

Peak flow

Peak flow is short for **peak expiratory flow (PEF)**. This is the speed at which a person can expel air from their lungs. PEF tests are used to assess the health of a person's lungs.

How peak flow is measured

PEF readings show the maximum rate at which air can be expelled from the lungs, measured in litres per minute (L/min). People with breathing problems have lower readings.

Peak flow meters help people to monitor their lung health. If a person's reading is lower than 80% of their expected best flow rate, health professionals will advise changing or increasing their medication, or taking more exercise.



The person fills their lungs with air, then breathes out into the meter as hard as they can. The peak flow reading is displayed on the side of the meter. The highest reading of three attempts is recorded.

Abnormal readings

Lower than expected PEF readings indicate lung problems such as:

- asthma – condition causing narrowing of airways
- emphysema – chronic lung degeneration
- chronic bronchitis – inflammation of the bronchi (tubes entering the lungs)
- cystic fibrosis – a genetic lung disorder (see page 2)
- lung cancer.

Keeping a diary

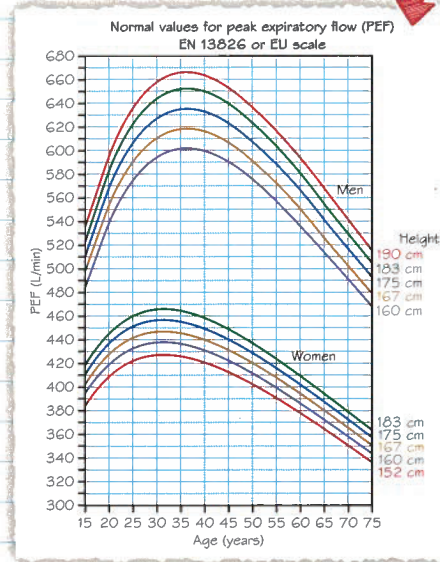
Patients are advised to measure and record their peak flow results regularly. This helps health professionals to:

- monitor a patient's air flow
- check that medication is working
- make recommendations on treatments
- understand which factors, e.g. environmental, may affect (trigger) their condition (see pages 17 and 18).

Interpreting readings

PEF rates vary between people because they have different lung capacities. Health professionals use published charts to work out the expected best flow rate for individuals based on their gender, height and age.

Published charts give an adult's expected best flow rate when PEF is measured using an EU standard meter.



Now try this

Jennie has asthma.

Explain, giving three reasons, why it is important for Jennie to use a peak flow meter regularly.

Jennie should keep a diary of the readings and events that might affect them.

Body Mass Index

Body Mass Index (BMI) is a way of measuring the amount of fat in the body. Being overweight or obese puts a strain on body systems and seriously affects physical health.

Measuring BMI

BMI is based on height and weight, and can be found on a **published chart**. Health professionals can advise people about lifestyle changes based on their BMI and use readings to track progress. A combination of a healthy diet and exercise helps to lower the risks of being under or overweight. Individuals fall into one of six categories based on their BMI.

Category	BMI
Underweight	<18.5
Healthy weight	18.5–24.9
Overweight	25–29.9
Obese	30–34.9
Severely obese	35–39.9
Morbidly obese	>40

Risks to health

Underweight	Overweight
Anaemia (causing tiredness), osteoporosis (fragile bones), weak immune system (more colds and flu)	Heart disease, high blood pressure, type 2 diabetes, stroke, arthritis

Limitations

Although BMI is a suitable guide for a healthy weight for most people, it does not take account of:

- muscle mass – athletes have more muscle and may be heavy for their height
- bone density – this may decrease with age or lack of physical activity
- age – older people may lose muscle and have more fat. For those under 18, BMI is shown on separate charts for boys and girls, with measurements expressed in centiles.
- gender – the same chart is used for men and women over 18, although women may have more body fat

Now try this

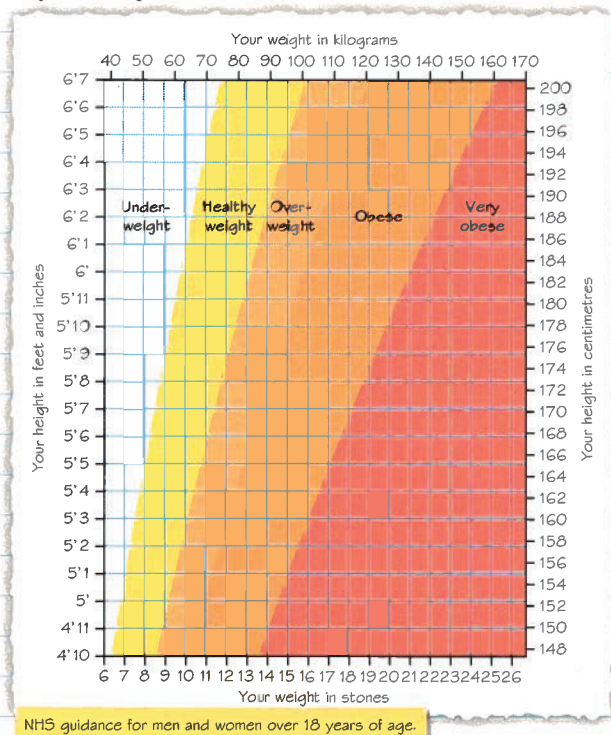
In which BMI category are these people?

- 1 Conran weighs 70 kg and is 1.8 m tall.
- 2 Sadie weighs 90 kg and is 1.7 m tall.

Read the information you need from the BMI chart.

Published guidance

A chart gives the BMI of an individual, using measurements for their height and weight.



NHS guidance for men and women over 18 years of age.