The effect of a slow eating rate protocol on anthropometry in free-living overweight or obese adults

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Obesity rates are increasing worldwide[1] with how we eat as well as what we eat potentially of importance. Specifically food consumed 'on the go' and/ or a lack of mindfulness around eating may be contributing factors in weight gain[2]. This study aimed to assess if a previously developed[3] slow eating rate (SER) protocol could facilitate weight loss in free living overweight/obese adults. Fifteen overweight/obese participants were recruited into this 10-week parallel, open label randomised controlled trial.

Participants were randomised to either intervention (SER protocol, n = 8) or control (Cont, no instructions, n = 7) groups at visit 1. Weight, height, body mass index (BMI), % body fat and % visceral fat were measured at each visit. Participants were video-recorded (to assess eating rate via chew counts) while consuming test meals at their own pace at visits 1 (baseline eating rate (ER) and 4. Between these visits, participants returned to their free-living environment in the community for six weeks where the intervention participants were asked to follow the SER protocol daily whilst consuming their lunchtime meal; the control participants were given no instructions. Monitoring of the intervention group was through the study's dedicated website and phone application, using Mixpanel core analytics (Mixpanel). All data were analysed using GraphPad Prism 7 for Windows. Normality was assessed using the Shapiro-Wilks test and independent and paired t tests were performed to compare measures between groups and within groups over time, respectively.

Characteristics	Control (n = 7)			Intervention (n = 8)		
	Baseline	Visit 4	P[1]	Baseline	Visit 4	P[1]
Weight (kg)	92.5 ± 9.6	92.7 ± 9.6	0.5808	85.2 ± 17.1	82.7 ± 16.7	0.0088
BMI (kg/m^2)	32.7 ± 4.8	32.7 ± 4.8	0.5708	29.75 ± 3.3	28.9 ± 3.4	0.0086
% Fat	31.25 ± 11.5	30.1 ± 10.9	0.5990	33.0 ± 6	31.7 ± 7.1	0.0863
Visceral Fat	7.9 ± 3.9	8.1 ± 4.0	0.1723	8.9 ± 4.2	8.0 ± 4	0.0232

Data presented as Mean ± standard deviation; BMI, body mass index. [1]Paired t test within group, baseline compared to visit 4

At baseline there were no significant differences between the two groups for any anthropometric measures,

The intervention group significantly reduced their weight, BMI and visceral fat over the intervention period and showed a trend towards a reduction in body fat. No significant changes were observed for the control group. This is the first study of its kind to successfully use the SER protocol in a free-living population and its results can be used by future studies aiming to target weight loss and maintenance with mindfulness-promoting tools.

1. World Health Organisation (WHO) (2016). *Obesity and overweight*. Available at: http://www.who.int/mediacentre/factsheets/fs311/en/ (Accessed: 4/8/2017).
2. Gilbert D and Waltz J (2010). Mindfulness and Health Behaviors. *Mindfulness*, **1**(4), pp. 227–234.
3. Koidis F, Brunger L, Gibbs M and Hampton S (2014). The effect of eating rate on satiety in healthy and overweight people - A pilot study. *e-SPEN Journal*, **9**(2).