

# Spirometry

## What is spirometry?

Spirometry tests how much, how fast and how long you can breathe in and out. It involves doing different types of breathing into a tube that is connected to a computer or small machine. This helps determine how well your lungs are working and if there is anything affecting your breathing. The three main measurements are:

- how much air your lungs can hold or lung volume (called 'forced vital capacity')
- how much air you can breathe out in 1 second (called 'forced expiratory volume in 1 second')
- the comparison between these two measurements (called 'forced expiratory ratio').

## Why has my GP recommended I have spirometry?

Spirometry is common and useful in a number of different situations. Common reasons include:

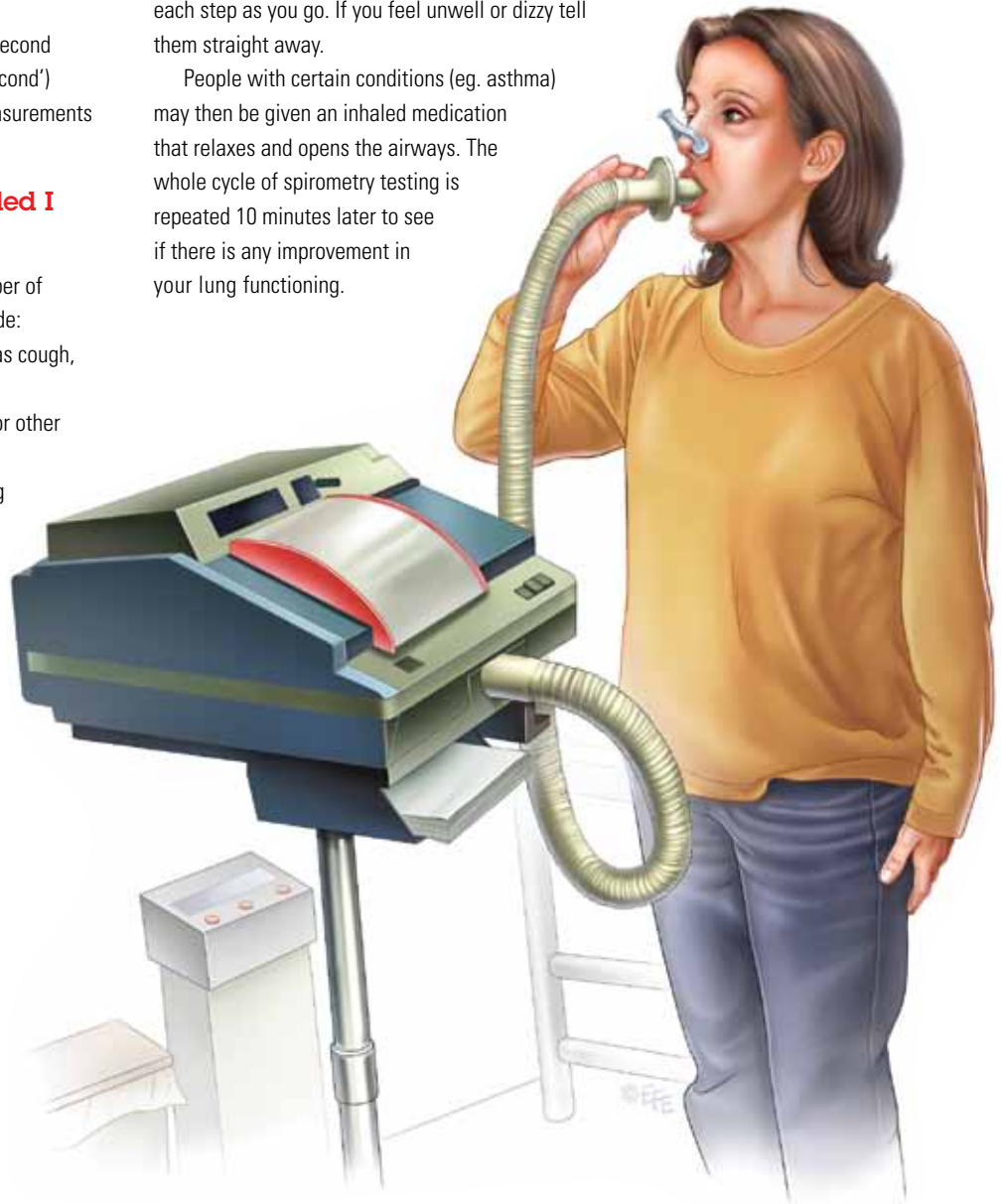
- looking for the cause of problems such as cough, shortness of breath or wheeze
- following up a finding on a chest X-ray or other lung test
- diagnosing and monitoring common lung diseases such as asthma and chronic obstructive pulmonary disease
- detecting early problems in people who have been exposed to things that may damage the lungs such as cigarette smoke, certain dusts and some medications.

## What does spirometry involve?

Spirometry may be performed at a general practice clinic or at a hospital or laboratory. It does not hurt, but some people get quite puffed or occasionally dizzy. The test, including an explanation of the test by the operator, usually takes 10–20 minutes. To help guess the size of your lungs you will be weighed and measured. You will then stand or sit up straight for the test. You may be asked to wear a peg on your nose to make sure all the air comes

out your mouth. You will take a really big breath in and then wrap your lips tightly around a special mouthpiece. You then breathe out as forcefully and fully as you can. With the mouthpiece still in your mouth you finally take another big breath in before having a rest and breathing normally. You will need to repeat this cycle at least three times to make sure the measurements are accurate and consistent. The person running the test will explain each step as you go. If you feel unwell or dizzy tell them straight away.

People with certain conditions (eg. asthma) may then be given an inhaled medication that relaxes and opens the airways. The whole cycle of spirometry testing is repeated 10 minutes later to see if there is any improvement in your lung functioning.



## How do I need to prepare for spirometry?

When you ring to book the test you will be given instructions to follow. In general though:

- don't smoke or do strenuous exercise on the day of the test
- don't drink alcohol or eat a big meal for 4 hours before the test
- wear comfortable, unrestrictive clothing for the test
- if you use puffers or inhalers try not to use the reliever ones for at least 4 hours before the test – check this with your doctor or when booking the test.

## Is there any reason I should not have spirometry?

Spirometry is a safe test. However, it is not recommended in certain conditions so let your doctor or the technician know if you have recently had any of the following:

- a collapsed lung
- a heart attack or aneurysm, or
- an operation on your eye, abdomen or chest.

Inform the technician if you have coughed up blood in the past 48 hours or if your doctor thinks you may have tuberculosis or influenza.

## What will the test cost?

Discuss this with your doctor or the place where you have the test. In most situations Medicare will cover some of the cost. There may be additional fees.

## What will the results mean?

Your results will be compared to the average results for someone of your age, gender and height, and your doctor will explain your results to you. Generally there are four possible findings:

- Normal study – this means your lungs worked normally on the day – it's still really important to discuss this with your doctor
- 'Obstructive defect' – in simple terms your lungs were struggling to get the air out quickly. Common reasons for this are asthma and chronic obstructive pulmonary disease
- 'Restrictive defect' – this means the lungs aren't as stretchy as they should be and it's difficult for you to get air easily into your lungs. This is less common and can be from

heart problems or diseases of the lung tissue

- 'Mixed defect' – this may mean there is difficulty with both breathing in and out. This might be from two different lung conditions.

## Does spirometry replace peak expiratory flow measurement?

No. Spirometry is a more accurate measure of lung function than peak expiratory flow (PEF) measurements. However, PEF is simple and quick and you can learn to do PEF at home to help you monitor your lungs if you have chronic lung disease. PEF can still be important to help you manage your asthma or airways disease.



## What can I do to improve my test results?

There are several things you can do to improve your breathing and protect your lungs.

### Quit smoking

- The most obvious is to quit smoking – let your GP know if you would like help with this.

### Medications and inhalers

- You should also take your medications and inhalers as prescribed and wear protective masks whenever exposed to dust and other irritants.

### Healthy diet and regular exercise

- A healthy diet and regular exercise are also important – discuss this with your GP if you haven't been active in a while.

## Where can I find further information?

- Your GP can direct you to further information about your results and diagnosis
- Quitline can provide information about quitting smoking. Call 131 848
- The Australian Lung Foundation has general information and a number of factsheets about different conditions: [www.lungfoundation.com.au/lung-information/patient-educational-material/fact-sheets](http://www.lungfoundation.com.au/lung-information/patient-educational-material/fact-sheets)
- You can find out about asthma from the National Asthma Council: [www.nationalasthma.org.au/](http://www.nationalasthma.org.au/).

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