The effect of giving global coronary risk information to adults: a systematic review

CRD summary
This review found that providing individuals at moderate to high risk with information about their coronary heart disease risk seemed to improve their awareness of risk, and may make them more likely to decide to start treatment to reduce their risk. The effect on longer term outcomes was less clear. The authors' conclusions are likely to be reliable.

Authors' objectives
To assess the effectiveness of providing global coronary heart disease risk information for the primary prevention of coronary heart disease in adults.

Searching
The authors searched MEDLINE, PsycINFO, CINAHL and the Cochrane Library from 1980 to December 2008. Search terms were reported. The search was limited to English language publications. The authors also searched the reference lists of included articles, searched their personal files and contacted experts in the field to identify additional studies.

Study selection
Studies of any design that included adults with no history of cardiovascular disease, and provided coronary heart disease risk information directly to participants as a primary intervention or part of an intervention, were eligible for the review. Studies had to report accuracy of risk perception; intention to start therapy; adherence to therapy; or change in predicted global cardiovascular disease risk or cardiovascular disease event rates. Only good or fair quality studies (see Validity assessment) were included.

Most included studies were randomised controlled trials (RCTs), some of which were factorial or cluster in design. Included studies used education, counselling or decision analysis alongside presentation of risk information, mainly in clinical or community settings. A variety of risk scores were used, Framingham or Framingham-derived scores being most common. Average coronary heart disease risk of participants in most studies was moderate (6 to 10%) to high (more than 10%).

Two reviewers independently selected studies for the review; disagreements were resolved by discussion.

Assessment of study quality
Studies were rated as good, fair or poor for four criteria: comparable groups; valid and reliable measurement; clear definition of the intervention; and appropriate statistical analysis. Ratings were converted to numerical scores (2, 1 or 0). Studies with average scores 1.5 or above were considered good quality, 1 to 1.49 fair, and less than 1 poor quality. Studies rated poor were excluded from the review.

Two reviewers independently assessed validity.

Data extraction
Differences in outcome measures between intervention and control groups, or differences from baseline within groups, were extracted or calculated.

Data were extracted by one reviewer and checked by two others.

Methods of synthesis
Studies were synthesised narratively by outcome. Differences between studies were discussed in the text and presented in tables.
**Results of the review**

Eighteen studies were included in the review (n at least 24,250 patients; one study recruited 315 primary prevention groups). Study size, where reported, ranged from 16 to 12,472 patients. Six studies were considered to be good quality and 12 fair.

Risk information (usually combined with education or counselling) increased accuracy of risk perception compared with baseline (four studies) and intention to start therapy (by 15 to 20 percentage points compared with controls; four studies), but not adherence to statin therapy (one study). The effect of providing risk information on predicted coronary heart disease risk generally increased with the intensity of the intervention. Studies with repeated risk presentation or counselling showed small but significant decreases in 10-year predicted risk (0.2 to 2 percentage points in studies using Framingham risk calculators).

Results for other outcomes were reported in an online appendix.

None of the included studies reported on cardiovascular disease event rates.

**Authors' conclusions**

Global coronary heart disease risk information seemed to improve the accuracy of risk perception and may increase intention to start coronary heart disease therapy among people at moderate to high risk. The effect on longer term outcomes was less clear and possibly related to the intensity of associated interventions.

**CRD commentary**

The review addressed a clear question. Inclusion criteria for study designs were broad but validity criteria were used to exclude poor quality studies. The authors searched a number of relevant sources and made some efforts to locate unpublished studies. Limiting the search to English meant that relevant studies in other languages could have been missed. Validity was assessed and used in study selection and synthesis. Only composite scores were reported, which made it difficult to assess individual quality features of included studies. Appropriate measures were taken to minimise risk of errors or bias during the review process. Relevant details of included studies were provided. A narrative synthesis was appropriate in view of the clinical heterogeneity of the included studies. The authors' conclusions reflect the evidence presented and are likely to be reliable.

**Implications of the review for practice and research**

**Practice:** The authors stated that clinical guidelines should continue to recommend that individuals are informed of their global coronary heart disease risk.

**Research:** The authors stated that further research is required in a number of areas including the most effective behaviour change interventions to use with coronary heart disease risk information; the effect of global coronary heart disease risk information on people at low risk and those with low numeracy skills; and the effects of giving information to healthcare providers as well as patients. Other research recommendations were listed.

**Funding**

CDC Prevention Research Centers Program.

**Bibliographic details**


**PubMedID**

20142567

**DOI**
Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.