

Trends in energy and macronutrient intake, body weight, level of physical activity, and energy expenditure in relation to dietary validity in female students -1988 to 2003

PM Warwick

School of Biological Sciences, University of New England, Armidale, NSW, 2351

Background - Various trends in dietary intake have been reported. However, validity of self-reported intake is variable, and trends could be confounded by validity, if not taken into account.

Objective - To determine trends in body weight, macronutrient and energy intake (EI), physical activity, and energy expenditure in acceptable- and under-reporting female university students.

Design - Analysis of four-day intake (weighed) and physical activity (timesheets) records from 887 female university students enrolled in a human nutrition unit. Records were collected annually between 1988 and 2003. Physical activity level (PAL) and energy expenditure (EE) were determined using a factorial method. Subjects with an EI:EE ratio <0.76 were classified as under-reporters (UR) (1). The remainder were classified as acceptable reporters (AR).

Outcomes – There was a significant increase in prevalence of under-reporting between 1988 and 2003 ($P<0.01$). Body weight, EE, protein intake (both g/day and as a percentage of energy) and carbohydrate (CHO) intake (g/day) increased during this time in AR ($n=480$) and UR ($n=407$), and in the whole group ($n=887$). Percentage (%) of energy from fat decreased in all three groups ($P<0.01-0.001$). Over the same period, PAL increased ($P<0.01$) and fat intake (g/day) decreased ($P<0.001$) in the whole group and in UR ($P<0.05-0.001$), but did not change in AR. Energy intake increased in both UR ($P<0.05$) and AR ($P<0.01$) but did not change in the whole group.

Conclusion – Prevalence of under-reporting increased between 1988 and 2003. Increased body weight, EE, and protein and CHO intake, and decreased % fat energy were not affected by dietary validity. Other trends either varied between UR and AR (increased PAL and decreased % fat energy), or were confounded by combining UR and AR into one group (EI).

1. Black, AE. The sensitivity and specificity of the Goldberg cut-off for EI:BMR for identifying diet reports of low validity. *Eur J Clin Nutr* 2000;54:395-404.