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Energy intake and the risk of obesity: are dietary patterns significant ?

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Global predictions indicate that Ireland will become the second most obese population in Europe by 2025⁽¹⁾. The Irish Universities Nutrition Alliance (IUNA) 2011 National Adult Nutrition Survey (n= 1,500, age = 18–90 years) highlighted that 52 % of Irish females were classified overweight (Body Mass Index (BMI) ≥ 25 kg / m²) and 21 % were classed obese (BMI ≥ 30 kg / m²).

Dietary patterns have evolved with increased dietary variety⁽²⁾, snacking occasions⁽³⁾, out of home eating and the prevalence of obesogenic communities⁽⁴⁾. The synergic relationship between energy intake and day of week is complex and dependent on gender⁽⁵⁾, age⁽⁵⁾, education, socioeconomic status, work environment⁽⁶⁾ and seasonal effects⁽⁵⁾. Food and drinks consumed at the weekend tend to be more energy dense with less nutritional value⁽⁵⁾.

This study investigated if energy intake increased over the weekend for females (20–45 years of age) inclusive of all BMI (kg / m²) classifications, resident in Ireland and working outside the home environment. Opportunistic sampling was employed to recruit participants predominantly from nominated companies (n= 32) with a small number of individual participants (n= 3). A cross sectional survey captured dietary intake across a four day diary of two week days (Friday and Monday) and two weekend days (Saturday and Sunday). Participants were requested to record all food and drink consumed, with no alteration to their normal routine. A quantitative study of energy intake was completed based on food diary entry into the Nutritics Nutrition Analysis (Version 4.25 University Edition) Software. A parametric paired *t*-test determined if there was a significant difference in energy intake over the weekend days compared to week days. Differences in mean energy intake across all four diary days were analysed using a one way (repeated measures) analysis of variance (ANOVA).

Mean energy intake on weekend days (Saturday and Sunday, 3458±916 kcal) was not significantly different (*p* = .088) to week days (Monday and Friday, 3175±946 kcal). Mean daily energy intake on Saturday (1965±770 kcal) was significantly higher (*p* = .007) than Sunday (1493±538 kcal) and Monday (*p* = .001) (1443±493 kcal). Mean energy intake was significantly lower (*p* = 0.0005) than the estimated average requirement (EAR) (2175 kcal) on all diary days.

In conclusion, mean energy intake was highest on Saturday (1965±770 kcal) compared to other diary days which was attributed to elevated mean daily intake of fat (80±38 g), alcohol (22±3g) and carbohydrate (210±82 g). Taking into consideration the mean participant age (32±7years) and BMI (22.97±3.2 kg / m²), future work could focus on the significance of sustained elevated energy intake over the weekend (without an equivalent energy expenditure) linked to weight gain and BMI classification.

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