Authors' objectives
To assess the efficacy of benzodiazepines and zolpidem for chronic insomnia.

Searching
MEDLINE was searched from 1966 to 1996. Current Contents was also searched and references cited in reports were obtained. The search strategy used the subject heading 'insomnia' with the subheading 'drug therapy' combined with 'placebos'. The Journal of Sleep Research was handsearched up to 1995. Only published studies were included.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) that included placebo groups and double-blinded assessment of the outcomes. Crossover designs were included but data were extracted only for the first treatment period.

Specific interventions included in the review
Flurazepam, estazolam, zolpidem, triazolam, quazepam, temazepam and lorazepam. These were all compared with placebo. The median duration of treatment was 7 days (range: 4 to 35).

Participants included in the review
People with chronic primary insomnia, in whom psychiatric and medical conditions had been ruled out as causes of insomnia. The participants' age ranged from 18 to 65 years old (predominately middle-aged) and 60% were women.

Outcomes assessed in the review
Sleep-onset latency, total sleep time, the number of awakenings, and sleep quality were assessed.

How were decisions on the relevance of primary studies made?
The studies were selected after two separate reviews were conducted to code each study's eligibility.

Assessment of study quality
The authors do not state that they assessed validity.

Data extraction
The data were extracted and coded by the lead author. Two investigators retrieved the outcome data and reached consensus. The retrieved data were then reviewed by the three other members of the team. If a series of summary measures were reported, these were combined into a single summary for the study.

Methods of synthesis
How were the studies combined?
A meta-analysis was conducted using a method described by Rosenthal (see Other Publications of Related Interest). The effect sizes were converted to z-scores, weighted for sample size, and the value of Cohen's d (the standardised mean difference) was used to quantify the magnitude of the treatment effects.

How were differences between studies investigated?
Heterogeneity of the effect sizes was tested using the chi-squared statistic.
Results of the review
Twenty-two were included. There was a discrepancy in the number of participants involved (3,494 in the table; 1,894 according to the text).

Medication was significantly more effective than placebo for all four outcomes assessed (p<0.001). There was no significant heterogeneity. The post-treatment between-group comparisons of effect size were 0.56 (95% confidence interval, CI: 0.41, 0.71) for sleep-onset latency, 0.71 (95% CI: 0.55, 0.87) for total sleep time, 0.65 (95% CI: 0.48, 0.82) for the number of awakenings, and 0.62 (95% CI: 0.45, 0.79) for sleep quality. There were no well-controlled studies of long-term treatment.

Authors' conclusions
Benzodiazepines and zolpidem produced reliable improvements in sleep in patients with chronic insomnia. Relative to the chronic and recurring course of insomnia, both the limited duration of the treatments studied, and the lack of follow-up data from controlled trials, represent challenges for developing evidence-based guidelines for the use of hypnotics in the management of chronic insomnia.

CRD commentary
The search was limited to English language publications identified predominantly by searching MEDLINE and Current Contents. Thus, studies published in other languages, in grey literature or other sources not included in these databases may have been missed. While the authors' assessment of the potential effects of publication bias show that this is unlikely to invalidate the main findings of the review, it is possible that information on some of the questions raised might, in fact, be available. Also, there was no assessment of the validity of the studies.

Implications of the review for practice and research
The practical value of the information in this review is limited by the short timescale of the studies. As the authors point out, insomnia is usually a chronic problem and 10% of long-term insomniacs take benzodiazepines for more than a year. However, none of the studies had follow-up data assessing the durability of treatment effects. In addition, daytime well-being and functioning were not assessed.

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Bibliographic details

PubMedID
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Other publications of related interest

Indexing Status
Subject indexing assigned by NLM

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Adult; Anti-Anxiety Agents /therapeutic use; Benzodiazepines /therapeutic use; Chronic Disease; Humans; Hypnotics and Sedatives /therapeutic use; Middle Aged; Pyridines /therapeutic use; Randomized Controlled Trials as Topic; Sleep; Sleep Initiation and Maintenance Disorders /drug therapy; Statistics as Topic; Treatment Outcome
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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.