



British Heart
Foundation

Metabolic syndrome

What is metabolic syndrome?

Metabolic syndrome is the medical term used when several risk factors for heart and circulatory disease, all related to the body's metabolism, occur together. This puts you at a greater risk of a heart attack or stroke, or developing diabetes.

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Risk factors

Having any three or more of the following risk factors could mean you have metabolic syndrome:

- insulin resistance
- central obesity or a BMI of more than 30
- low levels of HDL cholesterol
- high levels of triglycerides
- diabetes or you have a high fasting blood glucose level
- high blood pressure or you are taking medicines to lower your blood pressure.

Insulin resistance

Insulin is the hormone which helps our bodies use glucose for energy. Insulin resistance is when the body's cells don't respond properly to insulin, resulting in higher levels of insulin being needed to clear glucose from the bloodstream. Insulin resistance can lead to diabetes. People who are obese or who have high blood pressure or a high cholesterol level are more likely to have insulin resistance.

Central obesity

Central obesity is when you store fat around your middle (abdomen), rather than around the hips and thighs. This is one reason why waist measurement tends to be a better indicator of cardiovascular risk than BMI (body mass index). South Asians are more likely to carry excess weight around their abdomen compared with other people in the UK.

	Healthy waist measurement	Increased health risk	High risk of cardiovascular disease
Men	Less than 94cm (37 inches)	Over 94cm (37 inches)	Over 102cm (40 inches)
Women	Less than 80cm (32 inches)	Over 80cm (32 inches)	Over 88cm (35 inches)
South Asian men	Less than 90cm (36 inches)		Over 90cm (36 inches)
South Asian women	Less than 80cm (32 inches)		Over 80cm (32 inches)

Heart Helpline

Our cardiac nurses and information support officers are here to answer your questions and give you all the heart health information and support you need.

Call us on 0300 330 3311

**Similar cost to 01 or 02 numbers.
Lines are open 9am - 5pm Monday to Friday.**

This information does not replace the advice that your doctor or nurse may give you. If you are worried about your heart health in any way, contact your GP or local healthcare provider.

HDL cholesterol

High-density lipoprotein – sometimes called HDL cholesterol – is the ‘good’ type. It returns the extra cholesterol, that isn’t needed, from the bloodstream to the liver. Here it is either broken down or passed out as a waste product. Ideally, you want your HDL to be greater than 1.0 mmol/l.

Triglycerides

Triglycerides are another type of fatty substance in the blood, which are found in food from animal sources, like dairy products and meat. If you are overweight or eat a lot of fatty and sugary foods, or you drink too much alcohol, you are more likely to have high levels of triglycerides. Ideally, you want your triglycerides to be less than 1.7mmol/l.

Diabetes

Diabetes causes high levels of glucose (sugar) in your blood. This can affect the walls of your arteries and make them more likely to develop fatty deposits, increasing your risk of cardiovascular disease. There are two types of diabetes:

- **Type 1 diabetes** is when your body can’t make insulin.
- **Type 2 diabetes** is when your body can’t make enough insulin, or the insulin doesn’t work properly.

High blood pressure

You need a certain amount of pressure in your arteries to keep the blood flowing around your body. High blood pressure – called hypertension – is when your blood pressure is constantly higher than the recommended level of 140/90 mmHg.

What causes metabolic syndrome?

There are a number of factors that increase your risk of developing metabolic syndrome – such as being overweight and not getting enough exercise. Genetics can play a part, and you may inherit a tendency to become insulin resistant. Your ethnicity may also be a factor, in the UK South Asian and black African-Caribbean people have a high risk of diabetes and metabolic syndrome.

Will I need treatment?

Treatment includes making healthy lifestyle changes, such as losing weight and getting active. In particular, metabolic syndrome will be greatly improved or even disappear with weight loss. Medicines may also be prescribed if required to control blood pressure and blood sugar levels, and to improve cholesterol and triglyceride levels.