Lifestyle interventions in primary care: systematic review of randomized controlled trials

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CRD summary
The review concluded that lifestyle counselling interventions delivered in primary care settings by primary care providers to patients at low risk of cardiovascular disease appeared to be of marginal benefit. The authors' conclusions are sufficiently cautious and are likely to be reliable.

Authors' objectives
To determine whether lifestyle interventions delivered in primary care settings by primary care providers to adult patients are effective in changing factors related to cardiovascular risk.

Searching
MEDLINE, EMBASE and CINAHL were searched from January 1985 to December 2007 for studies in English. Search terms were reported. Reference lists of all retrieved articles were scanned for additional studies.

Study selection
Randomised controlled trials (RCTs) that compared lifestyle counselling interventions (exercise and diet) with usual care delivered in primary care settings for primary prevention of cardiovascular disease by primary care providers for adult patients (aged 18 or over) without known cardiovascular disease or diabetes were eligible for inclusion. Usual care included the distribution of basic lifestyle messages handed out by health professionals. The outcomes of interest were cardiovascular risk scores, blood pressure, lipid levels, weight or body mass index (BMI), morbidity and mortality. Outcomes had to be reported at 12 months or more. Studies that combined drug therapy with lifestyle counselling were excluded.

Interventions varied between studies and included: dietary interventions only; a combination of healthy-eating and staying-active messages; and an intervention directed towards physical activity. Duration of interventions ranged from one to nine months. Primary care providers who delivered the interventions were physicians only, nurses only or a combination of nurses and physicians. Age of participants ranged from 18 years to 70 years. Some studies included patients of both high and low cardiovascular risk. Outcomes assessed were changes in blood pressure, BMI and cholesterol. No studies reported data on morbidity or mortality.

It appeared that two reviewers independently assessed studies for inclusion; disagreements were resolved by discussion.

Assessment of study quality
Validity was assessed using methods by Guyatt et al. (1993) and assessed: adequacy of randomisation; accountability and follow-up after the study; intention-to-treat analysis; blinding and concealment; homogeneity; similarity of study and control groups; and evidence of contamination or simultaneous interventions.

Two reviewers independently assessed validity; disagreements were resolved through discussion.

Data extraction
The mean difference between groups for each outcome was calculated.

The authors stated neither how data were extracted for the review nor how many reviewers performed the data extraction.

Methods of synthesis
Studies were combined in a narrative synthesis with additional information presented in tables.
Results of the review
Seven RCTs (n=8,302) were included in the review.

Overall there was little benefit from lifestyle-orientated interventions compared to usual care. Only four of seven studies reported any significant positive effects; only two of these showed consistent effects across several outcomes. The main effects were significant (p<0.05) positive effects on blood pressure (three RCTs), cholesterol levels (two RCTs) and BMI (one RCT). One RCT that assessed cardiovascular risk scores reported no improvement in risk between groups. There were no significant benefits of one provider delivering the intervention compared to another (for example, physician versus nurse) and no significant benefits relating to the focus of the intervention (for example, diet versus exercise).

Authors’ conclusions
Lifestyle counselling interventions delivered by primary care providers in primary care settings to patients at low risk of cardiovascular disease appeared to be of marginal benefit.

CRD commentary
Inclusion criteria were clearly defined. Some relevant sources were searched, but limitation to English language studies may have resulted in the loss of some relevant data. No attempts were made to reduce publication bias and the potential for this was not assessed. Appropriate methods were used to minimise reviewer error and bias in the assessment of validity and possibly study selection; it was unclear whether similar steps were taken for data extraction. Validity was assessed, but results of the assessment were not reported and so the reliability of the data derived from the included studies could not be assessed. A narrative synthesis was appropriate given the differences between studies. The authors’ conclusions are sufficiently cautious and are likely to be reliable.

Implications of the review for practice and research
Practice: The authors stated that time and resources in primary care settings might be better spent on patients at higher risk of cardiovascular disease, for example, those with existing heart disease or diabetes.

Research: The authors stated that further research was needed. Results of an RCT in progress were awaited to determine if more sustained intensive lifestyle counselling programs delivered by health educations with backgrounds in nutrition and exercise were more effective than lifestyle counselling interventions delivered by primary care providers.

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