

What is the evidence that respiratory physiotherapy reduces sputum retention in patients with acute deterioration?

A 2010 systematic review identified four physiotherapy techniques that were found to increase sputum expectoration (Tang, 2010). Positive expiratory pressure (PEP) resulted in a significant increase in sputum expectoration compared with standard care, while the increment in sputum expectoration with the use of intermittent positive pressure ventilation seemed to be limited to male patients with a partial pressure of oxygen in arterial blood (PaO_2) >60 mmHg. Both oscillating PEP and expiration with glottis open in lateral position produced a significant increase in sputum expectoration both immediately and 1 hour after treatment. Vibrations and combination therapy did not produce any significant increase in sputum expectoration compared with standard care.

Tang CY, Taylor NF & Blackstock FC. Chest physiotherapy for patients admitted to hospital with an acute exacerbation of chronic obstructive pulmonary disease (COPD): a systematic review. *Physiotherapy*. 2010;96:1-13

Last amended February 2022
Last reviewed March 2025