

## Concurrent Session 1: Obesity, Diet and Disease

### **Dietary approaches for weight loss with increased fruit, vegetables and dairy**

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**Objective** - To assess the consumption of fruit, vegetables and non-fat dairy products of subjects in a weight loss study where strategies were used to increase intakes.

**Design** - Subjects were randomised to one of two diet and exercise weight loss programs for 12 weeks (n=40). The WELL diet (a Dietary Approaches to Stop Hypertension (DASH) type diet with a weight loss focus) included daily targets of four serves of fruits, four serves of vegetables and three serves of no fat dairy. The National Heart Foundation's (NHF) 'Healthy Weight Guide' diet included general advice to increase fruit and vegetable consumption but no specific targets. Subjects were visited or phoned fortnightly. They received group weight loss feedback as well as a personalized program that included lifestyle advice, feedback and goal setting. A food group counter recorded servings of fruit, vegetables and dairy products on three consecutive days of each week. Results of the first eight weeks are reported.

**Results** - At week 8, number of serves/day of targeted foods were greater for the WELL diet than the NHF diet (mean difference  $\pm$  SEM): Fruit:  $1.5 \pm 0.3$ , vegetables:  $1.5 \pm 0.2$ , dairy:  $1.3 \pm 0.1$  serves/day (all  $P < 0.01$ ). Vegetables serves/day (mean  $\pm$  SEM) on the WELL diet increased from week two to week eight (week two:  $3.3 \pm 0.2$ , week eight:  $4.1 \pm 0.4$  serves/day ( $P < 0.05$ )). Daily fruit intake remained above target (week two:  $4.7 \pm 0.2$ , week eight:  $4.8 \pm 0.1$  serves/day). Daily dairy intake remained below target (week two:  $2.7 \pm 0.2$ , week eight:  $2.8 \pm 0.2$  serves/day).

**Conclusions** - Changing dietary patterns may require different adjustment periods depending on the food type. Increasing fruit intake can be implemented quickly, whereas it takes a longer time to increase vegetable intake. Providing specific dietary targets appears to promote greater adherence to guidelines than general advice to increase intakes alone.

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### **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  $\pm$  SD):  $-7.6 \pm 3.3$  (HM) and  $-6.9 \pm 3.5$  kg (LM) and fat ( $-5.7 \pm 4.0$ ,  $-4.6 \pm 3.7$ ) and lean mass ( $-1.6 \pm 1.9$ ,  $-1.8 \pm 1.8$ ) 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  $7.9 \pm 0.7$  versus  $5.9 \pm 0.4$ 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 1mmol/day with no differences between diets. Bone density did not change.

**Conclusions** - 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.