



Metabolic Syndrome: A Modern Epidemic

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What is Metabolic Syndrome?

Metabolic syndrome (MetS) is a cluster of conditions when occur together, increasing the risk of heart disease, stroke and diabetes. As the name suggests, metabolic syndrome is related to your body's metabolism. In general, a person with MetS is twice as likely to develop heart disease and five times as likely to develop diabetes as someone without it [1].

According to the National Cholesterol Education Program (NCEP) and the American Heart Association (AHA), a person is diagnosed with MetS if he has three or more of the following risk factors [2]:



Risk factor	Criteria
Central Obesity (Waist circumference)	<ul style="list-style-type: none"> Men – more than 40 inches Women – more than 35 inches
Elevated Triglycerides (a type of fat in blood)	150 mg/dL or higher
Low HDL (good) cholesterol	<ul style="list-style-type: none"> Men - less than 40 mg/dL Women - less than 50 mg/dL
Elevated Blood Pressure (hypertension)	<ul style="list-style-type: none"> Systolic - 130 mm Hg or greater Diastolic - 85 mm Hg or greater Being treated for high blood pressure
Insulin Resistance	<ul style="list-style-type: none"> Fasting blood sugar 100 mg/dL or higher Being treated for high blood sugar

Note: Having just one of these conditions does not mean to have metabolic syndrome. But it does increase the risk of serious diseases. The more conditions you have, the greater the risk to your health.

Reasons to be at greater risk of developing MetS

Metabolic syndrome is a collection of risk factors, so there is not a single cause. The following factors increase the risk of developing metabolic syndrome:

- **Age:** The risk of metabolic syndrome increases as we get older.

- **Obesity:** A BMI (body mass index) greater than 25.
- **History of diabetes:** A family history of type 2 diabetes.
- **Polycystic Ovarian Syndrome (PCOS):** A condition where a woman's body produces too much hormones that lead to weight gain, especially around the abdominal area.

- **Other medical conditions** including high blood pressure, heart or blood vessel disease.

Complications due to MetS

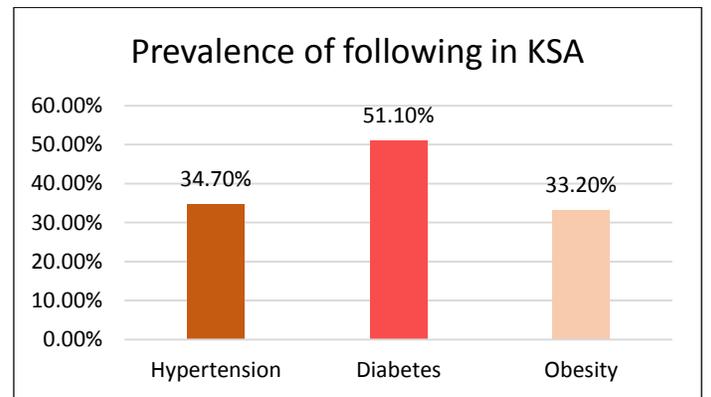
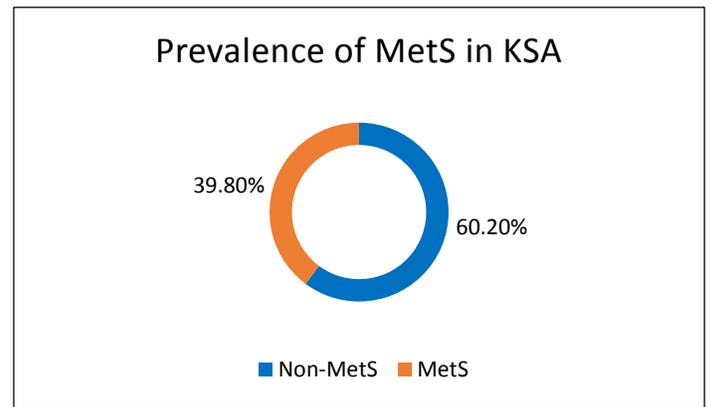
Metabolic syndrome itself often has no noticeable symptoms early on. But when its risk factors are left to increase for too long, major changes may start to develop in the body [3]. These include:

- **Cardiovascular diseases:** This happens when cholesterol hardens and begins to build up in the walls of arteries, causing blockages that can lead to high blood pressure, heart attack, and stroke.
- **Poor kidney function:** The kidneys become less able to filter toxins out of the blood, which can also increase the risk of high blood pressure, heart attack, or stroke.
- **Insulin resistance:** This is when the body's cells don't respond to insulin normally, and that can lead to high blood sugar levels and diabetes.
- **Skin diseases:** A skin disorder that causes thick, dark, velvet-like patches of skin around the neck, armpits, groin, between the fingers and toes, or on the elbows and knees.

Prevalence of metabolic syndrome in Saudi Arabia

Saudi Arabia is known to be one of the top countries worldwide with a high prevalence of diabetes, and obesity rate. Besides this, the prevalence of other components of metabolic syndrome is also significantly increasing in the Kingdom [4].

According to a study conducted by the Saudi Abnormal Glucose Metabolism and Diabetes Impact Study (SAUDI-DM), the prevalence of **metabolic syndrome** in Saudi Arabia is around **39.8%** [5]. Moreover, the other contributing factors such as **hypertension, diabetes, and obesity** are observed to be around **34.7%, 51.1%, 33.2%** respectively [5].



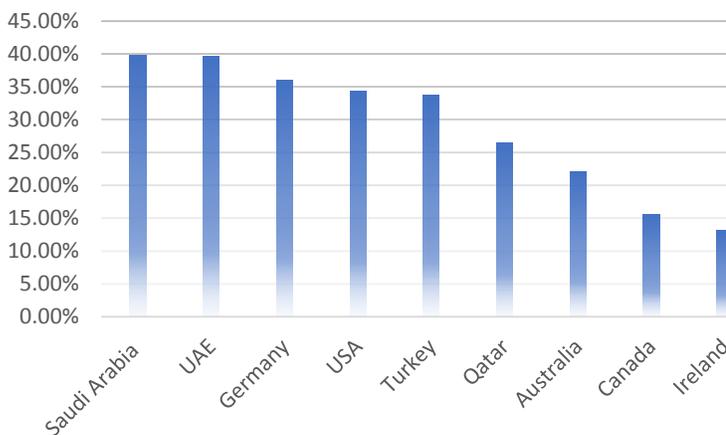
Statistics of metabolic syndrome at global scale

With the rise of obesity and diabetes around the world, MetS has become a global pandemic. In many countries around the world, people are at risk of developing MetS due to reduced exercise and increased food consumption leading to the rise of teenage obesity. Even other GCC countries such as Bahrain, Kuwait, and Oman, suffers from high prevalence of MetS in adults and children as well.

The prevalence of metabolic syndrome around the world is given as:

Country	MetS
Saudi Arabia	39.8% [5]
UAE	39.6% [12]
Germany	36% [7]
USA	34.3% [6]
Turkey	33.8% [11]
Qatar	26.4% [13]
Australia	22.1% [9]
Canada	15.5% [8]
Ireland	13.2% [10]

PREVALANCE OF METS AROUND THE WORLD



How is metabolic syndrome treated?

People diagnosed with the metabolic syndrome can reduce their risk for cardiovascular disease and type 2 diabetes by controlling the risk factors. The best way is often to lose weight, eat a healthy diet and increase their physical activity. Here are some important steps in managing the condition [2]:

- Taking healthy diet such as whole grains, nuts, healthy fats, fruits and vegetables.
- Controlling the intake of simple carbs such as sweet drinks, bread, high-carb snacks, etc.
- Maintaining healthy body weight (especially central obesity).
- Monitoring blood glucose, lipoproteins and blood pressure.
- Treating individual risk factors (high blood pressure and high blood glucose) according to established guidelines.
- Carefully choosing medication for high blood pressure as different drugs have different effects on insulin sensitivity.

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