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The timing of energy intake and its link to obesity

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Overweight and obesity currently accounts for 3·8 million deaths worldwide per annum (1). Reports have revealed that 24 % of adults in the UK are currently obese and this could reach up to 47 % by 2035 and 60 % by 2050 (2). However the timing of energy intake can have an influence on body weight. In Italy 67 % of the population have their main meal at midday (3) and the prevalence of obesity is substantially less than the UK (7·6 % vs 20·1 %)(4). Eating more in the evening and late at night can increase the risk of obesity and consuming a greater proportion of the day's total energy intake at midday can reduce the risk. This method of weight management is termed Time Restricted Eating (TRE)(5).

In order to assess the timing of energy an online questionnaire was developed. This was in two sections. The first section included questions relating to demographic information as well as meal pattern (time of day when the most and least amount of food is consumed), snacking habits, opinion on weight loss methods and familiarity with TRE. Disclosure of height, weight and weight status was not mandatory. Participants were then provided with a referenced written statement of evidence based on a study by Wang et al (6) supporting the TRE theory. A total of 460 participants answered part one of the questionnaire. Part two of the questionnaire assessed if participants agreed or disagreed with this evidence and their views and barriers to having a greater proportion of energy intake at midday was investigated by asking if they 'Agree' or 'Disagree' with particular statements. The statements were based on a review of previous literature exploring the public's views and barriers to weight loss methods and were structured using the COM-B behaviour change model (7). A total of 342 participants' complete part two.

The study found that those who ate the least at midday had a higher BMI ($p = 0{\cdot}03$) see figure 1 below. Figure 2 below illustrates the main barriers to consuming the greatest proportion of food a midday.

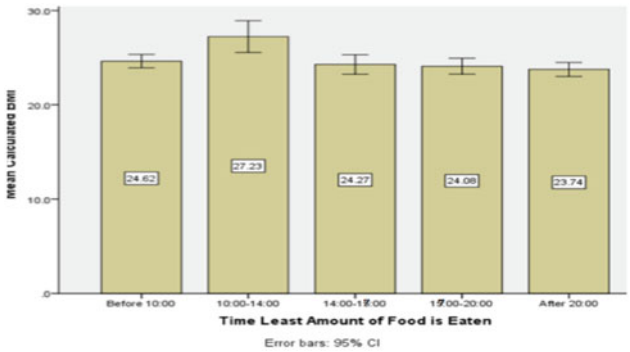

Figure 1 Mean BMI and time of day when least amount of food is eaten.

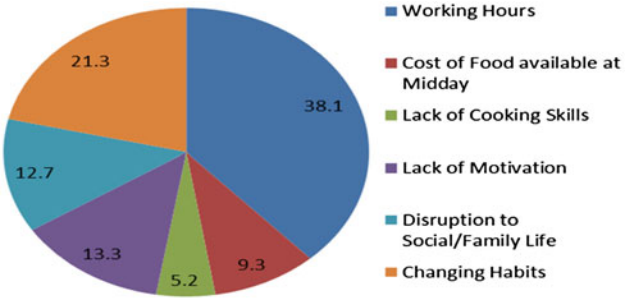

Figure 2 Main barriers to consuming the greatest proportion of food at midday.

After reading the statement of evidence, 64·1 % agreed that the timing of energy intake could influence weight and 87 % of those would consider changing the timing of their meals and snack in an effort to maintain or lose weight. This was independent of age, gender or BMI. Females were more likely than males ($p = 0{\cdot}049$) and those who were gaining weight were also more willing to try TRE than those with a stable weight ($p = 0{\cdot}018$).

Further research is needed to investigate how a weight management intervention using TRE could be developed using the COM-B Model of Behaviour Change.

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