

Summer Meeting, 15–18 July 2013, Nutrition and healthy ageing

## Systematic review of internet-based interventions providing individualised feedback for weight loss in overweight adults

A. Sherrington<sup>1</sup>, J. Newham<sup>1</sup>, V. Araujo-Soares<sup>1</sup>, A. Adamson<sup>1</sup>, E. McColl<sup>1</sup> and R. Bell<sup>1</sup>

<sup>1</sup>*Institute of Health and Society, Newcastle University, Newcastle, NE2 4AX, UK*

Obesity levels are rising annually and the trend is set to continue unless reversal techniques are implemented. Evidence suggests that traditional primary care treatments can be costly, ineffective and experience high attrition rates<sup>(1)</sup>. Therefore research is needed into alternative approaches in relation to weight/obesity management. Previous systematic reviews examining internet based weight loss interventions have found it difficult to determine effectiveness due to heterogeneity in the studies. As a consequence it remains unclear which components of individualised interventions are key to success<sup>(2)</sup>. The main objective of this systematic review was to assess the effectiveness of individualised feedback in internet-based weight loss interventions for overweight adults.

A systematic review of randomised controlled trials recruiting adult participants with BMI > 25 kg/m<sup>2</sup> was conducted. Interventions targeting diet and/or physical activity for weight loss were included. Interventions had to be delivered at least in part via the internet and incorporate some form of individualised feedback to the participants. Comparator groups included standard care or an alternative intervention without individualised feedback.

Nine studies were included ( $n = 2129$ ). At three months, interventions providing individualised feedback showed significantly greater weight loss (Mean difference (95% CI) =  $-2.53$  ( $-3.13, -1.92$ );  $p < 0.00001$ ), reduced BMI ( $-1.17$  ( $-1.52, -0.82$ );  $p < 0.00001$ ), reduced waist circumference ( $-3.90$  ( $-4.96, -2.83$ );  $p < 0.0001$ ) and a higher proportion of participants reaching 5% weight loss (25.79 (1.59, 417.21);  $p = 0.02$ ), compared to comparison groups without feedback. Subgroup analysis explored the effectiveness of different types of feedback. Different types of feedback consisting of human communication, automated algorithms or a mixture of both techniques.

Incorporating individualised feedback may be a key behaviour change technique for effective interventions delivered via the internet. More research is needed to investigate how internet interventions with individualised feedback could be incorporated into primary care.

1. Jolly K, Lewis A, Beach J *et al.* (2011) *BMJ* 343.
2. Neve M, Morgan PJ, Jones PR *et al.* (2010) *Obes Rev* 11, 306–321.