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[Intervention Review]

# Conservative versus interventional management for primary spontaneous pneumothorax in adults

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## ABSTRACT

### Background

Primary spontaneous pneumothorax is widely managed according to size with interventional techniques based on practice guidelines. Interventional management is not without complications and observational data suggest conservative management works. The current guidelines are based on expert consensus rather than evidence, and a systematic review may help in identifying evidence for this practice.

### Objectives

The objective of the review is to compare conservative and interventional treatments of adult primary spontaneous pneumothorax for outcomes of clinical efficacy, tolerability and safety.

### Search methods

We searched the Cochrane Central Register of Controlled Trials (CENTRAL), (*The Cochrane Library*, Issue 6, 2014); MEDLINE via Ovid SP (1920 to 26th June 2014); EMBASE via Ovid SP (1947 to 26th June 2014); CINAHL via EBSCO host (1980 to 26th June 2014); and ISI Web of Science (1945 to 26th June 2014). We searched ongoing trials via the relevant databases and contacted authors. We also searched the 'grey literature'.

### Selection criteria

We included randomized controlled trials (RCTs) and we accepted quasi-RCTs if a systematic method of allocation was used. Participants were limited to adults aged 18 to 50 years, with their first symptomatic primary spontaneous pneumothorax with radiological evidence and no underlying lung disease.

### Data collection and analysis

Two of five authors independently reviewed all studies in the search criteria and made inclusions and exclusions according to the selection criteria. No statistical methods were necessary as there were no included trials.

## Main results

We identified 358 studies with duplicates removed. There were three potentially relevant studies that we excluded as they were not randomized controlled trials. There was one ongoing trial that was relevant and we contacted the authors and confirmed the study is ongoing at June 2014. We will update this review when this ongoing study is completed.

## Authors' conclusions

There are no completed randomized controlled trials comparing conservative and interventional management for primary spontaneous pneumothorax in adults. There is a lack of high-quality evidence for current guidelines in management and a need for randomized controlled trials comparing conservative and interventional management for this condition.

## PLAIN LANGUAGE SUMMARY

### **Observation alone versus drain tube or needle insertion (interventional) for primary spontaneous pneumothorax in adults without previous lung disease.**

**Review question:** A primary spontaneous pneumothorax (PSP) is a collection of air in the lining of the lung that occurs on its own or without a traumatic event. When this occurs, people can have chest pain and shortness of breath. Most of the time, the air in the lung is absorbed by the body and slowly decreases with time. Most of the guidelines in managing this condition recommend draining the air by sucking it out with a small needle, or placing a larger tube into the chest that drains the air over a period of time (both called 'interventional' management'). We aimed to examine the evidence for the recommendation.

**Background:** Interventional management can have side effects, such as causing more pain, infection, and potentially damaging nearby structures. The other way of treatment is called observational or conservative, where pain relief and extra oxygen are given until the lung re-inflates and the air is absorbed by the body on its own. Studies that look back on how patients were managed (retrospective studies) and personal experience of the authors with these patients show that managing them by observation alone can work well.

**Review findings:** The authors of this review searched for studies that compared interventional management with observational management but found no completed studies, although there is one study in progress. This means that there is a lack of high-quality evidence about the best way to manage a primary spontaneous pneumothorax in adults aged over 18 without previous lung disease; further studies are needed. The evidence is current to 26th June 2014.