



## Metabolic Syndrome X

Metabolic Syndrome X describes overlapping disorders that include insulin resistance, overweight build, hypertension, and abnormal blood lipids. Each disorder promotes atherosclerosis, and together, the risk compounds. Atherosclerosis is a vascular disease that results in coronary artery disease, strokes and kidney impairment.

The National Institute of Health's (NIH) definition is that metabolic syndrome is present if the patient has three or more of the following:

- Waist circumference >40 inches in men, >35 inches in women
- Triglyceride =150 mg/dl
- HDL cholesterol <40 mg/dl in men, <50mg/dl in women
- Hypertension =130/85 mm HG
- Fasting blood glucose =110 mg/dl

Insulin resistance is defined as a state in which an elevated concentration of insulin produces less than the expected biological effect because cells resist the effect of insulin. Mechanisms for cell resistance to insulin include primary (*genetic*) resistance antibodies to insulin receptors, accelerated insulin destruction, and others.

For many people, Type II diabetes is preceded by a period in which their peripheral tissues (such as muscles) are resistant to insulin. The blood sugar tends to increase but the beta cells, which are located in the pancreas and produce insulin, increase their production of insulin, therefore, keeping the blood sugar near normal. Eventually, the beta cells are overwhelmed and the blood sugar rises. The diagnosis at that stage is Type II diabetes mellitus.

In underwriting, Metabolic Syndrome X is a concern because diabetes, hypertension and coronary artery disease can be "silent killers." An individual may be asymptomatic with the condition for years before diagnosis. Underwriting laboratory requirements screen for elevated blood sugar, high LDL cholesterol, and low high-density cholesterol, blood pressure, family history and smoking. Smoking accelerates vascular damage caused by diabetes mellitus or elevated lipids.

The final rating depends on the extent of end organ effects; for example, the level and control of hypertension, diabetes mellitus and lipids.

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