

Metabolic Syndrome

Metabolic syndrome is a group of the most dangerous risk factors associated with cardiovascular disease.

This combination of factors appears to pose added risk, beyond what would normally be expected from each of the factors individually.

Many people with metabolic syndrome have also been shown to have "insulin resistance". This is a condition in which the body becomes insensitive to insulin. Organs that ought to respond to a small rise in insulin remain unresponsive. More insulin is secreted to achieve the same effect, just as you may raise your voice for a person who is hard of hearing.

People with metabolic syndrome also have five times greater risk of going on to develop Type 2 diabetes.



For a person to be defined as having metabolic syndrome, they must have:

Waist measurement

- 37 inches or 94cm in European or Caucasian men
- 31.5 inches or 80cm in European or Caucasian women

For South Asian men the waist measurement is set at a lower level of 35.5 inches or 90cm but the level remains the same for South Asian women.

Chinese people are advised to try and achieve the same waist measurement levels as South Asians.

Japanese men are advised to try and attain a measurement of 33.5 inches or 85cm and Japanese women to achieve 35.5 inches or 90cm.

Ethnic South and Central Americans should use South Asian recommendations and Sub-Saharan Africans and Middle East populations should use the European data until more specific data are available.

Plus

Any two of the following four factors:

1. Raised triglyceride level $>1.7\text{mmol}$ or treatment for this lipid abnormality.
2. Reduced high density lipoprotein cholesterol (HDL-C) $<1.0\text{mmol}$ in men and $<1.2\text{mmol}$ in women.
3. Raised blood pressure – systolic >130 or diastolic >85 or treatment of diagnosed hypertension.
4. Raised fasting glucose $>5.6\text{mmol/l}$ or treatment for diagnosed Type 2 diabetes.

Initial management of metabolic syndrome should be through lifestyle changes including:

1. Reduced calorie intake to achieve a weight loss of 5-10% of body weight. It is important to reduce waist circumference to reduce cardiovascular risk. Fat stored deep within the abdomen is now known to directly affect lipid and glucose metabolism.
2. Moderate increase in physical activity. Aerobic activity is most beneficial as it is one in which the heart and lungs are able to supply the muscles with oxygen for a prolonged period of time, for example walking, swimming, dancing or cycling. Experts recommend that exercise should be of moderate intensity, for 30 minutes or more on 5 or more days a week.
3. Change to a diet using foods that have a low glycaemic index (GI). The GI of foods is a ranking of carbohydrates in food according to their immediate impact on blood glucose levels.

Foods containing carbohydrates that break down quickly, eg. instant white rice, have the highest GI value. The glucose response is rapid and high.

Conversely, foods that contain carbohydrates that break down slowly, e.g. lentils release glucose gradually into the bloodstream thus avoiding sharp rises and falls in blood glucose levels.

Foods with a low GI value have advantages over those with high GI values, especially for those people wanting to prevent or reverse the effects of metabolic syndrome.

For some people lifestyle changes are not sufficient to reduce risk of cardiovascular disease therefore drug therapy may be required.