Authors' objectives
To assess the effectiveness of ginkgo biloba for tinnitus.

Searching
The authors searched MEDLINE, EMBASE and the Cochrane Library (from inception to June 1998) using the search terms 'ginkgo biloba', 'ginkgo', 'ginkgo', 'tinnitus' and 'hearing disorders'. The authors also searched their own files and contacted manufacturers of ginkgo biloba preparations for published and unpublished data. The bibliographies of retrieved studies were searched for further relevant publications. There were no language restrictions.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) comparing ginkgo biloba with placebo or another active medication in the control arm.

Specific interventions included in the review
Ginkgo biloba in the intervention group and placebo or other active medication in the control group. Studies not performed on ginkgo biloba mono-therapy or those using homeopathic dilutions of ginkgo biloba were excluded.

Participants included in the review
Patients diagnosed with tinnitus. Trials performed on patients whose primary complaint was not tinnitus were excluded.

Outcomes assessed in the review
Primary end points reported were: severity score (0-3), specialist's evaluation. Patients' preference and loudness of tinnitus (by audiometry).

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection.

Assessment of study quality
The authors used a standard scoring system by Jadad et al. to measure the likelihood of bias (see Other Publications of Related Interest no.1). Two authors independently assessed the validity of included studies. Discrepancies in the evaluation of individual studies were resolved by discussion.

Data extraction
The authors state that the data were extracted for the review in a standardised, predefined process, but do not report what the process was or how many of the authors performed the data extraction.

Data were extracted for the categories of: study identification, Jadad score, study design, sample characteristics, interventions, primary end point and main results.

Methods of synthesis
How were the studies combined?
The studies were discussed in a narrative review.

How were differences between studies investigated?
There were no statistical tests, but the differences between the studies were discussed in the text.

**Results of the review**
Five RCTs were included in the review with 621 participants.

Patients taking ginkgo biloba improved significantly more than those on placebo in four of the studies. One study reported a negative result which may have been due to under-dosing.

**Authors’ conclusions**
The authors state that overall, the results of these trials are favourable to ginkgo biloba as a treatment for tinnitus, but a firm conclusion about its efficacy is not possible.

**CRD commentary**
The authors have stated their research question and some inclusion and exclusion criteria. The literature search appears to be thorough. The authors do not report who, or how many of the authors, performed the selection of studies or the data extraction. There is a validity assessment of the included studies but the scale used is limited in its assessment points.

The authors discussed the individual studies in a narrative review. Although there are no formal tests for heterogeneity, there was some discussion about the differences between the included studies with regard to participants, end points and treatment regimens.

The authors’ conclusions appear to follow from the results but these should be viewed with caution because of the limited number of included studies and the methodological limitations in the process of the review.

**Implications of the review for practice and research**
Research: The authors state that more trials are needed to test the therapeutic value of ginkgo biloba for relieving tinnitus, and that these trials should be methodologically rigorous and consistent in terms of the end points being measured, the doses used and the classification of patients.

**Bibliographic details**
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**Other publications of related interest**

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**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.