

# Pulmonary Rehabilitation Following Covid-19

Pulmonary rehabilitation is a programme designed for people who have had a lung illness or surgery, or who have chronic lung disease. It's essentially designed for people who are severely breathless. The primary goal is to enable you to achieve and maintain your maximum level of independence and functioning. Pulmonary rehabilitation uses exercise, education and behavioural intervention to improve daily life and enhance quality of life.

Although most pulmonary rehabilitation programmes focus on people who have chronic obstructive pulmonary disease, people with other types of lung disease, or who are recovering from a lung infection (such as coronavirus) may benefit as well. Pulmonary rehabilitation programmes may improve your quality of life by:

- reducing shortness of breath
- increasing exercise tolerance
- promoting a sense of wellbeing.

All of these will enable you to return to an active life, be it participating in sport, doing daily chores and work. It will also improve your emotional and mental outlook for the future which, in turn, will benefit your personal life too. Pulmonary rehabilitation programmes are traditionally conducted in an outpatient setting (in other words, the person has regular appointments at a medical practice, clinic or hospital). Patients often attend in groups or classes. However, given the current setting of social distancing and lockdown in some areas, home-based rehabilitation is very possible and achievable. Regular telephone contact while following exercise routines alone at home can be done. Alternatively, participating in group sessions via online conferencing facilities, such as Zoom or Skype, could be fun and allow for interaction, discussion and motivation from others going through the same difficulties. You may also use an activity tracker or smartphone-based monitoring app to help manage and see your progress.

Pulmonary rehabilitation should be used to prevent your lung disease becoming a chronic, severe problem. Even people with less severe disease may benefit from therapy to reduce shortness of breath and increase their ability to exercise, so returning to their 'former' lifestyle faster.

The most successful rehabilitation programmes are those in which services are provided by a respiratory or physical therapist, nurse, doctor, psychologist or social worker, and dietitian working as a team to coordinate services and tend to your needs. Most people are enrolled in these programmes for 8 to 12 weeks, but the time can vary depending on how you respond or cope. However, the techniques learned during the programme have to be continued at home after the rehabilitation programme ends or the gains may be lost.

## ASSESSMENT

To help design your pulmonary rehabilitation plan, your healthcare team may do one of the following tests:

- exercise stress test to measure your oxygen level, blood pressure and heart rate while you exercise;
- pulmonary function tests to check your lung function and breathing; and/or
- 6-minute walk test to measure your exercise tolerance.

## ENROLMENT AND GOAL SETTING

The first step for the team members is to determine your short-term and long-term goals. For example, an older person may desire to walk a grandchild to the school bus each day. If the person can walk only 300 feet (about 90 metres) because of shortness of breath but must walk 1,000 feet (300 metres) to the bus stop, the initial short-term goal may be to increase the walking distance, starting by small increments. Team members must be encouraging while also setting realistic goals. Periodic re-evaluation (weekly) is

important to ensure that these goals are being met.

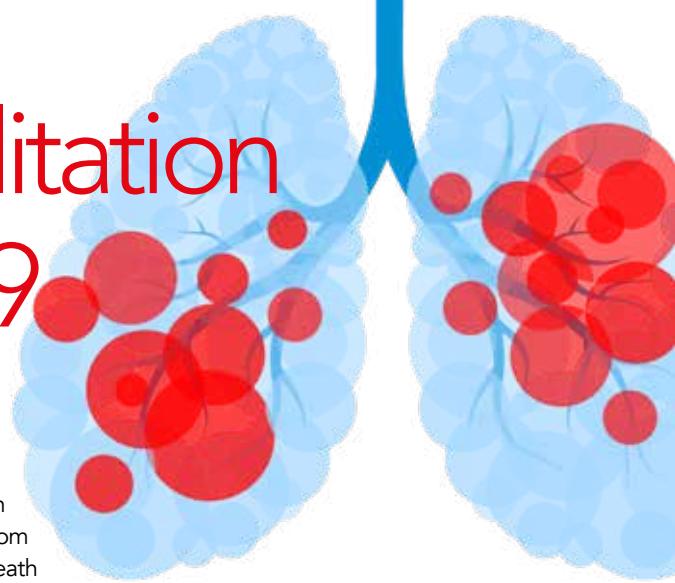
It is also important for team members to identify factors that may limit the programme's effectiveness for a particular person. These factors may include problems with financial resources, transportation to the rehabilitation centre, access and knowledge on how to use electronic devices to participate in rehabilitation, cognition and family dynamics. Cognitive problems may include someone elderly with dementia who lacks the ability to understand the role of rehabilitation. Or a person recovering from a stroke sustained while suffering from coronavirus. Confusion for some time following a stroke may make participation challenging and involve specific help. It is important for team members to recognise such problems and plan ways to help you through this.

Long-term goals should also be established. Again these will vary on age and ability, and severity of disease/damage to lung tissue. This could include being able to do your weekly shopping unaided, garden for an hour, take a 30-minute walk with friends or participate in other social activities. Team members will teach people to recognise changes in their lung condition, so that they will contact their doctor promptly, if necessary. Treatment may need to be modified in response to changes in symptoms.

## COMPONENTS OF PULMONARY REHABILITATION

A pulmonary rehabilitation programme has two main focal points:

1. A physical exercise programme, designed for people with lung conditions



and tailored for you; and  
2. Information and education on looking after your body and your lungs, and advice on managing your condition and your symptoms, including feeling short of breath. See the Box for examples of what these aspects include.

This may include:

### Exercise Training

Exercise training is the most important component of pulmonary rehabilitation; it trains your lungs and heart to work better and your body to use the oxygen more efficiently. It reduces the effects of inactivity and deconditioning, resulting in less shortness of breath and an increased ability to exercise. However, physical limitations may restrict the types of exercise training that can be used.

Aerobic exercise and strength training are both important components of exercise training in people with lung disorders.

Exercise of the legs is the cornerstone of training. Because walking is necessary for most activities of daily living, many rehabilitation programmes use walking (sometimes on a treadmill) as the preferred mode of training. Some people may prefer exercising on a stationary bicycle, elliptical trainer or step machine. Choosing an exercise that you find comfortable and satisfying will make it more enjoyable for you to do for the long term.

Exercise training of the arms is also beneficial. Such training is needed because chronic lung disease can cause muscle loss, and some of the shoulder muscles are used in breathing as well as in moving the arms. Muscle wasting is a common consequence of inactivity and therefore strength training, using your body weight or even light hand-held weights, will be incorporated to maintain or re-build muscle bulk.

### Inspiratory Muscle Training

Inspiratory muscle training (IMT) is often a component of pulmonary rehabilitation. With IMT, you use breathing exercises and devices to strengthen the muscles involved in breathing. IMT is usually used together with traditional aerobic exercise and helps reduce shortness of breath and increase your ability to exercise.

### 1. A physical exercise programme, designed for people with lung conditions and tailored for you

This includes:

- exercise training, including strength training
- inspiratory muscle training, breathing exercises
- neuromuscular electrical stimulation
- relaxation techniques

### 2. Information and education on looking after your body and your lungs, and advice on managing your condition and your symptoms, including feeling short of breath

This may include:

- psychosocial counselling
- nutritional evaluation and dietary counselling
- education, including on proper use or need for any prescription drugs
- emotional and group support

### Psychosocial Counselling

Depression and anxiety are common reactions to the life changes you may experience if you are living with lung disease. In addition, shortness of breath itself may cause anxiety and depression, interfere with sexual activity, and cause difficulty managing stress and in relaxing. Counselling, group therapy, and, when needed, drug treatment, are some of the options available to help you cope better if you experience these psychosocial problems. Sometimes family members participate in counselling to help them cope with the stress involved in caring for a person following illness. Depression, stress and anxiety may not only be due to the illness; you may also feel these if, having survived coronavirus, you have been exposed to life or death situations, seen or experienced traumatic things in hospital, and PTSD (post-traumatic stress disorder) could be a reality. In addition to this, lockdown may have resulted in social problems with loss of income, family and relationship problems.

### Nutritional Evaluation and Counselling

People who have lung disease often need nutritional advice. A pulmonary rehabilitation programme can help you to avoid weight loss and maintain muscle mass, a common problem with chronic respiratory conditions. You will also be taught how to eat so that you maintain adequate calory intake while avoiding becoming too full, which can interfere with your breathing. Alternatively, some people gain weight because of a reduced activity level, because of fatigue and

breathlessness. In this case, additional weight gain places an even greater demand on an already taxed respiratory system. Weight reduction benefits such people.

### Educate Yourself

Many pulmonary rehabilitation programmes offer group or one-on-one education sessions to help you learn to manage better. Sessions might focus on things such as:

- understanding your medication treatment plan;
- if you're a smoker, help with quitting; and
- stress and time management.

### WHAT YOU GET OUT OF A PROGRAMME

Most people who finish a pulmonary rehab course feel better at the end. You will usually be able to do more things without becoming short of breath or feeling so tired.

Studies have shown that nearly all people in pulmonary rehabilitation had seen their symptoms improve. Almost everyone reported feeling:

- less shortness of breath
- more energetic
- more in control, able to achieve more
- that their fitness had improved.

Completing a course of pulmonary rehabilitation is a good way to learn how to exercise safely and at the right level for you. Most people enjoy the course. It builds confidence and it's great fun meeting others in a similar situation.

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