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

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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).