

# THERAPEUTIC ULTRASOUND FOR OSTEOARTHRITIS OF THE KNEE OR HIP

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## ABSTRACT

### Background

Osteoarthritis is the most common form of joint disease and the leading cause of pain and physical disability in the elderly. Therapeutic ultrasound is one of several physical therapy modalities suggested for the management of pain and loss of function due to osteoarthritis (OA).

### Objective

To compare therapeutic ultrasound with sham or no specific intervention in terms of effects on pain and function safety outcomes in patients with knee or hip OA.

### Criteria for considering studies for this review

We updated the search in CENTRAL, CINAHL, EMBASE, MEDLINE and PEDro up to 23 July 2009, checked conference proceedings, reference lists, and contacted authors.

### Selection criteria

Studies were included if they were randomised or quasi-randomised controlled trials that compared therapeutic ultrasound with a sham intervention or no intervention in patients with osteoarthritis of the knee or hip.

### Data collection and analysis

Two independent review authors extracted data using standardized forms. Investigators were contacted to obtain missing outcome information. Standardised mean differences (SMDs) were calculated for pain and function, relative risks for safety outcomes. Trials were combined using inverse-variance random-effects meta-analysis.

### Main results

Compared to the previous version of the review, four additional trials were identified resulting in the inclusion of five small sized trials in a total of 341 patients with knee OA. No trial included patients with hip OA. Two evaluated pulsed ultrasound, two continuous and one evaluated both pulsed and continuous ultrasound as the active treatment. The methodological quality and the quality of reporting was poor and a high degree of heterogeneity among the trials was revealed for function (88%). For pain, there was an effect in favour of ultrasound therapy, which corresponded to a difference in pain scores between ultrasound and control of -1.2 cm on a 10-cm VAS (95% CI -1.9 to -0.6 cm). For function, we found a trend in favour of ultrasound, which corresponded to a difference in function scores of -1.3 units on a standardised WOMAC disability scale ranging from 0 to 10 (95% CI -3.0 to 0.3).

Safety was evaluated in two trials including up to 136 patients; no adverse event, serious adverse event or withdrawals due to adverse events occurred in either trial.

### **Authors' conclusions**

In contrast to the previous version of this review, our results suggest that therapeutic ultrasound may be beneficial for patients with osteoarthritis of the knee. Because of the low quality of the evidence, we are uncertain about the magnitude of the effects on pain relief and function, however. Therapeutic ultrasound is widely used for its potential benefits on both knee pain and function, which may be clinically relevant. Appropriately designed trials of adequate power are therefore warranted.

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