



FOOD FOR THOUGHT...

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Metabolic Syndrome

Analysis of almost 9,000 men and women from the Third National Health and Nutrition Examination Survey (NHANES III, 1988-1994) reveals that 47 million Americans (one out of every five people in the United States) is affected by metabolic syndrome.¹

Recently, the National Institutes of Health (NIH) adjusted the National Cholesterol Education Program (NCEP) guidelines to include metabolic syndrome.² The new guidelines recognize that it is crucial to detect the warning signs and urge people to make the right diet and lifestyle changes now.

- What is metabolic syndrome?
- What are the characteristics of metabolic syndrome?
- What lifestyle changes may help to prevent metabolic syndrome?

CROSSROAD OF DIABETES AND HEART DISEASE

Metabolic syndrome is often described as being at the crossroad of diabetes and heart disease. Many of the characteristics of metabolic syndrome are risk factors associated with either type 2 (or adult onset) diabetes or heart disease, or both.

Let's examine first the connection to type 2 diabetes. Normally, insulin helps to get glucose, or blood sugar, absorbed into cells so it can be used for energy. In type 2 diabetes, the body loses its ability to use properly the insulin it produces. When this occurs, blood sugar levels rise, damaging blood vessels, and type 2 diabetes is diagnosed.

With metabolic syndrome, the body also has trouble using its own insulin. But in response to glucose in the blood, the body continues producing more and more insulin until all of the glucose has been absorbed into cells. In other words, even though there is insulin resistance, the body is able to produce high enough levels of insulin to

eventually use glucose properly, and the type 2 diabetes diagnosis is prevented. Unfortunately, these high levels of insulin circulating in your blood present risk factors for heart disease.

This brings us to the heart disease connection. These high levels of circulating insulin in your blood can raise triglycerides and decrease HDL (high-density lipoprotein or the "good") cholesterol, both of which are risk factors for heart disease.

See page two for the specifics on what the National Cholesterol Education Program says defines metabolic syndrome.

INSIDE...		PAGE
	Other risk factors	2
	Lifestyle changes	2
	Sample menu and snacks	3
	Lowering risk of heart disease	4




RISK FACTORS FOR METABOLIC SYNDROME


Insulin resistance, combined with other risk factors ranging from high blood pressure to a waist circumference that is too large, is what defines metabolic syndrome. According to the National Cholesterol Education Program (NCEP) guidelines, metabolic syndrome should be diagnosed when three or more of these risk factors are present:²

Blood pressure	greater than 130/85 mm Hg
HDL-cholesterol	less than 40 mg/dL for men, less than 50 mg/dL for women
Triglycerides	greater than or equal to 150 mg/dL
Blood sugar (fasting)	greater than or equal to 110 mg/d
Waist circumference	greater than 40 inches for men, greater than 35 inches for women

LIFESTYLE CHANGES

Although genes may play a part, lifestyle factors play a significant role in metabolic syndrome. Controlling your weight and exercising are perhaps two of the most important changes you can make to help prevent your risk of developing metabolic syndrome and a host of other diseases.

 **GET MOVING!:** Weight loss and exercise are keys to reducing insulin resistance and improving blood lipid levels. Exercise alone can actually improve insulin sensitivity, especially in muscle cells. And in most people weight loss will lower blood pressure and improve triglyceride levels, both of which are factors in metabolic syndrome.

 **EAT SOME UNSATURATED FAT AS PART OF A WEIGHT LOSS DIET:** Recent research begins to look at the positive role that a moderate amount of healthy fat (think peanuts, peanut butter, olive oil and avocados) can have in weight loss diets. Even small weight loss can make a difference in helping to increase insulin sensitivity and normalize blood lipid levels. The key is to lose the weight and to keep it off over the long term.

When researchers at Harvard School of Public Health and Brigham and Women's Hospital in Boston put over 100 subjects on weight loss diets, they found that three times as many people were able to stick to a healthy moderate fat weight loss diet than those following the traditionally recommended low fat diet. Furthermore, the dieters who were allowed to eat some healthy fat kept the weight off for over 18 months and had better nutritional intakes. In addition, these dieters felt more satisfied because they could eat some of their favorite foods each day such as peanut butter, nuts and healthy oils, in a healthy Mediterranean-style eating pattern.³

Kathy McManus, MS, RD, director of nutrition at Brigham and Women's Hospital and co-investigator of the study, says, "Any low calorie diet can work in the short run, but we need to know what kind of eating pattern can sustain long-term weight loss—which is key to preventing chronic disease. The subjects substituted high saturated fat foods, like butter, with healthy monounsaturated fat foods, like peanut butter. They tossed nuts on their salad instead of croutons and used small amounts of full fat salad dressings. My patients loved this diet because they could include favorite foods if they carefully watched portion sizes."



SAMPLE DIET FOR A DAY

Often times a low-fat, high-carbohydrate diet is recommended for health. But for a significant part of the population, this diet may be harmful instead of helpful. For those with metabolic syndrome, a traditional low-fat, high-carbohydrate diet with lots of bagels, pretzels, and breads, would raise triglycerides and lower the good HDL cholesterol, both negative to health.

The updated American Heart Association Dietary Guidelines⁴ state, "For individuals diagnosed with metabolic syndrome, it may be desirable to avoid a very low-fat, high-carbohydrate diet, and to emphasize unsaturated fats. ..."

A typically recommended meal plan to control or help prevent metabolic syndrome consists of 15% protein, 5-10% saturated fat, 30-35% mono- and polyunsaturated fat, 45% carbohydrate, and less than 300 mg/day of dietary cholesterol. Here is an 1800-calorie sample menu:⁵

Meal	SAMPLE MEAL PLAN FOR METABOLIC SYNDROME
Breakfast	1/2 c cooked oatmeal with cinnamon, topped with 2 tsp. nuts 1/2 c low fat milk 1/2 grapefruit 1 slice whole wheat toast with 2 tsp. peanut butter or trans fat-free margarine 1 slice Canadian bacon Non-caloric beverage (water, tea, coffee, etc.)
Lunch	Peanut butter sandwich (2 Tbs. peanut butter, 1 Tbs. honey, 1/3 c seedless grapes cut in halves, 2 slices buttermilk white toast) Green salad (1 c lettuce, 4 tomato wedges, cucumber slices, 3 Tbs. small cooked shrimp, 2 tsp. vinaigrette dressing) 1 ginger snap Non-caloric beverage
Dinner	2.5 oz. roasted turkey breast with no skin 1/4 c cranberry sauce 3/4 c mashed potatoes with 2 tsp. trans fat-free margarine 1/4 c baked sweet potato with 2 tsp. peanut butter or trans fat-free margarine 1/2 c fresh peas with 1 heaping tsp. trans fat-free margarine 1/8 of a pumpkin pie Non-caloric beverage

RECOMMENDED SNACKS FOR METABOLIC SYNDROME

Again, these snacks are low cholesterol, and contain approximately 15% protein, 5-10% saturated fat, 30-35% mono- and polyunsaturated fat, 45% carbohydrate.

- 100 calories: 4 saltine crackers with 1/2 tablespoon peanut butter and a few drops of honey
1/4 large apple with skin and 1/2 slice sourdough toast with 1 tablespoon peanut butter
- 200 calories: 2 slices whole wheat toast with 1 tablespoon peanut butter
- 300 calories: 3/4 oz. dry-roasted peanuts and 5 cups air-popped popcorn with a few drops of safflower margarine and 4 oz. low-fat milk

Source: Syndrome X: Overcoming the Silent Killer That Can Give You a Heart Attack.

THE ROLE OF MONOUNSATURATED FAT (MUFA) IN LOWERING RISK OF HEART DISEASE

A clinical study from Penn State University examined a diet that substituted 2-3 servings daily of peanuts or peanut butter, rich in monounsaturated fat (MUFA), for foods with saturated fat.⁶ The researchers found that the peanut diet lowered total and LDL cholesterol by 11 and 14%, respectively. Overall they reduced the risk of cardiovascular disease by 21% compared to the average American diet.

Five major population studies have also documented an association between eating peanuts and peanut butter and lower risk of heart disease. These large-scale studies (Harvard Nurses Health Study, Harvard CARE Trial, Seventh Day Adventist Study, Iowa Women's Study and Harvard Physicians Health Study) included over 260,000 people. These studies show that eating peanuts, nuts and peanut butter five or more times per week can decrease risk factors for heart disease by as much as 50%.⁷



In addition to a significant amount of plant protein and heart healthy monounsaturated fat, peanuts and peanut butter are good sources of folate, niacin, thiamin, magnesium, fiber, and phytosterols, all of which are thought to be beneficial to health.



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The Peanut Institute is a non-profit organization that supports nutrition research and develops educational programs to encourage healthful lifestyles.



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