

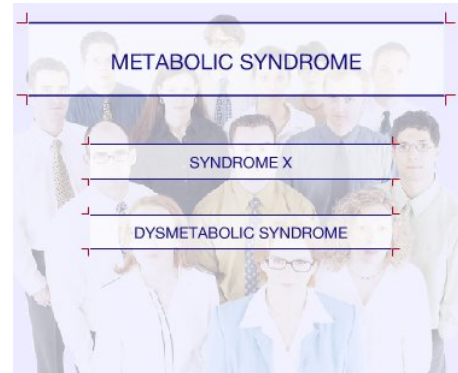


## What is the Metabolic Syndrome?

Metabolic syndrome is a common condition.

It is also known as syndrome X, insulin resistance syndrome and dysmetabolic syndrome. The number of people with metabolic syndrome increases with age, affecting up to 25% of the population.

Metabolic syndrome is a constellation of metabolic risk factors that occur together. Each of these factors can lead to cardiovascular disorders. When present as a group, the risk for heart disease, stroke and diabetes is very high.

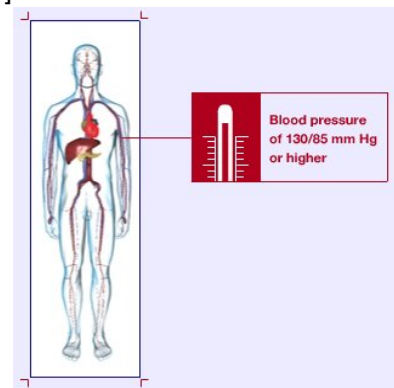


## Guidelines & Classification

Definitions of metabolic syndrome vary. Based on the WHO guidelines, the presence of three or more of the following in the same individual indicate metabolic syndrome [1]:

### 1) Hypertension / elevated blood pressure

A blood pressure of 130/85 mm Hg or higher is a sign of hypertension – the medical term for high blood pressure.

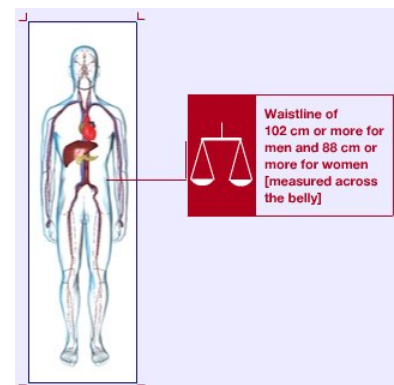


### 2) Being overweight or Obese / excess body fat, particularly around the waist

Ethnicity-based differences and the urgent need for a single universally accepted diagnostic tool led to a new definition by the International Diabetes Federation (IDF).

Central adiposity is used as the measurement criterion for the prevalence of metabolic syndrome as it is the central component in all different ethnic groups and can easily be diagnosed with a tape measure [2,3].

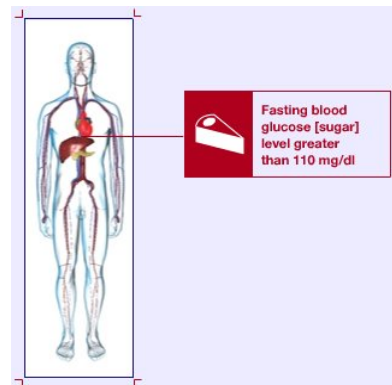
A waistline of 102 cm or more for men and 88 cm or more for women is one of the potential indicators of metabolic syndrome.





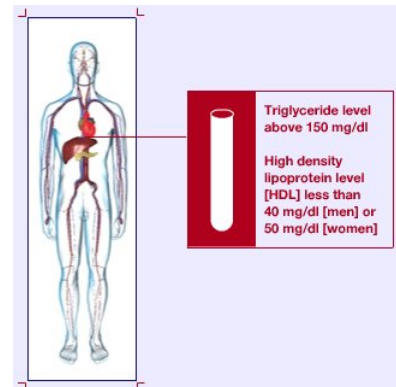
### 3) Elevated blood sugar

A fasting blood glucose (sugar) level greater than 100 mg/dl hints at abnormal glucose metabolism.



### 4) An imbalance in blood fats:

Both triglyceride levels above 150 mg/dl and high density lipoprotein level (HDL) – the “good” cholesterol – less than 40-50 mg/dl increase the risk for cardiovascular disease.



Having one indicator of metabolic syndrome increases the risk of developing others.

## Causes

Both genetic predisposition and the environment play important roles in the development of metabolic syndrome.

### Genetic factors

Genetic factors increasing the chance that an individual will develop the metabolic syndrome include:

- family history of diabetes or heart disease
- type 2 diabetes
- hypertension

### Environmental factors:

Environmental factors that enhance the possibility of becoming a high-risk metabolic syndrome candidate can be prevented.

Obesity, likely to be the greatest risk factor, is mainly due to:

- low activity level and a sedentary lifestyle
- diet rich in saturated fats, cholesterol and sugar





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**Other factors:**

Additional factors that play a role in the development of metabolic syndrome are:

- aging
- hormonal imbalance
- smoking
- chronic stress

Lifestyle therapies are the first-line interventions to reduce metabolic risk factors. These include:

- Normalisation of body weight (BMI under 25 kg/m<sup>2</sup>)
- Increased physical activity with a goal of at least 30 minutes of moderate-intensity activity on most days of the week
- Healthy eating habits with reduced intake of saturated fats and cholesterol

**Reference:**

- [1] European Journal of Cardiovascular Prevention and Rehabilitation 2003; 10: S1-S78  
[2] [www.idf.org](http://www.idf.org) (14/04/2005)  
[3] [www.idf.org](http://www.idf.org) DiabetesVoice; Special Issue May 2006; Volume 51



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