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A survey of enterally tube fed patients receiving low energy tube feeding regimens

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The British Artificial Nutrition Survey suggests that patients receiving long-term tube feeding are an increasingly dependent population with low activity levels⁽¹⁾. It has been suggested that such patients may have lower energy requirements than predicted and need low energy tube feeding regimens in order to prevent weight gain⁽²⁾. However, there is little published information about the use of low energy tube feeding regimens in the UK. Therefore, a preliminary survey was undertaken to investigate and characterise the numbers and types of patients receiving low energy tube feeding regimens (≤ 5020.8 kJ/d (≤ 1200 kcal/d)) and to understand the reasons for their use.

A survey of adult tube fed patients (≥ 18 years) who were receiving a low energy tube feeding regimen (receiving ≤ 5020.8 kJ/d (≤ 1200 kcal/d)) was undertaken in patients receiving enteral tube feeding at home (HETF) (n 1400) or in a long term neuro-rehabilitation centre (n 108) between July and September 2009. A standardised questionnaire, which included patient demographics (age, location, dependency and activity levels), tube type and feeding regimen details (duration, timing, energy and volume prescription), dietary intake and reasons for low energy tube feeding, was completed for each patient from their dietetic notes. Estimated energy requirements were calculated from the information provided using the Schofield equation⁽³⁾.

Sixteen percent (239/1508) of patients were receiving a low energy tube feeding regimen. Patients on low calorie tube feeding regimens had a mean age of 60 years (range 18–97), the majority were female (77%), with an average weight of 63.1 kg (SD 12) and BMI of 24 kg/m² (SD 3.5). Patients' main diagnoses were cerebro-vascular accident (33%) or other diseases of the central nervous system (18%), multiple sclerosis (13%), cerebral palsy (6%) and learning difficulties (6%). Average duration of enteral feeding was 5 years (SD 4.3, range 1 week – 22 years). Patients were predominantly PEG fed (74%), via boluses (20%) or continuous/intermittent pump feeding (80%). Patients were primarily living in nursing homes (71%), were highly dependent (85%) and had very low activity levels (98%). The majority (87%) of patients received feed via their tube as the sole source of nutrition using a 5020.8 kJ (1200 kcal) (50%) or 4184 kJ (1000 kcal) (39%) nutritionally complete feed. Their mean daily energy intake was 4527.088 kJ/d (1082 kcal/d) (SD 135), significantly lower than the calculated mean energy requirement (6932.888 kJ/d (1657 kcal/d) (SD 257), $P = 0.0001$). The main recorded reasons for use of low energy tube feeding regimens were long-term weight gain and decreased mobility. In the remainder of patients (n 31) the tube feed provided ~74% of total energy, with additional energy provided by other sources (food: n 17, sip feed: n 13, nothing: n 1).

The data from this preliminary survey suggest that a significant proportion (16%) of enterally tube fed patients receive a low energy tube feeding regimen (≤ 5020.8 kJ/d (≤ 1200 kcal/d)), which in the majority of cases is a sole source of nutrition. Further research is required in a larger cohort to fully understand the energy intakes and requirements of patients on long term tube feeding regimens, the reasons for use of low energy tube feeding regimens and their impact on patient outcome.

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1. British Artificial Nutrition Survey (BANS) (2009) BAPEN.
2. Dickerson RN, Brown RO, Gervasio JG *et al.* (1999) *J Am Coll Nutr* **18**, 61–68.
3. PEN Group (2004) The British Dietetic Association.