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[Intervention Review]

# Interventions for preventing voice disorders in adults

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## ABSTRACT

### Background

This is an update of a Cochrane Review first published in *The Cochrane Library* in Issue 4, 2007.

Poor voice quality due to a voice disorder can lead to a reduced quality of life. In occupations where voice use is substantial it can lead to periods of absence from work.

### Objectives

To evaluate the effectiveness of interventions to prevent voice disorders in adults.

### Search methods

We searched databases including CENTRAL, MEDLINE, EMBASE, CINAHL, PsycINFO and OSH Update to March 2010.

### Selection criteria

Randomised controlled clinical trials (RCTs) evaluating interventions for preventing voice disorders in adults. For work-directed interventions, interrupted time-series and prospective cohort studies were also eligible.

### Data collection and analysis

Two authors independently extracted data and assessed trial risk of bias. We performed meta-analysis where appropriate.

### Main results

We identified six randomised controlled trials including a total of 262 participants. Four studies were conducted with primary school or kindergarten teachers, one with student teachers and one with telemarketers.

Three studies found similar self-reported vocal symptoms between those who attended direct voice training and those who were in a no intervention control group (standardised mean difference (SMD) 0.27; 95% CI -0.12 to 0.66).

Two studies found similar self-reported vocal symptoms between those who attended indirect voice training and those who were in a no intervention control group (SMD 0.44; 95% CI -0.03 to 0.92).

One study found similar scores on the Voice Handicap Index for those who had direct and indirect voice training combined and for those who had no intervention. Two studies compared a combination of direct and indirect voice training with indirect voice training only. Both studies found similar scores for self-reported phonation difficulty (mean difference -5.55; 95% CI -23.75 to 12.66) in both groups.

The evidence for all comparisons was rated as low quality.

No work-directed studies were found. No studies evaluated the effectiveness of prevention in terms of sick leave or number of diagnosed voice disorders.

### **Authors' conclusions**

We found no evidence that either direct or indirect voice training or the two combined are effective in improving self-reported vocal functioning when compared to no intervention. The current practice of giving training to at-risk populations for preventing the development of voice disorders is therefore not supported by definitive evidence of effectiveness. Larger and methodologically better trials are needed with outcome measures that better reflect the aims of interventions.

## **PLAIN LANGUAGE SUMMARY**

### **Interventions for preventing voice disorders in adults**

People in occupations where voice use is central, such as teachers, are more at risk of developing voice disorders. The definition of voice disorders and their possible causes as well as the best methods for preventing them are still being debated. There is also no consensus on the best method of evaluating the voice, although many consider auditory voice quality assessment (where an expert judge listens to a recording of a participant's voice and makes his or her own judgment of its level of abnormality) as a gold standard measure. Voice training is used to prevent voice disorders. Voice training usually consists of a combination of 'direct' and 'indirect' treatment techniques. Direct techniques focus on the underlying physiological changes needed to improve an individual's technique in using the vocal system and may aim to alter vocal fold closure (adduction), respiratory patterns or resonance, pitch or articulatory tension. In practice this means training about how to achieve correct posture, breathing techniques and making various sounds like humming, singing musical scales or yawning. Indirect techniques, on the other hand, concentrate on contributory and maintenance aspects of the voice disorder and may involve relaxation strategies, counselling, explanation of the normal anatomy and physiology of the vocal tract, explanation of the causal factors of voice disorders and voice care and conservation.

We conducted a systematic search of the literature on preventing voice disorders in adults. We then appraised the quality of the studies found and combined their results. We found six studies which met our inclusion criteria. Four were conducted with teachers, one with student teachers and one with telemarketers.

We found no evidence that either direct or indirect voice training nor the two combined are effective in improving vocal functioning when measured using self-reported outcomes and when compared to no intervention.

All the included studies were small and of low methodological quality. Given the extent of the problem and the widespread use of voice training, further research is warranted.