7. **Hansen LG**, Warwick WJ, Hansen KL. Mucus transport mechanisms in relation to the effect of high frequency chest compression (HFCC) on mucus clearance. *Pediatr Pulmonol* 1994;**17**:113–18.
8. **Braggion C**, Cappelletti LM, Cornacchia M, *et al*. Short-term effects of three chest physiotherapy regimens in patients hospitalized for pulmonary exacerbations of cystic fibrosis: a cross-over randomized study. *Pediatr Pulmonol* 1995;**19**:16–22.
9. **Hansen LG**, Warwick WJ. High-frequency chest compression system to aid in clearance of mucus from the lung. *Biomed Instrum Technol* 1990;**24**:289–94.
10. **Kluft J**, Beker L, Castagnino M, *et al*. A comparison of bronchial drainage treatments in cystic fibrosis. *Pediatr Pulmonol* 1996;**22**:271–4.
11. **Warwick WJ**, Wielinski CL, Hansen LG. Comparison of expectorated sputum after manual chest physical therapy and high-frequency chest compression. *Biomed Instrum Technol* 2004;**38**:470–5.
12. **Arens R**, Gozal D, Omlin KJ, *et al*. Comparison of high frequency chest compression and conventional chest physiotherapy in hospitalized patients with cystic fibrosis. *Am J Respir Crit Care Med* 1994;**150**:1154–7.
13. **Scherer TA**, Barandun J, Martinez E, *et al*. Effect of high-frequency oral airway and chest wall oscillation and conventional chest physical therapy on expectoration in patients with stable cystic fibrosis. *Chest* 1998;**113**:1019–27.
14. **Varekojic SM**, Douce FH, Flucke RL, *et al*. A comparison of the therapeutic effectiveness of and preference for postural drainage and percussion, intrapulmonary percussive ventilation, and high-frequency chest wall compression in hospitalized cystic fibrosis patients. *Respir Care* 2003;**48**:24–8.
15. **Darbee JC**, Kanga JF, Ohtake PJ. Physiologic evidence for high-frequency chest wall oscillation and positive expiratory pressure breathing in hospitalized subjects with cystic fibrosis. *Phys Ther* 2005;**85**:1278–89.
16. **Oermann CM**, Sockrider MM, Giles D, *et al*. Comparison of high-frequency chest wall oscillation and oscillating positive expiratory pressure in the home management of cystic fibrosis: a pilot study. *Pediatr Pulmonol* 2001;**32**:372–7.
17. **Warwick WJ**, Hansen LG. The long-term effect of high-frequency chest compression therapy on pulmonary complications of cystic fibrosis. *Pediatr Pulmonol* 1991;**11**:265–71.
18. **Phillips GE**, Pike SE, Jaffe A, *et al*. Comparison of active cycle of breathing and high-frequency oscillation jacket in children with cystic fibrosis. *Pediatr Pulmonol* 2004;**37**:71–5.
19. **Bradley JM**, Moran FM, Elborn JS. Evidence for physical therapies (airway clearance and physical training) in cystic fibrosis: an overview of five Cochrane systematic reviews. *Respir Med* 2006;**100**:191–201.
20. **Rowe SM**, Clancy JP. Advances in cystic fibrosis therapies. *Curr Opin Pediatr* 2006;**18**:604–13.
21. **Thornton J**, Elliott R, Tully MP, *et al*. Long term clinical outcome of home and hospital intravenous antibiotic treatment in adults with cystic fibrosis. *Thorax* 2004;**59**:242–6.
22. **International Physiotherapy Group for Cystic Fibrosis**. *Physiotherapy in the treatment of cystic fibrosis (CF)*. 3rd edn. www.cfwww.org/ipg-cf/?article=195.
23. **Lapin C**, Lapin A, Pryor JA. Physiotherapy. In: Hodson M, Geddes D, Bush A, eds. *Cystic fibrosis*. 3rd edn. London: Hodder Arnold, 2007:407–20.
24. **Miller MR**, Hankinson J, Brusasco V, *et al*. Standardisation of spirometry. *Eur Respir J* 2005;**26**:319–38.
25. **Birring SS**, Fleming T, Matos S, *et al*. The Leicester Cough Monitor: preliminary validation of an automated cough detection system in chronic cough. *Eur Respir J* 2008;**31**:1013–18.
26. **Jones RL**, Lester RT, Brown NE. Effects of high frequency chest compression on respiratory system mechanics in normal subjects and cystic fibrosis patients. *Can Respir J* 1995;**2**:40–6.
27. **Milla CE**, Hansen LG, Warwick WJ. Different frequencies should be prescribed for different high frequency chest compression machines. *Biomed Instrum Technol* 2006;**40**:319–24.
28. **Cecins NM**, Jenkins SC, Pengelley J, *et al*. The active cycle of breathing techniques — to tip or not to tip? *Respir Med* 1999;**93**:660–5.
29. **Patterson JE**, Bradley JM, Elborn JS. Airway clearance in bronchiectasis: a randomized crossover trial of active cycle of breathing techniques (incorporating postural drainage and vibration) versus test of incremental respiratory endurance. *Chron Respir Dis* 2004;**1**:127–30.
30. **Sutton PP**, Parker RA, Webber BA, *et al*. Assessment of the forced expiration technique, postural drainage and directed coughing in chest physiotherapy. *Eur J Respir Dis* 1983; **64**:62–8.

Lung alert

Higher mortality from non-small cell lung cancer reported in subjects treated with oestrogen and progestin

The Women's Health Initiative (WHI) trial was a double-blind randomised placebo-controlled trial that examined the health benefits and risks of combined oestrogen and progestin in 16 608 postmenopausal women in the USA. The study was stopped early as health risks were shown to exceed benefits. In this study, both the incidence and mortality from lung cancer during the treatment and follow-up phases of the WHI (mean 7.9 years) were determined in a posthoc analysis.

No statistically significant differences in the incidence of lung cancer were seen between active (n=109) and placebo (n=85) groups (incidence 0.16% vs 0.13%; HR 1.23, 95% CI 0.92 to 1.63). More women died from lung cancer in the active (n=73) compared with the placebo (n=40) groups, and more deaths were seen in non-small cell lung cancer in the active (n=62; 0.09%) compared with the placebo (n=31; 0.05%) groups. There were no statistically significant differences in deaths from small cell lung cancer in the active (n=11; 0.02%) compared with the placebo (n=9; 0.01%) group.

Although there was no increase in the incidence of lung cancer in those on combined treatment, there was an increase in deaths attributable to lung cancer, especially in non-small cell disease. The authors speculate that combined hormone therapy stimulates growth of existing non-small cell lung cancers. This should be discussed with women considering combined hormone therapy, in particular those in a high-risk group.

► **Chlebowski RT**, Schwartz AG, Wakelee H, *et al*, for the Women's Health Initiative Investigators. Oestrogen plus progestin and lung cancer in postmenopausal women (Women's Health Initiative trial): a post-hoc analysis of a randomised controlled trial. *Lancet* 2009;**374**:1243–51.

P A Marsden

Correspondence to P A Marsden, ST3 Respiratory Medicine, Blackpool Victoria Hospital, UK; Paul.A.Marsden@manchester.ac.uk

Thorax 2010;**65**:200. doi:10.1136/thx.2009.134809