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## Study shows breast cancers regress

■ Dr Linda Calabresi

New research suggests that the natural course of some invasive breast cancers detected by screening mammography is to regress.

A study, published today in the *Archives of Internal Medicine* (168: 2311-16) (link), found women aged 50-64 who had regular screening mammograms over a six year period had a significantly higher incidence of invasive breast cancer than women who were screened once for breast cancer

at the end of the six years.

Researchers found the cumulative incidence of invasive breast cancer was 22% higher in the regularly screened group compared to the single screen group.

"It appears that some breast cancers detected by repeated mammographic screening would not persist to be detectable by a single mammogram at the end of six years," the Norwegian study authors said. This raises the possibility that some breast cancers might spontaneously

regress, they add.

The findings could not be explained by bias, differential risk, or changes in sensitivity of mammography.

While the findings seem counterintuitive, the spontaneous regression theory is difficult to rule out, according to an accompanying editorial.

"If the spontaneous remission hypothesis is credible, it should cause a major reevaluation in the approach to breast cancer research and treatment," the editorial authors suggest.

[Comment here.](#)

## Solar Keratosis



As you see it



...as Aldara sees it

"It should be considered as a first line therapy for sustained treatment of AK"<sup>1</sup>

 **Aldara**<sup>Cream, 5%</sup>  
(IMQUIMOD)

**PBS Information:** Authority required for superficial basal cell carcinoma. Refer to PBS Schedule for full information. This product is not listed on the PBS for solar keratosis or external genital warts. For RPBS Information, refer to PBS Schedule.

BEFORE PRESCRIBING PLEASE REVIEW PRODUCT INFORMATION IN THE PRIMARY ADVERTISEMENT IN THIS PUBLICATION.

1. Krawtchenko N et al. *Br J Dermatol* 2007; 157: (suppl. 2) 34-40. Further information is available on request from iNova Pharmaceuticals (Australia) Pty Limited, ABN 88 000 222 408, 9-15 Chivers Road, Thornleigh NSW 2120. ALDA3248A BBK 08/08

**inova**  
pharmaceuticals

## Pharmacists to screen for COPD

■ Louise Durack

Pharmacists are to start testing patients for COPD in a new program that aims to pick up patients who slip under the GP radar

In what may eventually become a national program, the Australian Lung Foundation has recruited 15 pharmacists in the NSW Newcastle and Hunter Valley who will give patients a lung function

screening test using a Piko-6 electronic peak flow meter.

"The device doesn't take the place of the diagnostic process using spirometry, but it will identify people who could benefit from spirometry," says Heather Allan, chief investigator for the program.

She told *6minutes* that GPs will still manage these patients as normal, but then refer them back to the pharmacist for follow-

up support which could include smoking cessation.

"We know spirometry use is sporadic and that COPD is a very under-diagnosed condition. This is a good way to see if we can identify more patients that may otherwise slip through the net," said Ms Allan.

Extending the program nationally is the "ultimate aim, dependent on viability," she said.

[Comment here.](#)

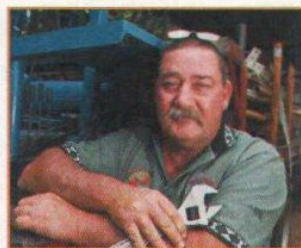
## Men to get their own health policy

■ Louise Durack

The government is to develop a National Men's Health Policy and wants to hear what Aussie men want.

Federal health minister Nicola Roxon says formal consultations will begin in early 2009 and she has appointed men's health ambassadors including Victorian governor Prof David de Kretser and union leader Bill Noonan to engage men in discussion about their health.

Speaking today she said a distinct policy was needed for the specific health problems



**New government policy will target conditions that affect men.**

that disproportionately affect men: "Many men are still reluctant to seek medical help or even talk to someone about their health.

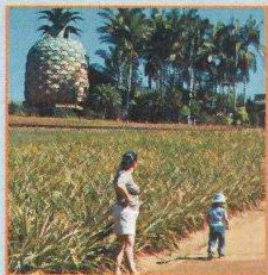
"Gender is a key determinant of health in Australia, and the

best way to improve health outcomes is to have policies that recognise the unique needs of men."

The department has released information materials ([www.health.gov.au/menshealthpolicy](http://www.health.gov.au/menshealthpolicy)), which can be used by those interested in holding their own local community discussion on men's health.

An additional resource kit, developed by Andrology Australia, called 'What every man needs to know', is also available by emailing National.Mens.Health.Policy@health.gov.au.

## In other news ...



**About 2000 extra doctors registered to work in Queensland** last year, with most from India, the UK and South Africa, and 400 graduates from Queensland universities, says the ABC. ([read more](#))

**A \$2 million a year taxpayer funded after-hours GP service** will go ahead near Darwin despite an internal report showing that only about eight patients present to the local ED per night, says the NT News. ([read more](#))

**Nursing home residents** as old as 90 are showing great physical and cognitive improvements after starting a twice-weekly 'boot camp' regime in Adelaide, says the *Courier Mail*. ([read more](#))

**Nicola Roxon** avoided answering a parliamentary question by the opposition about when the first patients would be treated in a superclinic, says the *Age*. ([read more](#))

Police are investigating a **suspicious fire** that has destroyed a Melbourne doctors' surgery, the *Herald Sun* reports. ([read more](#))

The *Daily Telegraph* says a doctor has admitted he had a **sexual relationship with a former patient** but denied providing her with drugs

including Valium and cocaine ([read more](#))

A **Sydney skin clinic doctor** claims he cured all his patients despite being deregistered for professional misconduct, prompting health authorities to contact thousands of his former patients, according to the *Daily Telegraph*. ([read more](#))

A **revolutionary painless technique** that uses electrical pulses to zap tumours is being trialled at The Alfred Hospital, to treat cancer, the *Courier Mail* reports. ([read more](#))

A ban on posters using the words "**longer lasting sex**" is to be challenged by new research showing the public is not as prudish as the advertising watchdog thinks, the *Sydney Morning Herald* reports. ([read more](#))

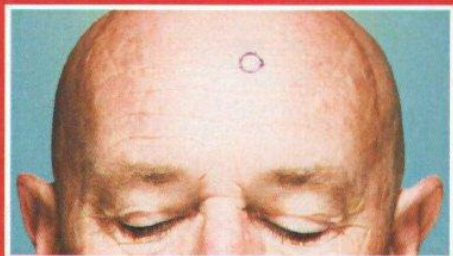
There is concern sweeping **changes being proposed to mandatory reporting** in New South Wales will put more children at risk, according to the ABC. ([read more](#))

South African and Zimbabwean health officials met at the weekend to **tackle a cholera outbreak** which has claimed at least three lives across the South African border, according to the ABC. ([read more](#))

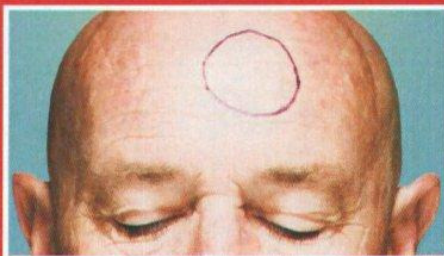
The *Age* reports lawmakers in Indonesia's remote province of Papua have thrown their support behind a controversial bill requiring some **HIV/AIDS patients to be implanted with microchips** - part of extreme efforts to monitor the disease. ([read more](#))

[Comment here.](#)

## Solar Keratosis



As you see it



...as Aldara sees it

**Aldara cream effectively treats visible and sub-clinical solar keratosis<sup>1-4</sup> and "it should be considered as a first line therapy for sustained treatment of AK"<sup>1</sup>**



**PBS Information:**  
Authority required for superficial basal cell carcinoma. Refer to PBS Schedule for full information. This product is not listed on the PBS for solar keratosis or external genital warts. For RPPBS Information, refer to PBS Schedule.

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2. Aldara<sup>TM</sup> Approved Product Information 3. Korman N et al. *Arch Dermatol* 2005; 141: 467-473. 4. Stockfleth E et al. *Arch Dermatol* 2004; 140: 1542.

Further information is available on request from Inova Pharmaceuticals (Australia) Pty Limited, ABN 88 000 222 408, 9-15 Chilvers Road, Thornleigh NSW 2120. ALDA32486 BRK 08/08

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pharmaceuticals

# COPD-X Checklist

## Diagnosis and Management of COPD

### C – Confirm diagnosis

Presence and history of symptoms:

- ☐ Shortness of breath
- ☐ Cough
- ☐ Sputum production

Smoking – history and willingness to quit:

- ☐ Smoker ☐ Pack years
- Willingness to quit ☐ high ☐ medium ☐ low
- ☐ Previous smoker
- ☐ Non-smoker
- ☐ Other smoking-related disease

**Spirometry - measure FEV<sub>1</sub> and FEV<sub>1</sub>/FVC and assess reversibility of airflow limitation**

Spirometry is essential for case-finding, to differentiate between asthma and COPD, and to determine the degree of disease severity.

#### Grade COPD severity:

Based on spirometry results – FEV<sub>1</sub> % of predicted post-bronchodilator.

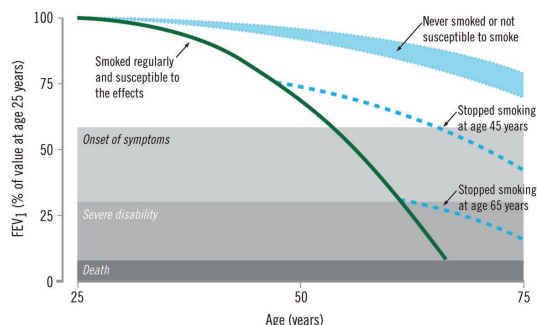
60–80% = Mild  
40–59% = Moderate  
<40% = Severe

	Pre-bronchodilator	% pred	Post-bronchodilator	Reversibility* (%)
FEV <sub>1</sub>				
FVC				
FEV <sub>1</sub> /FVC				

COPD is defined as post-bronchodilator FEV<sub>1</sub>/FVC <0.70 and FEV<sub>1</sub> <80% predicted. If fully reversible (to normal values) treat as asthma.

$$\text{*Reversibility} = \frac{(\text{FEV}_1 \text{ post BD}) - (\text{FEV}_1 \text{ pre BD})}{\text{FEV}_1 \text{ pre BD}} \times 100$$

#### Smoking Effects on Symptoms & Life Expectancy



### O – Optimise function

- ☐ Check smoking status
- ☐ Query optimal drug therapy
- ☐ Check compliance
- ☐ Review exercise status
- ☐ Check current device use
- ☐ Nutrition
- ☐ Consider sleep apnoea



## P – Prevent deterioration

### Essential Steps:

- ☐ Annual influenza vaccination
- ☐ Pneumococcal vaccination
- ☐ Consider long-term home oxygen

### Risk factor reduction:

- ☐ Check current smoking status
- ☐ Advise of the risks of smoking and benefits of stopping
- ☐ Refer to a Quit program if appropriate - Quitline 131 848
- ☐ Advise about pharmacological treatments for nicotine dependence
- ☐ Assess occupation e.g. dusty conditions
- ☐ Schedule follow up visit

## D – Develop self-management plan

- ☐ Assist in the development of a self-management plan
- ☐ Check for psychosocial problems and suggest supportive strategies, such as The Australian Lung Foundation's LungNet National Support Network - 1800 654 301
- ☐ Refer for pulmonary rehabilitation
- ☐ Refer to respiratory physician to:
  - Clarify diagnosis
  - Consider other therapies
  - Consider long-term home oxygen
  - Facilitate pulmonary rehabilitation
- ☐ Refer to hospital if:
  - Inadequate response to ambulatory management
  - Inability to walk between rooms when previously mobile
  - Inability to eat or sleep because of dyspnoea
  - Altered mental status suggestive of hypercapnia
  - Worsening hypoxaemia or cor pulmonale
  - Newly occurring arrhythmia
  - Cannot manage at home
  - High risk comorbidity condition

This checklist is based on the evidence-based consensus document, the COPDX Plan, Australian and New Zealand Guidelines for the management of Chronic Obstructive Pulmonary Disease 2003. This was an independent joint project of the Thoracic Society of Australia and New Zealand and The Australian Lung Foundation, contributed to by physicians, general practitioners, nurses and allied health professionals. See - MJA 2003; 178(Suppl).

Developed by Crockett AJ, Laven GA, Beilby J, Stocks N, Primary Care Respiratory Unit, Department of General Practice, the University of Adelaide, South Australia.

## X – Manage eXacerbations

- ☐ Ensure understanding of exacerbations and importance of early action and treatment at home if possible
- ☐ Consider need for controlled oxygen
- ☐ Inhaled bronchodilators, oral glucocorticoids and antibiotics are effective
- ☐ Review regularly



# COPD Action Plan

Patient Name:	Date of Birth:
GP Name:	GP Phone:
	After Hours Phone:
Consultant Name:	Consultant Phone:
Outreach/Community Nurse Phone:	Ambulance Phone:

<b>USUAL TREATMENT WHEN STABLE:</b>	Best FEV <sub>1</sub> _____	Best FVC _____
	Room air O <sub>2</sub> saturation _____ %	<input type="checkbox"/> CO <sub>2</sub> Retainer
	Oxygen: l/min _____	hrs/day _____

MY REGULAR MEDICATION/S	STRENGTH	DOSE	ROUTE <small>MDI + SPACER / DPI / NEBULISER / ORAL</small>	HOW OFTEN
1				
2				
3				
4				
5				
6				

<b>MODERATE ATTACK</b> (UNWELL BUT NOT SEVERE)	<ul style="list-style-type: none"> <li>• More wheezy / breathless</li> <li>• Increased cough and sputum</li> <li>• Change in colour of sputum</li> <li>• Loss of appetite / sleep</li> <li>• Taking more reliever medication than usual</li> </ul>	<b>OTHER HELPFUL TIPS</b> <ul style="list-style-type: none"> <li>• Eat small amounts more often</li> <li>• Use controlled breathing techniques</li> <li>• Use a huff and puff cough to clear secretions</li> <li>• Use anxiety/stress management techniques</li> </ul>
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EXTRA RELIEVER	STRENGTH	DOSE	ROUTE	HOW OFTEN
1				
2				
3				

PREDNISOLONE <small>(reducing schedule)</small>	STRENGTH	TABS/DOSE	DAYS
start			
then			
then			
then			

ANTIBIOTIC	STRENGTH	DOSE	ROUTE	HOW OFTEN
1				
2				

<b>SEVERE ATTACK</b> <ul style="list-style-type: none"> <li>• Call ambulance - 000 or ph: _____</li> <li>• Show them this plan and say you have severe COPD</li> </ul>	<b>My Symptoms:</b> <ul style="list-style-type: none"> <li>• Unable to perform normal activities e.g. dress, bathe</li> <li>• Fever / chills</li> <li>• Increased swelling of ankles</li> <li>• Extremely short of breath</li> </ul>
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NAME:	SIGNATURE:	DATE:
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## CHRONIC OBSTRUCTIVE PULMONARY DISEASE

The condition 'Chronic Obstructive Pulmonary Disease' (COPD) is often referred to as chronic bronchitis and emphysema. 'Chronic' means that the problem won't go away but can usually be controlled. COPD is mostly caused by smoking. In COPD the airways have become narrow and damaged and it is harder to breathe. Chronic bronchitis means the air passages are inflamed, which causes cough and excess phlegm. If you stop smoking, the phlegm usually dries up! People with COPD tend to get worse with chest infections and during cold weather. Good treatment will help you get better quicker.

### What can I do to keep well?

#### C onfirm diagnosis

The diagnosis and severity of COPD are determined by breathing tests such as spirometry, x-rays, and blood tests to measure oxygen and carbon dioxide levels. These tests help to exclude other conditions. The doctor should test whether your airway narrowing is reversible, i.e. can improve with treatment (possibly including a trial of oral or inhaled corticosteroids).

#### O ptimise function

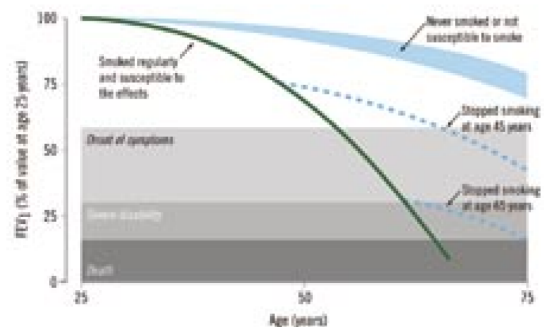
There are no medications that will cure COPD but they can make you feel better. Improving your lifestyle is the best thing you can do. Ask your GP, specialist or other health care workers to help work out the best treatment for you.

- Exercise for 30 minutes most days of the week – it's as simple as walking for ten minutes three times a day. Consider joining an exercise group or rehabilitation program.
- Optimise weight and nutrition. Eat a balanced diet, decrease alcohol consumption and avoid sedatives.
- Maintain good sleep habits.
- Ask your Doctor to refer you to a pulmonary rehabilitation program.

#### P revent deterioration

There is a gradual decrease in lung function with age. Smoking accelerates this decline.

- Quit smoking – it is never too late
- Have a flu vaccine (annual) and pneumonia vaccine (5 yearly).
- See your GP and Specialist regularly to check your progress.
- Get your oxygen level checked – oxygen therapy may prevent complications and prolong your life.



#### D evelop a self-management and support plan

Playing an active role in your health is important.

- You should have a self-management plan agreed by you, your GP, specialist and other health care workers.
- You and your carer / support person should receive education about COPD and its treatment.
- Contact the LungNet Support Line on 1800 654 301 for more information.

#### e X acerbations (when you get worse)

You should increase your treatment early when you are unwell. You should have an action plan completed by your doctor and a ready supply of any medications needed (eg antibiotics, prednisolone).

- Notify your GP and (if appropriate) your community nurse / case manager.
- People are often given high flow oxygen when they are extremely breathless, however this may be harmful if you have COPD. If your doctor advises low flow rates (eg 0.5 - 2.0 litres per minute) you should have a medic alert bracelet stating this.

*With good treatment your Quality of Life can be improved!*

For more information contact The Australian Lung Foundation on 1800 654 301





## Feeling short of breath?

*"When you can't breathe...  
nothing else matters"™*

**If you answer YES to 3 or more of these questions, you may have COPD.**

- Do you cough several times most days?
- Do you bring up phlegm or mucus most days?
- Do you get out of breath more easily than others your age?
- Are you over 40 years old?
- Are you a smoker or ex-smoker?

COPD is Chronic Obstructive Pulmonary Disease, a condition that affects about 1 in 5 Australians over 40 years old and often causes breathlessness. Chronic bronchitis and emphysema are types of COPD.

Reassuringly, there is something you can do about COPD, so for more information, please speak to your doctor.

For more information about COPD, call The Australian Lung Foundation Toll Free on 1800 654 301 or visit [www.lungfoundation.com.au](http://www.lungfoundation.com.au)

## Working with your health professional

Find a team of health professionals you like and are happy to work with on a regular basis. The more they know about you and your symptoms, the better job they can do at treating you.

Ask your health professional to prepare a plan of the things you can do to control your COPD and make your breathing easier. Their plan may follow this structure:

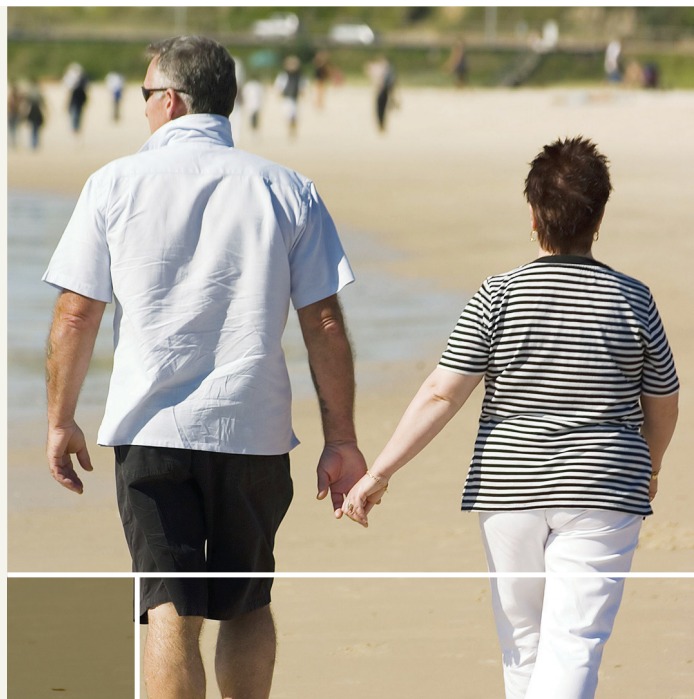
C	<b>CONFIRM DIAGNOSIS</b> Test to see if you have COPD
O	<b>OPTIMISE FUNCTION</b> Ways to help make breathing easier including a rehabilitation program
P	<b>PREVENT DETERIORATION</b> Doing everything possible to stop you getting worse
D	<b>DEVELOP SELF MANAGEMENT PLAN</b> A plan for managing your COPD
X	<b>MANAGE EXACERBATIONS</b> What to do if you get worse suddenly

It is important to visit your health professional for regular check-ups, or if your symptoms change.

## Take action today

COPD is a serious disease that can have a big impact on the quality of your life. However, if you follow the 5 steps outlined in this brochure, it is possible to reduce your symptoms and slow down the damage to your lungs.

**DON'T LET YOUR BREATHING GET ANY WORSE.**  
If you are a smoker, decide today to stop and take control of your COPD.



## Further information

Further detailed information on how to manage your COPD is available in The Australian Lung Foundation COPD Handbook, *Living Well with COPD*. This is available on-line at [www.lungnet.com.au/COPD](http://www.lungnet.com.au/COPD) or for further information, call 1 800 654 301.

## Here to help

The Australian Lung Foundation has a free information and support service called LungNet. To find out more about COPD and the help that is available to you, contact LungNet by:

- Phoning toll-free on 1800 654 301
- Emailing [enquiries@lungnet.com.au](mailto:enquiries@lungnet.com.au)
- Logging onto [www.lungnet.com.au](http://www.lungnet.com.au)

This brochure is one in a series produced by The Australian Lung Foundation to provide information on lung disease, its treatment and related issues.

The information published by The Australian Lung Foundation is designed to be used as a guide only, is not intended or implied to be a substitute for professional medical treatment and is presented for the sole purpose of disseminating information to reduce lung disease.

Any information relating to medication brand names is correct at the time of printing. The Australian Lung Foundation has no control or responsibility for the availability of medications, which may occasionally be discontinued or withdrawn.

Please consult your family doctor or specialist respiratory physician if you have further questions relating to the information contained in this leaflet.

For details of patient support groups in Australia please call 1800 654 301.

## The Australian Lung Foundation

✉ The Australian Lung Foundation  
PO Box 847  
Lutwyche Qld 4030



**Toll Free:** 1800 654 301



**Visit our website:** [www.lungnet.com.au](http://www.lungnet.com.au)

The Australian Lung Foundation Inc. ABN 36 051 131 901 Liability of Members Limited



"When you can't breathe...  
nothing else matters"™

## What causes shortness of breath?

### • The air passages in the lungs are damaged

Air flows in and out of your lungs through thousands of small air passages called bronchial tubes. When you have COPD, these tubes become narrower, making it harder to breathe. Medication can help your tubes to work better, opening them up and making breathing easier.



*A normal tube*



*COPD causes tubes to narrow*



*Medication can help tubes work better*

### • Breathing muscles do not work well

With COPD, your lungs become larger than normal, so the breathing muscles around the outside of the lungs (e.g. the diaphragm and chest wall muscles) become stretched and have to work harder. This means that there is more effort involved in breathing and it makes you feel breathless. These muscles help you take deep breaths to get plenty of oxygen. With COPD you can only take smaller breaths.

### • Arm & leg muscles tire

The muscles in your arms and legs tire easily and this may make your shortness of breath worse.

## How does a doctor test for COPD?

- COPD is tested with a simple breathing test (called spirometry)
- You blow into a small machine called a spirometer
- The results of the test tell the doctor whether you have COPD and how bad it is
- The test helps distinguish COPD from asthma

## The facts: Australia

- Almost 1 in 5 people over 40 have COPD
- COPD is the fourth most common cause of death in men and the sixth most common cause of death in women
- More people are dying from COPD each year
- COPD is the second leading cause of avoidable hospital admissions

## The good news

The good news is that by following the steps below, you can reduce ALL your symptoms and slow down the damage being done to your lungs.

### Step 1. Stop smoking

- This is the single most important thing you can do to help yourself. Most people need help to quit
- The sooner you stop smoking the longer you are likely to live – it is that simple
- Keep smoking and your health will get worse far quicker than if you quit

### Step 2. Seek help from health professionals

- Talk with your health professional (doctor, nurse, physiotherapist, pharmacist etc.) to understand how COPD is affecting you and what you can do about it
- If you are, or were a smoker, do not hide this from your doctor
- Learn how your medications work and then take them correctly
- Make a plan with your doctor so you know what to do if your COPD gets worse suddenly
- Do not be afraid to ask questions



### Step 3. Boost your health

- Join a COPD exercise and education program, often called pulmonary rehabilitation. This is one of the best treatments for COPD. The Australian Lung Foundation can help you find the program nearest you
- Exercise safely and regularly. Walking is an excellent exercise. You should check with your health professional about a suitable exercise plan
- Maintain a healthy weight. Being overweight or underweight can place a strain on your body. A healthy weight plus a healthy diet will help you to stay stronger and have more energy

### Step 4. Protect against flare-ups (exacerbations)

Because you have COPD, you may be more likely to get chest infections. Protect yourself by:

- Having flu and pneumococcal vaccines regularly
- Acting quickly if your symptoms are worse. Check the plan you made with your doctor so you know exactly what to do and what medicines to take

### Step 5. Join a support group

- The Australian Lung Foundation supports a network of COPD support groups right around Australia. Group members help each other by sharing their COPD stories, things that work and friendship

# Better Living with Chronic Obstructive Pulmonary Disease

*A Patient Guide*



THE  
AUSTRALIAN  
**LUNG**  
FOUNDATION

*"When you can't breathe...  
nothing else matters"*



**Queensland Government**  
Queensland Health

November 2008



## *Better Living with COPD*

'Better Living with Chronic Obstructive Pulmonary Disease: A Patient Guide' is a funded project of the Statewide COPD Clinical Network, Clinical Practice Improvement Centre, Queensland Health and The Australian Lung Foundation, COPD National Program.

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## Foreword

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Chronic Obstructive Pulmonary Disease (COPD) is second only to diabetes as a leading cause of avoidable hospital admissions. COPD impacts significantly on the day-to-day lives of people with COPD, their families and carers, and the health system. While there is no cure for COPD, there are things people with COPD can do to improve their symptoms and therefore the quality of their lives.

In 2007, the Queensland Health Statewide COPD Clinical Network identified the need for standardised, evidence-based patient information to be available to people with COPD who were participating in pulmonary rehabilitation programs. In response to this need, a team of health care professionals experienced in providing care to people with lung conditions compiled this booklet.

This booklet has been developed for people with COPD and their families and carers and also for health professionals involved in the care of people with COPD.

The aim of this booklet is to:

- provide useful information about how to live well with lung conditions
- offer practical hints about what people with COPD can do to improve their well-being
- act as a resource tool for people with COPD and health care professionals, particularly those living in regional and remote areas

Queensland Health and The Australian Lung Foundation are committed to supporting those with COPD to manage their condition and get the best they can out of life. This booklet is an important resource to learn how to live well with COPD.

We acknowledge the significant work undertaken by Queensland Health staff and in particular the Queensland COPD Clinical Network in the development of this booklet. A collaborative partnership between Queensland Health and The Australian Lung Foundation has made it possible to widen access to this resource to people with COPD, regardless of where they live in Australia. Additionally, we thank the consumers who provided feedback about this booklet during its development.

For access to this resource on-line, visit [www.lungnet.com.au](http://www.lungnet.com.au), or for further information, call The Australian Lung Foundation on 1800 654 301.

We encourage people with COPD and their families and carers and health professionals to make use of this valuable resource.



Hon. Stephen Robertson MP  
Minister for Health  
Queensland



Dr Robert Edwards, Chairman  
The Australian Lung Foundation

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Queensland Health and The Australian Lung Foundation wish to acknowledge the efforts of all those involved in the development and publication of 'Better Living with Chronic Obstructive Pulmonary Disease: A Patient Guide'.

*Dr Stephen Morrison, Chair  
Associate Professor Ian Yang, Immediate Past Chair  
Statewide COPD Clinical Network, Queensland*

### Project Officers

**James Walsh** (Coordinating Author), Physiotherapist,  
The Prince Charles Hospital, Brisbane, Queensland.

**Helen Seale**, Physiotherapist,  
The Prince Charles Hospital, Brisbane, QLD.

**Heather Allan**, Director – COPD National Program,  
The Australian Lung Foundation.

**Simon Halloran**, Physiotherapist,  
Bundaberg Base Hospital, QLD.

### Contributing authors

- Robyn Cobb, Physiotherapist,  
The Prince Charles Hospital, Brisbane, QLD.
- Annette Dent, Respiratory Scientist,  
The Prince Charles Hospital, Brisbane, QLD.
- Mary Doneley, Social Worker,  
The Prince Charles Hospital, Brisbane, QLD.
- Emily Gill, Dietitian,  
Royal Brisbane and Women's Hospital, Brisbane, QLD.
- Di Goodwin, Respiratory Clinical Nurse Consultant,  
Royal Brisbane and Women's Hospital, Brisbane, QLD.
- Kathleen Hall, Physiotherapist,  
The Prince Charles Hospital, Brisbane, QLD.
- Simon Halloran, Physiotherapist,  
Bundaberg Base Hospital, Bundaberg, QLD.
- Karen Herd, Dietitian,  
The Prince Charles Hospital, Brisbane, QLD.
- Michele Kennedy,  
Respiratory Clinical Nurse Consultant,  
Logan Hospital, Meadowbrook, QLD.
- Renae Knight, Occupational Therapist,  
Brisbane South Respiratory Service, QLD.
- Lisa McCarthy, Respiratory Nurse, Hospital in the  
Home, The Prince Charles Hospital, Brisbane, QLD.
- David McNamara, Respiratory Clinical Nurse  
Consultant, Nambour Hospital, Nambour, QLD.
- Jennie Robertson, Speech Pathologist,  
The Prince Charles Hospital, Brisbane, QLD.
- Judy Ross, Respiratory Clinical Nurse Consultant,  
Princess Alexandra Hospital, Woolloongabba, QLD.
- Helen Seale, Physiotherapist,  
The Prince Charles Hospital, Brisbane, QLD.

- John Serginson, Thoracic Clinical Nurse Consultant,  
The Prince Charles Hospital, Brisbane, QLD.
- Stella Snape-Jenkinson, Occupational Therapist, Heart Lung Team,  
The Prince Charles Hospital, Brisbane, QLD.
- Tracy Tse, Pharmacist, The Prince Charles Hospital, Brisbane, QLD.
- Barb Williams, Respiratory Clinical Nurse,  
Logan Hospital, Meadowbrook, QLD.
- James Walsh, Physiotherapist,  
The Prince Charles Hospital, Brisbane, QLD.
- Robert Walton, Clinical Psychologist,  
Nambour Hospital, Nambour, QLD.
- Brett Windeatt, Respiratory Clinical Nurse,  
Logan Hospital, Meadowbrook, QLD.
- Michelle Wood, Physiotherapist,  
The Prince Charles Hospital, Brisbane, QLD.
- Associate Professor Ian Yang, Thoracic Physician,  
The Prince Charles Hospital, Brisbane, QLD.

### Statewide COPD Clinical Network, Queensland, Steering Committee

- Dr Stephen Morrison (Clinical Chair),  
Royal Brisbane and Women's Hospital.
- Associate Professor Ian Yang (Immediate Past Clinical Chair),  
The Prince Charles Hospital.
- Heather Allan, The Australian Lung Foundation.
- Dr John Armstrong, The Princess Alexandra Hospital.
- Yvonne Bedson, Secretary Lung and Respiratory  
Friends Support Group Inc. Gold Coast.
- Dr Robin Bradbear, Northside Health Service.
- Dr Nick Buckmaster, Gold Coast Hospital.
- William Darbishire, The Australian Lung Foundation.
- Dr Llewellyn Davies, Rockhampton Base Hospital.
- Simon Halloran, Bundaberg Base Hospital.
- Linda Medlin, Northside Health Service.
- Dr Anthony Matthiesson, Townsville Hospital.
- Helen Seale, The Prince Charles Hospital.
- John Serginson, The Prince Charles Hospital.
- Dr Graham Simpson, Cairns Base Hospital.
- James Walsh, The Prince Charles Hospital.
- Samantha Daly, Clinical Practice Improvement Centre,  
Queensland Health.
- Col Roberts, Clinical Practice Improvement Centre,  
Queensland Health.

### Reviewers

- Judith Hart, Australian COPD Patient Taskforce.
- Associate Professor Christine McDonald,  
Respiratory Physician, Austin Hospital, Melbourne, VIC.
- Vanessa McDonald, Clinical Nurse Consultant,  
John Hunter Hospital, Newcastle, NSW.
- William Scowcroft, Co-Chair,  
Australian COPD Patient Taskforce.
- Myrna Wakeling, Talk Lung Care Support Group.

### Pulmonary Rehabilitation Booklets

The following COPD Pulmonary Rehabilitation Booklets were reviewed and used as models to produce this Patient Guide:

- Brisbane South Community Health Service District
- Bundaberg Health Service District
- Cairns Health Service District
- Nambour Hospital
- Gold Coast Health Service District
- The Prince Charles Hospital
- The Alfred Pulmonary Rehabilitation Program

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### Introduction

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Chronic Obstructive Pulmonary Disease (COPD) is a serious chronic lung condition that includes emphysema and chronic bronchitis.

The Australian Lung Foundation estimates that two million Australians have COPD. Of these, over one million have COPD that is severe enough that symptoms are starting to or have already affected the way people live their daily lives. Alarming of those people who have COPD, 75% do not know they have COPD and, therefore, are not taking the important steps to control their symptoms and slow down the progress of this disabling condition.

Breathlessness, a key symptom of COPD, creeps up on people slowly. Symptoms may begin with not being able to run to catch the train or play with young children. However, breathlessness can worsen to a stage where everyday tasks, such as hanging out the washing or walking to get the mail, become nearly impossible.

If you have COPD, the good news is that there are steps you can take to control the symptoms of COPD and slow down the progressive damage to your lungs.

'Better Living with Chronic Obstructive Pulmonary Disease: A Patient Guide' outlines the important steps that will make you feel better, such as:

- Enrolling in a pulmonary rehabilitation program.
- Quitting smoking.
- Maintaining a healthy diet.
- Understanding your medications.
- Joining a support group.
- Developing an action plan.
- Discussing immunisation with your doctor.

For more information about this Patient Guide and how to use it, contact The Australian Lung Foundation (phone: 1800 654 301 or Web site [www.lungnet.com.au](http://www.lungnet.com.au)) or speak to your pulmonary rehabilitation coordinator.

## chapter 2

# Overview of managing chronic obstructive pulmonary disease



This chapter will help you to understand:

- How a diagnosis of chronic obstructive pulmonary disease (COPD) makes you feel.
- What you can do to manage COPD.

### How a diagnosis of chronic obstructive pulmonary disease (COPD) makes you feel?

Chronic Obstructive Pulmonary Disease or COPD is a term used to describe a condition that includes emphysema, chronic bronchitis or a combination of both these. COPD is a serious lung disease that currently affects over 2 million Australians.

The diagnosis of COPD has a significant impact on who you are, how you feel about yourself and your life. COPD not only affects you the patient, but also those around you. As symptoms of the condition progress, the impact of the symptoms on your life and how you live it also progress.

Understandably, people who have COPD can at times feel frustrated, sad, angry, depressed, anxious or worried. All of these are normal responses to the changes that occur.

#### **Take control**

Although there is no cure for COPD, you can control your symptoms to improve your quality of life. While the lung and airway damage cannot be repaired, all the symptoms of COPD can be reduced if you take action.

Your quality of life can be improved and the length of your life can be extended.

This Patient Guide details steps you can take to live better with COPD.

So take control and breathe easier.



### What can you do to manage COPD?

This Patient Guide has been developed by doctors, physiotherapists, nurses and patients to help those with COPD understand and manage their condition.

The following steps are important to living well with COPD and are outlined in detail throughout the Guide.

1. Become a non-smoker (Chapter 10, Stopping smoking and preventing a relapse)
2. Enrol in pulmonary rehabilitation (Chapter 7, Introduction to pulmonary rehabilitation)
3. Improve and/or maintain your fitness (Chapter 9, Exercise and physical activity)
4. Develop an action plan with your doctor (Chapter 6, Managing your COPD)
5. Discuss immunisation with your doctor (Chapter 6, Managing your COPD)
6. Practice breathing control (Chapter 8, Breathlessness, breathing control and energy conservation)
7. Eat a healthy diet (Chapter 11, Healthy eating)
8. See your doctor when feeling unwell and before you get too sick (Chapter 6, Managing your COPD)
9. Know what your medications do and how to use them (Chapters 12 and 13)
10. Manage your anxiety (Chapter 15, Managing stress and anxiety)
11. Understand swallowing and airway clearance techniques (Chapters 16 and 17)
12. Talk to someone when you are feeling down or join a lung support group (Chapter 19, Community support services)

*To find out about patient support groups in your area, contact The Australian Lung Foundation on 1800 654 301.*

*Extensive research has shown that pulmonary rehabilitation can reduce breathlessness, increase exercise performance and improve health related quality of life. These programs include a combination of education sessions and exercise. To find out about a pulmonary rehabilitation program near you, speak to your doctor or call The Australian Lung Foundation on 1 800 654 301.*



This chapter will help you to understand:

- What the respiratory system is.
- What the structure of the lungs is.
- What the lungs do.
- What the role of the nose and nasal cavity is.
- How your lungs protect against irritants or foreign particles.

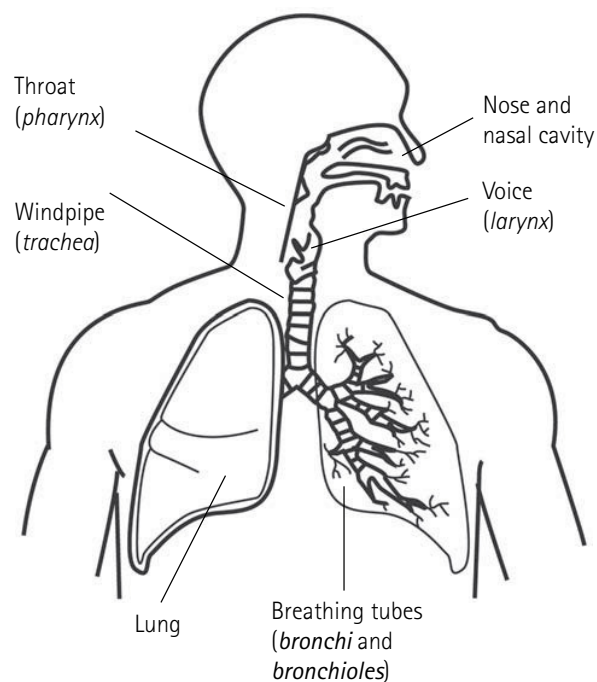
### What is the respiratory system?

The respiratory system includes the upper and lower respiratory tract. The upper respiratory tract consists of:

- The nose and nasal cavity.
- The throat (*pharynx*).
- The voice box (*larynx*).

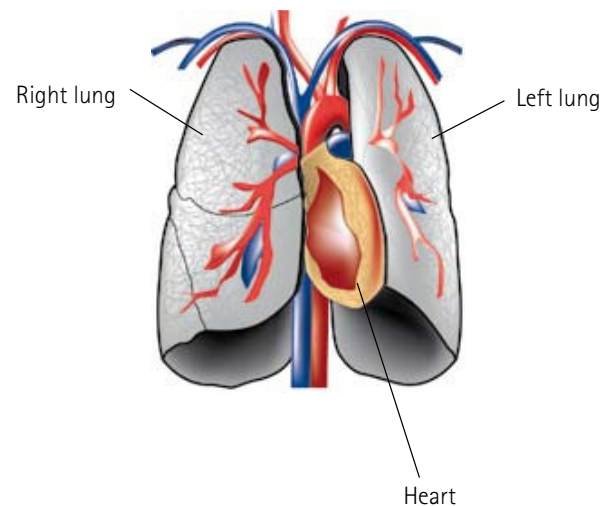
The lower respiratory tract consists of:

- The windpipe (*trachea*).
- Breathing tubes (*bronchi* and *bronchioles*).
- Air sacs (*alveoli*).



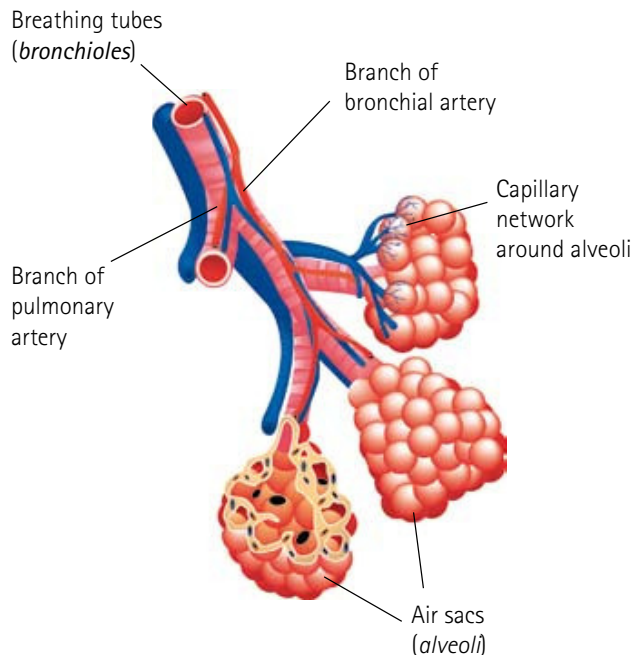
### What is the structure of the lungs?

Both lungs and the heart are located within the chest. There are two lungs inside the chest: the left lung and the right lung. Each lung is divided into segments called lobes. The lungs are soft and protected by the ribcage.



Within the lungs is a transport system for oxygen and carbon dioxide. Each time you breathe, air is drawn via the mouth and nose into the windpipe (*trachea*).

The windpipe splits into two breathing tubes (*bronchi*): one to the left lung and one to the right lung. The breathing tubes continue to divide into smaller and smaller tubes (*bronchioles*), which take air down into each lung.



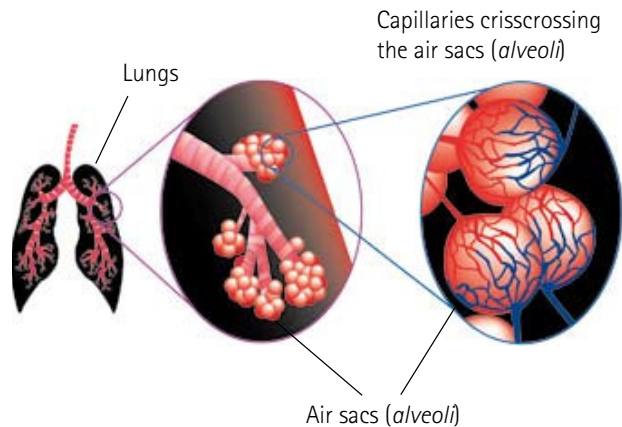
### What do the lungs do?

To survive, your body needs oxygen ( $O_2$ ), which you get from the air you breathe. The lungs help take the oxygen from the air, through the air sacs (*alveoli*), into the body.

The air sacs are surrounded by tiny blood vessels (*capillaries*), which crisscross the walls of the air sacs. The air sacs are where oxygen, which is a gas, is absorbed into the bloodstream.

Oxygen is then carried along the bloodstream, through the heart, to where it is needed in the body.

Carbon dioxide ( $CO_2$ ) is a waste product that is produced by the body. As a gas, carbon dioxide moves from the bloodstream back into the air sacs and through the airways, where it is breathed out.

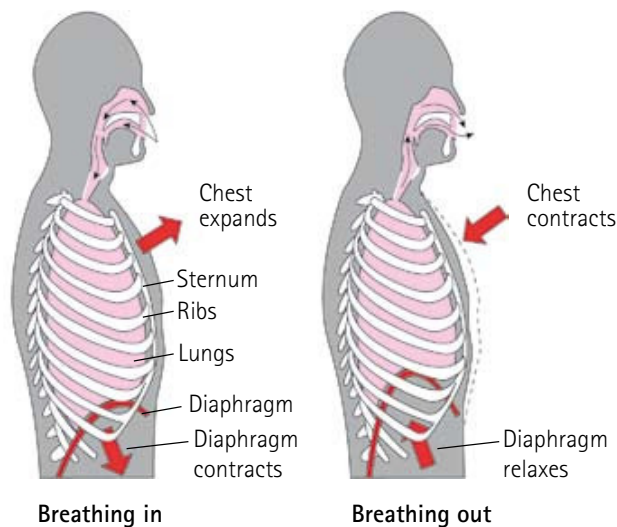


## How do you breathe?

The lungs are not a muscle and do not move on their own. The diaphragm is the main breathing muscle, acting like a pump.

When you breathe in, the diaphragm contracts and moves down. The muscles between the ribs also contract. The lungs expand, and air is drawn into the lungs.

When you breathe out, the diaphragm relaxes and moves back up. The muscles between the ribs relax. The lungs reduce to normal size and air is pushed out of the lungs.



## What is the role of the nose and nasal cavity?

The nose and nasal cavity perform a number of functions, including:

- Providing us with a sense of smell.
- Warming and moistening the air that is breathed in.
- Filtering the air that is breathed in of irritants, such as dust and foreign matter.
- Assisting in the production of sound.

The nose is the preferred route to deliver oxygen to the body as it is a better filter than the mouth. The nose decreases the amount of irritants delivered to the lung, while also heating and adding moisture (humidity) into the air we breathe.

When large amounts of air are needed, the nose is not the most efficient way of getting air into the lungs. In these situations, mouth breathing may be used. Mouth breathing is commonly needed when exercising.

Infection or irritation of the nasal cavities can result in swelling, a runny nose or blocked sinuses, which can interfere with breathing.

## How do your lungs protect against irritants or foreign particles?

The lungs provide protection against irritants or foreign particles entering the body. The lungs have several protection mechanisms. Firstly, the nose filters the air when breathing in, preventing irritants, such as dust and foreign matter from entering the lungs.

Secondly, if an irritant enters the lungs, mucus lines the airways and traps unwanted particles. Tiny hairs (*cilia*) line the air passages. They move in a sweeping motion to help move the mucus and unwanted particles up to the mouth where they can be cleared. The function of the tiny hairs can be affected by smoke, alcohol and dehydration.

The third protective mechanism for the lungs is the cough. A cough is the result of irritation to the breathing tubes (*bronchi* and *bronchioles*). A cough can clear mucus from the lungs.

Lastly, the lungs also have a built-in immune system that acts against germs.





This chapter will help you to understand:

- Chronic obstructive pulmonary disease
- Chronic bronchitis
- Emphysema
- Alpha-1-antitrypsin deficiency
- Asthma
- Bronchiectasis

### Your lung condition

Lung or respiratory conditions can be caused by:

- Acute or long-term breathing in of toxic agents (for example, cigarette smoke or chemical fumes).
- Infections.
- Genetic causes (for example, cystic fibrosis).
- Another disease, such as a muscular disorder, that impairs the function of the lungs.

### What is chronic obstructive pulmonary disease?

The term chronic obstructive pulmonary disease (COPD) is commonly used to describe a person who has chronic bronchitis, emphysema or a combination of these conditions. Chronic obstructive airways disease, or COAD, has also been used to describe these conditions.

Chronic bronchitis and emphysema are common long-term lung conditions that cause shortness of breath. Each condition can occur separately, but many people have a mixture of the two conditions. In Australia, chronic bronchitis and emphysema usually occur in people who have smoked or continue to smoke cigarettes, but they can be caused by environmental or genetic factors.

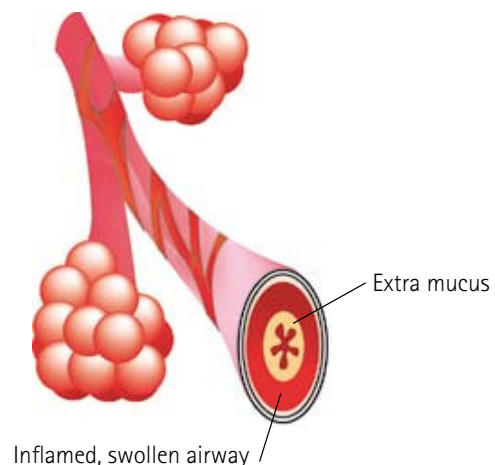
A small number of people can get emphysema from an inherited protein deficiency called alpha-1-antitrypsin deficiency.

*COPD is a term used to describe a condition that includes emphysema, chronic bronchitis or a combination of both.*

### What is chronic bronchitis?

Chronic bronchitis is a constant swelling and irritation of the breathing tubes (**bronchi** and **bronchioles**) and results in increased mucus production. This condition usually occurs as a result of infection and is often related to smoking. Chronic bronchitis is diagnosed if sputum is produced on most days for at least three months, for two consecutive years.

Airway obstruction occurs in chronic bronchitis because the swelling and excessive mucus production causes the inside of the breathing tubes to be narrower than usual. Frequent infections occur due to the increased mucus. As the airways become narrower, it is harder for air to move in and out of the lungs. Breathlessness can result.



### What is emphysema?

Emphysema is a condition where the air sacs (*alveoli*) become distended and the walls between them break down causing larger air spaces.

With emphysema, the breathing tubes (*bronchi* and *bronchioles*) become narrower and the lung tissue loses elasticity, which makes it harder to breathe the air out. As a result, air trapping (or *hyperinflation*) can occur.

The trapped air leads to an over-expansion of the lungs and is often called a barrel chest.

The combination of constantly having extra air in the lungs, and the extra effort needed to breathe, results in the feeling of shortness of breath.

However, not all air sacs are involved to the same degree, and only parts of the lungs may be affected.



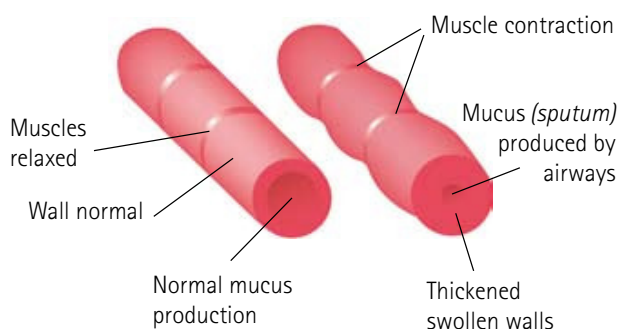
### What is alpha-1 antitrypsin deficiency?

Alpha-1 antitrypsin deficiency (AAT) is a genetic disorder that makes those with the disorder at greater risk of developing COPD. AAT is a substance normally present in the blood whose role is to protect the lungs from damage. Over the course of a lifetime, the delicate tissues of the lungs are exposed daily to a variety of inhaled materials, such as pollutants, germs, dust and cigarette smoke. AAT helps the body fight against the damage caused by these pollutants. The estimated 1 in 2,500 Australians with a deficiency of AAT have too low a level to protect the lungs from the damaging enzymes produced by the body in reaction to the pollutants. This puts them at greater risk of developing COPD.

Other lung conditions that commonly co-exist with COPD are asthma, bronchiectasis and interstitial lung disease. These are briefly explained below.

### What is asthma?

Asthma is a condition of chronic swelling of the airways. There are many factors that can trigger an asthma attack including infection, exercise and environmental factors, such as cold air or pollens.



Swelling of the airway wall and tightening of the muscles around the airway results in the narrowing of the breathing tubes (*bronchi* and *bronchioles*). Wheeze, chest tightness, breathlessness and cough are classic symptoms of asthma.

The swelling may produce an obstruction of the airways, similar to COPD. Some people have both COPD and asthma.

Asthma is often believed to be a disease that affects children and young adults. However, asthma is found in all age groups.

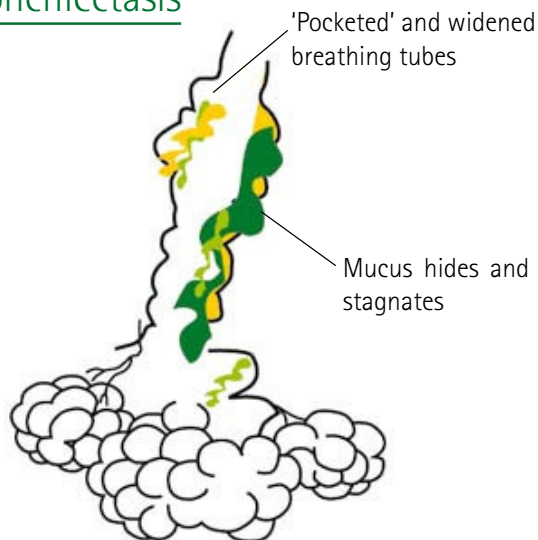
During an asthma attack, your airways become inflamed, swollen and blocked with sticky mucus (as shown in the following diagram). This makes breathing more difficult.

### COPD and Asthma

Because asthma and COPD have similar symptoms, it may be difficult to distinguish between the two conditions. We know that many of those with COPD may have asthma as well. We also know that many older Australians being treated for asthma, in fact have COPD.

Asthma and COPD have different causes, affect the body differently and are treated differently. It is important, therefore, to differentiate between asthma and COPD. The best way to do this is by having your doctor perform a lung function test (spirometry). See Chapter 5 "Lung function tests", page 12, for further information.

## Bronchiectasis



## What is bronchiectasis?

Bronchiectasis is a lung condition involving the destruction of the airways' inner lining and widening or dilatation of the breathing tubes (*bronchi* and *bronchioles*).

Bronchiectasis is not caused by cigarette smoking and is usually caused by a previous severe infection of the lungs.

Bronchiectasis is characterised by repeated episodes of acute bronchial infection with increased coughing and mucus (*sputum*) production. This alternates with periods of chronic infection and mild coughing.

In bronchiectasis, sputum becomes difficult to clear. Sputum can be trapped in 'pockets' within the breathing tubes, which can lead to further infections and damage to the airways.

Sputum is usually white and if it changes to yellow, brown or green, it usually means there is an infection.

The main treatments for bronchiectasis include: (1) airway clearance techniques to loosen and clear sputum and (2) prevention of further infections by vaccinating against infectious diseases, removing irritants and using aerosols and antibiotics when indicated.

## What is interstitial lung disease?

Interstitial lung disease refers to a group of lung conditions, including pulmonary fibrosis, in which the lungs harden and stiffen (become fibrosed).

During interstitial lung disease, the walls of the air sacs (*alveoli*) thicken, which reduces the transfer of oxygen (or other gases) to and from the blood.

Interstitial lung disease may be caused by immune conditions, asbestosis, exposure to chemicals or irritants, or have no known traceable cause (idiopathic).





This chapter will help you to understand:

- Why lung function tests are important in the diagnosis and treatment of chronic obstructive pulmonary disease.
- What the lung function tests are.

### Why are lung function tests important in the diagnosis and treatment of chronic obstructive pulmonary disease?

Lung function tests assist your doctor in the diagnosis and management of chronic obstructive pulmonary disease (COPD). The tests measure how well, and how much air, you breathe in and out of your lungs and how well oxygen enters your body. The most common tests are spirometry, gas transfer measurements and lung volume measurements.

You will probably have all of these tests done on your first visit to the specialist lung doctor. On following appointments to the doctor, you may only have a spirometry test so that the doctor is able to check how well your treatment is working.

To get the most accurate results from the breathing tests, you should NOT:

- Smoke for at least four hours before the test.
- Drink alcohol for at least four hours before the test.
- Exercise 30 minutes before the test.
- Wear tight clothing that may make it difficult for you to take in a deep breath.
- Eat a large meal two hours before the test.
- Take medication four hours before the test.

### What are the lung function tests?

#### **What is spirometry?**

Spirometry is the most commonly used test. This painless test measures the amount of air you are able to breathe in and breathe out, and how quickly you are able to breathe air out. Typically, if you have COPD, you will take longer to breathe all of your air out.

Spirometry is done by breathing in a machine called a spirometer and can take up to 20 minutes to do. The test is done after you have taken the biggest breath in and you will be encouraged to do your best by the person conducting the test.



Spirometry is often repeated after you have taken some breathing medications (for example, Ventolin® or Bricanyl®). This is done to find out if your lung function improves with these medications.

### What should I know before taking the spirometry test?

- You may be asked to not take your breathing medications on the day of the test. However, if you feel really breathless, take your breathing medications and let the person conducting your test know when you took your breathing medications.
- As effort is required to do this test, you may get tired. This is not unusual.
- The person conducting the spirometry test will give you instructions on how to do the test. If you do not understand them, ask for the instructions to be repeated or for a demonstration on how the test should be undertaken.
- You can sometimes become light-headed during the test. If this happens, stop breathing into the machine and let the person conducting your test know.
- To get the best results, you will be asked to do the test several times.
- Breathing test results vary according to a person's age, whether they are male or female, or short or tall, and their ethnic background.

The results of these breathing tests allow your lung function to be compared with people who are like you, but who do not have lung conditions.

Your breathing test results can be used to classify the severity of your lung condition. Different measurements are taken to assess your lung function.

The most important measures are:

1. **Forced Expiratory Volume in one second (FEV1).** This is the maximum amount of air that can be expelled from the lungs during the first second of breathing out following a maximal breath in.
2. **Vital Capacity (VC).** This is the maximum amount of air that can be expelled from the lungs while breathing out following a maximal breath in.
3. **Forced Vital Capacity (FVC).** This is the maximum amount of air that can be expelled from the lungs while breathing out forcefully. VC and FVC are equal in a normal lung but can differ in patients who have a chronic lung condition.
4. **FEV1/FVC.** This measures what proportion of FVC can be blown out in a second, that is. how quickly the lungs can be emptied. In people who have normal lungs, the result is 70% to 90% of the total forced capacity.

### What is a gas transfer measurement?

The gas transfer measurement is a test that measures how well oxygen in the air moves from your lungs across the air sacs (*alveoli*) and into your blood.

This test is done by breathing into a mouthpiece connected to a machine.

You will be asked to breathe out as much as you can, to take a large breath in, and to hold your breath for 10 seconds before breathing back into the machine. To get the best results, you will be asked to repeat the test.

This test will take about 15 minutes to complete.

Typically, if you have COPD, your results will be low, depending on how severe your condition is.

### What should I know before taking the gas transfer measurement test?

- If you are on oxygen, you will be asked to take the oxygen off for a few minutes before the test.

### What is a lung volume measurement?

The lung volume measurement is a test that measures the amount of air in your lungs. There are three measurements, which are taken:

- At the end of a normal breath.
- When you have taken in a deep breath.
- When you have blown out all the air.

No matter how hard you try, when you have blown out all the air, there is still some air left in your lungs and the amount of air that is left is what is measured.

Lung volumes are measured in a machine called a body plethysmograph, which is like a box with glass walls. This test is done in a box because very small pressure changes need to be measured while you are breathing.

During the test, you will sit in the box with the door closed and breathe through a mouthpiece attached to the machine.

During the test, you will be instructed to breathe normally through the mouthpiece. However, every now and then, you will be asked to breathe against a blockage and to also breathe all the air out and then take a large breath in. The test will take approximately 10 minutes to complete.

Typically, if you have COPD, your lungs will be a lot bigger than normal because of the amount of air trapped in your lungs (*hyperinflation*).

### What should I know before taking the lung volume measurement test?

- If you are on oxygen, usually you will be asked to come off the oxygen during the test.
- If you suffer from claustrophobia in small spaces, let the operator know. They may ask you to attempt the test as most people can do the test even if they have claustrophobia.





# chapter 6

## Managing your chronic obstructive pulmonary disease



This chapter will help you to understand:

- How you can help manage your chronic obstructive pulmonary disease.
- How to seek an accurate diagnosis that you and your family understands.
- How to adhere to your treatment plans.
- How to recognise when you are getting sick and what you can do about it.
- How you can participate in decisions concerning the management of your condition.

### How can you help manage chronic obstructive pulmonary disease?

Chronic conditions are becoming one of the greatest health challenges for Australia. For people living with a chronic condition, life can be a daily struggle.

Recent studies show that positive results can be achieved by people with chronic lung conditions, such as chronic obstructive pulmonary disease (COPD), who are involved in managing their own condition. People have reported 'feeling less breathless', 'feeling more in control of things' and requiring fewer visits to the doctor or hospital.

Effective management of COPD is based on a partnership between you, your family and your health care professionals. You will be required to take an active role in this partnership by:

- Seeking an accurate diagnosis and making sure that you and your family understand the diagnosis.
- Making sure you adhere to your treatment plans, which should include medications, diet, exercise and fun activities
- Developing an action plan to help recognise when you are getting sick, and know what you can do about it.
- Adjusting your lifestyle and behaviours to lessen symptoms and prevent loss of independence.
- Participating in decisions concerning the management of your condition.

*You may find it helpful to ask your doctor to help you fill in a COPD Action Plan. See page 101 for a template or visit The Australian Lung Foundation Website: [www.lungnet.com.au](http://www.lungnet.com.au)*

### How to seek an accurate diagnosis that you and your family understand

Communication is important when you have a chronic disease as you will need to ask lots of questions. You may find it helpful to write down your questions before you see the doctor or health care professional as some people can get flustered and forget what questions they wish to ask. You may need to get your doctor or health care professional to write the answers to your questions as well as provide additional information.

If you do not understand your doctor's or health care professional's explanation or answers, please let them know and ask them to explain the information again. Doctors and health care professionals often need to explain information several times, particularly when unfamiliar words or information are discussed.

### How to adhere to your treatment plans

When you have a chronic lung condition, you may experience difficulty managing all your treatments day after day. Support from both your family and support groups can help you to stay motivated and look after yourself. Setting yourself some goals can also help you to stay motivated.

### What is motivation?

Motivation explains why we do what we do – the reasons for our actions. For example, physiological motivators, such as hunger, motivate us to eat, and social motivators, such as fear, motivate us to look out for danger.

To stay on track with your goals:

- Know what your goals are – be realistic.
- Do the best you can with what you have.
- Simplify your life.
- Enjoy what you do.
- Take charge of your life.
- Be kind to yourself.
- Seek support from others.
- Start something – the energy will follow.

Some practical suggestions to help with your goals are:

- Locate your nearest LungNet support group by contacting The Australian Lung Foundation (phone: 1800 654 301).
- Ask a family member or friend to participate in your exercise and walking program, or join a maintenance group or local walking group. The Australian Lung Foundation or your local council should be able to give you the contact details for your local walking group.
- Make sure you understand the benefits of using the safety net card at the pharmacy. Where possible, always use the same pharmacist.

- Write on the calendar each month when your repeat prescriptions are due, so that you do not run out of medications.
- Ask your pharmacist about the medications for your condition.
- Ask your pharmacist, doctor or nurse to check your inhaled medication technique.
- Talk with a dietitian about your specific dietary needs.
- Reward yourself when you have done well.

### How to recognise when you are getting sick and what to do about it

People who have COPD and other lung conditions should understand the signs and symptoms of getting a chest infection or flare up. By seeking medical treatment early, developing and using a COPD Action Plan (see Appendix page 101) as discussed with your doctor, you can help to minimise the severity of your chest infection and may prevent being admitted to hospital.

### What are the warning signs?

- More breathless than normal.
- Coughing more often.
- Less energy for your usual activities.
- Loss of appetite.
- Change in amount of sputum.
- Change in colour of sputum, such as yellow-green or brown.
- Need for an inhaler or nebuliser more often than usual.
- Signs of fever or the first sign of a cold.

### What you can do when you become sick

- Commence your action plan.
- Contact your doctor as soon as possible.
- Reduce your activity level.
- Clear sputum with the cough and huff technique.
- Practice controlled breathing and relaxation techniques.
- Eat small amounts of nourishing food.
- Drink extra fluids.
- Use additional medication as planned by your doctor.

### What you can do to prevent flare ups

- Take good care of yourself by eating healthy foods, exercising and getting enough sleep.
- Take all the medications prescribed by your doctor.
- Talk to your doctor about creating a written action plan for you to deal with flare ups. (Samples of action plans are included in the Appendix of this Patient Guide. A copy of The Australian Lung Foundation 'COPD Action Plan' can be downloaded from the following Web site: [www.copdx.org.au/checklist/index.asp](http://www.copdx.org.au/checklist/index.asp).)
- Get a flu vaccination every autumn.
- Get the pneumonia vaccination every five years.
- Avoid contact with people with colds and infections.
- Avoid triggers that can make COPD worse (for example, air pollution, cigarette smoke and breathing very cold or very humid air).

## How can you participate in decisions concerning the management of your condition?

Your chronic condition may change over time. As different symptoms occur, you will need to recognise these changes and talk to your doctor about adapting to these changes.

When your condition changes, you will need to work with your doctor and health care professional to problem solve and make a decision on what to do.

Most life problems can be handled adequately in a number of ways, some of which may be better than others. Following, are some tips for successful problem solving:

- Accept that problems are a normal part of living.  
When you have done this, you can put your energy into solving the problem.
- Work at coping with problem situations. There may be no ideal solution, but you can often work at improving the situation.
- Learn to recognise when you have a problem.  
When you do have a problem, then decide if you need to do something about it.
- Resist the urge to act impulsively. Take time to sit down and look at your options before acting.
- Tackle the problem in manageable steps. When you are stressed, the tendency is to look at all your problems at once, throw up your hands and say 'that's too much to cope with...I give up!' Break the problem down into smaller steps and take one step at a time.

- Prioritise. Work out what is most important for you at this stage.
- Write down your problems. Your problems will appear clearer when they are on paper.
- Reward yourself. Even if you don't solve the problem the first time, at least you have tried.

## In summary

Learning to live well with a chronic condition is possible. Coping with a chronic condition involves skills training, learning to manage a number of symptoms, and consciously assessing and making lifestyle changes.

Regular communication between you, your family and your health care professional is essential.

You can take an active role in managing your disease by using the skills you have been taught. As you use these skills to problem solve and make decisions, your confidence in your ability to manage your chronic lung condition will improve. The more your confidence grows, the easier it will be to manage your chronic lung condition.



# chapter 7

## Introduction to pulmonary rehabilitation



This chapter will help you to understand:

- What pulmonary rehabilitation is.
- How pulmonary rehabilitation will help you.
- What pulmonary rehabilitation involves.
- How to enrol in a pulmonary rehabilitation program.
- What happens after you finish a pulmonary rehabilitation program.

### What is pulmonary rehabilitation?

Pulmonary rehabilitation is a program of education and exercise classes. These education and exercise classes will teach you about your lungs, how to exercise, how to do activities with less shortness of breath and how to live better with your lung condition.

Pulmonary rehabilitation programs involve patient assessment, exercise training, education, nutritional intervention and psychosocial support.

Pulmonary rehabilitation involves a team approach with the participants working closely with their doctors, respiratory nurses, physiotherapists and other allied health team members.



### How will pulmonary rehabilitation help me?

The education classes in pulmonary rehabilitation programs cover many topics including:

- Information about your lungs.
- How your medications work.
- When to call your health care professional.
- How to keep yourself from being hospitalised.

During a pulmonary rehabilitation program, you will meet other people who have breathing problems. The program gives you time to share with other people concerns and approaches to living with breathing problems.

*Pulmonary rehabilitation programs have been shown to help people breathe easier, improve their activity and quality of life, and stay out of hospital. After completing pulmonary rehabilitation, many patients find they can resume activities that they had previously given up.*

The exercise classes in pulmonary rehabilitation programs will help you to be more active and improve your fitness. The exercise classes will also help you to feel better and become stronger by helping you get into better shape. The exercise classes will involve using both your arms and legs.



### What does pulmonary rehabilitation involve?

A pulmonary rehabilitation program typically runs for at least six weeks with two sessions per week. Each session will usually involve a group education session (for example, lectures, demonstrations or discussions) followed by an hour of supervised exercise.

At the start of the pulmonary rehabilitation program, your medical history will be obtained and your fitness level will be assessed, usually through a walking test. From this assessment, an exercise program will be set for you at your fitness level. Another assessment will be done at the end of the program.

### How do you enrol in a pulmonary rehabilitation program?

The criteria to enrol in a pulmonary rehabilitation program will vary among centres. Some pulmonary rehabilitation programs will require a doctor's referral, whereas others will allow you to enrol yourself. Some programs may have restrictions on who can be referred. Some programs restrict enrolment to people who have previously quit smoking, whereas others may offer help to quit smoking as part of their program.

You should discuss the benefits of enrolling in a pulmonary rehabilitation program with your specialist lung doctor, GP, physiotherapist or respiratory nurse.

To find out more information about pulmonary rehabilitation, or where your nearest pulmonary rehabilitation program is located, contact The Australian Lung Foundation (phone: 1800 654 301, or Web site: [www.lungnet.com.au](http://www.lungnet.com.au)).

### What happens after you finish a pulmonary rehabilitation program?

What you learn and practice during a pulmonary rehabilitation program should carry over into your daily life after the program finishes. To maintain the benefits you have achieved, it is very important that you continue with your exercise program. Many pulmonary rehabilitation programs offer a maintenance program so that you can continue to exercise with others. See Chapter 9 for a sample exercise program you can do at home.

# chapter 8

## Breathlessness, breathing control and energy conservation



This chapter will help you to understand:

- What the causes of breathlessness are.
- How to better control or reduce your breathlessness.
- Why energy conservation is important.
- How you can conserve your energy.

### What are the causes of breathlessness?

#### Who becomes breathless?

Breathlessness (or *dyspnea*) is common in people with lung or heart conditions as well as in people who are overweight or unfit.

People who are overweight or unfit will have to work harder during everyday activities and, as a result, will fatigue more quickly.

As people get older, their lung function declines owing to changes in their lungs, their chest wall and the strength of their breathing muscles. These changes contribute to older people becoming more breathless when performing activities.

#### How do people feel about their breathlessness?

In mild forms of lung conditions, breathlessness may occur when walking up hills or stairs, but in severe forms, breathlessness can occur when walking slowly along flat ground or even at rest.

Daily activities become more difficult as the lung condition gets worse. It is not surprising that people who have chronic obstructive pulmonary disease (COPD) can become frustrated, anxious and depressed. These emotions can make breathing problems worse.

Importantly, for people who have lung conditions, such as COPD, there are things they can do to make their life better. These steps are outlined throughout this Patient Guide.

#### When do you notice your breathing change?

We are not usually aware of our breathing, but there are times when we do become aware.

The breathing centre in the brain is constantly receiving signals from your body about the amount of oxygen that is needed.

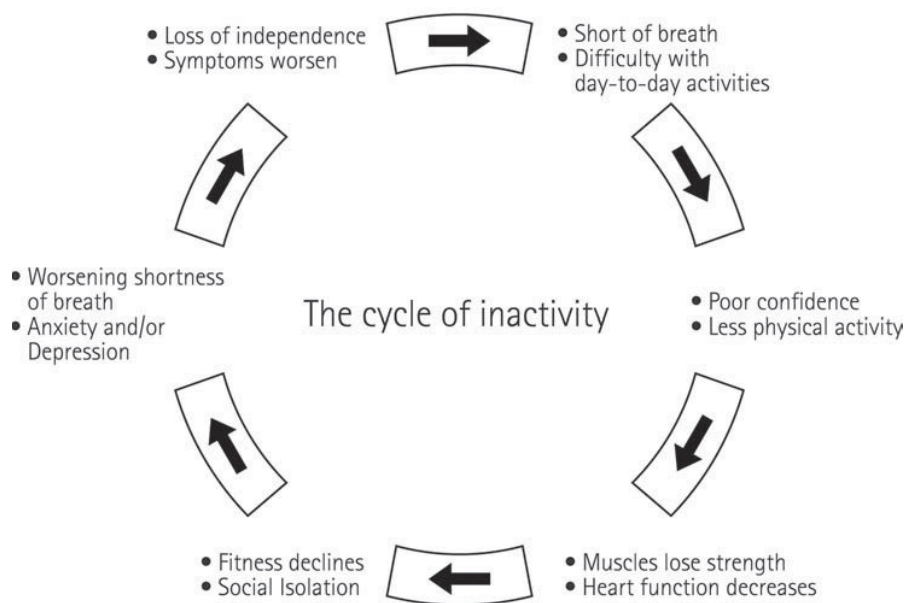
The oxygen requirements of your body will depend on many factors, such as:

1. The **severity** of your lung condition and the ability of air to pass through your lungs.
2. The **level of activity** you are currently doing will affect the amount of oxygen your body will need. For instance, when you are sleeping or resting quietly, the oxygen demand is less than when performing strenuous activities, such as walking up stairs or hills.
3. Your **fitness** or **conditioning** will also affect your oxygen requirements during an activity. A person with a better fitness level will generally be more efficient in moving oxygen around their body, and their muscles will require less oxygen to do the same activity, than a person who is unfit.
4. **Stress** or **anxiety**, or a **low mood**, can affect your breathing rate and oxygen requirements. These mood states can make you focus on your breathlessness and make you more aware of your breathing.
5. If you are **unwell** or have an exacerbation or flare up of your condition, more effort is required to breathe.

### Chronic obstructive pulmonary disease and breathlessness



COPD affects both the lungs and the body. As a result, breathlessness can be caused by a combination of reasons:

1. In COPD, the lungs **lose their natural elasticity** as they become damaged and over-expanded. This can make it harder for someone who has COPD to breathe air out fully.
2. As a result of being unable to breathe air out fully, the 'trapped' air leads to an over-expansion of the lungs. This is often called a barrel chest (**hyperinflation**). Hyperinflation changes the way your muscles and chest wall work. The breathing muscles of a person who is hyperinflated will have to work harder and as a result, will fatigue more quickly. Other muscle groups can be used to help people breathe; these muscles are known as **accessory muscles**. The neck muscles are an example of these accessory muscles.
3. The muscles used for breathing, like all muscles in the body, require oxygen to be able to work. A person who has COPD may have a **higher oxygen requirement** just to continue breathing.
4. The **narrowing or swelling of the airways**, in combination with producing larger amounts of mucus (*sputum* or *phlegm*), can restrict the flow of air in and out of the lungs. Airway clearance techniques can help to keep the airways clearer and assist in making breathing easier.
5. When you are living with COPD, you may be unable to continue your normal exercise routine, which can result in a cycle of inactivity (see the following diagram). Frequently, this will lead you to reduce your physical activities, causing you to become unfit or poorly conditioned. Being **unfit or poorly conditioned** makes your movements less efficient and requires greater effort to complete everyday activities.
6. People who have COPD often experience **increased anxiety** about becoming breathless or short of breath. This anxiety can lead to a fear of undertaking activities.



### Percentage of total body oxygen used for breathing

The following table demonstrates the percentage of total body oxygen used for breathing by a healthy person and a person who has COPD. Please note that this table reflects how people who have COPD work harder to breathe.

Healthy Person		COPD Person
4%	 Resting	15%
10% to 15%	 Exercising	35% to 40%

## How to better control or reduce your breathlessness

There are many treatment options and management strategies that can help you control or reduce your breathlessness.

### 1. Medication

Using your reliever and preventer medication can assist in controlling breathlessness. It is important that medications are used correctly to ensure their effectiveness.

For more details on medications and inhalation devices, refer to chapters 12 'Knowing your medication' on pages 56 to 60 and 13 'Inhalation devices' on pages 62 to 70.

### 2. Relaxed breathing

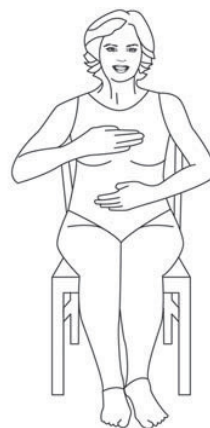
People who have COPD have more difficulty breathing out fully. However, the body's normal reaction when breathlessness occurs is to breathe faster and shallower. Breathing faster and shallower, however, is not an effective way to get control of breathing.

You could practice relaxed breathing any time you are trying to catch your breath. For example, relaxed breathing may be useful after coughing or exercising.

Aim to breathe out slowly and without force. As you breathe out, let your shoulder and neck muscles relax. Most of your breathing should occur by the lower ribcage expanding and relaxing, rather than in the upper chest.

By breathing out fully, you will be able to breathe in better. You may find it useful to practice relaxed breathing at rest so that you are familiar with the technique when you are breathless.

To practice relaxed breathing, place one hand on your chest and one on your stomach at the level of your navel while sitting. When you take a deep breath in, the hand on your stomach, rather than the hand on your chest, should move first. Practice breathing so that the hand on your stomach moves first:



- Take slow breaths, breathing in through your nose and breathing out through your mouth.
- Try different rates of breathing to find a rate that suits you – count to yourself as you breathe in, hold and breathe out.
- Practice doing 5 to 10 relaxed breaths, 5 to 10 times a day.
- Practice relaxed breathing at rest so that you are familiar with the technique when you are breathless.

### 3. Prolonged expiration breathing

The purpose of prolonged expiration breathing is to try to reduce the amount of air trapped in the lungs and reduce airway collapse by prolonged breathing out (*unforced expiration*). Breathing out should take longer than breathing in.

Breathing out through pursed lips is an example of this technique. Pursed lips (lips that are closer together than usual as if you were whistling) create a smaller opening for the air to flow through.

### 4. Recovery positions

Good posture is very important. The more you slump, the more you squash your lungs and abdomen, and the harder it is to breathe.

Try taking a deep breath while slumped. Now try again while standing or sitting fully upright with a tall spine. Can you notice a difference?

A comfortable recovery position is important. Typically, recovery positions are upright with your arms supported. Common examples of recovery positions are shown in the following images:



Resting against a desk

Resting against a wall



Resting against a rail

Resting while seated

### 5. Pace yourself

This is a very important skill and is often overlooked. If you have breathing problems and are noticing that you are more short of breath than previously, you will need to slow down to get your tasks done.

If you rush and try to beat the shortness of breath, you will spend longer trying to catch your breath. If you go slowly and pace yourself, you will go a lot further before needing a rest. For example:

- While **walking**, try to establish a pattern of breathing that matches your steps and that you can maintain easily. For example, you may breathe with every step or over a number of steps depending on your level of breathlessness and fitness.

If you **change** your pace of walking, you will need to adjust your breathing pattern.

- Before you begin **climbing stairs** or **walking up hills**, it is important to gain breathing control. Do not hold your breath and rush through the task to 'get it over with' as this will only make you more short of breath.

Aim to find a rate of breathing that matches your effort. If you find an activity too hard to do, simply stop and recover before restarting the activity at a slower pace.

- While bending and stooping, aim to breathe out as you bend over.

### 6. Improving your fitness

Better fitness levels or improved tolerance to exercise will enable a decrease in the effort required to perform everyday activities.

### 7. Managing your anxiety

Learning how to manage or control your anxiety, or situations that cause your anxiety, can assist your breathing control (see Chapter 15 'Managing stress and anxiety', page 76).

## Why is energy conservation important?

If someone has a chronic lung condition, the lungs are less efficient in meeting the body's demand for oxygen. As a result, the body's energy supplies become more limited.

With limitations in energy supplies, a person with a chronic lung condition can become more fatigued or short of breath with normal activity, and may possibly experience anxiety or panic with these activities.

By learning to conserve energy with everyday tasks, you will be able to perform many activities with less effort and shortness of breath.



With a little extra thought and planning, you can save energy for the activities you enjoy most, and do the activities that are important to you.

### How can you conserve your energy?

#### Control and coordinate your breathing with daily activities

- Coordinating your breathing pattern will ensure that you are able to control your breathing rate when working on daily tasks.
- If you go slowly and pace yourself, you will go a lot further before needing a rest. If you rush and try to beat the shortness of breath, you will spend longer trying to catch your breath.
- Do not hold your breath, as this reduces the amount of oxygen available to your heart, lungs and body.
- When you are feeling short of breath, use recovery positions to help regain control of your breathing (see the recovery positions on page 25).

- Examples of how to coordinate your breathing with tasks include:
  - **When standing up from a chair or bed**, breathe in deeply and then breathe out slowly through pursed lips as you rise to your feet.
  - **When lifting a bag of groceries**, breathe in deeply and then lift while breathing out slowly.
  - **When reaching up to a clothesline or a top shelf**, breathe in deeply and then breathe out as you reach up.
  - **When pushing a broom, vacuum or trolley**, push the object while breathing out slowly. Stop and rest while breathing in. Continue the pushing action while breathing out.

#### Make the best of how your body is designed to work

- Reduce bending and reaching:
  - Work at benches that are at waist height.
  - Store commonly used items on middle shelves between your waist and shoulders.
  - Use long handled aids (for example, long handled reachers, long handled pruning shears, a broom, a dressing stick, a sock aid and a bathing brush).
  - Bring your feet to you (for example, rest your feet on your knees to put on socks, towel dry and tie up your laces).
- Work close to the load:
  - Carry objects close to your body.
  - Organise equipment or food to be within easy reach.
  - Use a trolley to carry heavier items.
- Let your bigger muscles do the work:
  - Squat with your legs, and avoid bending your back.
  - Push rather than pull objects.
  - Use your hips to close drawers or doors.
- Avoid long term muscle strain:
  - Rest your arms frequently if working overhead.
  - Use a trolley if carrying heavy items for an extended time.
  - Ask for help to shift items.
  - Move or lift lighter loads (for example, divide the load of groceries, half fill the kettle).

### Sit to perform activities

- Sitting to perform activities will decrease your energy use compared with standing during the same task.
- Sitting as a position of rest will promote a better posture for breathing.
- When possible, consider sitting while ironing, washing dishes, showering, chopping vegetables, gardening, making a phone call or working in the shed.
- Keep a high stool or chair for you to use in your kitchen or at your work bench.
- When sitting, the surface at which you work should be about the level of your bent elbow. Do not sit in an awkward position. Make sure there is a space below your work area for your knees. Keep the feet firmly on the floor.

### Plan and prepare before you perform tasks

- Set realistic goals:
  - High expectations can lead to frustration, so be patient with yourself.
  - Take breaks during jobs .
  - Break jobs into smaller, more do-able tasks.
- Set priorities:
  - Make a list of goals for the day and tick them off as you do each one. Include activities that are rewards as well as routine chores.
  - Ask yourself 'Is it essential that this task be performed today?'

- Challenge old habits. Ask yourself 'Is it essential that this task be performed in the usual way. How can I make it simpler to perform?'  
For example, let dishes air dry rather than wiping them dry.
- Plan ahead:
  - Consider the best time of day for you to do a task.
  - Be aware of the cumulative effect of effort (for example, your body fatigues more easily as the day progresses or when you do more activities).
  - Allow time for interruptions or the unexpected.
  - Use a diary or calendar to plan activities.
- Pace yourself:
  - Use slow, rhythmic movements.
- Alternate light and heavy activities:
  - Spread heavier tasks throughout the day, week and month.
- Schedule in rest breaks:
  - Stop before you become exhausted – frequent short breaks will enable you to work longer.
- Delegate:
  - Learn to ask for help, or get someone else to do the task, such as family members, community services, neighbours, volunteers or friends. Asking for help does not mean you are dependent, it means you are using your energy to its best advantage.

## Better Living with COPD

### Organise your environment and equipment

- Avoid extremes of temperature:
  - Where possible, control the temperature in your environment.
  - Use a fan or air conditioner where possible, stay in the cool or warm part of the house, and reduce the time spent in steamy or humid bathrooms when showering.
  - Avoid strenuous tasks particularly in hot weather.
  - Avoid build up of fumes (for example, perfumes, paints and cleaning agents).
- Organise your space:
  - Put items where they can be found easily and quickly.
  - Keep most used items between waist and shoulder level.
  - Keep multiple items in the house (for example, put bins, pens and tissues in rooms that are often used).
- Use equipment that makes the job easier:
  - Such equipment includes light weight crockery, long handled reachers, long-handled garden equipment, stools, trolleys, velcro shoes, buttonless shirts and clothes that don't need ironing.





This chapter will help you to understand:

- Why it is important to maintain or improve your fitness.
- How you can benefit from exercise and physical activity.
- What the recommended guidelines for exercise are.
- What to do if you are unwell.
- How you can maintain your fitness level.

### Why is it important to maintain or improve my fitness?

People who have chronic lung conditions are often less active and can lose their fitness and muscle strength. By exercising regularly, a person's fitness and muscle strength can be maintained or improved.

People who have chronic lung conditions and who exercise regularly, such as walking or cycling for more than two hours per week, can improve their health. As a result, they will feel better and stay well.

The benefits from pulmonary rehabilitation, such as improvements in exercise performance or quality of life, have been shown to decline gradually over 12 to 18 months after stopping.

Therefore, to maintain the health benefits of pulmonary rehabilitation, it is very important to keep exercising. If your exercise program stops, you lose fitness and muscle strength very quickly.

### How can you benefit from exercise and physical activity?

Exercise will help to:

- Make your heart stronger and healthier.
- Improve your arm, body and leg muscle strength.
- Improve your breathing.
- Clear mucus (or *sputum*) from your chest.
- Reduce your breathlessness during daily activities.
- Increase the number of activities that you are able to do each day or each week.
- Improve your balance.
- Improve your mood and make you feel more in control.
- Make you more independent.
- Assist your weight control.
- Improve your bone density.

Talk to your doctor, physiotherapist or The Australian Lung Foundation about local programs available to you to help maintain your exercise program.

*People who exercise regularly can reduce their need for hospital admission.*

### What are the recommended guidelines for exercise?

#### What is involved in an exercise program?

An exercise program should include:

1. An **aerobic program**. Ideally, the aerobic program should involve a **walking program** as this is the most relevant exercise for daily living. Other types of aerobic exercise can include cycling, riding an exercise bike or even using a rowing machine. You could use these exercises to add variety to your program or when you have difficulties with walking (see page 35).
2. A **strength training program**, which will keep your muscles strong and prevent some of the effects of having a chronic lung condition. Strength training should include exercises for your arms, torso and legs (see page 39).
3. A **stretching program**, which can help you to maintain your flexibility (see page 37).

#### Exercise guidelines

- Exercise regularly – aim for a minimum of three sessions per week.
- Aim to exercise for at least 20 to 30 minutes per session.
- Aim for moderate intensity.
- Wear comfortable clothing and footwear.
- Ensure you drink enough fluids while exercising.

#### What if I am on oxygen?

If you are prescribed oxygen therapy and you have low oxygen levels in the blood when you exert yourself, wearing oxygen can help you tolerate the exercise more easily.

Never turn your oxygen up higher than prescribed for exercising unless you have discussed this with your doctor or physiotherapist first.

When exercising, be careful to avoid tripping and falling on your oxygen tubing.

#### General precautions

- Avoid strenuous exercise if you have a fever, an infection or the common cold. Restart your program at a lower intensity if your exercise routine is interrupted.
- Do not exercise immediately after a big meal.
- Do not exercise in extreme heat or cold.
- Take your bronchodilators (inhaled reliever medications that open the airways) before exercising.
- Use recovery positions to reduce breathlessness (see page 25)

### Getting started with your exercise program

You may find it better to exercise using an interval program rather than trying to exercise continuously.

For example, an interval program might be: walk for one to two minutes, rest for one minute and then walk again. You may need to repeat this 10 or 20 times to achieve at least 20 minutes of total walking time.

Interval exercise programs have many advantages. These include helping you to tolerate your exercise routine better as well as enabling you to exercise at a higher intensity, which should give you a greater improvement in your fitness.

### How often should you exercise?

Exercise should be part of your weekly routine, and you should plan enough time to fit this into your week.

You should exercise for a minimum of three days per week. Anything less will not allow you to improve your fitness.

### How hard should you exercise?

When attending your pulmonary rehabilitation program, your physiotherapist will assess your tolerance to exercise at the start of the program. From this assessment, you will be prescribed a program at the right level for you.

There are many ways to prescribe a training intensity for your exercise program:

1. **Your level of breathlessness** can be measured during an activity and rated against the Borg or modified Borg scale (see the following diagram).
2. Your physiotherapist can set you an exercise program at 60% to 80% of an **exercise test**. The exercise test, such as a six minute walking test or shuttle walking test, may have been done at the start of your program.
3. Exercising at a percentage, such as 60% to 80%, of **your maximum heart rate**. This method is generally not the best way to measure training intensity for people who have lung conditions as usually they are limited by their breathlessness.

These scales can be used to guide training intensity and to set personal goals for exercise.

Modified Borg scale		or	Borg scale	
			6	
			7	Very very light
			8	
0	Not short of breath		9	Very light
0.5	Very very slightly		10	
1	Very slightly		11	Light
2	Slightly		12	
3	Moderately	Training Zone	13	Somewhat hard
4	Somewhat severe		14	
5	Severe		15	Hard
6			16	
7	Very severe		17	Very hard
8			18	
9	Very very severe		19	Very very hard
10	Maximal		20	

*Adapted from: Borg G. Perceived exertion as an indicator of somatic stress. Scand J Rehab Med. 1970;2:92-8; Borg G. Psychophysical bases of perceived exertion. Med Sci Sports Exer. 1982;14:377-81; Mahler D. The measurement of dyspnea during exercise in patients with lung disease. Chest. 1992;101:242-7.*

#### Danger signs

If you experience any of the following symptoms when you are exercising, stop and rest immediately:

- Chest pain.
- Dizziness or feeling faint.
- Extreme shortness of breath.
- Excessive wheezing.
- Coughing up blood.

## Better Living with COPD

### What are some other activities that you can choose?

If you are bored with walking or are looking for variety, you can always consider other alternatives that might interest you. You might like to consider gardening, bush walking, dancing, playing golf, lawn bowls and water-based exercise.

### What if you are unwell?

If you find it hard to do your usual exercise program, this can be an early warning sign that you are becoming ill.

When you are unwell, your body is working harder to fight off the infection, and your breathing may become more difficult. Therefore, you should not be exercising as hard as you would normally.

### Why do you lose your fitness when you are unwell?

People who have chronic obstructive pulmonary disease (COPD) and who are unwell or have an exacerbation or flare up of their symptoms:

- Are less active in their day and spend more time sitting or lying down, and less time standing and walking than they would normally do.
- Lose muscle strength and conditioning as a result of this forced inactivity.

After an illness, you can take several months to regain your fitness level and muscle strength. This is true of all people who experience an illness and subsequent loss of fitness. But it is particularly true for those with COPD.

### What should you do to prevent losing your fitness?

The severity of an illness or exacerbation of an illness (or flare up) will affect the exercise level you are able to do.

Generally, the aim is to not exercise as hard as usual. Instead, you could:

- Walk at a slower speed (that you can tolerate) and use more rest breaks.
- Ride an exercise bike rather than going for a walk. You are moving less body weight while riding an exercise bike; therefore, it should be easier to do.
- Do a strength training program for your arm and leg muscles.



## How can you maintain your fitness?

As discussed earlier, maintaining your physical fitness has been shown to improve your health.

By completing a pulmonary rehabilitation program, you should have established an exercise routine that is suitable for you. Once you have completed your pulmonary rehabilitation, it is important to continue with your exercise routine.

There are a variety of options available that can assist you in maintaining your fitness, including:

1. Enrolling in a **maintenance exercise program** following the completion of your pulmonary rehabilitation program. For information on a maintenance exercise program near you contact The Australian Lung Foundation (phone: 1800 654 301, or Web site: [www.lungnet.com.au](http://www.lungnet.com.au)).
2. Joining a **community-based walking group**. These walking groups are based at your local parks or shopping centres. For further information regarding the walking groups available in your area, contact your local council, your local shopping centre or The Australian Lung Foundation (phone: 1800 654 301, or Web site: [www.lungnet.com.au](http://www.lungnet.com.au)).
3. Joining a **local gym or community group**. This can provide you with some support while you continue to exercise regularly.
4. **Exercising regularly with someone else**. This is another simple way to commit to maintaining your fitness. This option can work quite well, providing the individuals have similar exercise goals.

5. Participating in a **home exercise program**.

Some people may prefer to exercise on their own.

A **home exercise program** can be effective if the person makes this part of their daily routine.

Using an exercise recording sheet or an exercise diary can help to make this a regular commitment (see the following aerobic exercise recording sheet and strength training sheet on pages 35 and 36, respectively).





## Better Living with COPD

### Aerobic exercise recording sheet

To use your exercise recording sheet, write your prescribed exercise program in the columns as follows: the type of aerobic exercise (for example, walking or riding an exercise bike) in the Mode column, the distance or speed of the exercise (for example, 500 metres) in the Distance column and the total exercise time or the intervals (for example, two sets of 10 minutes) in the Time column. Once you have completed the exercise, tick the box corresponding to the day of the week that you completed the exercise.

Mode	Distance	Time	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
for example			✓		✓		✓		✓		✓		✓		✓	
Walk	500 metres	2 x 10 mins														



## Better Living with COPD

### Strength training sheet

To use your strength training sheet, write your prescribed exercise program in the columns as follows: the exercise to be performed (for example, squat) in the Mode column, the load (for example, no added weight) in the Load column, the number of sets and repetitions of each exercise (for example, 2 sets of 10 repetitions) in the Number column. Once you have completed the exercise, tick the box corresponding to the day that you completed the exercise. Samples of strength training exercises are shown on pages 39 -41.

Mode	Load	Number	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
for example																
Squat	no weight added	x 10 repetitions	✓		✓		✓		✓		✓		✓		✓	

# Better Living with COPD

## Examples of a stretching program

These stretches should be performed a few times each week. A stretching program should be performed before and after the aerobic and strength program.

### 1. Side neck stretch

- Slowly tilt head towards one shoulder
- Hold for 10 seconds
- Repeat two to three times
- Repeat toward other shoulder



### 2. Shoulder rotation

- Place hands on your shoulders as shown
- Slowly make forwards and backwards circles with your elbows
- Repeat five times each way



### 3. Thoracic stretch

- Hold hands behind your back as shown
- Move your hands away from your back
- Hold for 20 seconds
- Repeat two to three times



### 4. Shoulder stretch

- Gently pull on your elbow with your other hand until a stretch is felt in the shoulder
- Hold for 20 seconds
- Repeat two to three times



### 5. Triceps stretch

- Gently pull on raised elbow until a stretch is felt in the arm
- Hold for 20 seconds
- Repeat two to three times



### 6. Side stretch

- Reach one arm straight over your head
- Lean to that side as far as is comfortable
- Hold for 20 seconds
- Repeat two to three times



### 7. Quadriceps stretch

- Pull your foot towards your buttock until a stretch is felt in the front of your thigh
- Hold for 20 seconds
- Repeat two to three times



### 8. Hamstring stretch

- Place your foot on a block
- Slowly lean forwards until you feel a stretch in the back of your thigh
- Hold for 20 seconds
- Repeat two to three times



### 9. Calf stretch

- Place hands on a wall or a bench
- Slowly lean forwards until you feel a stretch in the back of your thigh
- Hold for 20 seconds
- Repeat two to three times



### Balance retraining

As you get older, your balance may be affected. As a result, you may find it useful to do some balance retraining exercises.

Please discuss balance retraining with your physiotherapist as they can give you exercises that are appropriate to strengthen your balance.

## Strength training program

There are many different types of exercise programs available. This is an example of a strengthening program. Please discuss with your physiotherapist or exercise physiologist about a suitable program for you to do.

- Aim to do three sessions per week of the following strengthening exercises.
- Aim to achieve muscle fatigue between 6 and 10 repetitions. If you have not achieved muscle fatigue after 10 repetitions, then you may need to either add arm or leg weights to the exercise or increase the weight of the arm or leg weights.
- If you find doing all the exercises at each session is too much, you can split the exercises in half and do them on alternate days. For example:
  - Day 1: You may choose to do the bicep curl, wall push up or bench press, lateral pull down, leg press or squat, and step ups.
  - Day 2: You may choose to do the shoulder press, sit to stand, standing row or seated row and lunge.

## Examples of strength training

Skeletal muscle weakness is present in people with COPD and this weakness can affect lower and upper limb strength. Strengthening these muscles is important as these muscles are used on an everyday basis.

### 1. Biceps curl

- Hold the arm weight at your side
- Curl arm towards your shoulder
- Do 6 to 10 repetitions for each arm
- Do one to three sets



### 2. Shoulder press

- From the start position (sitting or standing), press the arm weight upwards to straight arms
- Do 6 to 10 repetitions
- Do one to three sets



start

### 3. Wall push up

- From the start position, lean into the wall then push up away from wall
- Do 6 to 10 repetitions
- Do one to three sets
- To progress move feet away from the wall



start

OR

### 4. Bench press

- From the start position, press the arm weight upwards to straight arms
- Do 6 to 10 repetitions
- Do one to three sets



start

### 5. Standing row

- Lean forward onto a chair or bench
- From the start position, lift the arm weight up to your chest
- Do 6 to 10 repetitions
- Do one to three sets



start

OR

### 6. Seated row

- From the start position and while keeping your back upright, pull your arms to your chest
- Do 6 to 10 repetitions
- Do one to three sets



start

### 7. Lateral pull down

- Lean back slightly
- Pull bar down towards the front of your chest
- Do 6 to 10 repetitions
- Do one to three sets



### 8. Sit to stand

- Sit on the edge of your chair
- Stand upright
- Do 6 to 10 repetitions
- Do one to three sets
- Progress to not using your arms



### 9. Squat

- Stand with your legs shoulder width apart
- Lower your body as if you are sitting on a seat
- Do not bend your knees beyond 90 degrees
- Do 6 to 10 repetitions
- Do one to three sets
- To progress hold hand weights and repeat exercise



### 11. Step ups

- This activity can be either a strength or an aerobic exercise.
- For strength:
  - Do 6 to 10 repetitions
  - Do one to three sets
  - To progress hold hand weights and repeat exercise
- For aerobic:
  - Do a one minute set of step ups, then rest for one minute
  - Repeat 5 to 20 times depending upon your fitness



start

### 10. Leg press

- From the start position, press legs forward until knees are straight
- Do 6 to 10 repetitions
- Do one to three sets



start

### 12. Lunge

- Stand with a wide stride
- Bend both legs until forward thigh is parallel with the ground
- Do 6 to 10 repetitions
- Do one to three sets
- To progress hold hand weights and repeat exercise



## chapter 10

# Stopping smoking and preventing a relapse



This chapter will help you to understand:

- Why it is important to stop smoking.
- What nicotine addiction is.
- Why you shouldn't use nicotine to cope with stress.
- The options available to help you to stop smoking.

### Why is it important to stop smoking?

Many people who attend a pulmonary rehabilitation program have already been able to stop smoking. If that is you, congratulations!

Stopping smoking is important because it is the single most important step in slowing the progression of chronic obstructive pulmonary disease (COPD).

Tobacco smoking is responsible for over 19,000 deaths in Australia each year and is widely regarded as the most preventable cause of chronic conditions.

Smoking is the major cause of COPD.

### What is nicotine addiction?

Nicotine addiction is now recognised as a medical condition, rather than a bad habit.

As such, people who were once heavily addicted to nicotine have the potential to relapse to this disease-like state and become a smoker again.

People who stop smoking still have the receptors in their brains that were once 'hooked on' nicotine.

These receptors lie dormant, waiting to be turned on again by just one cigarette. If these receptors are turned on again, the addiction cycle can start again.

As a result, people who relapse and make another attempt to stop smoking can, once again, experience the unpleasant symptoms of nicotine withdrawal. These symptoms include strong cravings or urges to smoke, anxiety, agitation and depression.

Although many ex-smokers report being able to remember how much they enjoyed smoking, the actual physical addiction to nicotine is no longer active. Fortunately, just having these thoughts doesn't mean you will have cravings or urges to smoke.

The important message for many ex-smokers is that **stopping smoking is a lifelong process**, rather than an isolated event. For the majority of smokers who were once heavily nicotine-dependent, the potential for relapse continues to be a lifelong possibility.

Unfortunately, no scientifically proven method to prevent relapse currently exists. A significant number of ex-smokers relapse even after they have not smoked for more than one year.

Don't be tempted to try 'just one cigarette' to see if you still like smoking. Most ex-smokers will still like smoking if they try it. There is a high risk that 'just one' cigarette could cause you to start smoking again.

### Why you shouldn't use nicotine to cope with stress

Stressful events can cause ex-smokers to start smoking again. We are all different and some of us will require assistance, counselling or support to help cope with life's difficulties. These difficulties can include the loss of a loved one, anxiety regarding family members, financial stress or sometimes stress for no particular reason.

The nicotine delivered in tobacco smoke can be an effective antidepressant and anti-anxiety drug. When people return to smoking after a stressful event, they are either deliberately or inadvertently using nicotine as a medicine. However, the carbon monoxide, tar and cocktail of chemicals that are also contained in the tobacco smoke continue to damage the person's lungs and entire body.

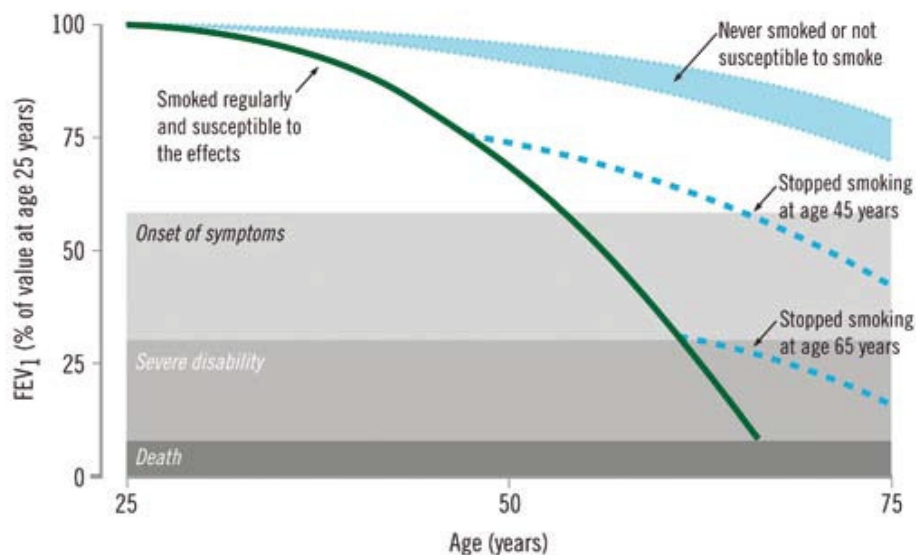
If you are having difficulty coping with a stressful event, seek professional assistance from your GP, who can make referrals to counsellors or psychologists. The option of prescribed antidepressant or anti-anxiety medications can also be discussed.

### What options are available to help me stop smoking?

As mentioned previously, stopping smoking is the single most important treatment for people who have COPD. There is no better time than now to seek help with your nicotine addiction.

Smokers who have COPD face the choice of stopping smoking now or continuing to smoke. Although lung function declines gradually with age, this process is accelerated by smoking. A 45-year-old smoker who stops smoking now will experience a less rapid decline in their lung function and ability to do activities than if they continued to smoke until 65 years of age. This example is illustrated in the following diagram (see page 44), in which lung function is represented by FEV1 (forced expiratory volume in one second).

## Smoking causes lung function to worsen at a faster rate



Adapted from Fletcher C. Peto R. *Br Med J.* 1977; 1:1645–8.

Being able to stop smoking is closely related to your motivation to quit. There is plenty of information available that describe the damaging health effects of cigarette smoking.

However, this information is not always enough to prompt cigarette smokers to stop smoking. For people who have COPD, smoking is no longer just a risk factor for chronic conditions; the chronic condition is now a reality.

*Stopping smoking is the best action you can take that can slow down the progression of COPD. The decision to stop smoking needs to come from you.*

Smokers who have COPD and who are motivated to stop smoking have a number of options available to help them stop smoking. These options include the following:

1. **Cold turkey:** Going cold turkey (stopping immediately without any support) is a brave, but unwise method of stopping smoking. Most people who go 'cold turkey' will fail. People who use nicotine replacement therapy (NRT) or medications that work on brain receptors are more successful in stopping smoking than people who go 'cold turkey'.
2. **NRT:** NRT is another medicine that can help smokers stop smoking. If you are thinking about using NRT, you may wish to consider the following points:
  - People often report being worried about some of the precautions and warnings associated with the use of NRT that are contained in the product information.
  - You should know that the nicotine in NRT is provided in a very small dose and is delivered very slowly to the body.
  - All the warnings about heart, lung, vascular disease and lung cancer contained on cigarette packets are related to the detrimental effects of carbon monoxide, tar and the lethal chemicals contained within cigarettes.
  - You should be aware that any potential side effects from the use of NRT are outweighed by the very real dangers of continued cigarette smoking.

- The precautions and warnings contained in the product information of NRT packages have recently been amended to reinforce that it is more dangerous to keep smoking than it is to use NRT.
- Speak to your pharmacist or healthcare professional about how to use NRT.

3. **Medications that work on brain receptors:**

Medications that work on brain receptors are prescription medicines that have been specifically designed to help smokers stop smoking. These have good success rates in getting people to quit. You may wish to discuss the suitability of medications that work on brain receptors with your GP.

4. **Stop smoking clinic programs:** Participating in a clinic program can give you the advice and support required to help you stop smoking. These programs are particularly helpful for people who have established disease conditions, such as COPD, as they often need more support to stop smoking. These programs can help people make the appropriate behavioural or environmental changes that are required to stop smoking. Studies have shown that clinics that offer professional behavioural support and advice on effective NRT use can help people stop smoking.

There is no time like now to quit smoking! Please ask for a referral to a clinic or a smoking counsellor who can help you stop smoking.

*For support to quit smoking, call the  
National Smoking Quitline on 137 848*



This chapter will help you to understand:

- Why healthy eating is important for people who have lung conditions.
- What healthy eating is for those who are underweight.
- What healthy eating is for those who are overweight.
- How to identify potential nutritional issues common in lung conditions and how to manage these.
- What you can do if you are too tired to shop, cook or eat.
- What are the types of food that have been associated with lung conditions.

### Why is healthy eating important for people who have lung conditions?

Lung conditions increase the risk of poor nutrition, weight loss and reduced muscle strength because of:

- Increased energy needs. Studies have shown that people who have chronic lung conditions expend 25% to 50% more energy than healthy people due to the increased work of breathing and fighting chest infections.
- Poor appetite, or for some people on steroids, a bigger appetite.
- Increased need for certain vitamins, minerals and antioxidants.
- A lack of energy to shop, cook and eat meals. Malnutrition adversely affects lung structure, respiratory muscle strength and endurance. If you are overweight, you are likely to become more short of breath during activities, such as walking up stairs or carrying the groceries. Carrying additional body weight increases the risk of other cardiovascular diseases, such as high blood pressure and high cholesterol.

### What is healthy eating?

A selection of servings from each of the five food groups each day will provide the energy, vitamins, minerals and antioxidants your body needs to maintain good health.

The five food groups are:

1. Breads, cereals, rice, pasta and noodles.
2. Vegetables and legumes (for example, baked beans, kidney beans, lentils and chickpeas).
3. Fruit.
4. Milk, yoghurt and cheese.
5. Meat, fish, poultry, eggs, nuts and legumes.

The recommended number of servings for each food group is given in the following table (see page 47).

Food group	Recommended number of serves per day	One serve equals
Breads and cereals	4 to 9*†	2 slices of bread or 1 cup of cereal or 1/2 cup muesli or 1 cup of cooked rice or pasta or 4 to 6 large crackers or 8 to 12 small crackers
Vegetables and legumes	5 or more	1/2 cup cooked vegetables or 1 cup salad
Fruit	2 to 3	1 medium piece of fruit or 1/2 cup of tin fruit or 3 to 4 pieces dried fruit
Milk and dairy foods	2 to 3	1 cup full cream, reduced fat and low fat milk or 40 grams cheese or 200 grams yoghurt or 1 cup of custard
Meat, poultry, fish and legumes	1 to 2	85 grams meat or 100 grams fish or 3/4 cup legumes or 2 small eggs

\*Number of serves is dependent on age, sex and activity level.

†For weight loss, eat 2 to 4 serves per day.

In the 'The Australian Guide to Healthy Eating', the five food groups are presented on a plate, making it easy to see the suggested daily proportions of each food group.



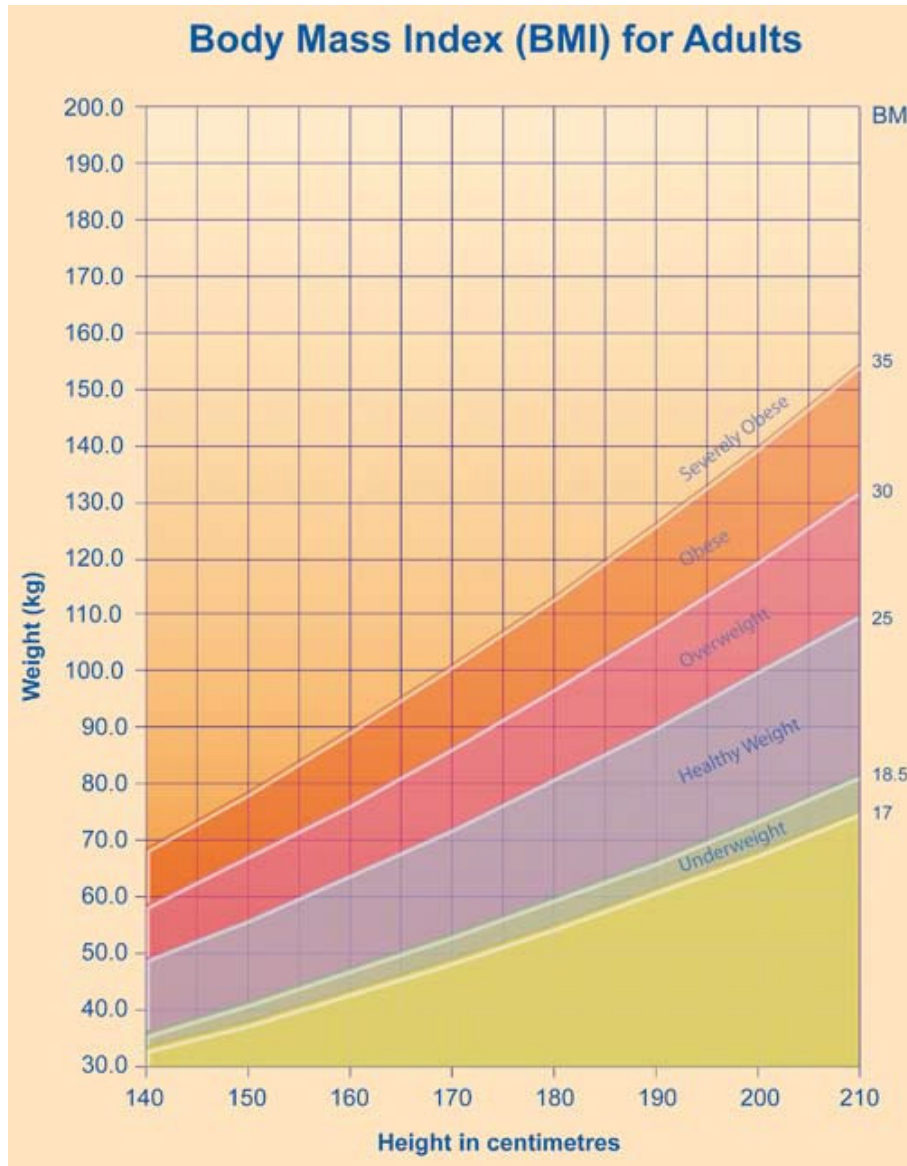
Commonwealth of Australia. The Australian Guide to Healthy Eating 1998. Available from: [www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-publicat-document-fdcons-cnt.htm](http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-publicat-document-fdcons-cnt.htm)

As well as eating a varied and balanced diet, it is important to drink adequate amounts of water and/or other fluids (eight or more cups per day), unless you have been advised previously to limit your fluid intake.

## What are the common potential nutritional issues in lung conditions and how can you manage them?

### **What is a healthy body weight for me?**

You can use the following graph to work out your Body Mass Index (BMI), which will indicate whether you are underweight, overweight or within your healthy weight range. To work out your BMI, find your weight (in kilograms) along the side of the graph and your height (in centimetres) along the bottom, then find where the two lines join in the graph.



### What if you are underweight?

If you are underweight, your body has less energy and nutrient stores to help it do its work.

Being underweight can cause your muscles to become weak. Your respiratory muscles that help you to breathe can also be affected.

Being underweight can have a negative impact on your lung function, impair your exercise tolerance and increase your risk of infection.

### What can you do about being underweight?

Eating foods that are high in protein and energy will help you to improve your nutrition and regain lost weight and muscle:

- Eat a healthy, balanced diet. Ensure you have a good intake of protein-rich foods, such as eggs, dairy products, beans, meat, fish and poultry.
- Enrich your meals and snacks where possible with dairy products and eggs (use powdered eggs if the food is not going to be cooked, for example, eggflips).
- Fortify milk by adding one-half to one cup of skim or full cream milk powder to one litre of full cream milk. Use the fortified milk on breakfast cereals and in milkshakes, porridge, soups, casseroles, milk desserts and mashed potato. You can even add one to two tablespoons of milk powder into batters, cake mixes, puddings, scrambled egg and gravies.
- If you are feeling short of breath, it may be easier to drink more nutritious milk-based drinks. Your dietitian can talk to you about specific supplements, such as Sustagen® and Ensure®, available in pharmacies.
- Nourishing snacks between meals can be a good way of increasing your intake. Try milk desserts and drinks, yoghurt, dried fruit and nuts, raisin toast, muffins, crumpets, biscuits and cheese, sandwiches or even breakfast cereal with milk.
- Soups can be easy to eat and can be made more nourishing by adding cereal (for example, rice, barley or pasta) plus some meat, chicken or legumes (for example, lentils, canned bean mix or canned chickpeas).
- Add some extra calories by adding extra fat, preferably poly- or monounsaturated sources of fat, to your meals:
  - Fry meat, fish, chicken and vegetables in vegetable oils (for example, olive oil or canola oil).
  - Spread margarine, avocado, peanut butter or hummus on breads, crackers or baked foods.
  - Add margarine or oils to cooked rice, pasta, potatoes, vegetables and salads.

## Sample meal plan if you are underweight

### *Breakfast*

*A bowl of cereal with one and a half cups of full cream milk and one or two teaspoons of sugar  
or*

*Two scrambled or poached eggs on toast with margarine*

### *Morning tea*

*A tub of full cream yoghurt (200 grams)  
or*

*A nutritious drink, such as a fruit smoothie, Nestlé MILO® or Sustagen®*

### *Lunch*

*A soft sandwich, two slices of bread, ham, turkey or egg, cheese and salad (lettuce, tomato, beetroot and cucumber)  
or*

*A tin of tuna or salmon stirred through one cup of cooked pasta and grated cheese*

*Side salad with an oil based dressing  
or*

*A small tin of baked beans on two slices of toast with margarine  
and*

*A dessert, such as canned fruit and custard*

### *Afternoon tea*

*Cheese and biscuits  
or*

*A nutritious drink, such as a fruit smoothie Nestlé MILO® or Sustagen®*

### *Dinner*

*A soft hot meal, such as quiche, casserole, stew or fish with white sauce*

*Well cooked vegetables, such as mashed potato or pumpkin, and cauliflower or broccoli with cheese sauce  
and*

*A dessert, such as jelly and ice cream*

### *Supper*

*A nutritious drink, such as hot chocolate*



### What if you are overweight?

Carrying too much weight can make it hard for you to do normal activities and make breathing even more difficult.

Additional weight can interfere with breathing and increase your oxygen requirement, causing your lungs to work even harder.

Weight gain can be related to an increased appetite and/or fluid retention as a side effect of the medication, prednisolone.

Being overweight also increases your risk of high blood pressure, diabetes and high cholesterol.

### What can you do about being overweight?

If you need to lose weight try the following hints:

- Choose foods from each of the five food groups every day.
- Eat a balanced diet that is low in fat, salt, sugar and alcohol, and high in fibre.
- Use small amounts of added fat (for example, butter, margarine or oil) in your cooking. Use marinades, herbs and spices for added flavour without added fat.
- Trim visible fat from meat and remove the skin from chicken before you cook.
- Use low-fat cooking methods, such as grilling, barbecuing, steaming, microwaving, boiling, oven baking and stir frying.

- Choose low-fat dairy products, such as:
  - Low-fat milk, such as Trim®, PhysiCAL, Skim or Shape.
  - Cheeses with less than 10% fat, such as Bega® Super Slims, Kraft® Extra Lite or Devondale Seven.
  - Low-fat yoghurt or low-fat ice cream.
- Reduce or eliminate the use of spreads, such as butter, margarine and mayonnaise. For extra moisture and flavour, try mustards, chutneys and extra salad ingredients.
- Watch your portion sizes. Use 'The Australian Guide to Healthy Eating' as a guide for portion sizes (see page 47).
- Drink plenty of water (approximately eight cups) every day unless you have been advised previously to limit your fluid intake.
- Change your recipes to use low-fat ingredients. Try using one of the low-fat cookbooks that are available.
- Increasing your physical activity is an important way to help you lose excess weight. Your physiotherapist will talk to you about a specific exercise program tailored to assist your weight loss in conjunction with healthy eating.

## Sample meal plan if you are overweight

### *Breakfast*

*Two slices of toast, thin scrape of margarine and vegemite, jam or honey*

*A tub of low-fat yoghurt (200 grams)*

*or*

*A bowl of cereal with one cup of low fat milk and*

*A small glass of orange juice*

### *Morning tea*

*Two plain biscuits*

### *Lunch*

*Two slices of bread, a bread roll or lavash bread with 65 grams of lean ham or turkey, mustard or cranberry sauce, and salad (lettuce, tomato, beetroot and cucumber)*

*or*

*A tin of tuna or salmon stirred through one cup cooked pasta*

*A side salad*

*or*

*A small tin of baked beans on two slices of toast and*

*A piece of fruit, such as a banana, apple, orange, or two apricots or plums*

### *Afternoon tea*

*A tub of low-fat yoghurt (200 grams)*

### *Dinner*

*100 grams of lean meat, such as chicken, fish, lamb or pork, that has been stir fried, steamed or grilled, or cooked in a curry, stew or bolognese or other pasta sauce with a variety of vegetables, such as:*

- *Pasta sauce: tinned tomatoes, mushrooms, capsicum, zucchini*
- *Curry: potato or sweet potato, eggplant, carrots, chickpeas*
- *Stir fry: capsicum, ginger, garlic, bean sprouts, snow peas, carrots*
- *Grilled: mashed potato, peas, carrots*

*and*

*One cup of pasta or rice*



### What if you are too tired to shop, cook or eat?

When you are tired or unwell, it can be difficult to make sure you are eating enough. However, this is usually the time when good nutrition is most important.

To help, try some of these tips:

- Remember to have a rest before meals.
- Eat slowly and chew foods well.
- Breathe evenly while chewing and sit quietly for 30 minutes after eating.
- Stop eating if you need too. Relax and take a few deep breaths before continuing to eat.
- Eat meals when your symptoms are best controlled.
- Try having five or six smaller meals or snacks rather than three large meals per day.
- Make all meals and snacks as nourishing as possible – make every mouthful count.
- If nauseated, try cold meals instead of hot.
- Softer foods are often better tolerated (for example, stews, mashed vegetables, mince or scrambled eggs).
- Never miss a meal. Try a smaller snack or nourishing drink if you can't face a big meal.
- Prepare extra meals when you are feeling good and freeze for later use.
- If you have been prescribed oxygen, you could use this while preparing and eating your meal.
- Stock up the kitchen with low cost, healthy convenience meals for the times you are not feeling great. Bottled, frozen and tinned foods can be nutritious (remember to read the labels to see if it is a healthy food option). They are also easy to prepare and easy to stock up on when you are feeling well.

#### Simple to prepare meals

- Sandwiches, bread rolls or pita bread with meat, cheese, fish or egg and salad filling
- Crumpets or muffins toasted with cheese
- Toast with avocado or peanut butter
- Tinned fish or egg with salad and a bread roll
- Scrambled egg on toast
- Canned soup and toast

#### Nutritious snacks

- Yoghurt
- Custard
- Dried fruit
- Nuts
- Cheese and crackers
- Raisin toast or fruit buns
- Milk drinks, such as AktaVite®, Nestlé MILO®, Ovaltine or fruit smoothies
- Milkshakes

## What types of food have been associated with lung conditions?

### **What about dairy products?**

Some people with lung conditions believe that milk increases mucus production. Scientific studies have not backed up this claim.

Milk can coat the back of the throat and make mucous secretions feel thicker. Rinsing the mouth with water or soda water after milky drinks can help prevent this.

Dairy foods are encouraged as they provide a rich source of calcium. Many people with lung conditions may require long-term steroid medication – this can increase the loss of calcium from the bones. The loss of calcium from the bones increases the risk of osteoporosis and bone fractures.

To maintain your bone strength and protect against osteoporosis:

- Ensure that your calcium intake is high (three to four serves of low-fat calcium rich foods each day).
- Increase your intake of foods that are sources of vitamin D, which helps absorb dietary calcium. Sunlight helps to produce vitamin D in your skin; however, make sure you protect yourself from UV rays.
- Limit your intake of salt, caffeine and alcohol as these substances increase calcium excretion.

### **What about other supplements?**

Omega-3 polyunsaturated fatty acids are known to be beneficial in helping reduce lung inflammation in people who have chronic obstructive pulmonary disease.

The best sources of omega-3 polyunsaturated fatty acids are:

- Oily fish (for example, mackerel, sardines, herring, salmon, trout, tuna and mullet):
  - Consume at least two fish meals per week.
- Canola oil, soybean oil, flaxseed oil and mustard seed oil.





This chapter will help you to understand:

- Why medications are used in the management and treatment of chronic obstructive pulmonary disease.
- What the use, effects and side effects of your medications are.

### Why are medications used in the management and treatment of chronic obstructive pulmonary disease?

To improve or manage your chronic obstructive pulmonary disease (COPD) symptoms, your doctor may have prescribed various medications. As each person's health is different, each person may be prescribed different medications at different doses – your medication program is tailored especially for you.

For each different medication that you are prescribed, make sure you understand:

- What the medication is for.
- How the medication works.
- How long the effects of the medication last.
- What the possible side effects of the medication are and how you can avoid them
- If the medication will cause problems with your other medications.

If you are confused or unsure about any of the information provided in relation to these points, you should ask your doctor or pharmacist to explain. You should be confident and informed about your own condition, including the

medication you use. Although each medication may cause side effects, it is important to remember that only a small number of people using that medication will develop side effects.

As respiratory medications target the lungs, the typical method for delivery of these medications is via inhalation. Correct technique is important in delivering your medication effectively. To ensure you are receiving the full benefits from your medication, have your inhaler technique checked by your doctor, pharmacist or respiratory nurse.

The majority of medications for people who have COPD are listed on the Pharmaceutical Benefits Scheme and require prescriptions from a doctor. However, Ventolin® and Bricanyl® are available over the counter without a prescription, but will cost more.

## What are the use, effects and side effects of your medications?

### Relievers or bronchodilators

#### 1. Beta<sub>2</sub>-agonists (short-acting)

Terbutaline (Bricanyl®)  
Salbutamol (Asmol®,  
Airomir®, Epaq®, Ventolin®)

##### Use

- Given effectively by a spacer and puffer.
- Sometimes given by a nebuliser.
- Always carry a short-acting reliever with you for acute situations.
- If using more than your prescribed dose, your condition is getting worse and you should see your GP.

##### Effects

- Lasts for up to four hours.
- Works within minutes to relieve symptoms.
- Relaxes smooth muscles in your lungs and opens up airways.
- Can improve exercise capacity.

##### Side effects

- Tremor and a rapid heartbeat



#### 2. Beta<sub>2</sub>-agonists (long-acting)

Eformoterol (Oxis®, Foradile®)  
Salmeterol (Serevent®)

##### Use

- Do not use to treat an acute situation (**use a short-acting reliever instead**).

##### Effects.

- Relaxes smooth muscles in your lungs for up to 12 hours.
- Use twice a day.
- Serevent® takes 10 to 20 minutes to take effect.
- Oxis® is fast-acting and long-lasting, that is up to 12 hours

##### Side effects

- Tremor and a rapid heartbeat.



### 3. Anticholinergi (short acting)

Ipratropium (Atrovent®)

#### Use

- Has a slower onset.
- Do not use to treat an acute situation.

#### Effects

- Relaxes smooth muscles in your lungs and opens up airways in a different way compared with  $\beta_2$ -agonists.
- Lasts for up to six hours.

#### Side effects

- Dry mouth, urinary retention and blurred vision are common.
- Should NOT be used in conjunction with Spiriva®.

### 4. Anticholinergic (long acting)

Tiotropium (Spiriva®)

#### Use

- Is similar to and replaces Atrovent®.
- Inhale once daily only.
- Use with the HandiHaler®; the capsule should not be swallowed.



#### Effects

- Lasts for up to 24 hours.

#### Side effects

- Dry mouth, urinary retention and blurred vision.
- Use with caution if you have a prostate problem.

### 5. Theophylline (Nuelin®, Theo-Dur®)

#### Use

- Is rarely used because of the potential for significant side effects.
- Regular blood tests are required.

#### Effects

- Available in controlled release tablets and syrup.
- Take with food.

#### Side effects

- Tremor, nervousness, light-headedness, nausea and vomiting.

## Better Living with COPD

### Preventers (inhaled corticosteroid)

Beclomethasone (QVAR®)  
Budesonide (Pulmicort®)  
Fluticasone (Flixotide®)

#### Use

- Inhale twice a day.
- Must be used regularly to be effective.

#### Effects

- Reduces swelling and the amount of mucus (or *sputum*) in the air passages.
- May take up to a few weeks for you to notice its effect.

#### Side effects

- Thrush infection in the mouth or hoarseness (to avoid these effects, use a spacer when using a metered dose aerosol, and rinse your mouth and gargle after each dose).



### Combination therapy

Budesonide and eformoterol (Symbicort®)  
Fluticasone and salmeterol (Seretide®)  
Salbutamol and ipratropium (Combivent®)

#### Use

- Designed to improve patient's compliance or adherence.
- Combivent® is not available on the Pharmaceutical Benefits Scheme (PBS).



#### Effects and side effects

- Refer to individual medications.

### Antibiotics

- Antibiotics are used to treat exacerbations or flare ups when sputum colour, volume and texture change.
- The antibiotics chosen will depend on the patient's allergy status and sensitivity.
- Follow the instructions when taking antibiotics. You may need to take the antibiotic on an empty stomach or with food.
- You must complete the full course to avoid resistance.

## Oral corticosteroids

Prednisone (Sone®, Panafcort®)  
Prednisolone (Solone®, Panafcortelone®)

### Use

Short-term:

- To manage an exacerbation or flare up of symptoms.
- Use minimal doses for the shortest duration, if possible.
- Take in the morning with food.
- Do not stop treatment unless advised by your doctor as patients need to be weaned slowly, with successively lower doses of drug, over time.

Long-term:

- Use when inhaled steroid is not enough to prevent an exacerbation or flare up.

### Effects

- Reduces inflammation of airways.

### Side effects

- Difficulty in sleeping, weight gain, bruising easily, osteoporosis, muscle wasting and glaucoma.

*If oral steroids are part of your action plan, do not delay starting prednisone at the onset of an exacerbation or flare up because you are concerned about the side effects of this medication. Short term use of the oral steroids should only have minimal side effects, unless very frequent courses are required. Ensure that you have a prescription at home for use.*

## Mucolytics

Bromhexine (Bisolvon®)  
Acetylcysteine (Mucomyst®)

### Use

- Drinking enough water is essential before starting treatment.

### Effects

- Reduces the stickiness of sputum.

### Side effects

- Nausea, diarrhoea and bronchospasm (tightening of airways).

### Vaccinations

- A yearly influenza vaccine is recommended for people who have COPD as the vaccine has been shown to reduce risk of death and hospital admissions.
- Vaccination against pneumonia (PneumoVax® 23) is recommended every five years as it has been shown to reduce hospital admissions.
- After two vaccinations (over 10 year period), discuss with your doctor whether further vaccinations should be given.





This chapter will help you to understand:

- Why using inhalation devices is an important skill.
- How the inhalation devices work.
- How to correctly use the inhalation devices.
- When the inhalation devices are empty.
- How to clean and care for the inhalation devices.

### Why using inhalation devices is an important skill

Using an inhalation device is a skill. After many years of using inhalation devices, you may develop ways of using your inhalation devices that may not make the most of your inhaled medications.

Having your inhalation device technique assessed by an appropriate member of your pulmonary rehabilitation team is essential. You can also check with your managing doctor or a pharmacist.

To make the most of using an inhalation device, it is important to position your body appropriately to enable a slow deep breath. Typically, individuals are encouraged to be sitting upright or standing while taking their inhaled medication.

The inhalation devices covered in this chapter include:

1. Puffer (or metered dose inhaler)
2. Puffer and spacer
3. Turbuhaler®
4. Accuhaler™
5. HandiHaler®
6. Autohaler™
7. Nebuliser

### Puffer (or metered dose inhalers)

A puffer is also known as a metered dose inhaler, or an aerosol.

#### **How does the puffer work?**

In the puffer, the medication is stored under pressure in the metal canister. When the puffer is fired, a fine mist of the medication is produced that can be inhaled into the lungs. These devices work best with spacers or holding chambers (see the following section on puffers and spacers).

### How to use the puffer

1. Remove the cap.
2. Hold the puffer upright and shake vigorously.
3. Raise your chin and look straight ahead.
4. Breathe out gently and fully.
5. Place the puffer mouthpiece between your teeth and form a seal with your lips.
6. As you slowly start to breathe in, fire the canister by pressing firmly and continue to breathe in deeply.
7. Remove the canister from your mouth and hold your breath for 10 seconds, if possible.
8. Breathe out gently.
9. If you need to deliver two doses of your medication, wait 30 to 60 seconds between doses and repeat steps 2 to 8.
10. Replace cap.



### When is the puffer empty?

A purple puffer is empty when the dose indicator on the back reaches zero.

For other puffers, it is more difficult to know when they are empty. If the puffer is becoming empty, the amount of and speed at which the spray comes out is reduced, or the puffer may feel empty when shaken.

If using a puffer for regular medication, you can calculate when your puffer is likely to be empty. To do this, work out how many puffs per day you use and divide the number of puffs in the canister (written on the canister box) by the number of puffs per day you use. This will tell you how many days you can use your puffer for before it needs replacing.

### How to clean the puffer

- Remove the metal canister (do not wash the metal canister).
- Wash the plastic casing and cap with running warm water through the top and bottom for at least 30 seconds.
- Shake off excess water and allow to air dry.

### How to care for the puffer

- When reassembling the puffer, ensure that the metal canister fits securely into the plastic casing.
- Always keep the cap on the puffer when not in use to prevent foreign objects lodging in the mouthpiece.



### Haleraid®

The Haleraid® can assist those people who have difficulties pressing the canister.

A Haleraid® can be obtained from independent living centres or pharmacies, and are available in two sizes.

## Puffer and spacer

Puffers (also known as a metered dose inhaler or an aerosol) may be used with a spacer, which is a small- or large-volume holding chamber.

### **How does the puffer and spacer work?**

A spacer holds the spray before the spray is breathed in. Using a spacer with a puffer allows more medication to get to where it is needed in the airways. Using a puffer and spacer can provide up to 27% of the medication to the lungs compared with only 9% when using a puffer on its own.

A puffer and spacer prevent throat irritation by reducing the amount of medication sitting in your mouth or throat. Spacers have a one-way valve that stops air being breathed into the spacer while the spacer is in your mouth.

If used correctly, a puffer used with a spacer is at least as effective as a nebuliser in delivering a similar dose of medication, that is, 4 to 10 puffs equals one nebuliser dose.

### **How to use the puffer and spacer**

1. Sit upright or stand.
2. Assemble the spacer and shake device to ensure that the one-way valve is not stuck and rattles.
3. Hold the puffer upright, remove the cap and shake well.
4. Place the puffer mouthpiece into the end of the spacer opposite to the valve.
5. Place the mouthpiece between your teeth and close your lips around it making sure your neck is slightly tilted back.
6. Breathe out gently and slowly.
7. Activate the puffer into the spacer once only.
8. Either:
  - Breathe in slowly and deeply for five seconds through your mouth, and hold your breath for 10 seconds, if possible.
  - Or*
  - Breathe in and out through your mouth normally for four breathes.
9. Wait 30 seconds between doses and repeat steps 2 to 9.



### When is the puffer and spacer empty?

To determine when the puffer is empty, refer to the section on puffers (page 63).

### How to clean your puffer and spacer

- To clean the puffer, refer to the section on puffers on page 63.
- To clean the spacer:
  - Every month, separate the two pieces of the spacer and wash in warm soapy water.
  - Do not rinse as the soap helps to reduce the static charge in the spacer (static causes the medication to stick to the sides of the spacer reducing the amount of medication that can be inhaled).
  - Allow to drip dry (do not dry with a tea towel).
  - Do not wash in dishwasher.

### How to care for your puffer and spacer

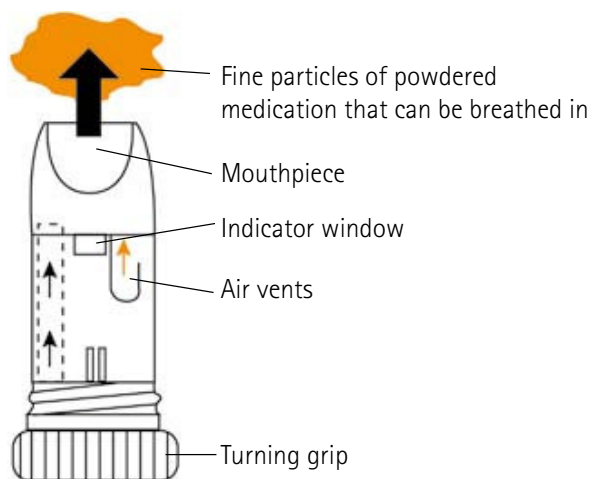
- Do not store the puffer inside the spacer.
- If the spacer valve does not rattle, the spacer may need cleaning or it may need to be replaced.

## Turbuhaler®

### How does the Turbuhaler® work?

A Turbuhaler® is a device that is activated by breathing in. When you load the Turbuhaler®, a precise dose of powdered medication is measured and deposited into a reservoir by gravity. Therefore, it is important that you hold the Turbuhaler® upright when you load it.

When the Turbuhaler® is placed in your mouth and you breathe in, air is drawn through vents on the side of the Turbuhaler®. This causes the air in the Turbuhaler® to become turbulent. This turbulence breaks up the powdered medication into very fine particles. As you breathe in, these very fine particles are able to go further down the airways.



### Turbuhaler® grip

A Turbuhaler® grip may be available from chemists for people having difficulty turning the wheel (for example, people who have arthritis).

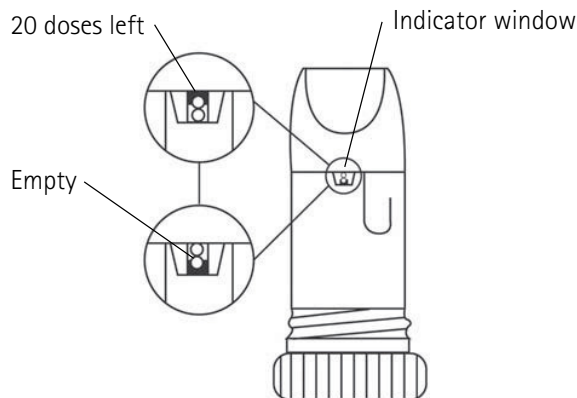
### How to use the Turbuhaler®

1. Hold the Turbuhaler® upright, and unscrew and remove the cap.
2. Hold the white body and turn the colour base to the right as far as it will go and then back again – you should hear a click.
3. Breathe out gently away from the Turbuhaler®.
4. Place the mouthpiece between your lips and form a seal (do not put your lips over the air vents on the side of the Turbuhaler®).
5. Hold the coloured part of the Turbuhaler® (to make sure the air vents are not covered).
6. Breathe in forcefully and deeply through your mouth.
7. Remove the Turbuhaler® from your mouth before breathing out.
8. If another dose is required, repeat steps 2 to 7.
9. Replace the cap.

### When is the Turbuhaler® empty?

The Symbicort® Turbuhaler® (red base) has a counter that counts down to zero (in twenties). When the indicator window is red, the device is empty.

On other Turbuhalers®, a red line will appear at the top of the indicator window on the side of the device, which indicates that 20 doses are left (this is a good time to organise a new device). When the red line appears at the bottom of the window, the Turbuhaler® is empty.



### How to prime a new Turbuhaler®

- You should only prime each new Turbuhaler® once.
- When you get a new Symbicort® Turbuhaler® out of the box, take off the cap and turn the base left and right until three clicks are heard. The Turbuhaler® is now primed and ready for use.

### How to clean the Turbuhaler®

- Wipe the mouthpiece with a dry tissue from time to time.
- Do not wash any part of the Turbuhaler®.

### How to care for the Turbuhaler®

- Do not breathe into the device as the medication is a dry powder.
- Do not expose to water (keep the cap on tightly to prevent moisture entering the device).
- The powder you hear when you shake the device is NOT medication, it is a drying agent.
- The medication is inhaled directly into the lungs; therefore, you probably won't feel or taste anything.

## Accuhaler™

### How does the Accuhaler™ work?

The Accuhaler™ is a breath-activated device that contains a foil strip that has 60 regularly spaced doses of medication. To load the Accuhaler™, move the foil strip to deposit a dose into the reservoir of the device. The Accuhaler™ is now ready to deliver the medication dose.



### How to use the Accuhaler™

1. Check the window that indicates the number of doses left.
2. To open, hold the base of the Accuhaler™ in one hand, place the thumb of the other hand in the thumb grip and push the thumb grip around as far as possible.
3. With the mouthpiece facing up, push the lever around until it clicks.
4. Breathe out gently away from the Accuhaler™.
5. Put the mouthpiece between your teeth and lips to form a seal.
6. Breathe in deeply and fully through your mouth.
7. Hold your breath for about 10 seconds, if possible.
8. Remove the Accuhaler™ from your mouth.
9. Breathe out away from the Accuhaler™.
10. If another dose is required, repeat steps 5 to 11.
11. To close the Accuhaler™, put your thumb in the thumb grip and slide it until the cover clicks in place.

### When is the Accuhaler™ empty?

The Accuhaler™ is empty when the dose counter on the top indicates zero. The last five doses will appear in red.

### How to clean the Accuhaler™

- Wipe the mouthpiece with a dry tissue from time to time.
- Do not wash any part of the Accuhaler™.

### How to care for the Accuhaler™

- Keep your Accuhaler™ dry.
- Keep your Accuhaler™ closed at all times.
- Store your Accuhaler™ below 30°C and do not keep it in the car on hot days.

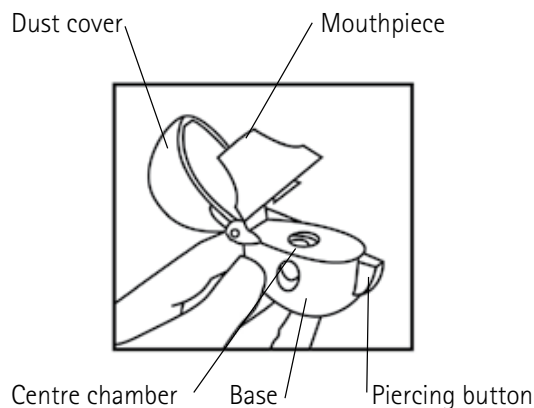
## HandiHaler®

### How does the HandiHaler® work?

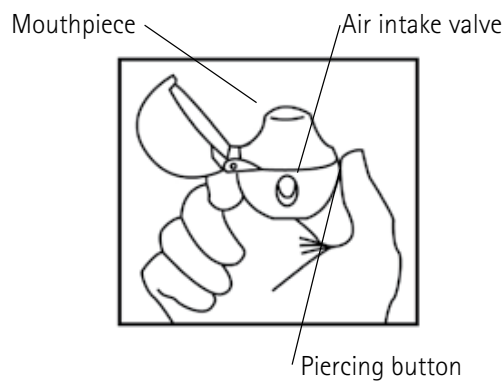
The HandiHaler® is activated by breathing in through the mouthpiece. When activated, a capsule (containing the medication) inside the HandiHaler® is pierced, allowing the medication to be inhaled.

### How to use the HandiHaler®

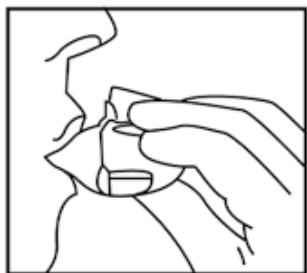
1. Open the dust cap by pulling upwards.



2. Open the mouthpiece by pulling upwards.
3. Remove the capsule from the foil and drop the capsule into the centre chamber.
4. Firmly close the mouthpiece, leaving the dust cap open.
5. Press the green button once to pierce the capsule, then release the green button.



6. Breathe out gently away from the HandiHaler®.
7. Put the mouthpiece between your lips to form a seal.
8. Breathe in deeply (enough to hear or feel the capsule vibrate) and fully through your mouth, keeping your head in an upright position.



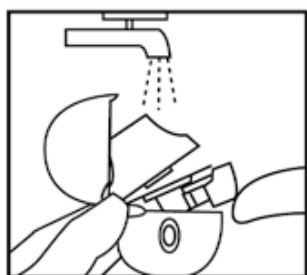
9. Hold your breath for about 10 seconds, if possible.
10. Remove the HandiHaler® from your mouth.
11. Breathe out away from the HandiHaler®.
12. Repeat steps 2 to 11 once to completely empty the capsule.

### When is the HandiHaler® empty?

When you have run out of capsules, you will have no more medication. The HandiHaler® should be replaced yearly.

### How to clean the HandiHaler®

- Once a month, you should:
  - Open the dust cap.
  - Open the mouthpiece.
  - Open the bottom part by pressing the green lever in and up.
  - Rinse under warm water to remove dry powder.



- Tip out excess water.
- Leave to air dry for 24 hours with the HandiHaler® open.
- Dry the outside with a clean cloth, if needed.

- Remember that as the HandiHaler® takes 24 hours to dry, you should wash it immediately after a dose to ensure that it is completely dry before the next dose.

## Autohaler™

### How does the Autohaler™ work?

The Autohaler™ is activated by breathing in through the mouthpiece, which triggers the device to expel the medication. The Autohaler™ is primed before use by lifting the pressure lever (the grey lever), which expels the medicine into a staging chamber.

### How to use the Autohaler™

1. Unclip the mouthpiece cover from the back and shake.
2. Hold the Autohaler™ upright and click the grey lever upwards so that it stays up (as shown in the accompanying diagram).
3. Breathe out gently.
4. Place the Autohaler™ between your lips to form a seal (do not block the air vents with your hands).
5. Tilt head back and breathe in with a slow, deep steady breath – don't stop when you hear the click.
6. Hold breath for 10 seconds, if possible.
7. Breathe out gently.
8. Push the grey lever down.
9. Wait 30 to 60 seconds between doses.
10. Replace mouthpiece cap.

*Please note: The lever must be pushed up (on) before, and pushed down (off) after, each dose, otherwise the Autohaler™ will not operate.*



- a. Remove the cap and hold the Autohaler™ upright.
- b. Push the lever up until it clicks and stays up.
- c. Place the mouthpiece between teeth and lips, Breathe in slowly and deeply.

### When is the Autohaler™ empty?

The Autohaler™ is empty when you do not hear any medication being delivered.

### How to clean the Autohaler™

- Wipe with a clean dry cloth.

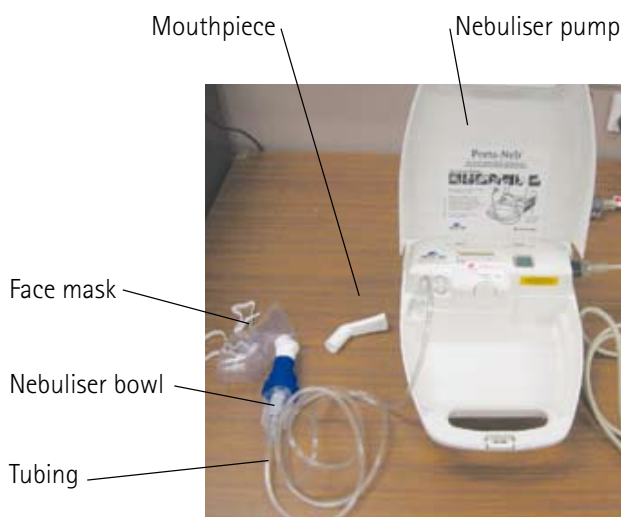
## Nebuliser

### How does the nebuliser work?

In a nebuliser, pressurised air is pumped through liquid to form a fine mist that is inhaled through a face mask or mouthpiece. The pump is usually driven by electricity; some pumps may be driven by a battery or 12 volt car batteries.

### How to use the nebuliser

1. Assemble clean dry equipment (face mask or mouthpiece, nebuliser bowl, tubing and nebuliser pump)



2. Place pump on a firm flat surface.
3. Ensure the two halves of the nebuliser bowl are connected.
4. Fill the nebuliser bowl with the required amount of medication.
5. Connect the tubing and the mouthpiece or face mask to the nebuliser bowl.
6. Put the facemask on, or the mouthpiece in your mouth, and turn the machine on.
7. Sit upright and breathe normally until the nebuliser starts to splutter and the amount of vapour coming out is minimal.
8. Switch the machine off when finished.

### How to clean the nebuliser

*Correct cleaning of your nebuliser will reduce the risk of chest infections.*

- After each use, rinse the nebuliser bowl and the facemask or mouthpiece.
- Each day, wash the mouthpiece or facemask in warm soapy water.
- Ensure that the nebuliser parts are completely dry before storage (liquid left in the bottom of the nebuliser bowl is an ideal site for germs to grow).
- Do not wash the tubing, replace it if it is black and mouldy.
- Each week, soak the nebuliser bowl and the mouthpiece or facemask in half vinegar and half water, rinse and allow to air dry.
- Replace your nebuliser tubing, bowl and face mask or mouthpiece every three months.

## How to care for the nebuliser

*Your nebuliser will work best when it is well maintained.*

- Inspect the nebuliser bowl and tubing for cracks, and if cracks are found, replace.
- Nebuliser bowls have a limited life span. Check the manufacturer's manual for the expected life span of your nebuliser.
- If you have acquired a nebuliser bowl through a hospital, it will only last three months and should be replaced.
- If you have a new nebuliser bowl and it is not working, check for an extra piece of plastic in the bowl call a baffle (sometimes the baffle is missing, and if so, the bowl will need to be returned).
- The filter on the nebuliser pump may need to be replaced occasionally. See the manufacturer's manual for how often the pump may need replacing.
- Have the nebuliser pumped checked annually for correct airflow and pressure by the company that sold you the nebuliser or by your local pharmacy.
- If nebulising Atrovent® or Pulmicort®, the use of a mouthpiece is preferable. If you do not use a mouthpiece, the use of eye protection is advisable.
- Ensure you rinse your mouth and face afterwards.



# chapter 14

## Home oxygen therapy



This chapter will help you to understand:

- When you need home oxygen.
- What the benefits of using home oxygen are.
- What equipment you will need to use home oxygen.
- Who can help cover the cost of home oxygen.

### Oxygen Therapy

Oxygen therapy is prescribed for many people with chronic lung disease who have a low blood oxygen level. Oxygen therapy is prescribed to prolong and improve the quality of life of the recipient. While the use of oxygen MAY relieve shortness of breath, in many cases it does not.

### When do you need home oxygen?

Most people with lung conditions feel breathless at times. Feeling short of breath is caused mainly by the extra work of breathing.

### Important considerations

- You can feel breathless even with normal oxygen levels in the blood.
- Not everyone with a chronic lung condition needs oxygen at home.
- Tests are needed so your doctor can tell if you need home oxygen.
- Home oxygen is prescribed at a flow rate and for a minimum number of hours per day.
- You only get the full benefit if you use home oxygen as prescribed. Using your oxygen as prescribed, and not just when you feel you need it, is very important.
- Using oxygen when it isn't prescribed can be harmful.

### Breathlessness

You have probably learned by now that long term lung conditions, such as chronic pulmonary obstructive disease (COPD), bronchiectasis and pulmonary fibrosis, cause breathlessness. People often think that when they feel breathless, it is because they are not getting enough oxygen into their body.

For most people who have chronic lung conditions, breathlessness mainly occurs because it is harder to breathe the air in and out.

This is called the 'work of breathing'. Breathing air in and out requires more work if the lungs are 'too full' (*hyperinflated*) or are stiff, or if the airways are narrow. This is why you are learning different breathing techniques to help control your breathlessness.

You may have already found that these techniques help when you get out of breath.

### Low oxygen levels in the blood

Some people with severe lung conditions have lower levels of oxygen in their blood, either all the time or only when they are sleeping or exercising.

Home oxygen is only prescribed when the blood oxygen level is low. If your oxygen level is very low, there are benefits of using oxygen at home in the long term.

### How do you (and your doctor) know you need home oxygen?

To determine if you need home oxygen, your doctor can order a blood sample to be taken from an artery (usually at your wrist) while you are resting. You'll probably remember if you've had one of these blood samples taken as it hurts more than a normal blood sample. They may also arrange to test your oxygen level by placing a probe on your finger while you are sleeping or walking.

### What are the benefits of using home oxygen?

A common home oxygen prescription is to use oxygen, set at a flow rate of two litres per minute, for at least 16 hours each day.



Photograph supplied by AirLiquide

Most people notice some improvement when they start using oxygen at home. You may notice that you:

- Feel more refreshed on waking.
- Feel less breathless performing activities, such as showering and walking.
- Are able to think more clearly.
- Have more energy.

People who have COPD and very low oxygen levels have been found to live longer if they use oxygen for longer than 16 hours a day.

### When to use home oxygen

Once you know your prescription, it is useful to work out when you will use your oxygen to make sure that you get at least the minimum hours each day. Wearing oxygen from late afternoon (5 pm), through the evening and overnight while sleeping until the morning (7 am) takes care of 14 hours. In this example, you would only need to wear the oxygen for two hours during the day.

Fitting the oxygen in around your weekly routine is important to ensure that wearing oxygen disrupts your life as little as possible. Some people only need oxygen while sleeping, because their oxygen level is okay during the day. Others need to wear oxygen all the time and need to plan their activities to include oxygen.

## What equipment do you need to use home oxygen?

An oxygen concentrator is the most common method of giving oxygen. The concentrator is an electronic pump that filters out nitrogen from the air (which is a mixture of oxygen and nitrogen) that we breathe. The concentrator supplies oxygen through long tubing connected to nasal prongs.

Another method of delivering oxygen is via small cylinders. Small oxygen cylinders weigh about five kilograms, come with trolleys or carry bags and can be used when away from home. The cylinders are best used with oxygen conservers that make the cylinders last longer. Check with your local oxygen provider to confirm which oxygen conservers are available in your area. Portable oxygen concentrators are also available.

## Who can help cover the cost of home oxygen?

Currently, each state has different arrangements for funding oxygen equipment for use in the home. Discuss with your doctor about the financial support that is available for you to use home oxygen.





This chapter will help you to understand:

- What the signs of stress are.
- What avoidance is.
- Feelings of helplessness.
- What you can do if you have depression.
- How you can reduce stress.
- What relaxed breathing is.
- Why relaxation practice is important.
- How you can reduce the number of crisis events and manage them.

### What are the signs of stress?

Research tells us that the people who enjoy the best quality of life and fewest complications are those that understand their condition and are actively involved in managing their condition.

Stressors, such as illness, financial concerns or relationship difficulties, could cause:

- Your heart to beat faster.
- The muscles of your arms and legs to tremble or shake.
- Your breathing to change.
- You to start sweating.

### What is avoidance?

In response to stress, some people begin to avoid certain situations or activities. Avoidance can be a problem. Continuing to avoid situations or activities that make you feel anxious can reduce your activity level and social contacts.

If you avoid certain situations or activities, speak with your pulmonary rehabilitation facilitator or doctor about how you can gradually re-expose yourself to those situations or activities.

### Feelings of helplessness?

The diagnosis of chronic obstructive pulmonary disease (COPD) has a significant impact. Everyone with COPD feels helpless to some degree, particularly if experiencing recurring flare-ups. This is normal. However, it is important to avoid giving into the feelings of helplessness and remember that everything you can do to manage your condition helps. The tips on the following page might help you to keep on track.

### What can you do if you have depression?

Not surprisingly, severe or ongoing stress can often lead to depression. If you feel that you or someone close to you may be depressed, speak with your medical team about how to access helpful resources in your area.

*Some people with COPD experience depression. If you believe this is you, speak to your doctor about support available to help*

### How can you reduce stress?

1. **Establish a routine.** Having a regular routine helps maintain balance and increases your sense of control. In your routine, you should include activities you need to do as well as fun activities that you can look forward to.
2. **Eat well and drink plenty of water.** Your body will perform best when you eat well and drink plenty of water. However, if you have been advised to restrict fluids, you should follow this advice.
3. **Exercise regularly.** Talk with your pulmonary rehabilitation facilitator about the type, frequency and intensity of exercise that is right for you. Find out how to upgrade your exercise program as you improve, and plan regular exercise into your routine. If possible, exercise earlier in the day so as not to disturb your sleep.
4. **Get plenty of sleep.** Establish a regular bedtime. Often, the urge to sleep is ignored in favour of watching television or doing other activities. A warm bath, shower or milk drink before bed may improve your sleep. If you can't get to sleep after twenty minutes of being in bed, get out of bed and do a quiet activity until you feel tired.
5. **Limit your use of alcohol and other drugs.** Many people use drugs and alcohol to help manage their stress. For example, some people use alcohol and cigarettes to **calm down** and other people may use coffee, cola or energy drinks to **get themselves going**. However, drugs and alcohol can have harmful effects on people and can result in dependence.
6. **Maintain your social network.** People with chronic conditions who have few friends and don't get out much may have worse health outcomes. Getting out and catching up with friends is important and you should plan to do this regularly.
7. **Join a local patient support group.** Contact The Australian Lung Foundation to find out about patient support groups near you (phone: 1800 654 301 or Web site: [www.lungnet.com.au](http://www.lungnet.com.au)). If a patient support group has not been established in your area, The Australian Lung Foundation can help you to start a patient support group.
8. **Maintain interests and hobbies.** Often people who have chronic conditions let go of interests and hobbies because they believe the effort outweighs the benefits. Participating in enjoyable activities can give life meaning and can help you maintain and enhance your skills and abilities.

9. **Be aware of automatic or distorted thinking.**

When life is busy or stressful, you may respond to events without stopping to consider your response. Before responding, stop and take some deep breaths, count to 10, or go for a short walk and consider whether you need to respond and how you will respond.

10. **Planning and time management.** People who plan how they will apply the skills they have learnt in pulmonary rehabilitation to their home or work life are more likely to use these skills in their daily lives. Effective time management is essential for maintaining your health, work, social and home life. Spread tasks, or parts of tasks, across several days, and build time into your schedule for unexpected events.

11. **Communicate effectively.** Effective communication includes both speaking and listening. Often when you feel under pressure, you can spend all your time speaking or thinking about what you want to say rather than listening. Take the time to listen to what is being said before responding. Assertive communication requires honest and direct discussion that describes the problem, the effect and the solution.

12. **Practice relaxed breathing.** When stressed, most people tend to breathe faster and shallower; this type of breathing can lead to a feeling of breathlessness. People who have COPD can minimise the risk of becoming breathless during times of stress by using the relaxed breathing techniques (see Chapter 8).

## Why is relaxation practice important?

Scheduling time to relax in your daily or weekly routine is important. Relaxation can be formal, such as guided relaxation practice, or informal, such as watching football or listening to music. Formal relaxation practice helps to:

- Increase your metabolism.
- Slow your heart beat.
- Relax your muscles.
- Slow your breathing.
- Lower your blood pressure.

If you are interested in finding out more about formal relaxation practice, ask your facilitator for a tip sheet on relaxation.

### How can you reduce the number of crisis events and manage them?

#### Reducing the number of crisis events

- The chance of crisis events occurring due to ill health should be reduced if you use your medication and inhalers appropriately, and remember to eat well and exercise regularly.
- The number of crisis events occurring due to injury, muscle strain or physical exhaustion should be reduced if you increase your exercise tolerance and practise your energy conservation skills.
- The number of crisis events occurring due to stress should be reduced if you practise your relaxation techniques and improve your communication and problem solving skills.



#### Managing crisis events

When a crisis event does occur, and you find yourself getting worked up, you will need to decide whether you will let the event get worse or whether you will do something about the event. The following strategies may help you manage crisis events:

- Become aware of your expectations. In the past, if a similar crisis event went from bad to worse, it doesn't mean that the current event will also go from bad to worse.
- Become aware of the language you are using and replace negative thoughts with positive thoughts. For example, rather than thinking your weekend was a disaster, recognise that it rained on the weekend and, as a result, you were unable to do what you wanted to do.
- Protect yourself against becoming too stressed by mentally rehearsing a potentially challenging event before it occurs.
- Don't forget to use relaxed breathing.

# chapter 16

## Chronic obstructive pulmonary disease and swallowing

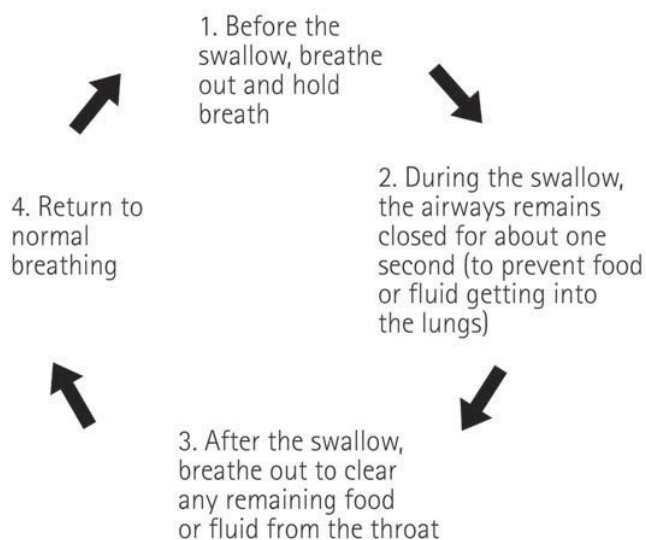


This chapter will help you to understand:

- How swallowing and breathing are related.
- How breathing and swallowing are affected by chronic obstructive pulmonary disease.
- What the consequences of swallowing problems are.
- How you can tell if you are having swallowing problems.
- How a speech pathologist can help you with swallowing problems.
- What strategies you can use to help manage swallowing problems.
- How you can reduce the number of crisis events and manage them.

### How are swallowing and breathing related?

Swallowing is a highly complex process involving the coordination of more than 26 muscles and six nerves. For this process to occur smoothly, the body must also co-ordinate the breathing cycle during the swallow. Swallowing interrupts breathing. At the exact moment you swallow, you must momentarily hold your breath to close the airway. Closing the airway prevents any food or fluid from entering the lungs. The normal swallow-breathing cycle (shown in steps 1 to 4 in the following diagram) should only take a few seconds to complete.



### How are breathing and swallowing affected by chronic obstructive pulmonary disease?

#### **How does chronic obstructive pulmonary disease (COPD) affect your breathing?**

Details of how chronic obstructive pulmonary disease (COPD) can affect your breathing are provided in other sections of this Patient Guide (see Chapter 8 'Breathlessness, breathing control and energy conservation' on pages 22 to 29). Basically, COPD can cause you to breathe faster, which means that your breathing muscles can become tired and weak. Your coughing reflex can also become weak. As breathing and swallowing are related, a weak cough reflex can cause problems with swallowing.

### How does COPD affect your swallowing?

Swallowing and breathing are related. Many people with breathing problems also experience difficulty co-ordinating breathing and swallowing while eating and drinking.

During mealtimes, you may use the swallow-breathing cycle more than 100 times. People who have COPD often become short of breath during mealtimes because of the breath-holding that occurs during the swallowing-breathing cycle. The more short of breath you become, the more likely you will find it difficult to co-ordinate your breathing and swallowing.

Swallowing problems (called *dysphagia*) can occur because the need for oxygen will always overrule the need to protect the lungs from food or fluids.

### What are the consequences of a swallowing problem?

#### Swallowing problems and aspiration

If breathing timing is even slightly changed during swallowing, the airway may not be fully closed and food or fluid may be breathed into the lungs. This is called aspiration and may lead to chest infections or pneumonia.

Normally, when food or fluid 'goes down the wrong way' (*aspirated*), you automatically cough up the food or drink. As people who have COPD often have a weakened cough reflex, they may not be able to clear all the food or fluid out of their airways.

Aspiration is a symptom of swallowing problems. The extent of the swallowing problems can change over time, and may depend on how bad your breathing problems are at the time (and other medical factors).

As many as 21% to 42% of people who have COPD, experience aspiration (particularly during an exacerbation or flare up). Swallowing problems are often under diagnosed in people who have COPD because silent aspiration can be difficult to detect.

#### Swallowing problems and nutrition

As you are using more energy to maintain you breathing during chewing and swallowing, eating and drinking can become more tiring. As a result, you may take longer to complete your meals and you may eat and drink less. Eating and drinking less could cause you to miss out on important nutrients and lose weight.

## How can you tell if you are experiencing swallowing problems?

Read the following two lists of the common signs of swallowing problems. Tick the box next to any sign that you experience when eating and drinking:

### List 1

- ☐ Coughing or choking after swallowing food or drinks
- ☐ Increased shortness of breath during meals
- ☐ Wet or 'gurgly' voice after swallowing
- ☐ Feeling like food is getting stuck in the throat
- ☐ Difficulty chewing foods
- ☐ Taking longer to start a swallow

### List 2

- ☐ Food or drink going into your nose
- ☐ Food or drink remaining in the mouth after swallowing
- ☐ Reflux or regurgitation
- ☐ Taking much longer to finish meals
- ☐ Getting more fatigued after eating and drinking
- ☐ Unexplained weight loss
- ☐ Unexplained temperatures or changes in sputum colour

If you ticked two to three items (particularly those in List 1), or are concerned about your swallowing, ask your GP (or respiratory specialist) to refer you to a speech pathologist who can assess your swallowing.

## How can speech pathologists help you with swallowing problems?

Speech pathologists are trained to assess, diagnose and treat swallowing and communication problems. They can:

- Assess your current swallowing function and determine the cause of your swallowing problem.
- Recommend appropriate foods and fluids, as well as strategies to improve swallowing safety.
- Start you on swallowing therapy, if appropriate.
- Identify the need for further investigations.
- Liaise with other health care professionals.

### What strategies can you use to help manage swallowing problems?

*If you are experiencing swallowing problems, a speech pathologist can give you specific advice to help you eat and drink safely.*

Even if you are not experiencing swallowing problems, you should be aware that there are a number of strategies that can be used to protect the lungs. This knowledge could help you if you do encounter swallowing problems (for example, if you have an exacerbation or flare up). These strategies include:

- Try not to eat or drink when you are breathless.
- Always sit upright in a supported chair when you are eating and drinking.
- Eat slowly and take small mouthfuls.
- Select foods that are soft and easy to chew, or add sauce or gravy to moisten foods.
- If worn at home, oxygen prongs should not be removed during meals.
- Have smaller, more frequent meals, and take a break during your meal if you become too short of breath.
- Try to breathe out immediately after you swallow to help clear any food or fluid left in your throat.
- Alternate between sips of fluids and solids.
- Try to minimise talking during mealtimes to reduce the exertion on your breathing.
- Remain upright for 30 minutes after your meal.
- If you experience reflux or heartburn, discuss anti-reflux medication with your GP.

### **Managing swallowing problems due to dry mouth**

People who have COPD often experience dry mouth. Dry mouth can be related to oxygen use (via a mask or nasal prongs), mouth breathing or medications. Having a dry mouth is uncomfortable, can increase the risk of dental problems and can cause swallowing problems. To reduce dry mouth symptoms:

- Sip fluids frequently throughout the day.
- Always rinse and gargle after taking your medication or inhalers.
- Use artificial saliva products (for example, Biotene® or Oralube®), available at your local pharmacy, or other oral lubricants (for example, grape seed oil flavoured with peppermint essence).
- Suck sugar free lollies or chew gum.
- Avoid medicated lozenges or alcohol-based mouthwashes.
- Reduce your intake of caffeine, alcohol and spicy foods, and avoid smoking.
- Regularly brush your teeth and gums (or clean your dentures) to reduce bacteria build up in your mouth.
- Have regular dental check-ups.
- Talk to your GP about reviewing the medications you are taking.

*To overcome difficulties with swallowing medications, try cutting or crushing your medications and mixing them with yoghurt, custard or jam before swallowing them. However, as not all medications can be cut or crushed, you should always check with your GP or pharmacist first.*

# chapter 17

## Airway clearance: keeping your lungs clear



This chapter will help you to understand:

- What the role and function of sputum in lung conditions is.
- Why it is important to keep your lungs clear.
- When you should use airway clearance techniques.

### What is the role and function of sputum in lung conditions?

The lungs provide protection against foreign particles entering the body by trapping unwanted particles in the mucous lining of the airways.

Your secretions can be cleared from the lungs by coughing, expiratory airflow and the movement of tiny hairs called cilia. These tiny hairs line the breathing tubes (**bronchi** and **bronchioles**) and move like a wave to help propel the mucus and unwanted particles up to the mouth where they can be cleared.

The function of the tiny hairs (*cilia*) can be affected by smoke, alcohol and dehydration.

If you have a lung condition or a chest infection, the breathing tubes can become more swollen and inflamed. As a result, the airways can produce thicker and stickier mucous secretions called sputum or phlegm.

### Why is it important to keep your lungs clear?

Repeated chest infections have been shown to contribute to a deterioration in lung function. If sputum is not cleared from the lungs, it can cause ongoing inflammation, which can lead to further lung damage.

In some lung conditions, the ability to clear these secretions can be more difficult, resulting in:

- More coughing, which increases your fatigue and can make you more breathless.
- Narrowing of the airways, which can make breathing harder.

### When should you use airway clearance techniques?

When to use airway clearance techniques will depend greatly on your individual needs. For example:

- Many people who have chronic lung conditions produce very little or no sputum. These people generally do not need to do any regular airway clearance techniques.
- Some people who have chronic lung conditions develop a moist cough when they have an infection. These people may need to do a few simple airway clearance techniques when this occurs.
- A small number of people who have chronic lung conditions and who cough up sputum every day may need to use an airway clearance technique regularly.

### What are the airway clearance techniques?

There are a variety of airway clearance techniques. If you regularly produce sputum, then you should discuss your airway clearance needs with your respiratory physiotherapist. They will assist you to find a technique that works best for you. Some of these may include:

- 'Hands on' techniques, such as percussion and expiratory vibrations.
- Independent breathing regimens, such as Active Cycle of Breathing Techniques and autogenic drainage.
- Respiratory devices, such as positive expiratory pressure devices (for example, PEP and Astra PEP) and oscillating positive expiratory pressure devices (for example, FLUTTER® and Acapella®).

Your lung symptoms may change over time and this is important to remember. As a result of changes in your lung symptoms, your airway clearance routine may also need to be modified. For example:

- Your airways may become 'tight' and you may become more breathless as a result. At this time, your airway clearance technique may be changed to decrease the work of your breathing.
- If you develop a chest infection in which you begin to produce larger quantities of sputum, you may be referred to a physiotherapist who may commence an airway clearance technique with you.



# Chronic obstructive pulmonary disease and incontinence



This chapter will help you to understand:

- Why you need to know about incontinence.
- What the pelvic floor is.
- The symptoms of a weak pelvic floor.
- What good bladder and bowel habits are.
- How to do pelvic floor exercises.

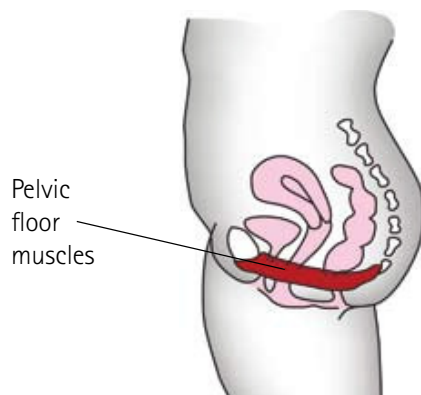
## Why do you need to know about incontinence?

Incontinence and other complaints of a weak pelvic floor are common for many people who have chronic obstructive pulmonary disease (COPD) and other chronic lung conditions.

The pelvic floor helps to control bladder and bowel function. When the pelvic floor muscles contract, they protect the bladder, the bowel and the uterus during daily activities and from the pressures of coughing and sneezing.

## What is the pelvic floor?

The pelvic floor is made up of layers of muscle and other tissues.



The pelvic floor holds up and supports the organs in the pelvis including the bladder, the bowel, the uterus (or womb) in women and the prostate in men.

Contraction of the pelvic floor muscles is important in preventing urgency (the urgent need to go to the toilet), constipation and incontinence (the leakage of urine or faeces). The pelvic floor muscles also contribute to good posture. The pelvic floor muscles can be weak from:

- Chronic coughing.
- Pregnancy and childbirth.
- Continual straining to empty bowels (constipation).
- Heavy lifting.
- Being overweight.
- Being unfit.
- Changes in hormone levels at menopause.

### What are the symptoms of a weak pelvic floor?

If you suffer from any of the following complaints, you may have a weak pelvic floor:

- **Urgency:** a sudden and urgent need to go to the toilet and an inability to 'hold on'.
- **Incontinence:** a leakage of urine or faeces from the bladder or bowel.
- **Stress incontinence:** a small leakage of the urine from the bladder when the pelvic floor is stressed by activity, such as coughing, laughing, sneezing, straining or lifting, jumping, running or doing exercise.
- **Constipation or straining:** the inability to defecate without great effort.
- **Frequency:** a need to go to the toilet frequently, which indicates an inability to 'hold on'.
- **Other symptoms:** such as vaginal flatus (wind) or inability to keep tampons in.

### What can you do to strengthen you pelvic floor?

A weak pelvic floor cannot do its job properly. Research has shown that the pelvic floor responds to regular exercise. In fact, the sooner you start pelvic floor exercises, the better your chance of preventing or overcoming many of the problems associated with a weak pelvic floor.

If you experience stress incontinence, using 'the knack' technique can help to protect you against leakage. The knack technique is when you simply contract the pelvic floor muscles before any activity (for example, coughing, sneezing, lifting or jumping) that will increase pressure to the pelvic floor and the likelihood of leakage. Practise this technique regularly to ensure that it becomes a lifelong habit.

### What are good bladder and bowel habits?

Going to the toilet between four and six times a day and no more than twice at night is normal.

#### **Some simple steps to keep your bladder and bowel healthy**

- Try to drink at least six to eight cups (one and a half litres) of fluid a day (unless advised otherwise by your doctor).
- Limit the amount of caffeine (for example, coffee, cola and tea) and alcohol you drink as these drinks irritate the bladder.
- Try to go to the toilet only when your bladder is full and you need to go (emptying your bladder before going to bed is fine).
- Take your time when urinating so that your bladder can empty completely.
- Keep your bowels regular and avoid constipation.
- Keep your pelvic floor muscles in good condition.

*Speak to your doctor or continence advisor, or contact the National Continence Helpline (phone: 1800 330 066) if you are having difficulty or have concerns about your bladder and bowel function.*

## How to do pelvic floor exercises

### How to tighten your pelvic floor muscles

- Sit or lie comfortably with the muscles of your thighs, buttocks and abdomen relaxed.
- Tighten (and then relax) the ring of muscles around your back passage (anus) as if you are trying to control diarrhoea or wind. Practise this movement until you are able to exercise the correct muscles.
- When you are passing urine, try to stop the flow midstream and then re-start it. This should only be performed occasionally, as this action may interfere with your normal bladder emptying.

### How to do your pelvic floor routine

- **For men:** tighten and draw in strongly the muscles around your anus and urethra all at once, trying to hold them up inside. Hold this contraction as you count to five and then relax. You should have a feeling of letting go as you relax. Rest for at least 10 seconds and repeat. Aim to do 10 contractions.
- **For women:** tighten and draw in gently the muscles around your anus, vagina and urethra all at once, trying to hold them up inside. Hold this contraction as you count to five and then relax. You should have a feeling of letting go as you relax. Rest for at least 10 seconds and repeat. Aim to do 10 contractions.
- When doing these exercises:
  - Do not hold your breath.
  - Do not push down; squeeze and lift up.
  - Do not tighten your buttocks or thighs.

### What else do you need to know?

- Strengthening the pelvic floor muscles takes time. If you have very weak muscles initially, they will fatigue easily. Don't give up. These exercises do work if done regularly.
- These exercises should be done regularly and you can add them into your daily routine, such as after going to the toilet, when having a drink or when lying in bed.
- A position that enhances pelvic floor function should be chosen if you regularly perform airway clearance techniques. When sitting, this is achieved with feet flat on the floor, your hips at 90 degrees and your lumbar spine in neutral or straight (not slumped). Ensure you use the knack technique before huffing and coughing.
- For more information, please contact your doctor, physiotherapist or continence advisor, or contact the National Continence Helpline (phone: 1800 330 066). There are specialist health care professionals that deal with the problem of incontinence.





This chapter will help you to understand:

- How you can use community support services.
- Where you can seek or access community support services.
- What a patient support group is.
- What your transport options are.
- What other community support services may be helpful

### How can you use community support services?

- Be an active participant in your care.
- Learn about your lung condition and learn how to manage and adapt to it.
- Benefit from the knowledge and experience of other people who have lung conditions.
- Build your own support network to help manage your health.
- Plan ahead and use available services as you need them.

### Where can you seek or access community support services?

1. From your team of **health care professionals**, which may include:
  - A local doctor or respiratory physician.
  - A community pharmacist.
  - A community health centre.
  - Your local council.
  - A nurse, such as a community health or respiratory nurse.
  - Allied health care professionals, such as a physiotherapist, dietitian, social worker, psychologist, occupational therapist or speech pathologist.
2. From **The Australian Lung Foundation** (phone: 1800 654 301 or Web site: [www.lungnet.com.au](http://www.lungnet.com.au)), which may include:
  - Patient information resources.
  - Information on local pulmonary rehabilitation and community exercise programs (maintenance).
3. From your local **Commonwealth Carelink Centre** (phone: 1800 052 222), which provides free information about local community aged care, disability and support services.
4. From the **Commonwealth Respite and Carelink Centre** (phone: 1800 059 059), which provides information and options about respite care and other support services for carers, such as:
  - Respite care in emergency and short term planned care situations.
  - Assistance in locating and booking residential respite.
  - Access to an emergency respite service 24 hours a day.

### What is a patient support group?

A patient support group is a group of people who have common interests and needs. The Australian Lung Foundation supports a network of support groups for people who have lung conditions, and their carers and family.

#### **What do patient support groups do?**

When you join a patient support group, you can expect to benefit from the following types of activities:

- Regular meetings.
- Special guest speakers, giving you regular access to expert information on your lung condition and other relevant issues.
- Member-to-member support (by telephone, and hospital and home visits).
- Receiving and distributing lung health education information.
- Special seminars and patient programs.
- Social outings.
- Rehabilitation assistance.
- A group newsletter and national newsletter.
- Social enjoyment, entertainment and good cheer.
- Online support chat rooms.

#### **How you can benefit from a patient support group**

Joining a patient support group allows you to:

- Discuss the information you have learnt from your doctor and other health care professionals, as sometimes the information is difficult to remember or confusing.
- Access new information on your lung condition.
- Share your experiences in a caring environment.
- Participate in pleasurable social activities.
- Change the way you think about your condition.
- Help your carer to understand your condition.

Have you ever experienced the satisfaction of helping someone else in distress? Sometimes, focusing our energy on helping others is the best therapy for overcoming our own troubled feelings.

There are people who need your support and friendship.

#### **Who will attend the patient support group?**

You will meet ordinary people, from all different working and ethnic backgrounds. They will share with you a common personal interest in managing their lung condition, whether they are a patient or a carer.

Group members will also have a wide variety of social and lifestyle interests.

#### **Where and when do patient support groups meet?**

Most groups have regular meetings that are held at a community or neighbourhood centre, or a meeting room at a local hospital. Venues with reasonable transport access are normally chosen.

#### **How much does participating in a patient support group cost?**

Membership of a patient support group normally involves a small annual fee and perhaps a gold coin at meetings to cover the costs of membership services, such as postage, photocopying and meetings. These fees are always kept to an absolute minimum.

### How do you join a patient support group?

The Australian Lung Foundation operates a service called LungNet, an Australia-wide network of affiliated patient support groups.

To find out about patient support groups in your area, contact The Australian Lung Foundation (phone: 1800 654 301, or Website: [www.lungnet.com.au](http://www.lungnet.com.au)).

### What if there is no patient support group in your area?

Support is still available, even if you live in a rural or remote area, or if your town or suburb does not yet have a patient support group.

You can keep in touch by telephone or online support groups with 'foster friends' in other areas and be kept informed by regular newsletters. To find out more about these resources, contact The Australian Lung Foundation (phone: 1800 654 301 or Web site: [www.lungnet.com.au](http://www.lungnet.com.au)). The Australian Lung Foundation can also help you to start a support group if there is not one in your area (phone: 1800 654 301 for further information).

Options may include:

- Disability parking permits (for more information, see your GP or occupational therapist).
- A taxi subsidy scheme with half price taxi fares (for more information, see your GP).
- An ambulance service at reduced cost for transport to and from medical appointments (for more information, talk with your local ambulance service).
- A Home and Community Care Program (for more information, talk with your local community health centre).
- A Patient Transit Scheme that provides financial help for travel and accommodation expenses for people from rural, regional and remote areas in some parts of Australia when travelling to the closest specialist treatment centre. Patients should make arrangements with a means test clerk, social worker or welfare officer at their local hospital before travelling.

## What are your transport options?

Options for transport will depend on what transport is available in your local area. Your local council and community health centre will be able to provide details of the transportation services within your community.

### What other community support services may be helpful?

1. The **Department of Veterans' Affairs** can provide financial, medical, transport and homecare assistance for those people who have served in the armed services. The assistance available includes the following options:
  - Gold Card. Veterans who have served for their country and who are deemed suitable for this benefit are eligible for a full range of health care services.
  - White Card. Veterans who have served their country are eligible for compensation related to their service in the forces. Australian veterans are eligible for Veterans' Home Care; however, British or other overseas veterans are not eligible for Veterans' Home Care.
  - Orange Card. Eligible veterans can access the range of pharmaceutical items available under the Repatriation Pharmaceutical Benefits Scheme.

For more information contact Veterans' Home Care (phone: 1300 550 450).

2. The **Home and Community Care Program** provides government funding for the frail aged and young disabled people, and includes the following services:
  - Medical Aids Subsidy Scheme.
  - Meals on Wheels.
  - Community Agencies (for example, Queensland

- Health Primary and Community Health Services, Blue Care™, Spiritus and Ozcare).
- Palliative Care Services.
- Home Assist Secure (Queensland Government Department of Housing).
- Aged Care Assessment Service.
- Community Aged Care Packages.
- Day or Respite Care.

3. The **National Smoking Quitline** (phone: 137 848) provides assistance if you wish to quit smoking.
4. Do It Yourself kits are available for purchase if you wish to prepare a **will**. Alternatively, speak to a solicitor or a Public Trustee in your state.
5. The **Advanced Health Care Directive** is a document that states your wishes and directions regarding your future health care for various medical conditions, and comes into effect only if you are unable to make your own decisions. See your GP or local health care professional for more information.
6. **Counselling services**, such as Lifeline (phone: 131 114) or Centacare (located in your capital city).



This chapter will help you to understand the following frequently asked questions:

- Should I be vaccinated for the flu and/or pneumonia?
- What tests can be done to assess my breathing?
- What should I know about osteoporosis?
- Can I travel?
- What about sex?

### Should I be vaccinated for the flu and/or pneumonia?

Unless told otherwise by your doctor (for example, you are allergic to eggs), you should receive vaccinations for both the flu and pneumonia.

The flu vaccine is available each autumn and you should be vaccinated every year. As there are no live viruses in the vaccine, you will not get the flu from injection of the vaccine. Like any injection, injection of the flu vaccine may make your arm tender for a short period of time.

You should get the pneumonia vaccination every five years. If you had the pneumonia vaccine more than five years ago, or have had pneumonia since you first had the vaccination, ask your doctor if you should be vaccinated again. Like the flu vaccine, there are no live viruses in the pneumonia vaccine; however, injection of the pneumonia vaccine may make your arm tender for a short period of time.

After two vaccinations (a 10 year period), discuss with your doctor whether further vaccinations should be given.

### What tests can be done to assess my breathing?

There are many tests that can be done to find out if your health problem is related to your lungs. These tests, and what they are used for, are listed following:

- **Respiratory function tests** are breathing tests to find out how your lung function compares with people who are like you but who do not have lung conditions. Spirometry, gas transfer tests and lung volume measurements may all be done as part of a complete test of pulmonary function or each measurement may be done alone. These tests are discussed in detail in Chapter 5 'Lung function tests', page 12.
- **A chest x-ray** takes a picture of your lungs and is a routine test for evaluating chronic obstructive pulmonary disease (COPD). A chest x-ray will show the lungs as well as the heart and several major blood vessels. Chest x-rays are useful if other conditions, such as pneumonia or lung tumours, are suspected.

### What other tests may be useful?

- **A computed tomography (CT) scan** can take many small specialised pictures of the lungs. Although a CT scan is not routinely performed, it can provide more detail than a chest x-ray.
- **An arterial blood gases (ABGs) test** is a blood test that measures how good your lungs are at bringing oxygen into the blood and removing carbon dioxide from the blood. As an ABGs test requires an injection into an artery, this test can be more painful than a standard blood test.
- **An oximetry test** is a way of indirectly measuring oxygen levels in your blood. This test is not painful and is commonly used to measure oxygen saturation, which indicates how much of the oxygen in your body is in red blood cells. However, as this test can be less reliable than ABGs, ABGs will be used when a more accurate measure of oxygen levels is required, such as when deciding whether supplemental oxygen is required.
- **A sputum test** is used to find out what type of infection is in your sputum and which antibiotics would be most effective against that infection.
- **Exercise tests** are done to stress your heart and lungs. These tests are usually done at either a sub-maximal or maximal level. As a result, you can become more breathless and tired during and after the test. Exercise testing will usually be performed as a walking test or on an exercise bike. These tests can be done in an exercise laboratory, a gymnasium or on a walking track. In the laboratory, you will usually be asked to breathe through a mouthpiece connected to a machine. This machine measures how much effort it takes you to exercise. You may also be connected to heart and oxygen monitors.

### What should I know about osteoporosis?

Osteoporosis is the weakening of the bones. Both men and women can get osteoporosis and it occurs in many people as they grow older. Approximately one in two women and one in three men over 60 years of age in Australia are expected to experience an osteoporotic fracture.

Taking certain medication can increase the chances of getting osteoporosis. Steroids are a common medication taken by patients who have COPD. Unfortunately, one of the side effects of steroids can be an increase in your chance of getting osteoporosis. Your doctor can monitor your bone density or the strength of your bones with a bone density scan.

There are medications that can slow the progress of bone loss and in some cases actually strengthen the bones. Adequate nutrition and physical activity are other important factors that can help you to maintain bone strength and assist in preventing falls and fractures. You can discuss these factors with your doctor, physiotherapist, exercise physiologist or dietitian.

For more information, you can contact Osteoporosis Australia in your State or Territory (phone: 1800 242 141, or Web site: [www.osteoporosis.org.au](http://www.osteoporosis.org.au)).

## Can I travel?

People who have COPD can travel. However, some people who have COPD are advised to avoid travelling at high altitudes (for example, flying in a plane) because of decreased oxygen levels at high altitudes. Oxygen can be prescribed when travelling at high altitudes to assist people's breathing. If you are planning to travel at high altitudes, you should discuss your oxygen needs with your doctor.

## What about sex?

Your lung disease does not directly affect your sexual ability. However, COPD can affect both your physical health, such as becoming more short of breath, and your emotional health, such as feeling anxious, depressed, or lonely, both of which can affect your sexual ability. For a lot of people who have chronic lung conditions, the fear of becoming short of breath may lead to avoidance of sexual activity or an inability to maintain sexual arousal. Many people who have COPD and their partners have concerns about the effect of sexual activity on their lungs. However, sex is not harmful to your lungs, and resuming intimacy and closeness with your partner can help to decrease feelings of loneliness and isolation.

Simple considerations to help you better manage your shortness of breath during sexual activity include:

- Having adequate rests before and during sexual relations.
- If needed, clearing mucus (*sputum* or *phlegm*) before sexual activity.
- Using your bronchodilator before sexual activity.

- If you use supplemental oxygen for activities, planning to use the same amount of oxygen during sexual activity.
- Avoiding factors that will increase your fatigue, such as heavy meals, alcohol consumption, uncomfortable room temperature and emotional stress.
- Choosing positions that are less energy consuming and that avoid pressure on the chest (for example, side-to-side).
- Having an able bodied partner assume a more active role.
- Avoiding allergic elements in the environment (for example, perfumes and hair sprays) that may induce bronchospasm.
- Simply touching, being touched and being close to someone is essential to help a person feel loved, special and truly a partner in the relationship.
- Being aware of your symptoms.

Medications, such as bronchodilators and steroids that you take for your lung conditions have not been documented to cause difficulties with sexual function.

Pulmonary rehabilitation programs usually have a class that discusses issues related to sexual function, or you can discuss your concerns with your health care professional.

### References

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### Feedback

Queensland Health and The Australian Lung Foundation welcome feedback on 'Better Living with Chronic Obstructive Pulmonary Disease: A Patient Guide'.

This Patient Guide will be reviewed on a semi-annual basis and appropriate changes will be made:

- If scientific evidence supports a change to the advice contained in the Patient Guide.
- According to feedback from patients, carers and managing clinicians who use the Patient Guide.

Written feedback can be provided to the following addresses:

The Australian Lung Foundation  
PO Box 847  
Lutwyche QLD 4030  
[enquiries@lungnet.com.au](mailto:enquiries@lungnet.com.au)

Clinical Practice Improvement Centre  
Royal Brisbane and Women's Hospital  
PO Box 128  
Herston QLD 4029  
[cpic@health.qld.au](mailto:cpic@health.qld.au)

The following list of questions provides an example of the type of feedback we are seeking:

1. Was the Patient Guide easy to use? \_\_\_\_\_
  - a. Was the language easy to understand? \_\_\_\_\_
  - b. Did you like how the chapters were ordered? \_\_\_\_\_
  - c. Was the Patient Guide easy to navigate? \_\_\_\_\_
2. If you found the Patient Guide difficult to understand, how would you like to see it changed? \_\_\_\_\_
3. Was there too much information, or not enough information, in the Patient Guide? \_\_\_\_\_
4. Was there any information that you felt should have been included in the Patient Guide that was not included? \_\_\_\_\_
5. How did you access this Patient Guide?
  - a. At a pulmonary rehabilitation class ☐
  - b. Online at The Australian Lung Foundation Web site: [www.lungnet.com.au](http://www.lungnet.com.au) ☐
  - c. Requested from The Australian Lung Foundation ☐
  - d. Other \_\_\_\_\_ ☐
6. Where do you live? (provide city, state and postcode only) \_\_\_\_\_
7. Do you receive The Australian Lung Foundation's free quarterly newsletter, 'LungNet News'? \_\_\_\_\_  
If not, would you like to? ☐  
If so, please provide your postal address. \_\_\_\_\_
8. Are you a patient? ☐
9. Are you a carer? ☐
10. Are you a health care professional (please specify)?
  - a. GP ☐
  - b. Allied Health, please specify ☐
  - c. Physician ☐
  - d. Nurse ☐
11. If you are a health care professional, how did you use this Patient Guide?
  - a. To support pulmonary rehabilitation classes ☐
  - b. As patient education during consultations
12. Do you have any other comments you wish to provide? \_\_\_\_\_

Thank you for your feedback.



# COPD Action Plan

Patient Name:	Date of Birth:
GP Name:	GP Phone:
	After Hours Phone:
Consultant Name:	Consultant Phone:
Outreach/Community Nurse Phone:	Ambulance Phone:

## USUAL TREATMENT WHEN STABLE:

Best FEV <sub>1</sub> _____	Best FVC _____
Room air O <sub>2</sub> saturation _____ %	<input type="checkbox"/> CO <sub>2</sub> Retainer
Oxygen: l/min _____	hrs/day _____

MY REGULAR MEDICATION/S	STRENGTH	DOSE	ROUTE MDI + SPACER / DPI / NEBULISER / ORAL	HOW OFTEN
Ask your doctor about pulmonary rehabilitation or call The Australian Lung Foundation on 1800 654 301 to find out about a program near you.				
1				
2				
3				
4				
5				

## MODERATE ATTACK (UNWELL BUT NOT SEVERE)

### • NOTIFY GP OR OTHER HEALTH PROFESSIONAL

- More wheezy / breathless
- Increased cough and sputum
- Change in colour of sputum
- Loss of appetite / sleep
- Taking more reliever medication than usual

## OTHER HELPFUL TIPS

- Eat small amounts more often
- Use controlled breathing techniques
- Use a huff and puff cough to clear secretions
- Use anxiety/stress management techniques

EXTRA RELIEVER	STRENGTH	DOSE	ROUTE	HOW OFTEN
1				
2				
3				

PREDNISOLONE (reducing schedule)	STRENGTH	TABS / DOSE	DAYS
start			
then			
then			
then			

ANTIBIOTIC	STRENGTH	DOSE	ROUTE	HOW OFTEN
1				
2				

## SEVERE ATTACK

- Call ambulance: 000 or ph: \_\_\_\_\_
- Show them this plan and say you have severe COPD

## My Symptoms:

- Unable to perform normal activities e.g. dress, bathe
- Fever / chills
- Increased swelling of ankles
- Extremely short of breath

NAME:	SIGNATURE:	DATE:
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This initiative is part of "Sail On", a National Public Health campaign to help people with COPD "put the wind back into their sails".  
The Australian Lung Foundation is grateful for financial assistance provided by:  
Sponsors – Boehringer Ingelheim, GlaxoSmithKline, Pfizer  
Supporters – Air Liquide Healthcare

live with **copd**  
An initiative of  
The Australian Lung Foundation



## CHRONIC OBSTRUCTIVE PULMONARY DISEASE

The condition 'Chronic Obstructive Pulmonary Disease' (COPD) is often referred to as chronic bronchitis and emphysema. 'Chronic' means that the problem won't go away but can usually be controlled. COPD is mostly caused by smoking. In COPD the airways have become narrow and damaged and it is harder to breathe. Chronic bronchitis means the air passages are inflamed, which causes cough and excess phlegm. If you stop smoking, the phlegm usually dries up! People with COPD tend to get worse with chest infections and during cold weather. Good treatment will help you get better quicker.

### What can I do to keep well?

#### C onfirm diagnosis

The diagnosis and severity of COPD are determined by breathing tests such as spirometry, x-rays, and blood tests to measure oxygen and carbon dioxide levels. These tests help to exclude other conditions. The doctor should test whether your airway narrowing is reversible, i.e. can improve with treatment (possibly including a trial of oral or inhaled corticosteroids).

#### O ptimise function

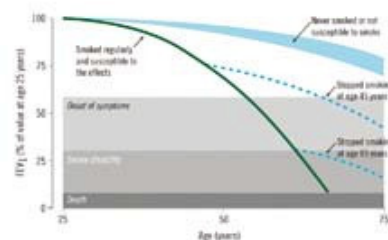
There are no medications that will cure COPD but they can make you feel better. Improving your lifestyle is the best thing you can do. Ask your GP, specialist or other health care workers to help work out the best treatment for you.

- Exercise for 30 minutes most days of the week – it's as simple as walking for ten minutes three times a day. Consider joining an exercise group or rehabilitation program.
- Optimise weight and nutrition. Eat a balanced diet, decrease alcohol consumption and avoid sedatives.
- Maintain good sleep habits.
- Ask your Doctor to refer you to a pulmonary rehabilitation program.

#### P revent deterioration

There is a gradual decrease in lung function with age. Smoking accelerates this decline.

- Quit smoking – it is never too late.
- Have a flu vaccine (annual) and pneumonia vaccine (5 yearly).
- See your GP and specialist regularly to check your progress.
- Get your oxygen level checked – oxygen therapy may prevent complications and prolong your life.



Adapted from Fletcher C, Peto R, Br Med J 1977; 1: 9645-8

#### D evelop a self-management and support plan

Playing an active role in your health is important.

- You should have a self-management plan agreed by you, your GP, specialist and other health care workers.
- You and your carer / support person should receive education about COPD and its treatment.
- Contact the LungNet Support Line on 1800 654 301 for more information.

#### e X acerbations (when you get worse)

You should increase your treatment early when you are unwell. You should have an action plan completed by your doctor and a ready supply of any medications needed (eg antibiotics, prednisolone).

- Notify your GP and (if appropriate) your community nurse / case manager.
- People are often given high flow oxygen when they are extremely breathless, however this may be harmful if you have COPD. If your doctor advises low flow rates (eg 0.5 – 2.0 litres per minute) you should have a medic alert bracelet stating this.

*With good treatment your Quality of Life can be improved!*

For more information contact The Australian Lung Foundation on 1800 654 301



The Australian Lung Foundation  
PO Box 847, Lutwyche Q 4030  
enquiries@lungnet.com.au  
www.lungnet.com.au

Adapted from COPD Action Plan Pack developed  
by A/Professor D McKenzie and Dr K Withell,  
Prince of Wales Hospital, Randwick

live with **copd**  
An initiative of  
The Australian Lung Foundation

## **COPD Self-management Plan**

The Prince Charles Hospital

Your Dr has made this plan for you so you know what to do when a flare up occurs.

NAME

U.R.

D.O.B. .... / .... / .....

SEX

M/F

<b>Worsening Symptoms</b>	<b>What to do</b>
*More breathless than normal. Coughing more often. Less energy for usual activities. Loss of appetite. *Change in amount of phlegm or *Change in colour: yellow, green, brown Signs of fever. Need inhaler/nebuliser more than usual. (If you have 2 or more of the above points with an (*), it may mean you need antibiotics.)	<b>1) Call GP &amp; Community Nurse.</b> 2) Use extra medication listed below & see your local Dr. 3) Reduce activity and rest frequently. 4) Clear phlegm (huffing and coughing). 5) Practice controlled breathing & relaxation. 6) Eat small meals, often. Drink extra fluids.
<b>Severe Symptoms</b> If you are not improving or feeling worse.	<b>What to do</b> Contact doctor for urgent appointment or go to local hospital emergency room.

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### **Extra Medications to use for worsening symptoms:**

To be completed by GP, Physician, Respiratory Specialist / registrar.

**1) Reliever:** \_\_\_\_\_. Take \_\_\_\_ puffs / \_\_\_\_ nebule, up to every \_\_\_\_ hours.

**2) Antibiotic:** \_\_\_\_\_, \_\_\_\_\_ mg. Take \_\_\_\_ tablets \_\_\_\_ times a day.

**3) Prednisone:** \_\_\_\_ mg tablets. Take \_\_\_\_ tablets, once a day with food.

\_\_\_\_\_.

It is strongly advised that you contact or see your Doctor within 24 hours for ongoing instructions.

Plan devised by:	(name)	(signature)	/ /
Review date:	/ /	Please discuss this plan with your Doctor near this date.	

<b>Danger Signs (any of these)</b>	<b>What to do</b>
Severely breathless, chest pain, high fever, agitated, afraid, drowsy, confused	Phone ambulance (000) immediately. Show this plan to the Paramedics.

**Caution QAS:** CO<sub>2</sub> Retainer Y ☐ / N ☐ (Please consider low flow O<sub>2</sub> to keep SaO<sub>2</sub> 88-92%)

## **COPD Self-management Plan**

The Prince Charles Hospital

This plan reminds you “What to do to stay well” with your COPD.

NAME

U.R.

D.O.B. .... / .... / ....

SEX

M/F

### **When you are well – things to know**

How much you can usually do.

Your usual appetite.

Your usual sleep pattern.

Your usual level of breathlessness & cough.

Your usual phlegm colour and amount.

What things make your symptoms worse.

### **What to do to stay well**

Plan activities and pace yourself.

Listen to your body & learn about COPD.

Eat a balanced diet & drink enough fluids.

Exercise regularly. Stay in touch with friends.

Avoid things that make symptoms worse.

Take medications & use oxygen as prescribed.

### **Regular Inhaled Medications:**

Reliever (quick): \_\_\_\_\_, \_\_\_ puffs OR a nebule, \_\_\_ times a day & as needed.

Reliever (slow): \_\_\_\_\_ mcg, \_\_\_ puffs / nebule / capsule, \_\_\_\_\_ times a day.

Preventer: \_\_\_\_\_ mcg, \_\_\_ puffs, \_\_\_ times a day.

\_\_\_\_\_, \_\_\_ puffs / nebule / tablets, \_\_\_\_\_ times a day.

**Oxygen:** Use at least \_\_\_ hours a day, set on \_\_\_ lpm. For exercise, use \_\_\_ lpm. For sleep, \_\_\_ lpm

### **Health Carers & Contact Details**

GP:	Dr	
Community Health Nurse:	Community Health Centre	
Respiratory Consultant:	Dr	Hospital
Respiratory Nurse:		Hospital

<b>Lung Function</b>	Date								
	FEV1								
	FVC								
	SaO2								
	FiO2								

Date:     /     /     Patient signature: \_\_\_\_\_

Copy sent with client consent to: GP ☐, Community Health Nurse ☐, Filed in Chart ☐

### Disclaimer

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The printing of this Patient Guide was supported by:

November 2008

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# **COPD PHARMACY SCREENING PROJECT**

**A collaborative screening, referral and management process to improve health outcomes in Chronic Obstructive Pulmonary Disease (COPD)**

*Conducted by The Australian Lung Foundation in collaboration with the Faculty of Pharmacy at the University of Sydney, and Boehringer Ingelheim Pty Ltd.*

*Funded by the Pharmacy Guild of Australia, as part of the Guild's Research and Development program in the Fourth Community Pharmacy Agreement.*

The COPD Pharmacy Screening Project is currently recruiting pharmacists in the Newcastle / Hunter Valley area.

## **Aim of the project:**

- To assess the feasibility and impact of pharmacist collaboration with general practitioners in the early detection, referral and ongoing management of COPD

## **Participating community pharmacists will:**

- Help raise awareness of COPD
- Identify patients at risk of COPD early and refer them to their usual GP
- Participate in the management of COPD in collaboration with the patient's usual GP

## **Why COPD?**

- COPD is largely unrecognised and under-diagnosed. Patients often attribute early stages of COPD to smoking, reduced fitness or age and do not seek treatment until their condition is moderate or severe.
- Early detection of COPD is important in altering the clinical course of the disease and preventing progressive lung damage and associated complications.
- Research has shown that high quality lung function testing by pharmacists is feasible.

## **Why the Hunter Valley?**

The Hunter Valley/Newcastle area has been selected for a trial of the project as an area supplied with primary care practitioners proactive about improving the lung health profile of the community.

## **Will I be remunerated for my time?**

Remuneration will be provided to participating pharmacists at the end of the study to compensate for any extra resources required for the completion of the lung function screening and documentation according to the criteria specified in the study.

**Further details can be obtained at an information session  
at the next NHVPA CPE Meeting on 27<sup>th</sup> August 2008.**

For further information on this project, please contact Dr Bandana Saini on (02) 9351 6789.

*Any person with concerns or complaints about the conduct of a research study can contact the Senior Ethics Officer, Ethics Administration, University of Sydney on (02) 9351 4811 (Telephone); (02) 9351 6706 (Facsimile) or [gbridy@usyd.edu.au](mailto:gbridy@usyd.edu.au) (email).*



## **MEDIA RELEASE**

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Date: 10 November 2008

### **A call for pharmacists interested in Chronic Obstructive Pulmonary Disease**

The Australian Lung Foundation is currently recruiting additional pharmacists in the Newcastle/Hunter Valley area to participate in a research project testing the effectiveness of lung function screening at community pharmacy.

The Australian Lung Foundation, in collaboration with the University of Sydney, is piloting a screening, referral and management program for Chronic Obstructive Pulmonary Disease that has been funded by The Pharmacy Guild of Australia.

Chief Investigator, Heather Allan of The Australian Lung Foundation, said that the research program currently had a number of pharmacists already participating, but that a few more were still needed.

"Chronic Obstructive Pulmonary Disease (COPD) is a leading cause of death and hospitalisation in Australia", said Ms Allan. "Of particular alarm to the Lung Foundation however, is the fact that it also remains largely unrecognised and under-diagnosed."

"Symptoms of COPD, such as shortness of breath and persistent cough, are often misdiagnosed as asthma or passed off as "normal" signs of aging or side-effects of smoking. Consequently, patients often do not seek treatment until their condition has become moderate to severe. As we all know, early detection and management can make a significant difference to the quality of life of people with COPD and to their longer term health."

Ms Allan said that pharmacists are well placed to play a significant role in raising awareness of COPD amongst their patient group, performing lung function screening and referring at-risk patients to their general practitioner for lung function testing.

A limited number of places are currently available for pharmacists in the Newcastle and Hunter Valley area with an interest in COPD. The Australian Lung Foundation is interested in hearing from that would be like to participate in the project.

Training is scheduled for November and December 2008. A limited number of places are still available for pharmacists in the Newcastle and Hunter Valley area with an interest in COPD that would like to participate. Further information is available from the project manager, Phoebe Kearey, who can be contacted on 0418 886 186 or [phoebe@lungnet.com.au](mailto:phoebe@lungnet.com.au).

- ends -

For further information, contact: Phoebe Kearey on 0418 886 186 or [phoebe@lungnet.com.au](mailto:phoebe@lungnet.com.au).

## Prevention focus

THE federal govt has urged ongoing commitment to the National Preventative Health Strategy, with a taskforce seeking to tackle the "looming burden of chronic diseases."

The initial focus will be on alcohol, tobacco and obesity, with a statement from health minister Nicola Roxon saying the release of the Australian Institute of Health and Welfare's *National Public Health Expenditure Report* showed an 8% decline in public health funding in 2005-06.

"We are determined to shift prevention from the margins to the centre of health care - a crucial part of building a health system for a modern Australia," Roxon said.

## India pharmacy trip

AN EXCLUSIVE tour for pharmacists, their partners and friends of the industry will explore India's colourful desert state of Rajasthan.

Pharmacy Small Group Tours will host the Colours of India Tour, led by Mike and Yvonne Lazarow and Dipak Sanghvi, on February 21 - March 1, 2009.

The eight-night itinerary covering Mumbai, Udaipur, Jodhpur and Osian includes tours and a camel safari, a business program, and an option to extend to Jaipur and the Taj Mahal.

Packages start from \$9650 (two share, ex Sydney and Melbourne) including return airfares, hotel accommodation, meals and tours. Details 03 9530 8344.



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**08 93881444**  
[www.trimed.com.au](http://www.trimed.com.au)

## Sick certs to be simpler?

THE heat may be off pharmacists after the Federal Government announced it will relax Work Choices laws that allow employers to demand medical certificates from staff.

The tougher provisions, introduced by the Howard government, "have triggered a turf war between doctors and other health professionals", the *Sydney Morning Herald* reported.

A spokeswoman for Workplace

## COPD R&D grant

THE Pharmacy Guild has announced the contracting of the second R&D Investigator Grant, which will evaluate the feasibility and impact of initial screening and referral of patients for Chronic Obstructive Pulmonary Disease by community pharmacists, using a portable electronic device.

The study will be undertaken by Heather Allen of the Australian Lung Foundation.

## Airport noise alert

LIVING near an airport can increase your blood pressure, according to a European Commission study.

Scientists found that people living for at least five years under a busy flight path were at greater risk, with a 10 decibel increase in night-time aircraft noise leading to 14% higher blood pressure.

**Owners - need a locum or permanent staff?**  
**Pharmacists - need a job?**



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[www.locumco.com.au](http://www.locumco.com.au)

Relations minister Julia Gillard said the govt would simplify the rules as part of its overhaul of industrial laws.

The issue has generated much confusion, with pharmacists divided on how to conduct patient consultations and what charging regimes should apply.

## GPCR research

MONASH University has been allocated \$6.5m over the next 5 yrs to study why some drugs work and some don't and why some cause unwanted side-effects.

Pharmacology professor Patrick Sexton and his 35-strong group will look at G protein-coupled receptors (GPCRs) which are targeted by almost half of all therapeutic drugs.

## Melbourne drug treats alcoholism

A DRUG developed by Victorian biotech Solagran Limited has been shown to be effective in treating conditions associated with chronic alcoholism.

The trial was conducted in 2006 but the results were subjected to an embargo until patents were granted in January this year.

Ropren is approved in Russia for the treatment of chronic liver disease and will now be used to treat conditions associated with drug and alcohol addiction.

## HOT Travel Deals

WELCOME to *Pharmacy Daily's* new travel feature.

Each week we plan to highlight a couple of great travel deals which we're sure will be of interest to everyone in the pharmacy industry.

With Easter almost upon us and chocolate everywhere be inspired to discover more about chocolate by visiting areas of culinary excellence in France, Italy, or Australia's own chocolate paradise:

**Paris Food Walking Tour** - Pastry and Chocolate from \$142 per person - price includes an English speaking guide, tasting of pastries, chocolates and bread varieties. Flights to Paris start from \$1965 (ex-Syd).

**Gourmet Walking Tour of Bologna, Italy** - Chocolate, pasta and mortadella from \$115 per person - the tour takes you through medieval markets and

visits the local traditional chocolate maker, where solid chocolate was invented. Flights to Bologna start from \$2095.

Or closer to home, **Hobart Cadbury Chocolate Factory Tour** from \$65 per person. The largest facility in the southern hemisphere and a chocolate lovers dream with the opportunity to sample on the tour. Price includes one way coach from Hobart to Cadbury factory, and return cruise to Hobart. Also plenty of time for shopping at the factory's outlet following the tour!!

All these tours can be booked through [www.zuji.com.au](http://www.zuji.com.au).

## DISPENSARY CORNER

DOCTORS have removed a bullet from the shoulder of an 88-year-old Spanish Civil War veteran - almost 70 years after he was shot.

Faustino Olivera complained of a painful lump which required an operation, shocking surgeons when they uncovered the ammunition from a Mauser 98.

A NEW range of cosmetics has been withdrawn from sale in Singapore after complaints from irate Catholics.

The products, branded 'Lookin' Good for Jesus,' are made by US makeup company Blue Q and were being sold by Singapore retailer Topshop.

Products include a 'Virtuous Vanilla' lip balm, hand and body cream, with slogans including "Redeem your reputation," "Get tight with Christ," and "Get His Attention."

Other Blue Q products include a "Believe in God" breath spray, a "King" size shopping bag, a "Patron Saint of Parking" car air freshener and a coin purse with the logo "Show HIM the money".

A BRITISH nature-lover has been reunited with his false teeth more than a year after losing them while on a walk in the picturesque Lake District.

David Packer removed his dentures to eat a chocolate bar in Jan 2007, and the teeth must have fallen from his pocket.

Just last month another walker found the dental plate and put an ad in the lost and found section of a walking magazine, leading to the teeth being reunited with their owner.

"I had visions of a sheep wandering around the Lakes with a set of my shiny teeth - I never thought I would see them again," Packer said.

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# Pilot to combat COPD

## Pharmacists to help Hunter Valley sufferers breathe easy

Pharmacists may soon play a pivotal role in managing the killer chronic obstructive pulmonary disease.

A PILOT program run by the Australian Lung Foundation will see pharmacists and GPs in the NSW Hunter Valley region working together on the disease.

Using the PiKo-6, a portable electronic device that measures the amount of air in a person's lungs, pharmacists will screen patients identified as being at a high risk of COPD.

At-risk patients include asthmatics over 35 with a history of smoking, or people experiencing breathlessness with minimal exertion or an ongoing cough with phlegm or mucus.

If the test reveals signs of COPD, the pharmacist will refer the patient to a participating GP in the area for assessment, including a full spirometry test and diagnosis.

Pharmacists will then be involved in the ongoing management of patients diagnosed with COPD, including monitoring drug compliance and



Breathless: Continuing cough with phlegm combined with breathlessness may be chronic obstructive pulmonary disease.

quality use of medicines, counselling on smoking cessation and referring to support networks if appropriate.

Heather Allen, executive director of clinical relations at the Australian Lung Foundation and the program's lead investigator, said the symptoms of COPD, such as shortness of breath and a persistent cough, are often misdiagnosed as asthma or passed off as part of getting older or normal side effects of smoking.

"People, particularly ex-smokers or chronic smokers, are reluctant to talk to their doctor about their breathlessness.

"The Australian Lung Foundation works very hard to raise awareness of symptoms of

COPD and encourages people with symptoms to see their GP for a diagnosis. We hope this program will prove successful and we'll be given the opportunity to roll it out further in the future," Ms Allen said.

The Pharmacy Guild of Australia said recent evidence suggests that early detection of COPD in primary care by non-physicians, such as pharmacists, is feasible and should be considered as an alternative.

"Given community pharmacists' accessibility and frequency of contact with patients, they are in an excellent position to screen and refer patients at risk of COPD, as well as play an active role in their ongoing management.

"Frameworks exist for the delivery of cognitive pharmaceutical services and previous research suggests that the community pharmacist can successfully screen individuals resulting in early referral and intervention for further assessment and management," the Guild said in a statement.

The 15-month program will begin next month and the Australian Lung Foundation is looking for pharmacists in the Hunter Valley region to participate, as well as an academic pharmacist to fill a three-day-a-week position as a research associate.

For more information email Heather Allan at [heather@lungnet.com.au](mailto:heather@lungnet.com.au).

## New quitting program

TERRY White Chemists has launched a new smoking cessation program, following the success of the Tony Ferguson Weight Loss Program.

The Today program, being supported by a television advertising campaign, is a weekly, step-by-step consultation program that includes in-store medical advice and monitoring to help patients quit smoking.

The initial consultation includes assessment of the customer's medical history, a test of their readiness to quit and recommendations on which nicotine replacement therapy (NRT) might be suitable.

The customer is also given a series of tests to measure lung strength and carbon monoxide levels as well as blood pressure monitoring. Program members keep a daily progress diary and return to the pharmacy every week for 12 weeks for follow-up.

Today is not aligned with any particular NRT product, giving the pharmacist discretion to recommend the appropriate solution.

Andrew Vidler, TWC executive director, said the success of the Tony Ferguson program provided the group with valuable insight into delivery of professional services.

Mr Vidler said the Today program was the first of a number of category extensions offering one-on-one professional advice.

"We did a lot of research in putting this program together and found that although there are plenty of stop-smoking products on the market, there's a real lack of professional one-on-one support for smokers who are trying to give up.

"The Today program is different because it's based on the individual. Every smoker has their own trigger factors, their own social and lifestyle situations and their own goals, so one-on-one assessment and support is crucial in helping them improve their health."

## Pharmacists take labelling complaints to TGA

SIMONE ROBERTS

FRUSTRATED pharmacists have taken their concern over medicines labelling to the TGA, calling for tougher regulation.

Fed up with difficult-to-read or confusing labelling, and insufficient space to affix a pharmacy label, pharmacists have deluged the TGA with submissions detailing their grievances, and demanding legislation to ensure packs allow enough space for a dispensing label.

Other demands include the replacement of bottle packs with blister strips; colour-coding of strengths; printed rather than

embossed expiry date and batch number on packaging; and the inclusion of pharmacists in consultation groups to develop improved packaging.

A submission template provided on the AusPharm website says guidelines and recommendations on medicines labelling set by Medicines Australia in 2006 appear to have been ignored or overlooked by most pharmaceutical manufacturers.

The submission suggests that a product should only be registered if it meets labelling requirements.

"Product registration should be dependent on compliance with such regulations as are necessary to ensure that

prescription-only medications are packed and labelled in a way that ensures patient safety by presentation in a user-friendly way," it says.

The Pharmacy Guild of Australia has also made a submission to the TGA in response to a draft on revised guidelines issued by the regulator.

"The Pharmacy Guild supports labelling measures that enhance patient safety and contribute to good pharmacy practice. We received comment from many of our members and we thank them for their support in providing feedback in this area. We look forward to seeing the TGA's response," a spokesperson for the Guild said.

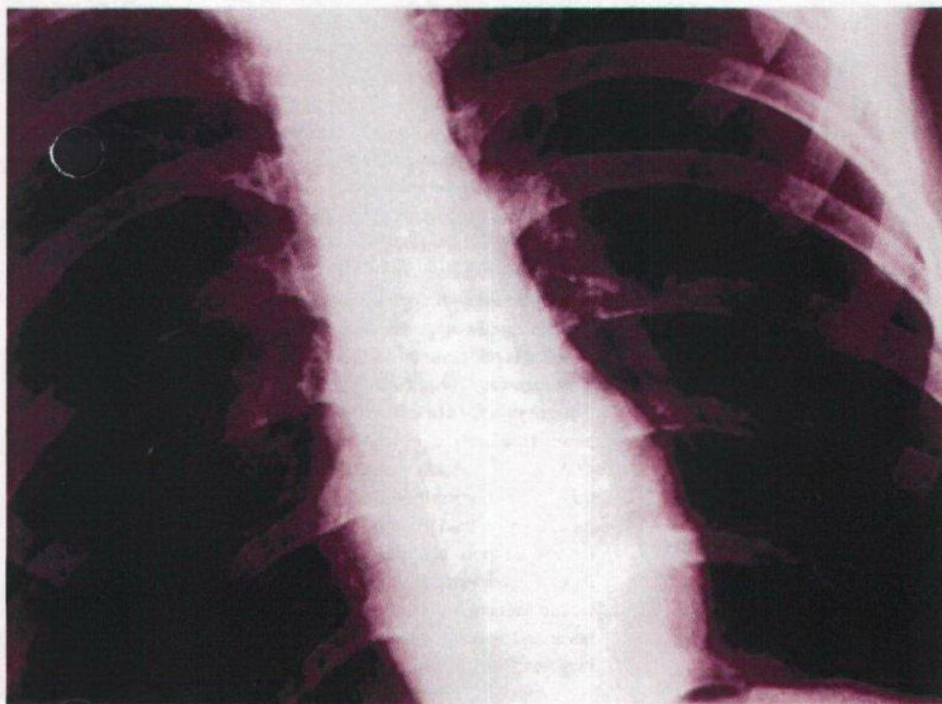


Dr Jenny Gowan PhD, FPS, FACPP, HMR Facilitator, Northern & North East Valley Divisions of General Practice, Melbourne, Consultant Pharmacist

Associate Professor Louis Roller BPharm, PhD, FPS, FACPP, Department of Pharmacy Practice, Victorian College of Pharmacy, Monash University



CONTINUING PROFESSIONAL DEVELOPMENT



## The chronic obstructive pulmonary disease burden

PHARMACY CAN PLAY A PRIMARY ROLE IN  
IMPROVING THE SELF-MANAGEMENT OF COPD TO  
IMPROVE PATIENTS' QUALITY OF LIFE.

**C**hronic obstructive pulmonary disease (COPD) and chronic obstructive airways disease (COAD) are interchangeable terms. COPD is a chronic, slowly progressive disorder characterised by fixed or minimally reversible airway obstruction; unlike the reversible airway obstruction seen in asthma.

COPD is a major cause of disability, hospital admission and premature death. It is the single leading cause of death that is continuing to increase and is now the third largest contributor to the burden of disease in Australia.<sup>1</sup>

Guidelines developed and published in 2003, by the Australian Lung Foundation and the Thoracic Society of Australia and New Zealand, were based largely on evidence in the Global Initiative for Chronic Obstructive Lung Disease (GOLD)<sup>2,3</sup>. These have been further updated, incorporating more recently published evidence and systemic reviews in the Cochrane Library and, are now based on National Health and Medical Research Council (NHMRC) levels of evidence. The guidelines have a strong emphasis on the use of objective measures of function, the role of non-pharmacological interventions and promotion of self management. The key recommendations are summarised in the COPDX Plan.

- **C—Confirm diagnosis and assess severity;**
- **O—Optimise function;**
- **P—Prevent deterioration;**
- **D—Develop support network and self-management plan; and**
- **X—manage exacerbations.**

The guidelines aim to:

- **affect changes in clinical practice based on sound evidence; and**
- **shift the emphasis from a predominant reliance on pharmacological treatment of COPD to a range of interventions which include patient education,**

**self-management of exacerbations and pulmonary rehabilitation.**

These guidelines deal mainly with the management of established disease and exacerbations. However, this is only one element of the COPD Strategy of the Australian Lung Foundation [www.lungnet.org.au] which has the long-term goals of:

- primary prevention of smoking;
- improving rates of smoking cessation;
- early detection of airflow limitation in smokers before disablement; and
- improved management of stable disease and exacerbation prevention.

No medications for COPD have been shown to modify the long-term decline in lung function which is the characteristic of the disease. Drug treatment is aimed at reducing symptoms and complications. Stopping smoking and domiciliary oxygen are the only treatments shown to reduce mortality in COPD.<sup>4</sup>

The following notes offer further comments on the management of COPD:

**1. CONFIRM DIAGNOSIS AND ASSESS SEVERITY**

COPD comprises three separate, but often interconnected, disease processes, all leading to progressive loss of lung function. These are:

1. Chronic over-secretion of mucous, resulting in chronic cough and phlegm production. This may be associated with low-grade infection in the airways resulting in chronic bronchitis.
2. Airway thickening and narrowing resulting in difficulty in breathing.
3. Damage to the small airways within the lung, eventually causing destruction of elastic fibres and airway sacs resulting in emphysema. This restricts the

lungs' capacity to contract and expand and decreases the amount of lung tissues through which oxygen can enter the body.<sup>5</sup>

The diagnosis of COPD rests on the demonstration of airflow limitation which is not fully reversible. If airflow limitation is fully or substantially reversible, the patient should be treated as for asthma.

**Symptoms**

The main symptoms of COPD are breathlessness, cough and sputum production. Patients often attribute breathlessness to ageing or lack of fitness.

A persistent cough, typically worse in the mornings with mucoid sputum, is common in smokers. Other common symptoms include chest tightness, wheezing and airway irritability.

Acute exacerbations, usually infective, occur from time-to-time and may lead to a sharp deterioration in coping ability. Fatigue, poor appetite and weight loss are more common in advanced disease. Some physicians may describe patients as:

**No medications for COPD have been shown to modify the long-term decline in lung function which is the characteristic of the disease.**

'PINK PUFFERS'—thin, anxious patients with Type 1 respiratory failure with no carbon dioxide retention and;  
'BLUE BLOATERS'—large, quiet with Type 2 respiratory failure and carbon dioxide retention.<sup>6</sup>

Severity is defined according to the degree of airflow obstruction measures by forced expiratory volume in one second (FEV<sub>1</sub>).

**Mild disease:** FEV<sub>1</sub> 60–80% of age/sex predicted—with cough, minimal dyspnoea, normal examination.

**Moderate disease:** FEV<sub>1</sub> 40–59% of predicted with cough, breathless on moderate exertion, wheeze, hyperventilation, and reduced air entry.

**Severe disease:** FEV<sub>1</sub> <40% with cough, breathless on minimal exertion, signs of moderate COPD, possibility of respiratory failure and right heart failure.<sup>5</sup>

The Medical Research Council's five-point grading of functional limitation due to dyspnoea<sup>7</sup> is:

1. 'I only get breathless with strenuous exercise.'
2. 'I get short of breath when hurrying on the level or walking up a slight hill.'
3. 'I walk slower than most people of the same age on the level because of breathlessness or have to stop for breath when walking at my own pace on the level.'
4. 'I stop for breath after walking about 100 yards or after a few minutes on the level.'
5. 'I am too breathless to leave the house,' or 'I am breathless dressing.'

Investigations carried out by the physician will include:

- spirometry checking lung function tests and arterial blood gases;
- assessment of degree of reversibility with  $\beta_2$  agonists and corticosteroids;
- Chest X Rays to exclude other (smoking-related) pathology; and
- Computed tomography

**2. OPTIMISE FUNCTION**

**Therapeutics:**

Symptom relief: Inhaled bronchodilators (eg. salbutamol 100–200mcg, or terbutaline

Microaspiration of oesophageal secretions (possibly including refluxed gastric content) is a risk; especially with coexistent snoring or obstructive sleep apnoea.

Reflux and microaspiration exacerbate cough, bronchial inflammation and airway narrowing. Patients may be at risk of aspiration due to swallowing difficulties. Speech therapists are often invaluable in providing techniques to assist swallowing.

Mucolytic agents may reduce the frequency and duration of exacerbations (evidence level 1).<sup>1</sup> A trial of a mucolytic (eg. bromhexine or N-acetylcysteine) may be considered for those people who have a higher-than-average rate of exacerbations, although these agents are not available for COPD through the PBS.<sup>8</sup> Adequate fluid intake may also aid expectoration.

Opioids may have a role in the relief of severe intractable dyspnoea (evidence level 1).<sup>1</sup>

Pulmonary rehabilitation reduces dyspnoea, anxiety and depression, improves exercise capacity and quality of life, and may reduce hospitalisation.<sup>2</sup> Pulmonary rehabilitation is an effective intervention in COPD and has been shown to reduce symptoms, disability and handicap, and to improve functioning by:

- **improving cardiovascular fitness, muscle function and exercise endurance;**
- **enhancing the patient's self-confidence and coping strategies, and improving medication adherence and use of respiratory treatment devices; and**
- **improving mood by controlling anxiety and panic, decreasing depression, and reducing social impediments.**<sup>2</sup>

Chest physiotherapy may be beneficial in aiding sputum removal.

Exercise training may also

improve cardiovascular fitness, exercise endurance, muscle strength, self-efficacy and health-related quality of life and mood.<sup>2</sup>

#### 4. PREVENT DETERIORATION

Smoking cessation has been shown to halt the accelerated decline in lung function seen with COPD.<sup>10,12</sup>

Clinically significant degrees of emphysema occur almost exclusively in cigarette smokers. The severity of emphysema among smokers increases with the number of cigarettes smoked per day and the duration of smoking. Almost all smokers of more than 20 cigarettes per day show some degree of emphysema.<sup>12</sup>

About 82% of deaths due to COPD in men are attributable to smoking and 76% of deaths in women. Smokers are also at risk of developing lung cancer and cardiovascular disease, such as ischaemic heart disease and peripheral vascular disease.

People who continue to smoke despite having pulmonary disease are highly nicotine-dependent and may require treatment with pharmacological agents to help them quit.

Nicotine dependence is a chronic condition with a high rate of relapse. Most former smokers have an average of five-to-six serious attempts to quit.<sup>12</sup> People must not continue to smoke when using nicotine replacement therapy.

Treatment is usually required for up to 12 weeks (6–8 weeks for most people). Doses can be tapered in the later stages. Combinations may be used for heavy smokers or those who have been unsuccessful previously. Before initiating nicotine replacement treatment, or use of other agents such as bupropion (Zyban), varenicline (Champix), contraindications should be carefully checked. The April edition of the *AJP*, (Vol 89, 1056) examined smoking cessation in detail.<sup>13</sup> A combination

of psychosocial and pharmacological interventions is superior to either alone (evidence level 1).<sup>1</sup>

Other factors that can contribute to the development of COPD include:

- **occupational dust and fume exposure;**
- **outdoor and indoor air pollution (including environmental tobacco smoke);**
- **$\alpha_1$ -antitrypsin ( $\alpha_1$ -AT) deficiency (thought to affect about 1:1000 in the population);**
- **over production of interleukin-18 in the lungs;**
- **genetic predisposition;**
- **recurrent respiratory infections in childhood; and**
- **bronchial hyper-responsiveness.**

**Vaccination:** Influenza vaccination reduces the risk of exacerbations, hospitalisation and death. Pneumococcal vaccination is known to be highly effective in preventing invasive bacteraemic pneumococcal pneumonia, but may be less effective in elderly or immuno-suppressed patients. The vaccination should be repeated five times every year.

**About 82% of deaths due to COPD in men are attributable to smoking and 76% of deaths in women.**

#### 5. DEVELOP A SUPPORT NETWORK AND SELF-MANAGEMENT PLAN

Patients should be encouraged to take appropriate responsibility for their own self-management (evidence level 111–1).<sup>1</sup>

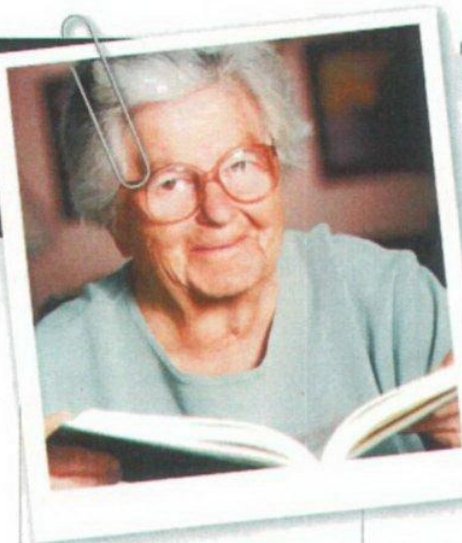
It has been shown that self-management education reduced the need for rescue medication; and led to increased use of oral corticosteroids and antibiotics for respiratory symptoms, but had no effect on hospital presentations.

## Scenario

You have been asked to undertake a PMR for Mrs Alison Brown, a 75-year-old widow who lives alone in her unit. She has a good diet, but does not exercise. Her memory and cognition seem to have declined since she lost her husband three years ago. She has had a bilateral cataract removal, hysterectomy, colonoscopy, and haemorrhoidectomy.

Mrs Brown's history lists COPD, asthma, depression, diverticular disease, gastro-oesophageal reflux and hypothyroidism. Pathology results recently show adequate thyroxine dosing. Following the death of her husband she was prescribed sertraline, but experienced hyponatraemia and nausea.

She currently has about two drinks a day and 20 years ago gave up smoking



a pack a day. She weighs 68kg and is 156cm tall (BMI = 28kg/m<sup>2</sup>). Currently, she is troubled with back pain and has a poor appetite.

Mrs Brown seems to be taking 11 oral medicines per day plus three inhalers. She is concerned by a recent diminishing of her memory, but this does not appear to

be affecting her medication compliance. She fills her own Dose Administration Aid box weekly, and the dispensing records confirm compliance. The WebsterPak system was offered. She declined at this stage, but the dispensing pharmacist will keep it in mind for the future. Mrs Brown stores her medications appropriately; they are all in date and she is aware of generic issues. She has previously been given consumer medicines information.

On close examination of her medications, she had not been using her Spiriva as she was 'unsure about it'; she was using the Seretide prn (as prescribed) and managing the Accuhaler 'well'.

On checking her technique it was noted that she was breathing into the accuhaler. She was not able to use the Asmol adequately and so the pharmacist suggested the use of a spacer and explained emergency use. She had stopped taking the prednisolone as she had finished the course.

Following the review she started using Spiriva after the pharmacist had helped her with opening the device and how to clean both chambers. This had not been explained to her before and she was quite sure it was not working.

She also was counselled to use Seretide regularly. She stored the prednisolone for use for future exacerbations—to be used only after medical examination. Although she no longer smokes, she has considerable airway damage.

Medications indicate a cardiac history, although, this is not mentioned in the referral. If there is a component of heart failure, an ACE-inhibitor should be considered. She is gaining weight, probably from fluid retention, as she says she has not much appetite. The use

of a beta-blocker is considered (check effect on asthma/COPD) and, maybe, spironolactone to optimise her prognosis.

The use of ibuprofen for back pain is queried, as a number of studies have now shown it will significantly reduce the antiplatelet activity of aspirin.<sup>14-17</sup>

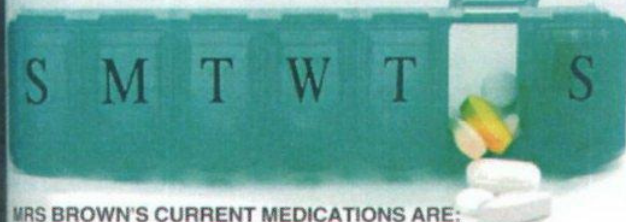
This will also increase her risk of gastrointestinal events, plus increased cardiovascular risk. She was counselled about taking her low-dose aspirin before her ibuprofen. This was to avoid possible loss of effect from the aspirin, but it only works when only a single dose of ibuprofen is used.<sup>17</sup> Alternatively Mrs Brown could trial therapeutic doses of paracetamol. Buprenorphine patches (Norspan) may also be a possibility.

The omeprazole (Losec) is ordered for midday but she finds this difficult to remember. This was changed to one each morning when the concern was raised. In addition she has swallowing difficulties, and admitted to sometimes crushing the tablets.

Losec tablets should be swallowed whole (not broken or chewed) with liquid. If required, the tablets can also be dispersed in half a glass of non-carbonated water (mineral water is not suitable) or non-carbonated fruit juices. Stir until the tablets disintegrate and drink the liquid with the pellets immediately, or within 30 minutes. Rinse the glass with half a glass of water and drink. The pellets must not be chewed or crushed.<sup>(18)</sup>

Consideration for referral to a speech therapist, to help with her swallowing difficulties, was suggested. It is likely that her COPD has predisposed her to reflux. Some exercise is suggested that suits her ability and motivation.

Findings and recommendations from the interview are presented to the prescriber who then, with Mrs Brown, develops a medication management care plan, for implementation by her general practitioner and community pharmacist to assist Mrs Brown to obtain the best outcomes from her medication and optimise her quality of life.



### MRS BROWN'S CURRENT MEDICATIONS ARE:

• Aspirin	100mg 1 daily
• Atorvastatin (Lipitor)	40mg 1 d
• Furosemide (Uremide)	40mg 1 bd
• Potassium chloride (Slow K)	600mg 2 m
• Thyroxine (Oroxine)	100mcg 1m ac
• Omeprazole (Losec)	20mg 1 mid-day
• Citalopram (Celapram)	20mg 1m
• Tiotropium (Spiriva)	10mcg 1 capsule via Handihaler each morning
• Fluticasone/Salmeterol (Seretide 500/50) Accuhaler	1 bd prn
• Salbutamol (Asmol)	100mcg Inhaler 2 q4h prn
• Prednisolone	25mg reducing dose mdu
• Temazepam	10mg 1 n prn
• Paracetamol 500mg codeine	8mg 1 n prn
• Ibuprofen 400mg (Brufen)	1 tds pr

WITH COPD EXPECTED TO BE THE THIRD HIGHEST CAUSE OF MORTALITY BY 2020, PHARMACISTS HAVE A CLEAR ROLE IN PREVENTION, IDENTIFICATION AND PRIMARY CARE, KYMBERLY MARTIN REPORTS.

# Breathing life into failing lungs

## KEY POINTS

- By 2020 it is estimated that COPD will be the third most common form of death.
- One in seven smokers develop COPD.
- Help identify at risk patients; smokers, those with persistent cough, particularly aged older than 40.

**E**stimates show that more than one million Australians have Chronic Obstructive Pulmonary Disease (COPD). More alarming, however, is that almost three quarters are unaware they have the disease, said Heather Allan, executive director, COPD Program, The Australian Lung Foundation.

The Australian Lung Foundation estimates that COPD costs Australia almost \$1bn annually and every day 1,000 COPD patients occupy Australian hospital beds.

Smoking is the single biggest cause of COPD, with approximately 85% of COPD being linked to smoking history, Ms Allan told the *AJP*.

'Quitting smoking is vital for those diagnosed with COPD. Getting onto a smoking cessation program straight away is the number one thing the patient can do to slow down progression of the disease and to improve their symptoms. Damage to lung and airways cannot be reversed, however, appropriate management of COPD can improve quality of life and keep people out of hospital.'

Environmental factors play a role in COPD. Miners, farmers and others who have worked in dusty environments are at elevated risk. Women seem to be more susceptible than men, possibly because they have smaller airways. A small proportion of COPD is

related to a genetic deficiency of alpha-1 antitrypsin.

COPD is often confused with asthma, as symptoms of the two conditions are similar. These include breathlessness and productive cough. As people age, their ability to compensate for damage done to the lungs through smoking or environmental exposures wanes. Symptoms, such as shortness of breath, are often attributed to age.

Previously COPD was a male dominated disease due to the relative rates of smoking among men. However, as more women have taken up smoking, COPD is becoming common in women. Ms Allan

'It is important to identify

because you can slow the progress of the condition and improve patient quality of life through appropriate management. COPD, unchecked, can have a significant impact on ability to complete even the simplest of tasks. At the severe end of COPD, just tying up shoelaces can be difficult,' she said.

#### BETTER MANAGEMENT

Dr Christine Jenkins, senior staff specialist in thoracic medicine at Concord Hospital, Sydney said that although there are no new medications for COPD, clinicians are now moving away from drugs as the sole platform for treatment.

Current treatment strategies are all about better COPD management, Dr Jenkins told the *A/P*. 'Being more proactive and focused on early diagnosis and early institution of treatment incorporating supervised exercise, rather than just treating with drugs.

'While drugs will always be a crucial part of COPD management they are not the only part. Drugs give good symptomatic benefit, improve quality of life and reduce exacerbations. Patients, however, remain symptomatic despite these benefits.'

Without appropriate exercise patients become 'de-conditioned.' And a vicious cycle begins, with breathlessness curtailing further exercise with associated muscle loss and, due to weakness, exercise begins even less likely.

'For many patients COPD is not just a lung disease it is a systemic disease with a range of manifestations. Apart from muscle-wasting, patients can have high C-reactive protein (CRP) levels indicating inflammation. There is a tendency to lose weight even though these patients may be eating adequately.

'We know appropriate levels of supervised exercise keeps COPD patients independent for far longer. Nothing will retrieve lung function but patients can maintain mobility,

be active socially and improve mood. Things accumulate in a negative way if mobility is not maintained with a structured exercise program.'

Dr Jenkins said randomised trials show, no matter how little the exercise even walking 150 metres or improving arm strength can have real value in the range of daily activities.

She added that access to a supervised exercise regime may be difficult for some patients. 'Often GPs do not refer to a physiotherapist and this is because the patient has not been diagnosed with COPD. They mention breathlessness which is often attributed to age or being overweight. COPD is under-diagnosed. Identifying the disease can be done in general practice by taking a good clinical history and arranging spirometry.

Immunisation against flu and pneumococcal is important. Dr Jenkins said there is also good evidence supporting early intervention with steroids and antibiotics to help reduce exacerbation and enhance recovery time.

'Distinguishing a COPD patient from a normal patient is critical. We don't encourage prescribing antibiotics in otherwise healthy patients with acute bronchitis, but patients with COPD need antibiotics promptly.'

Dr Jenkins said there is a high prevalence of airways disease in the community. 'Many asthmatics are smokers and go on to develop COPD. She said there is a link between asthma and COPD but not a strong one. 'And it may be important to distinguish between the two, although this is a topic of some debate at present. Unquestionably, patients can have both diseases and, unquestionably, people can have COPD that can be misdiagnosed as asthma or vice versa.'

#### IMPROVING OUTCOMES

Kenneth Chapman is professor of medicine at the University of

Toronto, Ontario, Canada. He said there is a growing recognition that clinicians could improve treatment outcomes for COPD patients by combining therapies.

Professor Chapman was visiting Australia for the annual meeting of the Thoracic Society of Australia and New Zealand.

He said a decade ago the COPD patient would receive a puffer, or short-acting bronchodilator. Fast forward 10 years and many patients in Canada and Australia are still receiving 'small doses of therapy'. These were short-acting bronchodilators, with the urgent treatment of antibiotics and steroids when they became very sick.

For the first time in 2007/2008 there has been a reduction in COPD mortality and it comes from a more comprehensive approach to treatment. It involves giving patients a combination therapy of seretide and tiotropium as opposed to relying on just one drug, Professor Chapman told the *A/P*.

'We are prescribing longer-acting agents that work preventively, so COPD patients are more free of symptoms, less disabled and out of hospital emergency rooms. It is not so much new tools but using the available tools in a timely and comprehensive fashion.

'We have seen in the last 10, or 15 years, a growing recognition that we are able to alter important clinical events like hospitalisations and mortality outcomes. COPD is a disease, not just with high day-to-day disability, but also high mortality.

Professor Chapman said the demographics of COPD are changing; with more women in Canada and the US have the disease than men.

'There are a number of reasons. One is that, at the beginning of the 20th century, it was rare for women to smoke. By the middle of the 20th century it became more common so women caught up to men in terms of their exposure. We know that women

**Smoking is the biggest cause of COPD, with approximately 85% of COPD in Australia being linked to smoking history**

are more sensitive to the adverse effects of tobacco smoke than men.

'The typical COPD patient at the beginning of my career was a 70–75 year old man with advanced emphysema. Now, if you walk into the pulmonary rehabilitation program at Toronto Hospital, 75% of patients are women aged 55 or 60. Women are developing the disease earlier than men. We are dealing with patients who are trying to work through to retirement. We are not dealing with people who are sedentary and already retired. These are people trying to live active lives; they are the baby boomer generation who want to be active.'

Professor Chapman said by the year 2020, COPD would be the third most common cause of death on the planet. That includes all western nations. And increasing prevalence of women with COPD is going to make it a key health issue.

'We want to give COPD the same prominence as breast cancer. COPD is out there: it is common, it can be lethal. We need to find it early, use comprehensive strategies—comprehensive inhaled therapies that allow people who live with this disease to have a good quality of life. And a longer life.'

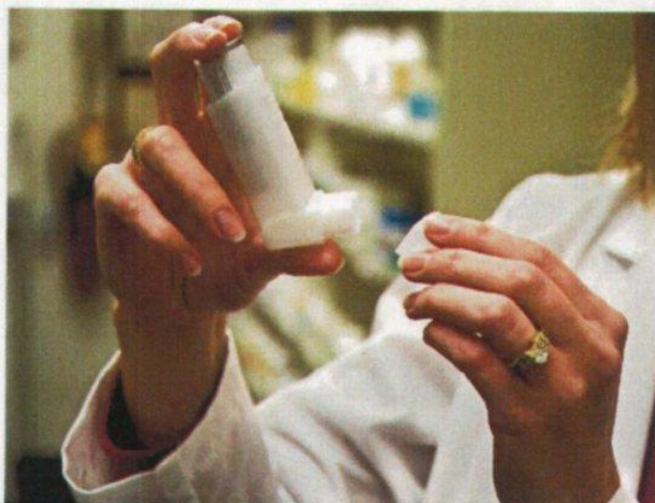
According to Professor Chapman an estimated one in seven smokers goes on to develop COPD.

'This tells us there is a genetic predisposition, or there are other factors. This includes birth weight, socio economic class, probably nutrition and tobacco smoking. But tobacco smoking is only one factor. Around 10% of people who are not smokers go on to develop COPD.'

#### PULMONARY REHABILITATION

In addition to smoking cessation, medications and bronchodilator therapy, COPD management should include pulmonary rehabilitation.

Pulmonary rehabilitation, like cardiac rehabilitation following a heart attack, is an exercise program



**It would be great to see pharmacy more interactive with patients when they are getting their inhaler**

designed specifically for COPD patients. The objective is to improve exercise capacity and keep people out of hospital.

'Pulmonary rehabilitation is very effective and has been shown to reduce hospital admissions between 25 and 50%,' said Ms Allan.

'We have many patients who have experienced first hand the benefits of pulmonary rehabilitation. One of these patients found that her COPD had limited her life to such a degree that walking into the kitchen to make a cup of tea was a challenge. After pulmonary rehabilitation she has been able to walk 3km a day. So, it has a huge impact on the quality of life for those with COPD.'

Pulmonary rehabilitation is usually available through hospitals or community health services. According to Mrs Allan, this is because the effectiveness of the program is not widely understood at a primary care level and many programs struggle for funding in the hospital system.

'Some state governments are starting to recognise the significant benefits of the program. There are now around 200 programs nationally, mainly through hospitals but not exclusively.'

#### ROLE FOR PHARMACISTS

Pharmacists may assist COPD patients in self-management by recommending increased use of bronchodilators when they become more symptomatic, said Dr Jenkins.

'If they do not already have a written action plan, this should be suggested, in addition to keeping a script available for antibiotics and oral steroids. Two-thirds of COPD exacerbations are triggered by respiratory tract infections. Increased sputum volume is an early symptom especially if sputum is coloured.'

Pharmacy could also check inhaler technique to help promote better outcomes.

'Pharmacy is in a position to take this up vigorously and often this is not happening. The pharmacy assistant is usually not the person to advise the patient on how best to use an inhaler. Older patients often do not use inhalers properly and COPD patients tend to be older. It would be great to see pharmacy more interactive with patients when they are getting their inhalers. Pharmacists probably think it is a GPs role and I would agree with that but many GPs don't do it unfortunately.'

Dr Jenkins said pharmacists could help identify COPD in people particularly those older than 40 who may be coming into the pharmacy with a productive cough, who smoke, or who were smokers and are breathless. COPD is a likely diagnosis.

'If the person is repeatedly coming back to the pharmacy for cough mixtures, pharmacists can ask about the duration of the cough and direct patients to a GP.'

'Unfortunately stigma is still attached to COPD. Many people see it as a self-inflicted illness as a result of smoking, although most have given up by the time of diagnosis. This tabo is not helpful to the patient.'

According to Professor Chapman one frustration in asthma for a long time is that a vast majority of

patients, through simple remedies, can be free of asthma symptoms and asthma disability.

He said when control of asthma was surveyed in Europe, North America, Asia, Australia and Latin America it was discovered most patients, suffered needless disability: 'Symptoms don't get reported to doctors; doctors don't go probing for symptoms. The disease is under-treated.'

#### UNNECESSARY DISABILITY

'There is a real parallel in COPD with more disability than necessary. Patients should be aware that comprehensive therapies are available. This could be a vital role for the pharmacist.'

'If the patient is bringing in repeated antibiotic scripts for bronchitis and taking inhalers for COPD the pharmacist can advise the patient to talk to their GP. They could be on two inhalers, not one, for more effective control of COPD.'

'Pharmacists can help facilitate communications between the patient and the GP.'

In Canada, he said, pharmacists are trying out compliance reminders with one of the larger pharmacy chains calling patients when their prescriptions run out.

'This certainly helps in the comprehensive treatment of diseases like asthma and COPD.'

As to the safety of therapies, Professor Chapman said inhaled drugs generally appear to be very safe.

'Tiotropium has a number of minor side effects like dry mouth. A recent FDA review of clinical trials of tiotropium, however, found an excess incidence of stroke in tiotropium-treated patients compared to placebo-treated patients.'

'At this early stage no-one knows what this means. It may be random, it may be relevant. We will keep looking at this.'

Peter Holder, community

## Pharmacists wanted for spirometry trial

The Australian Lung Foundation is in the process of recruiting community pharmacists to participate in a 15-month pilot program to improve diagnosis of COPD.

Supported by funding from the Fourth Community Pharmacy Agreement, the trial is taking place in the Newcastle and Hunter Valley region. Fifteen pharmacies will be recruited in the area to work with local GPs to help identify at-risk patients, particularly, those older than 35 with a smoking history who are chronic asthmatics.

COPD is under-diagnosed with many people mistakenly believing

they have asthma when in fact they have COPD, said Heather Allan, executive director, COPD programs at the Foundation.

'Pharmacists see at-risk patients regularly, either for asthma medications or a variety of other reasons, and are in a unique position to identify chronic asthmatics or those with breathlessness,' Ms Allan told the AJP.

These people will be invited to take a one-minute screening test using a small electronic spirometer called the PiKo-6. The device calculates if air from the lungs is appropriate to weight, height and age, and can detect a bronchial obstruction. This is when the

pharmacist can suggest the patient see their GP for a complete diagnosis.

If COPD is diagnosed the pharmacist will be notified and paid for three follow-up visits with the patient to complement the GP's management. The pharmacist will check medication compliance, encourage participation in pulmonary rehabilitation and, where necessary, provide patients with access to smoking cessation interventions.

Following this, the patient will be assessed to see if their management has improved to guideline standards. Pharmacists in the Newcastle/Hunter Valley interested in participating in the program can phone the Foundation on 1800 654 301. The recruitment campaign was due to begin now.

**As well as a reminder about influenza vaccine, ensure they are vaccinated against pneumococcal disease and suggest**

pharmacist and National Asthma Council board member, said pharmacy's role, like many others, is complementary to the management of COPD disease with the patient's GP.

This includes support with medication regimens and helping them understand how to use inhaler devices correctly.

'People won't get sufficient benefit if don't know how to use the device properly. A lot of people with COPD are elderly and may need extra help. In some cases, where patients are not able to use these devices, we recommend they talk to their GP about using something else.'

#### WINTER CHALLENGES

As to vaccinations, Mr Holder said people with COPD are at high risk of pneumonia. With winter approaching it was important for pharmacists to be alert, particularly in the COPD age group where people were more vulnerable to infection and at high risk of complications.

'As well as a reminder about influenza vaccine ensure they are vaccinated against pneumococcal disease and suggest they discuss this with their GP. It is a good

idea to bring the benefit of both vaccinations to their attention.

'A lot of COPD patients and asthmatics will present to pharmacy for OTC remedies such as cough, cold, allergy and flu symptoms. It is important to take their disease state into context.'

'Quitting smoking is something we can always encourage. It is never too late to quit, but it can be hard for many who have smoked nearly all their life. I have seen patients with advanced COPD who have quit. Sometimes forcibly after being hospitalised.'

Mr Holder said it was good advice for patients in this category to have back-up scripts for antibiotics and steroids.

'Many patients would be aware that when they become symptomatic to have a script available at a time when they cannot get to a doctor. This is something pharmacy too should be aware of. When the patient comes to the pharmacy with a cough and a cold and we know they have COPD we can ask if they have a script for an antibiotic or inquire if the GP has given instructions on what action to take if they get a cold,' Mr Holder said. ■