

Metabolic Syndrome

(Insulin Resistance Syndrome, Syndrome X)

Definition:

A group of risk factors that occur together and cause you to carry an increased risk for developing coronary artery disease, peripheral vascular disease, and type 2 diabetes.

Causes:

It is not known whether metabolic syndrome is due to one single cause, but all of the associated risk factors are related to obesity.

The two most common risk factors are:

- Carrying extra weight around the middle of your body (central obesity). Your body shape may be described as “apple-shaped”.
- Insulin resistance- Your body’s inability to use insulin effectively.
 - Insulin is a hormone that is manufactured by your pancreas. It is the gate keeper at the “door” of your body’s cells. Insulin allows food (in the form of blood glucose) to enter into your cells where it is used for energy.
 - When you have insulin resistance, your body cells do not respond to insulin. Glucose is not allowed in your body cells, and glucose levels begin to build up in the blood. Your pancreas responds by producing more insulin. Glucose and insulin levels rise, and over a period of time can affect many systems in the body. It raises blood fats (cholesterol, triglycerides) and damage artery walls and nerves. Damage to artery walls and nerves can affect your heart, kidneys, brain, eyes, stomach, etc.

Other risk factors include:

- Age 45 of older
- Genes that make you more likely to develop this condition
- Hormonal changes
- Physical inactivity

Possible Complications:

- Atherosclerosis- thickening of artery walls
- Diabetes
- Coronary artery disease and/or heart attack
- Kidney Disease
- Nonalcoholic fatty liver disease
- Stroke

Symptoms:

There are usually no symptoms associated with metabolic syndrome.



Diagnosis:

According to the American Heart Association and the National Heart, Lung, and Blood Institute, you have metabolic syndrome if you have at least three of the following signs:

- Blood pressure equal or greater than 130/85mmHg
- Fasting blood glucose(sugar) greater than 99mg/mL
- Triglyceride level 150 mg/dL or greater
- Low HDL cholesterol
 - Men = less than 40 mg/dL
 - Women = less than 50 mg/dL
- Large waist circumference
 - Men = 40 inches or greater
 - Women = 35 inches or greater

Treatment:

Reducing your risk factors and making lifestyle changes are goals in the treatment and reversal of metabolic syndrome.

- Losing weight – Goals is to lose 5-10% of your current body weight. This can generally be achieved by consuming 500-1000 fewer calories per day.
- Consume a diet that is low in fat, and incorporates a variety of fruits, vegetables, and whole grains.
- Adding physical activity into your routine wherever possible. It is recommended that you get at least 30 minutes of moderate intensity exercise most days of the week.
- Lower your cholesterol by losing weight, exercising, and using cholesterol lowering medications, if needed.
- Lower your blood pressure by losing weight, exercising, and using anti-hypertensive medications, if needed.
- People who smoke should quit smoking.

*Diabetes Prevention Program (DPP) was a research study that followed 3,234 participants for 3 years. Participants were split into treatment groups. One group underwent intensive lifestyle modification, including diet, exercise, and behavior modification. Another group was treated with Metformin (anti-diabetic medication). Results of the study showed that the “lifestyle” group reduced their risk of developing diabetes by 58%. In participants older than 60 years of age, their risk was reduced by 71%. The participants in the “Metformin” group reduced their risk of developing diabetes by 31%, and Metformin was even shown to be less effective in participants over age 45.

