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## Is there Potential to use Bio-active Compounds (Capsaicinoids) as Innovative Weight Management Aids? A meta-analysis of evidence

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We are in the midst of a global obesity crisis, which currently affects over 500 million adults in both industrialized and developing countries<sup>(1)</sup>. Although the health benefits of weight reduction are well-recognised, weight loss by diet and exercise fail in most patients<sup>(2)</sup>. Capsaicinoids are a group of natural chemicals found in chilli peppers that have bioactive properties which help to support weight management<sup>(3)</sup>. The aim of the present study was to conduct a meta-analysis studying the potential effects of capsaicinoids on appetite, which may, in turn, from the basis of a natural, safe weight loss aid.

Medical databases (Medline, Web of Knowledge and Scopus) were systematically searched for papers. Search terms were: ‘capsaicin\* or chilli’ and ‘appetite’/‘satiety’. Seven randomised control trials were found studying the effect on appetite, 4 of which provided results in format suitable to be combined in analysis. From the studies, 13 effect sizes were extracted and analysed.

Results showed that taking capsaicinoids prior to a meal reduced ad libitum EI by 393.95 KJ (94.09 Kcal)  $p < 0.001$  during the following meal. Although results should be viewed cautiously as heterogeneity was high ( $I^2 = 80\%$ ).

Study findings suggest that regular consumption of capsaicinoids may contribute to weight management through reductions in EI. It has been shown that even small reductions in body weight (5%) can reduce obesity co-morbidities<sup>(4)</sup>. Larger and longer trials are now needed but there does appear to be some potential for capsaicinoids to be used as a natural weight-loss aid, particularly when used in conjunction with diet and exercise.

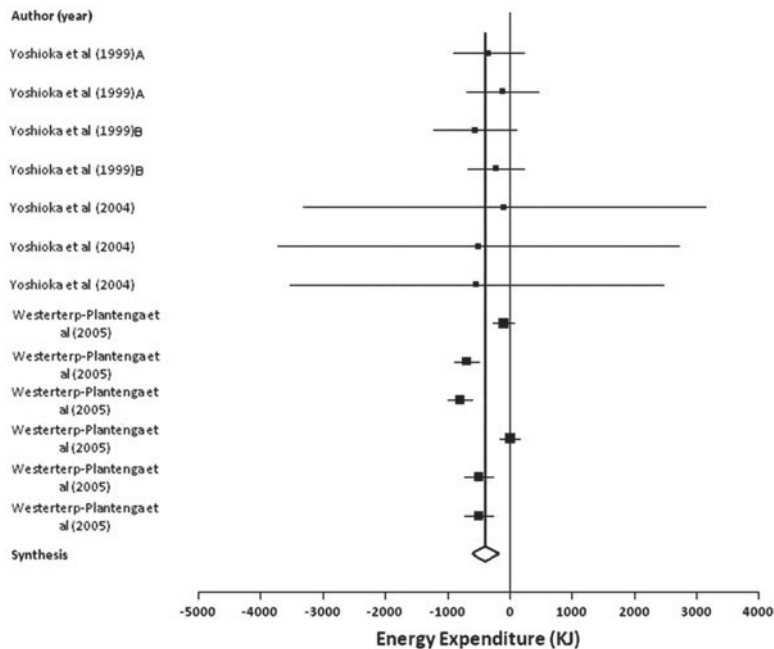


Fig. 1. Forest plot showing combined effect size.

1. Arbeeny CM (2004) *Obesity* 12, 1191–1196.
2. World Health O (2011) *World health statistics* 2011.
3. Luo XJ, Peng J & Li YJ (2011) *Eur J Pharmacol* 650, 1–7.
4. Seagle HM, Strain GW, Makris A *et al.* (2009) *J Am Diet Assoc* 109, 330–346.