

# Breathing therapies in patients with non-specific low back or neck pain: a systematic review

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## Introduction

Patients with non-specific low back pain (LBP) or neck pain (NP) show

- ↑ Thoracic and ↓ diaphragmatic breathing
- Impaired diaphragm functioning
  - ↑ Position and fatiguability
  - ↓ Excursion

However, the effect of breathing therapies on pain and disability in patients with LBP or NP is unknown.

## Purpose

To provide an overview of the effectiveness of breathing therapies involving active instructions to change breathing on pain and disability in patients with non-specific LBP or NP.

## Materials and methods

### Systematic literature search



Pubmed	PsycArticles
PEDro	Embase
Cochrane	Web of Science

### PICOS

- P** Adults with non-specific LBP or NP
- I** Active intervention to modulate breathing
- C** Control intervention
- O** Pain, disability
- S** All designs, except single case studies

### Data extraction

- Patient** Condition, duration, n=, age, ♂ ♀
- Intervention** Content, duration, frequency
- Outcome** Mean and SD, or median and IQR

### Risk of bias assessment



Downs and Black checklist	
Reporting bias	Internal validity
External validity	Statistical power

## Results

### Systematic literature search



3601 unique records  
17 records included

### Risk of bias assessment



Majority: fair to good (50-85%)

### Data synthesis

- Stand-alone breathing therapies:
  - Breath awareness therapy
  - Respiratory muscle endurance training
  - Inspiratory muscle training
  - ➔ ↓ Pain, not disability
- Breathing therapy + other active interventions:
  - ➔ ↓ Pain, ↓ disability



## Relevance and conclusion

### Breathing therapies for non-specific LBP or NP

- Stand-alone: reduce pain
- Combined with active, non-breathing-related interventions: reduce pain and disability

### Take home message:

Consider adding breathing therapies to the treatment plan of patients with non-specific LBP or NP, e.g., in case of a dysfunctional breathing pattern or decreased diaphragm functioning. Combination with other active treatments may be preferred.

## Acknowledgements



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