**P47** Efficacy of an isocaloric high protein low GI weight loss diet compared to a low GI high carbohydrate diet in overweight/obese men

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**Background** – Although diets with increased protein to carbohydrate appear more effective for improving body composition and metabolic outcomes in women, they have been poorly studied in men.

**Objective** – Our study aimed to comprehensively assess the efficacy of a high protein low GI diet (HP) compared to a high carbohydrate low GI diet (HC) for weight loss in overweight/obese men.

**Design** – One hundred and twenty three overweight men aged 49±9 y and BMI 34±6 kg/m² were randomized to one of 2 isocaloric (7MJ) weight loss diets for 12 weeks. HP: (Protein:CHO:Fat;%Sat Fat = 35:40:25;8%) or HC (17:58:25;8%). Outcome measures were regional fat and lean loss as well as cardiovascular risk markers.

**Outcome** – Weight loss on both diets was similar; 8.9±4.2kg (mean±SD). Total abdominal fat mass loss was significantly greater on HP compared with HC even after controlling for baseline differences (HP -0.76±0.38 kg vs HC, -0.56±0.36 kg; P=0.02). Triglycerides (TG) fell by 0.45±0.70 mmol/L, LDL cholesterol by 0.48±0.66 mmol/L, blood pressure by 11/12±10/8mmHg and HDL cholesterol remained unchanged independent of diet composition. Glucose and insulin fell by 0.27±0.58 mmol/L and 4±6mU/L respectively. CRP fell significantly only in those subjects with TG>2 mmol/L and on HP (P=0.03 time/diet/TG status interaction). Plasma folate increased 7% on both diets and homocysteine remained unchanged at 7.7 µmol/L. Plasma B12 increased significantly only on HP by 20% (P=0.027 for diet interaction).

**Conclusion** – Both high protein diets and high carbohydrate low GI diets are effective in improving cardiovascular risk in obese men but with some metabolic advantages on the higher protein pattern.

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**P48** Epithelial cell folate is an accurate marker when compared with whole tissue biopsy folate for examining the role of folate status in colorectal cancer

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**Background** – Epidemiological studies have shown low folate status is associated with colorectal cancer. Colonic tissue folate levels at different stages of cancer development should give important information, but different methodologies to extract the colonic tissue folates have been used. This has hampered progress in defining the relationship between systemic and tissue folate levels.

**Objective** – To evaluate two methods of colonic tissue preparation for estimation of total folate content.

**Design** – Whole tissue punch biopsy samples were obtained from the descending colon of 31 individuals following a normal colonoscopy. Blood samples were obtained for the determination of plasma homocysteine (Hcy), red cell folate (RCF), methylenetetrahydrofolate reductase 677C>T genotype, and serum vitamin B₁₂ and folate. Colonic tissue folate was measured both in washed whole tissue biopsies and in epithelial cells isolated from tissue biopsies.

**Outcomes** – Whole biopsy and epithelial cell folate concentrations were significantly correlated (R=.375; P=.038). Hcy was inversely correlated with both measures (R=-.365; P=.043 and R=-.364; P=.044 respectively). RCF was significantly correlated with isolated epithelial cell folate (R=.477; P=.007) but not with whole tissue biopsy folate (R=.264; P=.151). There were no significant associations between serum and colonic folate in this study.

**Conclusion** – Both methods are useful for comparing systemic and localised tissue folate status but epithelial cells may provide more reliable data.