

W o m e n ' s HEALTH UPDATES



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Metabolic Syndrome & Your Health

Metabolic syndrome. Syndrome X. Insulin resistance syndrome. You may have heard all these terms for what most medical organizations today recognize as MetSyn, or metabolic syndrome. Or, maybe these terms are new to you. Regardless of what you call it, the condition (it's not a disease) is affecting a greater percentage of Americans as more of us become overweight and obese. Yet, metabolic syndrome is not something your health care professional is likely to tell you about or even look for—some doctors question whether it's clinically significant, and some don't know how to evaluate patients for it.¹ That's why it's so important to be a smart health care consumer and learn more about this weight-related health issue.

Read the information contained in this *Women's Health Update* about metabolic syndrome and become familiar with its components. Then, talk to your health care professional to learn what can be done to diagnose, treat and, most important, prevent metabolic syndrome—a health issue you're sure to hear more about in the future.

Fact 1. Metabolic syndrome is not a disease but a “constellation” of health markers.

To be diagnosed with metabolic syndrome, the National Heart, Lung, and Blood Institute (NHLBI) says you need to have three of the following five markers:²

- A waist circumference of more than 34 inches (more than 40 inches in men)
- A fasting blood glucose level of 110 mg/dL or higher (considered a marker for insulin resistance) or if you're taking medication for high glucose levels
- Triglycerides at or above 150 mg/dL
- An HDL-cholesterol level below 50 mg/dL (at or below 40 mg/dL in men) or if you're taking medication to increase your HDL
- A blood pressure at or above 130 mm Hg systolic (the top number) or 85 mm Hg diastolic (the bottom number) or if you're taking medication to treat high blood pressure.

Fact 2. The prevalence of metabolic syndrome in the U.S. is increasing.

Statistics from the third National

Health and Nutrition Examination Survey (NHANES) (1988–1994) show an estimated 24 percent of Americans over age 20 had metabolic syndrome, but more recent statistics from NHANES 1999 to 2002 find that has increased to 34.5 percent based on the NHLBI definition. If a newer definition of metabolic syndrome from the International Diabetes Federation (IDF) is used, that percentage increases to 39 percent.^{3,4}

The reason so many of us have metabolic syndrome is related to three things: weight, lack of exercise and genetics.⁵

However, while you're more likely to have metabolic syndrome if you're overweight, not everyone who is overweight has it. Estimates are that about one out of three overweight people has metabolic syndrome,⁶ with the risk thought to be directly related to the amount of abdominal fat you have, as measured by your waist circumference.^{7,8}

You also have a higher risk if you're Hispanic or South Asian (from the Indian subcontinent),⁹ lead a sedentary lifestyle or follow a high-fat diet, particularly one high in fried foods, carbohydrates and so-called “empty calories” (think soda).¹⁰ Conversely, following a diet high in whole grains and unsaturated fats, as well as mild-to-moderate alcohol

The underlying cornerstone of metabolic syndrome is insulin resistance, in which your body doesn't respond to the insulin being pumped out by your pancreas.

consumption (one to 19 drinks a week, primarily beer and wine), can reduce your risk.¹¹

Metabolic syndrome can also be a side effect of certain drugs, including corticosteroids, antidepressants, anti-psychotics, protease inhibitors and antihistamines, all of which can lead to obesity and glucose intolerance.⁹

Fact 3. The prevalence of metabolic syndrome increases with age.

An estimated 49 percent of Americans over 50 have metabolic syndrome based on the NHANES 1999–2002 data.^{12,13} The reason for the age differential is likely related to our tendency to gain weight and become less active as we age, both of which can negatively affect blood pressure and HDL levels, as well as triglyceride levels.

Fact 4. Metabolic syndrome places a woman at significantly higher risk for type 2 diabetes and cardiovascular disease.

You are up to 3.4 times more likely to die from cardiovascular heart disease (CHD) if you have metabolic syndrome than if you don't and are significantly more likely to develop atherosclerosis, a buildup of plaque in your coronary arteries that contributes to heart disease, stroke and peripheral vascular disease (PVD).¹²

And while it's not a direct cause of diabetes, metabolic syndrome is a strong predictor of the disease. It's very rare to have diabetes without also having metabolic syndrome. Even more important, the two together push your risk of heart disease up by 50 percent compared to having diabetes without metabolic syndrome.¹³

Fact 5. Metabolic syndrome can be prevented, managed or even reversed.

The underlying cornerstone of metabolic syndrome is insulin resistance, in which your body doesn't respond to the insulin being pumped out by your pancreas. This leads to glucose intolerance, in which glucose can't get into cells and builds up in your blood. The best way to reduce insulin resistance and, thus, glucose intolerance, is by reducing calories and increasing physical activity. Not so surprisingly, this also improves blood pressure and HDL and triglyceride levels, even if you don't lose a significant amount of weight.¹⁴ Losing just five to 10 percent of your body weight can have significant effects on these factors and is a realistic, achievable goal.

Underlying Mechanism

We're still learning about metabolic syndrome, which was only identified in 1988, so the underlying changes that lead to it are still under investigation. However, we know that the two key components are obesity and insulin resistance, which invariably exist in someone with metabolic syndrome. The obesity tends to be related to abdominal fat. That's because this type of fat produces inflammatory chemicals that are implicated in every other component of metabolic

syndrome.¹⁵ It's not a straight line effect, however. Every component of metabolic syndrome has effects on every other component. For instance, insulin resistance can make blood vessels in the heart more susceptible to inflammation and the buildup of plaque, as well as stiffness, leading to atherosclerosis.¹⁵

Diagnosing Metabolic Syndrome

There are at least six definitions for metabolic syndrome. The one described earlier comes from the National Heart, Lung, and Blood Institute (NHLBI). Others come from the World Health Organization (WHO)¹⁶ and the International Diabetes Federation (IDF).¹⁷ All are different.

The WHO, for instance, requires evidence of insulin resistance or diabetes to make a diagnosis of metabolic syndrome, while the IDF requires a certain degree of abdominal obesity. The NHLBI, however, considers the five components equal in importance.¹ The WHO's definition is designed to identify people at greater risk for diabetes; while the NHLBI's definition is designed to identify those with greater risk for cardiovascular disease (CVD).¹⁸

What does this mean to you? Well, it means your health care professional may be just as confused as you are. In the U.S., however, there's general agreement among medical professionals to use the NHLBI definition, in part because it's so difficult to test individuals for insulin resistance in the typical health care provider's office.

The reality, however, is that any *one* of the five risk factors increases your risk of cardiovascular disease, whether

you have metabolic syndrome or not. So whether you have one or all five of the components, make sure you and your health care professional work together to reduce that risk and any others you may have.

Women's Risk

Although the rates of metabolic syndrome in women and men are about the same, there is one difference: Women with polycystic ovarian syndrome (PCOS), a hormonal condition that often affects fertility, are 11 times more likely to have metabolic syndrome than those without.¹⁹ Part of the reason is that one of the hallmarks of PCOS is insulin resistance. That's why so many women with the condition take diabetes drugs like metformin (Glucophage), designed to improve insulin sensitivity.

Studies in women with PCOS also find that the more overweight women are, the greater their risk of metabolic syndrome.²⁰ Another significant risk factor is having high levels of androgens, or male hormones, such as testosterone, regardless of weight or insulin resistance.²¹ Bottom line: If you have been diagnosed with PCOS, talk to your doctor about other risk factors you may have for cardiovascular disease.

Lifestyle-Focused Treatments

It's clear that losing weight through modest changes in your diet and physical activity is one of the best ways to reduce your risk of metabolic syndrome and improve all markers for the condition. Don't try crash diets, however; they don't work. The best approach is to reduce your total calories slightly—by 500 to 1,000

calories a day, depending on your weight.⁹ You can cut out 500 calories a day, for instance, simply by skipping that Frappuccino and cutting out one large soda. Cutting calories isn't enough, however, if you're after long-term weight loss. You also have to change the way you eat and view food. That means setting goals for weight loss, planning meals, reading labels, reducing portion sizes and not bingeing.

And you don't have to lose a lot of weight. Aim for five to 10 percent of your weight over six to 12 months. If you weigh 200 pounds, that's a loss of 10 to 20 pounds. Even this small amount of weight will improve the biomarkers for metabolic syndrome.

Even if you don't need to lose weight, you should change your diet. Studies find a diet high in saturated fat, simple sugars and cholesterol contributes to the components of metabolic syndrome. Reducing your intake of these nutrients along with increasing the amount of fruits, vegetables and whole grains you eat is your best bet.⁹ One diet plan that can help you achieve a healthy, balanced diet is available from NHLBI. It's called the "Dietary Approaches to Stop Hypertension" (DASH) eating plan and features heart healthy foods.

Now on to the second part of the equation: Exercise. When you exercise, your cells become more receptive to insulin; think of them opening up like a parched plant opens when you water it. Even without weight loss, regular exercise such as a brisk 30-minute walk daily can make a huge difference in improving most, if not all, metabolic syndrome risk factors.

Medical Treatments

Although lifestyle changes are the best way to improve all risk factors associated with metabolic syndrome, in some cases your health care provider may also choose to prescribe medication. There is no single medication that can address all five markers, so they are typically treated individually.

To improve insulin resistance, for instance, your doctor may prescribe medications such as metformin (Glucophage), pioglitazone (Actos), rosiglitazone (Avandia) and sitagliptin phosphate (Januvia). In fact, studies find that metformin can help prevent diabetes in people with prediabetes.⁹ And, Januvia has been shown to enhance the body's own ability to lower elevated blood sugar.²⁴

If you have hypertension as part of the syndrome, make sure your doctor knows. Large doses of some commonly prescribed blood pressure drugs, such as diuretics and beta-blockers, can make insulin resistance worse. ACE inhibitors such as enalapril (Vasotec) and benazepril (Lotensin) and angiotensin receptor blockers like losartan (Cozaar) seem to work best in patients with diabetes.⁹

While there aren't many drugs that can raise HDL cholesterol, your doctor may still prescribe a statin, particularly if your LDL cholesterol levels are high; statins can improve HDL cholesterol somewhat.²² Additionally, if your 10-year risk of heart disease is high, you may want to talk to your health care professional about aspirin therapy.

Drugs commonly prescribed to reduce triglycerides include gemfibrozil (Lopid) and clofibrate (Abitrate).²³

Questions to Ask Your Health Care Professional

1. Can you help me understand metabolic syndrome?
2. Which waist measurement puts me at high risk for weight-related health concerns?
3. What is my fasting blood glucose level? Should I be concerned?
4. Am I at risk for heart disease and what should I do to decrease my risks?
5. Am I at risk of developing diabetes and what can I do to reduce my risk?



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Resources

American Heart Association

800-242-8721

www.americanheart.org

American Diabetes Association

800-342-2383

www.diabetes.org

American Obesity Association

202-776-7711

www.obesity.org

National Heart, Lung and Blood Institute

Health Information Center

301-592-8573

www.nhlbi.nih.gov

TOPS (Take Pounds Off Sensibly) Club, Inc.

800-932-8677

www.tops.org

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