

Effect of an energy reduced high protein red meat diet on weight loss and metabolic parameters in obese women

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Aim: To determine the effects on weight loss, fat and lean body mass, metabolic parameters and markers of bone turnover of reduced energy intake with increased protein from red meat in overweight and obese women (BMI 27-40).

Methods: Twelve week randomised parallel design of two 5600KJ diets: High meat (HM) 34% protein 46% carbohydrate 20% fat or low meat (LM) 17% protein 64% carbohydrate 20% fat.

Results: One hundred women with a mean BMI of 32.6 and mean age of 49.3 years completed the study. Weight loss (*Mean ± SD*): -7.6 ± 3.3 (HM) and -6.9 ± 3.5 kg (LM) and fat (-5.7 ± 4.0 , -4.6 ± 3.7) and lean mass (-1.6 ± 1.9 , -1.8 ± 1.8) changes were different from baseline but not between diets. There was a significant interaction between diet and baseline triglyceride ($p < 0.05$). Subjects with high TG (> 1.5 mmol/L) had greater loss of weight on the HM diet 7.9 ± 0.7 versus 5.9 ± 0.4 kg ($p = 0.02$). TG fell by 8% in the LM diet and 22% in the HM diet (ns). HDL cholesterol fell 5-8% and LDL cholesterol and glucose fell by 7% and 4% respectively with no differences between diets. Fasting insulin fell by 16-27% with no significant differences between diets. Vitamin B12 increased by 9% on HM and fell by 13% on LM ($p < 0.01$) but fasting plasma homocysteine did not change. Plasma folate was unchanged. Urine markers of bone turnover increased by 8-12% and calcium excretion decreased by 1 mmol/day with no differences between diets. Bone density did not change.

Conclusion: A low energy diet high in red meat seems to provide a weight loss advantage to subjects with some features of the metabolic syndrome with no adverse effects on bone metabolism.