# Effects of Manual Therapy on the Diaphragm in the Musculoskeletal System: A Systematic Review

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## Abstract

**Objectives:** To analyze the effects at the musculoskeletal level of manual treatment of the diaphragm muscle in adults.

**Data Sources:** Systematic review using 4 databases: PubMed, Science Direct, Web of Science, and Scopus.

**Study Selection and Data Extraction:** Two independent reviewers applied the selection criteria and assessed the quality of the studies using the Physiotherapy Evidence Database scale for experimental studies. A third reviewer intervened in cases where a consensus had not been reached. A total of 9 studies were included in the review.

**Data Synthesis:** Manual therapy directed to the diaphragm has been shown to be effective in terms of the immediate increase in diaphragmatic mobility and thoracoabdominal expansion. The immediate improvement in the posterior muscle chain flexibility test is another of the most frequently found findings in the evaluated studies. Limited studies show improvements at the lumbar and cervical level in the range of motion and in pain.

**Conclusion:** Manual diaphragm therapy has shown an immediate significant effect on parameters related to costal, spinal, and posterior muscle chain mobility. Further studies are needed, not only to demonstrate the effectiveness of manual diaphragm therapy in the long-term and in symptomatic population, but also to investigate the specific neurophysiological mechanisms involved in this type of therapy.

**Photograph**



## Image



**Figure 1: Example of manual treatment of the diaphragm muscle in supine position.**

## Recent Publications

1. Fernández-López I, Peña-Otero D, de Los Ángeles Atín-Arratibel, María, Eguillor-Mutiloa M. Effects of manual therapy on the diaphragm in the musculoskeletal system: a systematic review. Arch Phys Med Rehabil. 2021; 102-12:2402-2415..
2. Fernández-López I, Peña-Otero D, Atín-Arratibel, María de los Ángeles, Eguillor-Mutiloa M. Influence of the phrenic nerve in shoulder pain: A systematic review. International Journal of Osteopathic Medicine. 2020;36:36-48.
3. Fernández-López I, Peña-Otero D, Atín-Arratibel, María de los Ángeles, Eguillor-Mutiloa M, Bravo-Llatas C, Genovés-Crespo M, et al. Effects of diaphragm muscle treatment in shoulder pain and mobility in subjects with rotator cuff injuries: A dataset derived from a pilot clinical trial. Data Brief. 2021;35:106867.
4. Fernández-López I, Atín-Arratibel MA, Peña-Otero D. El diafragma torácico y su influencia en los distintos sistemas corporales. Enfermería Activa. 2020;6(XVI):25-30.
5. Martí-Salvador M, Hidalgo-Moreno L, Domenech-Fernandez J, Lison JF, Arguisuelas MD. Osteopathic manipulative treatment including specific diaphragm techniques improves pain and disability in chronic nonspecific low back pain: a randomized trial. Arch Phys Med Rehabil 2018;99:1720–9

## Biography

Dr Isidro Fernández-López is a Physiotherapist PhD. MSc. and Osteopath D.O. in Holystic Centro de Recuperación in Madrid (Spain). Associate Professor in the Faculty of Nursing, Physiotherapy and Podiatry of the Universidad Complutense de Madrid. Specialist in Sports Physical Therapy and Physical Activity and Health. Author of many publications in international scientific journals in the field of shoulder pathology, neurorehabilitation and sports biomechanics.

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