Evidence of cost-effectiveness

Tool 14

This Tool contains information on the cost-effectiveness of interventions to prevent and manage overweight and obesity. It is adapted from the NICE guideline on obesity[1] – see section 6: *Health economics* at www.nice.org.uk/guidance/CG43 for more information.

The key to the grading of evidence (1+, 2- etc) is given on page 126.

PREVENTION

INTERVENTION	NICE EVIDENCE REVIEW CONCLUSIONS	EVIDENCE
Diet and exercise programme	There is some evidence that a diet and physical activity intervention incorporating interactive educational sessions is cost-effective when compared with a similar intervention using only mail-shot advice for couples living together for the first time.	Two intervention groups: Low-level group receiving initial introductory group workshop followed by mail-outs, and high-level group receiving mail-outs alternated with interactive sessions with a dietitian and exercise physiologist **(1+)** (Dzator et al, 2004[2]). The aim of the intervention was to investigate the effect that diet and physical activity programmes have on couples.
		Investigation of four public health strategies **(1+)** (Roux et al, 2004[3]). The aim of the investigation was to assess the cost-effectiveness of population-wide strategies to promote physical activity in adults.
Workplace	The evidence did not suggest that physical activity counselling at a workplace resulted in any cost-effective gains in health outcomes, and studies on the benefits in terms of lost productivity are equivocal.	Seven sessions of workplace-based tailored counselling promoting physical activity and healthy dietary habits **(1+)** (Proper et al, 2004[4]).
		Eleven programmes addressing weight management, water intake, fruit and vegetable intake, television-viewing and various 'exercise' activities offered via internet and email **(2-)** (Aldana et al, 2005[5]).
School	There is some evidence that school-based interventions can result in cost-effective health gains. Both interventions identified resulted in weight loss at acceptable costs.	Children received 'Planet Health' intervention material during the curriculum (focus on decreasing television-viewing, decreasing consumption of high-fat foods, increasing fruit and vegetable intake, and increasing moderate and vigorous physical activity) **(1+)** (Wang et al, 2003[6]).
		After-school obesity intervention programme **(2+)** (Wang et al, 2004[7]).
Community weight loss programmes	There is some evidence that all population-wide strategies to promote physical activity in adults, as identified by the US Preventive Services Task Force (USPSTF), were cost-effective.	Investigation of factors that impact on an individual's decision to adhere to a community weight loss programme **(3+)** (Roux et al, 2004[3]).
Nutritional counselling	There is some evidence that nutritional counselling by a general practitioner (GP), compared with counselling by a dietitian, is cost-effective.	Investigation of behaviours that might "contribute to delay or avoidance of diet-related chronic diseases and conditions that are believed to be most prevalent among the low-income population" **(2-)** (Rajgopal et al, 2002[8]).

MANAGEMENT (non-pharmacological)

INTERVENTION	EVIDENCE	COST PER QALY (Quality-adjusted life year*)
Diet	23 group sessions with dietitian (assumption of 1 hour and a group of six) (Wood et al, 1991[9]).	£174
Behavioural treatment	14 extra contacts: 90-minute contacts with clinical psychologist (Wadden et al, 1989[10]).	£4,360
Physical activity	19 compulsory contacts by an unreported healthcare professional (assumption of physiotherapist and 1-hour contacts) (Pritchard et al, 1997[11]).	£9,971

* QALY calculated by NICE in their health economics review – see section 6 of the NICE guideline on obesity.[1]

NICE conclusions on the cost-effectiveness of non-pharmacological management

- Evidence on the cost-effectiveness of non-pharmacological interventions (diet, physical activity and behavioural treatment) is limited.
- Cost-effectiveness is closely geared to the duration of benefit.
- If weight loss relative to trend remains constant for five years post-intervention before returning to baseline, the cost per QALY (quality-adjusted life year) in the best-performing non-pharmacological studies ranges from £174 to £9,971.
- Dietary interventions seem particularly cost-effective due to the low levels of staff contact needed.
- These results should be treated as corroborative evidence, rather than definite proof of the cost-effectiveness of non-pharmacological interventions.

References

1 National Institute for Health and Clinical Excellence (NICE) (2006) *Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children*. London: NICE. www.nice.org.uk/guidance/CG43

2 Dzator JA, Hendrie D, Burke V et al (2004) A randomized trial of interactive group sessions achieved greater improvements in nutrition and physical activity at a tiny increase in cost. *Journal of Clinical Epidemiology*; 57 (6): 610-619

3 Roux L, Pratt M, Yanagawa T et al (2004) Measurement of the value of exercise in obesity prevention: A cost-effectiveness analysis of promoting physical activity among US adults. *Obesity Research*; 12: A18 (Suppl)

4 Proper KI, de Bruyne MC, Hildebrandt VH et al (2004) Costs, benefits and effectiveness of worksite physical activity counselling from the employer's perspective. *Scandinavian Journal of Work, Environment and Health*; 30 (1): 36-46

5 Aldana S, Merrill R, Price K et al (2005) Financial impact of a comprehensive multisite workplace health promotion program. *Preventative Medicine*; 40: 131-137

6 Wang LY, Yang Q, Lowry R, Wechsler H (2003) Economic analysis of a school-based obesity prevention program. *Obesity Research*; 11 (11): 1313-24

7 Wang L, Yin Z, Gutin B et al (2004) A cost-effectiveness analysis of a school-based obesity prevention program. *Obesity Research*; 12: A18 (Suppl)

8 Rajgopal R, Cox RH, Lambur M, Lewis EC (2002) Cost-benefit analysis indicates the positive economic benefits of the expanded food and nutrition education program related to chronic disease prevention. *Journal of Nutrition Education and Behaviour*; 34 (1): 26-37

9 Wood PD, Stefanick ML, Williams PT, Haskell WL (1991) The effects on plasma lipoproteins of a prudent weight-reducing diet, with or without exercise, in overweight men and women. *The New England Journal of Medicine*; 325: 461-466

10 Wadden TA, Sternberg JA, Letizia KA et al (1989) Treatment of obesity by very low calorie diet, behavior therapy, and their combination: a five-year perspective. *International Journal of Obesity*; 13 Suppl 2: 39-46

11 Pritchard JE, Nowson CA, Wark JD (1997) A worksite program for overweight middle-aged men achieves lesser weight loss with exercise than with dietary change. *Journal of the American Dietetic Association*; 97: 37-42