



COPD: pulmonary rehabilitation

Intervention

Pulmonary rehabilitation interventions include inpatient and/or outpatient programs incorporating exercise with or without other components, such as education and psychosocial support.

Indication

COPD is predicted to be the third-leading cause of death worldwide by 2020.

Patients with stable COPD and following exacerbations of COPD.

To improve fitness and strength and reduce feelings of breathlessness.

To reduce activity limitation and participation restriction, and restore patients to highest possible level of independent functioning and improve quality of life.

To reduce hospital admissions.

Precautions

Initiation of physical exercise may be challenging in patients after an exacerbation. However, pulmonary rehabilitation after exacerbation of COPD appears safe and effective.

Time may be required to find the appropriate exercise protocol for the individual patient.

Availability

The Australian Lung Foundation list of pulmonary rehabilitation programs by state. www.lungfoundation.com.au/professional-resources/pulmonary-rehabilitation/programs/

Description

Exercise training programs require assessment of exercise endurance and strength, and creation of an individual exercise prescription (see case study example www.pulmonaryrehab.com.au/index.asp?page=86).

A pulmonary rehabilitation program must include, at a minimum, the following lower limb endurance exercises:

- Walking training for all patients
- Stationary cycling training.

Intensity, duration, frequency and type of exercise (i.e. continuous or interval) are also included in the exercise prescription. If possible, a pulmonary rehabilitation program should also include:

- a home exercise program
- upper limb endurance and strength training
- lower limb strength training.

Other components may include flexibility and stretching exercises, balance exercises, inspiratory muscle training, a patient education program and psychosocial support.

A detailed Pulmonary Rehabilitation Toolkit is available from The Australian Lung Foundation (see Tips and Challenges).



Tips and Challenges

Pulmonary rehabilitation after acute exacerbation of COPD:

- significantly reduces risk for hospital re-admission
- significantly reduces mortality
- improves health-related quality of life
- improves exercise capacity.

An advantage of rehabilitation after exacerbation is that it may provide a window of opportunity for patient education in that they may be more willing to change their health behaviours following an exacerbation.

Patients often re-exacerbate within weeks, disrupting or sometimes discontinuing their rehabilitation program.

For acute exacerbations, the rehabilitation program must commence within three weeks of initiation of exacerbation treatment. The minimum duration of an effective program that includes exercise training is six weeks, and the longer the program, the more effective it appears to be.

The Australian Lung Foundation has a comprehensive Pulmonary Rehabilitation Toolkit.
www.pulmonaryrehab.com.au/index.asp?page=2

The Global Initiative for COPD (GOLD) has a Pocket Guide to COPD Diagnosis, Management and Prevention (2011 Revision) available for translation into multiple languages.
www.goldcopd.org/guidelines-pocket-guide-to-copd-diagnosis.html

Grading

NHMRC Level 1 evidence.

References

Abramson MJ, Crockett AJ, Frith PA and McDonald CF. COPDX: an update of guidelines for the management of chronic obstructive pulmonary disease with a review of recent evidence. *MJA* 2006; 184 (7): 342-345
www.mja.com.au/public/issues/184_07_030406/abr10742_fm.html

Gruffydd-Jones K & Loveridge C. The 2010 NICE COPD Guidelines: how do they compare to the GOLD guidelines? *Prim Care Respir J* 2011; 20(2): 199-204. doi:10.4104/pcrj.2011.00011. Available from www.thepcrj.org

Puhan MA, Gimeno-Santos E, Scharplatz M, Troosters T, Walters EH, Steurer J. Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease. *Cochrane Database of Systematic Reviews* 2011, Issue 10. Art. No.: CD005305. DOI: 10.1002/14651858.CD005305.pub3.

Consumer Resources

The Australian Lung Foundation offers patient support resources.
www.lungfoundation.com.au/lung-information/patient-support

The Australian Lung Foundation patient fact sheet on pulmonary rehabilitation
www.lungfoundation.com.au/wp-content/uploads/2012/06/Pulmonary-Rehabilitation-Factsheet_1701131.pdf

The Better Health Channel website has easy-to-read consumer resources about COPD
www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Lung_conditions_obstructive_pulmonary_disease

Patients describing COPD and pulmonary rehabilitation made by King's College Hospital, London, UK, are available on YouTube at:

- www.youtube.com/watch?v=3goKl9Vr8iw

Part 1 (7.46 minutes)

- www.youtube.com/watch?v=cthKnGK6Gzs

Part 2 (5.26 minutes)