"A Modified Macronutrient Diet for Children with Prader-Willi Syndrome Does Work"
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Background:
Children with Prader-Willi syndrome (PWS) have a predictable pattern of weight gain, with obesity beginning in early childhood and worsening as they get older. They have low tone and as a result their energy requirements are lower (typically 60% estimated average requirement for energy, EAR) than age matched controls.1

The modified macronutrient diet aimed to increase the proportion of energy from protein (25%) and fat (30%) and lower the proportion from carbohydrate (45%) compared to guidance for the general population, as well as having a high fibre content (>20g/day).1

Individuals worked with their dietitian to create personalised stepwise plans to move their current intake towards these levels. Follow-up measurements were taken between 9 and 12 months after starting the dietary changes.

Case 1:
An 11 year old boy
• BMI decreased from 26.7 (>99.6th centile) to 23 (98th centile).
• fat mass decreased from 24.5kg (41.4%) to 19.6kg (35.2%)
• muscle mass increased from 32.9kg to 34.2kg.
• fibre intake 22.7g

Case 2:
18 year old female and
• fat mass reduced from 30.7kg (43.6%) to 27.6kg (39.2%)
• muscle mass increased from 37.6kg to 40.7kg

Case 3:
A 5 year old boy, is following the same diet but is too young to accurately measure bio-impedance with current equipment.
Positive effects on BMI have been seen though from 22.1kg/m² (above +3.5sd) to 19.1kg/m² (above 98th centile) over a 1 year period

Conclusion:
The results from these three cases indicate that an energy restricted diet with a well-balanced macronutrient composition and fibre intake improves both BMI and body composition in children with PWS compared to a simple energy-restricted diet.

References: