A snapshot audit of the dietary fruit and vegetable consumption in adults with cystic fibrosis (CF): How many portions are consumed daily?

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**Background:** There is no literature documenting the fruit and vegetable intake of patients with CF. Recommendations for consuming 5 portions of fruit and vegetable a day may not be met due to the emphasis placed on macronutrient intake by the CF team.

**Aims:** To ascertain the number of portions of fruit and vegetables consumed daily; To examine the attitude, understanding and perception of patients with CF to eating fruit and vegetables.

**Methodology:** Ten patients were approached by the CF Dietitian randomly in outpatient’s clinic over 6 months to self-complete a validated food frequency and a general questionnaire examining knowledge on the factors contributing to the fruit and vegetable intake.

**Results:** Patient Demographics: Six females and four males; age 19–53 years; BMI 17.7–27.7; all were pancreatic insufficient. Daily Fruit and Vegetable Consumption Reported by Patients: 1 (13%) patient did not know; 1 (13%) questionnaire was incomplete; 1 (13%) patient consumed 1–2 portions; 2 (26%) patients consumed 2–3 portions; 2 (26%) patients consumed 4–5 portions; 3 (38%) patients consumed >5 portions. Summary of Attitude, Understanding and Perception of Patients with CF to Eating Fruit and Vegetables: 80% reported that they would like to eat more; 20% worried about being overweight; 10% worried about being underweight; 17% didn’t feel they ate a balanced or healthy diet; 20% enjoyed their diet; 10% thought too much emphasis was placed on the caloric intake.

**Conclusions:** Daily fruit and vegetables intake appears variable. There are mixed views on perceptions, understanding and attitudes to eating fruit and vegetables.

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Energy intake from PEG feeds and long-term anthropometric changes in children with CF

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**Background:** A minority of children with cystic fibrosis (CF) fail to achieve satisfactory weight gain in spite of intensive dietary counselling and oral energy supplementation. We reviewed 15 children who had failed to achieve adequate growth, requiring percutaneous endoscopic gastrostomy (PEG) placement for supplementary feeding. We attempted to identify the proportion of the estimated average requirement (EAR) for energy required from PEG feeds to achieve satisfactory weight and height gain.

**Method:** Retrospective data on weight and height were obtained in the year before and in the 2 years following PEG placement. Standard deviation scores (SDS) were used to assess changes in weight and height. Information on energy and protein intake from overnight PEG feeds was obtained to see whether there was a correlation between intake and anthropometric changes. Paired student’s t tests were used to assess changes.

**Results:** In the year to PEG placement this population had a significant fall in weight and height SDS (p < 0.012 and 0.016 respectively). In the year following PEG placement significant improvements were recorded in weight and height SDS which were large. Overweight and obese children are evidence of the progress in nutritional interventions combined with genetic and environmental influences. Improvement in weight and height SDS scores were maintained.

**Conclusion:** A recommended minimum of 40% of estimated average energy requirement should be provided from PEG feeds in order to achieve satisfactory improvements in weight and height SDS scores in children with CF.

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Obesity in childhood cystic fibrosis

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**Objective:** To assess the effect of obesity on clinical outcome in children with cystic fibrosis.

**Methods:** Data on anthropometry, nutrition and co-morbidities were collected over time. Characteristics of cases identified included genotype, age and BMI at diagnosis. Evidence of adverse effects of obesity were examined. HbA1c, lipid profiles, liver function tests and albumin, coagulation. Liver ultrasound appearances were recorded.

**Results:** Ninety-two children were identified: 9 children were obese (BMI >98th). Nine children were identified as obese, they had the overgrowth phenotype. Ninety-one children were overweight (BMI >85th).

**Conclusion:** Obese children are evidence of the progress in nutritional interventions combined with genetic and environmental influences. These children merit special attention at the clinic.

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Obesity in childhood cystic fibrosis: Do overweight and obesity improve clinical outcome in the French cystic fibrosis population?

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**Objective:** The aim of this study was to assess the influence of obesity on clinical outcome in a large cohort of children with cystic fibrosis.

**Method:** Data on anthropometry, nutrition and co-morbidities were collected over time. Characteristics of cases identified included genotype, age and BMI at diagnosis. Evidence of adverse effects of obesity were examined. HbA1c, lipid profiles, liver function tests and albumin, coagulation. Liver ultrasound appearances were recorded.

**Results:** From 2647 patients in C and 1498 patients in A cohort (56%) nutritional status subgroup prevalence (%) were: in C and A 6.1; 6.1, 5.6 and 1.2 in C, 37.3, 57.7, 4.3 and 0.7 in A for respectively UW, NW, OW and OB. Mean age in A is increasing with BMI (p < 0.0001). Frequency of F508/F508 (p < 0.02), use of pancreatic enzymes (p < 0.001) in C and A are lower in OW/OB and these patients have the best FEV1 and FVC whatever their gender and age, with less PA colonization in A (p < 0.01). We found a positive correlation between pulmonary function and BMI CF co-morbid conditions and the prevalence of diabetes (12/257) and cirrhosis (5/257) in OW/OB: none are on a transplant waiting list versus 1% in UW/NW and none died versus 1% in UW/NW.

**Conclusion:** OW/OB prevalence in CF is respectively 5.2 and 1% whereas the French ObEpi 2003 collected 30 and 11%. Our results suggest a beneficial effect of high BMI on FEV1, FVC, prevalence of PA, cirrhosis and diabetes. Potential risks of chronically high BMI have not been studied in this population yet, but justify further investigations in this longer life expectancy cohort.