

BTS Guideline on Pulmonary Rehabilitation in adults

Web appendix 1: Clinical Questions

- **Do patients with COPD who continue to smoke get similar benefit and have similar completion rates from pulmonary rehabilitation compared with ex-smokers? Should they be referred?**
- **Do patients with COPD with chronic respiratory failure get similar benefit from pulmonary rehabilitation compared with those who do not have chronic respiratory failure and is it safe? Should they be referred?**
- **Do patients with COPD with co-existent cardiovascular disease get similar benefit from pulmonary rehabilitation compared with those who do not have cardiovascular disease and is it safe? Should they be referred?**
- **Do patients with COPD with co-existent anxiety and depression get similar benefit from pulmonary rehabilitation compared with those who are not anxious or depressed? Should they be referred?**
- **Do patients with COPD who are MRC grade 2 breathless get similar benefit from pulmonary rehabilitation compared with those with greater breathlessness? Should they be referred?**
- **Do patients with COPD who are MRC grade 5 breathless get similar benefit from pulmonary rehabilitation compared with those with MRC grade 3-4? Should they be referred?**
- **Role of pharmacological agents at referral to pulmonary rehabilitation.**
- **Is once weekly supervised pulmonary rehabilitation as effective at improving exercise performance and health status in patients with chronic respiratory disease when compared with a twice (or thrice) weekly supervised programme?**

- Are pulmonary rehabilitation programmes that are less than 6 weeks in duration equally effective at improving exercise performance and health status in patients with chronic respiratory disease when compared with programmes that are longer or equal to 6 weeks in duration?
- Are rolling programmes of pulmonary rehabilitation equally effective as stand-alone programmes for patients with chronic respiratory disease?
- Are Pulmonary rehabilitation programmes that include resistance training and aerobic training more effective at improving exercise performance in patients with chronic respiratory disease when compared with aerobic training alone.
- Are Pulmonary rehabilitation programmes that include interval training more effective at improving exercise performance in patients with chronic respiratory disease when compared with continuous aerobic training?
- Do pulmonary rehabilitation programmes that include personal goal setting achieve greater improvements in functioning when compared with programmes that do not include personal goal setting?
- In patients with COPD does face to face twice-weekly supervision of pulmonary rehabilitation lead to greater improvements in walk test distance and dyspnoea scores than supervision provided by internet support /manual etc ?
- Does Pulmonary Rehabilitation within one month of discharge improve outcomes in COPD patients hospitalised for acute exacerbations of COPD compared with usual care?
- What is the completion rate of Pulmonary Rehabilitation within one month of hospital discharge in unselected patients compared with elective pulmonary rehabilitation?

- Does a cognitive-behavioural component delivered before commencing rehabilitation improve compliance (adherence / completion) of pulmonary rehabilitation?
- What is the impact of a pulmonary rehabilitation programme on the exercise, physical activity, muscle strength, health status, psychological state, and nutritional status of participants compared with usual care without pulmonary rehabilitation?
- What is the impact of a pulmonary rehabilitation programme on survival of participants compared with usual care without pulmonary rehabilitation?
- In patients with COPD does inspiratory muscle training plus pulmonary rehabilitation lead to greater improvements in exercise tolerance and dyspnoea scores than pulmonary rehabilitation alone?
- In patients with COPD does therapy with hormones / drug / nutraceuticals plus pulmonary rehabilitation lead to greater improvements in walk test distance and dyspnoea scores than pulmonary rehabilitation alone?
- In patients with COPD does non-invasive ventilation (NIV) DURING exercise of pulmonary rehabilitation lead to greater improvements in walk test distance and dyspnoea scores than pulmonary rehabilitation alone in those with type II respiratory failure?
- In patients with COPD does neuromuscular electrical stimulation (NMES) plus pulmonary rehabilitation lead to greater improvements in walk test distance and dyspnoea scores than pulmonary rehabilitation alone?
- In patients with COPD and exercise desaturation does the acute administration of medical gases DURING the exercise component of pulmonary rehabilitation lead to

greater improvements in walk test distance and dyspnoea scores than pulmonary rehabilitation in room air?

- **Should pulmonary rehabilitation be repeated? If so, when?**
- **Should maintenance “exercise” be offered following their first pulmonary rehabilitation**
- **Does pulmonary rehabilitation lead to improvement in exercise capacity, health status, breathlessness in adult patients with non-CF bronchiectasis compared with patients with non-CF bronchiectasis that do not undergo rehabilitation?**
- **Does pulmonary rehabilitation lead to improvement in exercise capacity, health status, breathlessness in adult patients with interstitial lung disease compared with patients with interstitial lung disease that do not undergo rehabilitation?**
- **Does pulmonary rehabilitation lead to improvement in exercise capacity, health status, breathlessness in adult patients with asthma compared with patients with asthma that do not undergo rehabilitation?**