Airway clearance physiotherapy improves ventilatory dynamics during exercise in patients with cystic fibrosis: a pilot study
Fernanda Maria Vendrusculo, Zoe Johnstone, Elaine Dhoutte, Márcio V F Donadio, Steven Cunningham, Donald S Urquhart; BMJ Journals; Volume 104, Issue 1

Setting the scene:
The aim was to investigate whether the undertaking of airway clearance physiotherapy (ACT) prior to cardiopulmonary exercise testing (CPET) results in improvements in exercise capacity.

What did they do?
A prospective randomised, cross-over pilot study was performed in children aged >9 years. Spirometry, plethysmography and CPET were performed on two separate occasions. Two CPET tests were performed 1 month apart—one with ACT prior to CPET and the other without. Following recruitment and consent, subjects attended at least 4 weeks prior to the first CPET. Airway clearance physiotherapy was carried out using the (Peak Expiratory Pressure)PEP mask along with (Autogenic Drainage) AD techniques. Participants were instructed to sit with back straight, and elbows resting table. They were instructed to perform gentle, relaxed breathing at tidal volume using abdominal breathing for approximately five breaths or until breathing appeared relaxed. Subjects performed CPET on an electromagnetically braked cycle ergometer using a modified version of the Godfrey protocol. Test 1 was performed after 4 weeks of regular use of ACT with the standardised technique. Test 2 was undertaken after a further 4 weeks of regular use of ACT with the standardised technique. The 4-week period was chosen to fit with scheduled clinic visits.

Takeaway message:
ACT prior to exercise may alter ventilatory mechanics and improve ventilatory efficiency in exercising patients with Cystic Fibrosis. These are potentially favourable adaptations to exercise training for individuals with Cystic Fibrosis.