

[Review]

Alarm interventions for nocturnal enuresis in children (Archive)

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Abstract

Background

Enuresis (bedwetting) is a socially disruptive and stressful condition which affects around 15-20% of five year olds, and up to 2% of young adults.

Objectives

To assess the effects of alarm interventions on nocturnal enuresis in children, and to compare alarms with other interventions.

Search strategy

We searched the Cochrane Incontinence Group trials register (December 2002) and the reference lists of relevant articles. Date of the most recent searches: December 2002.

Selection criteria

All randomised or quasi-randomised trials of alarm interventions for nocturnal enuresis in children were included, except those focused solely on daytime wetting. Comparison interventions included no treatment, simple and complex behavioural methods, desmopressin, tricyclics, and miscellaneous other methods.

Data collection and analysis

Two reviewers independently assessed the quality of the eligible trials, and extracted data.

Main results

Fifty three trials met the inclusion criteria, involving 2862 children. The quality of many trials was poor, and evidence for many comparisons was inadequate. Most alarms used audio methods.

Compared to no treatment, about two thirds of children became dry during alarm use (RR for failure 0.36, 95% CI 0.31 to 0.43). Nearly half who persisted with alarm use remained dry after treatment finished, compared to almost none after no treatment (RR of failure or relapse 45/81 (55%) vs 80/81 (99%), RR 0.56, 95% CI 0.46 to 0.68). There was insufficient evidence to draw conclusions about different types of alarm, or about how alarms compare to other behavioural interventions. Relapse rates were lower when overlearning was added to alarm treatment (RR 1.92, 95% CI 1.27 to 2.92). Penalties for wet beds appeared to be counter-productive. Alarms using electric shocks were unacceptable to children or their parents.

Although desmopressin may have a more immediate effect, alarms appear more effective by the end of a course of treatment (RR 0.71, 95% CI 0.50 to 0.99) and there was limited evidence of greater long-term success (RR 4/22 (18%) vs 16/24 (67%), RR 0.27, 95% CI 0.11 to 0.69). Alarms were better than tricyclics

during treatment (RR 0.73, 95% CI 0.61 to 0.88) and afterwards (7/12 (58%) vs 12/12 (100%)), RR 0.58, 95% CI 0.36 to 0.94).

Authors' conclusions

Alarm interventions are an effective treatment for nocturnal bedwetting in children. Alarms appear more effective than desmopressin or tricyclics by the end of treatment, and subsequently. Overlearning (giving extra fluids at bedtime after successfully becoming dry using an alarm) and avoiding penalties may further reduce the relapse rate. Better quality research comparing alarms with other treatments is needed, including follow-up to determine relapse rates.

Synopsis

Alarm interventions reduce night-time bed wetting in children during treatment, and are better in the long term than treatment with desmopressin or tricyclic drugs.

Night-time bedwetting is common in childhood, and can cause stigma, stress and inconvenience. Alarms take longer to reduce bedwetting than desmopressin, but their effects continue after treatment in half the children who use alarms. Overlearning (giving children extra fluids at bedtime after successfully becoming dry using an alarm) may reduce the relapse rate. There are no serious side-effects, which can occur with drug treatment. However, children need more supervision and time from other family members at first. There was not enough evidence with which to compare alarms with other non-drug treatments.

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