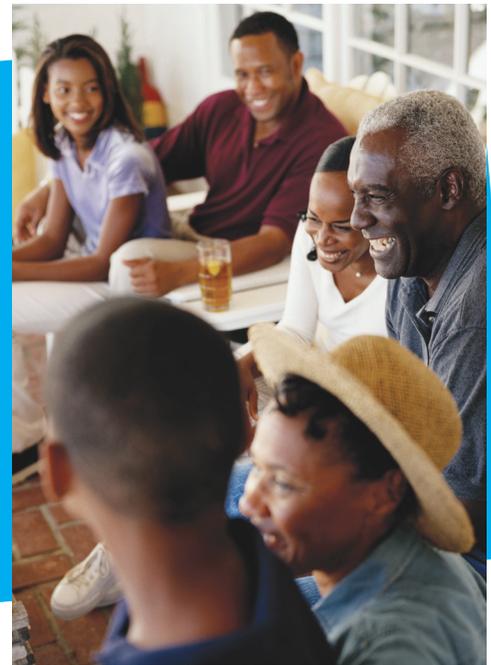


INSULIN RESISTANCE AND METABOLIC SYNDROME



Diabetes and insulin resistance are on the rise. More than 54 million people in the U.S. have been diagnosed with prediabetes or insulin resistance –which, according to the National Diabetes Education Program, means having higher than normal blood sugar levels, but not high enough to be diagnosed as diabetes. What’s important to remember, is that prevention of both insulin resistance and metabolic syndrome is possible. Here are some ways to reduce or delay the risk for developing diabetes and metabolic syndrome through healthier lifestyle choices.

Insulin resistance

Insulin resistance is a condition where blood glucose levels are higher than normal, but not high enough to be diagnosed as diabetes. Typically, insulin enters your muscles and other cells from the blood stream. When there is insulin resistance, the insulin “keys” no longer fit in the lock, and can’t open the “doors” to your muscles and other cells to let glucose in. Instead, the glucose stays in the blood, raising the levels of glucose in the blood. When this happens, it’s called prediabetes, or insulin resistance. Long-term damage to the body, especially the heart and circulatory system, may be occurring during insulin resistance.



Metabolic syndrome

Metabolic syndrome is a combination of disorders in the body’s metabolism that increases the risk of heart disease, stroke and diabetes. It is a very common and dangerous medical problem that is closely associated with insulin resistance. It is sometimes referred to as Insulin Resistance Syndrome or Syndrome X. By the year 2010, metabolic syndrome is expected to affect 50 – 75 million people in the U.S. alone.

Metabolic syndrome is defined as the presence of 3 or more of the following health conditions:

- Excess weight around the waist (more than 40 inches for men and 35 inches for women)
- Triglyceride blood level of 150 mg/dl or more
- HDL cholesterol levels below 40 mg/dl for men and below 50 mg/dl for women
- Blood pressure of 130/85 mm/HG or higher
- Insulin resistance (a fasting blood sugar between 100 and 125) or diabetes (a fasting blood sugar level over 125 mg/dl)

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Higher risks for insulin resistance can come from:

- Immediate family members with diabetes
- Personal history of diabetes during pregnancy
- Fasting blood sugar levels 100-125 or non-fasting blood sugar levels 140 - 199
- Being overweight or obese
- Gaining weight around your middle section
- A personal history of polycystic ovary disease

The glucose and insulin basics:

Glucose: sugar (or energy) for the body that comes from food

Insulin: (a hormone in the body) needed to get glucose into cells in the body. Once in the cells, glucose is used for energy or stored for later use

Some of the risks for developing metabolic syndrome include:

- **Family health history of:**
 - Type 2 diabetes
 - Hypertension
 - Early heart disease
- **An unhealthy lifestyle:**
 - Low activity level
 - Progressive weight gain
- **Being overweight**
- **Other areas of increased risk:**
 - Women who are post-menopausal
 - Smoking
 - Eating a poor diet



Some of the effects of metabolic syndrome on your health if left untreated include:

- Increased risk for heart attack and stroke
- Increased risk for developing type 2 diabetes
- Increased risk for blood clot formation
- High blood pressure

Effects on your health if treated:

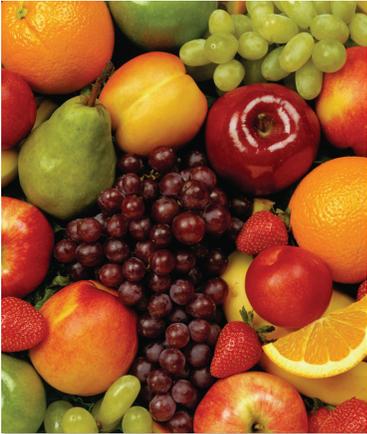
- Prevent the development of type 2 diabetes
- Blood glucose levels may return to normal
- Improved blood pressure levels
- Improved cholesterol levels
- Addition of years to your life



The safest, most effective and preferred way to reduce insulin resistance in overweight and obese people is weight loss and increased physical activity. A moderate weight loss of 5 - 10% of your body weight can improve insulin sensitivity and reduce your chances that metabolic syndrome will evolve into diabetes and/or heart disease. Weight loss can be achieved by increasing your physical activity and eating healthy. Your health care provider may also prescribe medications to treat individual risk factors for high cholesterol or triglycerides, high blood pressure, high blood glucose or signs of kidney disease if they feel it is necessary.

Exercise!

- Start a sustainable, consistent activity program
- 30 minutes, 5 days a week can help:
 - Lower blood pressure
 - Lower cholesterol levels
 - Increase insulin sensitivity
 - Reduce risk of developing diabetes
- Exercise may also reduce the risk of heart disease regardless of any weight loss
- Choose an activity that is enjoyable, rhythmic and uses large muscle groups
- Always check with your physician before starting any exercise program

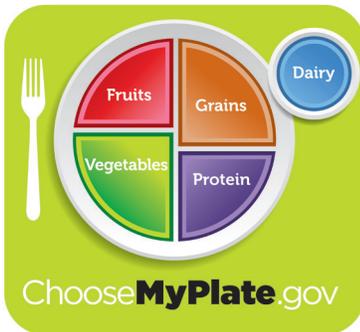


Eat healthy!

- Replace some of the animal fats, sugars, and white flour in your diet with:
 - Whole grains
 - Fiber (25 grams/day)
 - More fruits and vegetables
 - Healthy fats: canola oil, olive oil, flaxseed oil, avocados and nuts
 - Fish (especially salmon, mackerel and tuna)

Some other better health habits to take into account include:

- Quit smoking
- Limit alcohol intake
- Be compliant with prescription drugs
- Find a walking buddy or group
- Take walks during your work breaks
- Look at what you are feeding your family
- Be a role model for your children to be active and get out to play



A daily diet plan

Proteins: Adequate for your body weight (about 50 grams per 100 pounds – OR take your weight divided by 2)

Fats: About 3 tablespoons of healthy oil

Carbohydrates: four cups of healthy veggies and about 2 fruits

Water: 7-11 cups per day

Insulin resistance and metabolic syndrome can often be prevented and possibly even reversed by making simple changes to the way you live. Start on a path of eating healthier and increasing physical activity, and you'll be reaching your goals in no time.

