulin-resistant obese women. Diabetologia 48:8–16

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To the Editor: The relative contraction of mass due to different weight loss diets is of great interest in light of the current epidemic of obesity and diabetes. The paper by McAuley et al [1] comparing different diets was therefore of considerable importance. I feel, however, that the authors underestimated the full impact of their results and allowed a certain amount of bias to compromise their conclusion. For one thing, weight loss in itself is not the real goal of obesity treatment. In fact, one seeks total reduction in stored free energy, to which the most important contributing factor is fat. When an analysis of energy balance is required, one cannot compare energy intake with mass stored; everything must be converted to the same unit. The effect of a diet should be given in terms of calories consumed vs calories stored, i.e. it is changes in energy, rather than changes in mass, that are critical. We computed the energy lost by weighting fat:lean body loss from McAuley's data at 9:4 (Fig. 1). It can be seen that, in fact, the low-carbohydrate diet still has an advantage over the other diets, even though this group consumed more calories. This reduction in energy efficiency (popularly referred to as metabolic advantage) has been observed in many comparisons (Reviewed years up to 2003: [2; 3–5]), of which McAuley has picked a single one where the benefit of the low-carbohydrate diet was not considered significant. The authors further point out the limitations of determining accurately the number of calories consumed, but somehow feel that this applies only to the Atkins group. Overall, the paper comes across as being biased: excuses are given for the high-carbohydrate group ('be more directional with regard to fruit, vegetables and wholegrain cereals'), disclaimers are given for the Atkins groups ('early fluid loss'), and the Zone appears to be settled on as a compromise. In any case, an appropriate indication of the energy lost seems to be the most important variable, and this clear difference between the diets is the most obvious and noteworthy result. In conclusion, on the anniversary of Einstein's annum mirabilis [6], a more careful approach to energy balance would seem appropriate.

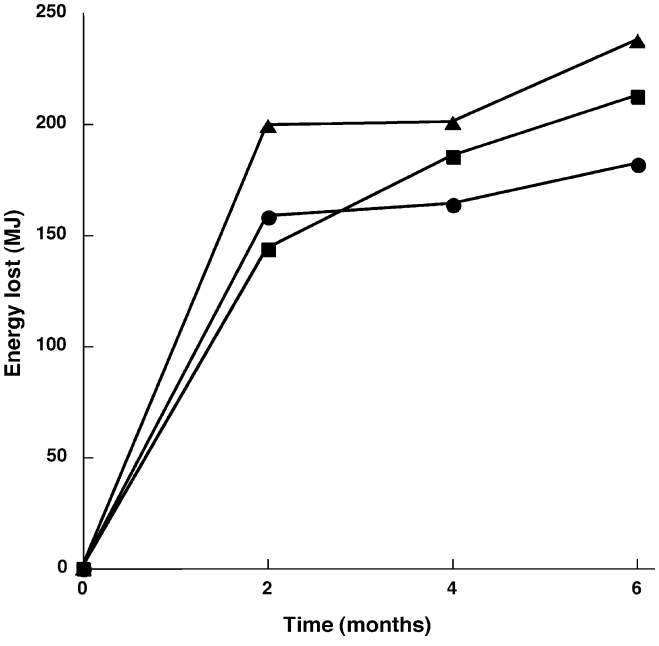

Fig. 1 Energy changes in experiments in Ref. [1]. *Triangles*, high-fat diet (Atkins); *squares*, high-protein diet (Zone); *circles*, high-carbohydrate diet

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