

# Pulmonary rehabilitation in lung disease



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**P**ulmonary rehabilitation is an evidence-based multidisciplinary intervention for patients with chronic lung disease. The aims are to reduce symptoms (breathlessness and fatigue), increase activity during daily life, achieve a commitment to long-term exercise and self-management, improve quality of life and decrease healthcare costs. The components of pulmonary rehabilitation are assessment, exercise training, education, nutritional intervention and psychosocial support.

## Which patients benefit?

Improvements can occur in patients with mild, moderate or severe disease. This includes those with COPD (the largest group undergoing rehabilitation), asthma, bronchiectasis, cystic fibrosis, interstitial lung disease, respiratory muscle weakness and chest wall deformity. In short, any patient with lung disease whose lifestyle is affected by breathlessness may gain from pulmonary rehabilitation.

However, many patients are not identified and invited early into beneficial programs. Often this is because patients consider their symptoms to be mild, such as breathlessness only when walking up inclines or stairs, and they are ignored and attributed to ageing, weight gain or lack of exercise and not the underlying lung problem.

## Why does pulmonary rehabilitation work?

Most people with lung disease who experience breathlessness during exertion will avoid the daily activities that make them breathless. Typically, walking is avoided, especially up inclines. As a result, they become physically deconditioned and a vicious cycle develops of progressively less and less physical activity. With further muscle deconditioning may come anxiety over breathlessness, depression, social isolation and impaired quality of life.

This vicious cycle of inactivity can be broken by exercise training in a group setting supervised by a health professional. Patients re-gain confidence to exercise and they see they are not alone in having the problems. As they become more confident with physical activities, this helps reduce anxiety and depression, social isolation and improves quality of life.

Physiologically, exercise training results in improved functioning of arm and leg muscles in particular. This in turn reduces lactate build-up during exercise, ventilatory demand and breathlessness.

## Which type of exercise is best?

Walking is an activity that people who are breathless avoid, yet walking is an essential component of everyday life. Therefore, walking training forms a key component of pulmonary rehabilitation. The recommendations are that patients with lung disease should undertake endurance exercise, for example walking, for 20-30 minutes on 3-5 days each week. Walking training is often done intermittently, with frequent short rests during the 20-30 minute period to avoid intolerable breathlessness.

In addition, a prescribed circuit of simple exercises is aimed at improving the strength and endurance of the arm and leg muscles.

The exercise prescription varies with the individual, based on assessment by a physiotherapist. Patients need reassurance that breathlessness on activity is not harmful and that it is important that exercise is continued long-term (for which most programs use simple equipment that allows the same exercises at home).

## What are the outcomes?

The measurable outcomes include improved exercise tolerance assessed using a simple walking test.

Other important benefits include decreased breathlessness and fatigue, measured using standardised scales, and improved quality of life.

In patients with COPD, pulmonary rehabilitation has been shown to reduce healthcare utilisation.

## What is involved for the patient?

Most pulmonary rehabilitation programs provided within WA last for between 6 and 10 weeks. Patients usually attend two supervised exercise classes each week and complete an individually prescribed home exercise program on an additional 2 or 3 days each week. The exercise classes last between 60 and 75 minutes and involve groups of patients supervised by a physiotherapist. Some programs also offer weekly education sessions provided by a multidisciplinary team.

Following this short period of supervised rehabilitation it is essential that patients continue to maintain a regular exercise program. To assist this, patients may attend a weekly maintenance exercise class. Some patients may join a gym or a local walking program.

## Pulmonary rehabilitation programs in WA

Within the metropolitan area the physiotherapy departments in tertiary and some secondary hospitals offer programs. There are also community-based programs that accept GP referrals provided by the COPD Community Linkage Service and the Healthy@Home Chronic Disease Management Teams. Maintenance exercises classes are available in the community, coordinated by Community Physiotherapy Services, and are available in some hospitals. A number of regional hospitals provide programs. There are a few home-based supervised rehabilitation programs for patients who have recently been hospitalised and/or are too disabled by breathlessness to attend an out-patient or community program.

LungNet, a service provided by The Australian Lung Foundation, provides information about lung diseases and the location of local patient support groups. Tel: 1800 654 301 or email: [enquiries@lungnet.com.au](mailto:enquiries@lungnet.com.au) ■

*References are available on request.*



■ A long hospital corridor serves well for testing improvements in exercise endurance in patients on the program.