

**ADVICE GIVEN TO INCREASE DIETARY PROTEIN OR ENERGY DOES NOT
IMPROVE ACTUAL INTAKE OR NUTRITIONAL STATUS IN CAPD
PATIENTS.**

D Sutton, B Higgins, J Stevens
Queen Alexandra Hospital, Portsmouth

PROBLEM: A previous study on this unit revealed that 88% of PD patients failed to achieve recommended dietary intakes of 35 cal/kg and 79% failed to achieve Recommended Intakes of 1.2g/kg protein. There was a good correlation between energy intake and estimates of actual energy expenditure, but no statistical link between poor dietary intake and measures of nutritional status.

PURPOSE: To see whether increasing non-protein calories to match expenditure improved nutritional status. To investigate whether current recommendations for protein and energy are appropriate.

DESIGN: 59 stable, non-diabetic CAPD patients with no recent infection or malignancy were randomised. Nutritional status was assessed from a 5 day Food Diary, Subjective Global Assessment (SGA) and Anthropometry. The Functional Ability section of the SGA questionnaire was used to allocate a Physical Activity Level (PAL). Basal Metabolic Rate (BMR) was estimated from the Schofield equation. An estimate of Total Energy Expenditure (TEE) was calculated from BMR x PAL. Calories from dialysate were included. All subjects completed diaries at 0, 2 & 4 months. SGA and Anthropometry were assessed at 0 & 4 months. Dietary advice was according to results. Controls (C) were advised a high protein (1.2g/kg) diet and the intervention group (I) were advised to increase non-protein energy intake to match TEE, protein =0.8g/kg.

FINDINGS: Final dietary data were available for 50 subjects. SGA and Anthropometry for 51. 31 (56%) had a BMI in the healthy range, 22 (40%) were overweight and 2 obese. The SGA score was A for 39 (71%) and B for 15 (27%). There was no significant change. SGA shows subjects eat to the limit of their appetite. Mean serum albumin (SA) was 37 ± 3 g/l. Analysis of variance showed no association between protein intake and SGA or SA. Protein (mean 0.94 ± 0.22 g/kg) and total energy, dietary and dialysate, (24 ± 6 cal/kg) intakes did not change in either group. TEE was 32 ± 5 cal/kg. There was a weak correlation between TEE and calorie intake (Pearson 0.334, $p=0.013$). In C (n=28), 8 (28%) achieved the (RI) of 1.2g/kg protein. In I (n=27) 23 (85%) achieved a protein intake =0.8g/kg.

CONCLUSION: Despite dietary advice subjects did not manage to significantly increase their intake of protein or calories. The majority maintain their nutritional status on protein intakes less than recommended. They appear to eat to the limit of their appetite, with BMI results indicating that some exceed energy requirements. Glucose from dialysate contributes significant 'empty' calories. It is difficult to ensure an adequate nutrient density if dietary calories are restricted.

RELEVANCE: Dietary protein intake recommendations are currently based on the results from balance studies on just 8 patients. This work supports other studies that suggest that an adequate intake is 0.8 – 1.0g/kg. This would be readily achievable by most patients. Energy intakes should match an estimate of expenditure. Functional Ability questionnaire shows that many patients are very inactive. Attempts to improve dietary intake without addressing exercise and lifestyle are likely to exacerbate weight problems. Dialysis prescription could be modified to incorporate non glucose containing fluids to improve or maintain fluid balance and improve weight control. Dietitians could then concentrate on helping patients understand and achieve intakes to optimise potassium and phosphate control and eat a well balanced, nutrient dense diet.