All About Insulin Resistance

Insulin resistance is a condition that increases your chances of developing type 2 diabetes and heart disease. When you have insulin resistance, your body has problems using insulin. Over time, this makes your blood glucose (sugars) levels go up. The good news is that cutting calories, being active, and losing weight can reverse insulin resistance and lower your chances of developing type 2 diabetes and heart disease.

What does insulin do?

Insulin helps your body use glucose for energy. Insulin is a hormone made by the pancreas. Your body needs insulin to turn glucose into energy.

Insulin works like a key at the entrance to your cell. Food arrives at the door of a cell in the form of blood glucose. Insulin opens the door, just like a key. Then blood glucose enters the cell where it's used for energy.

When you have insulin resistance, your cells don't respond to insulin. Blood glucose still arrives at the cell door, but your cell resists opening the door for insulin. Your pancreas tries to keep blood glucose levels normal by making extra insulin. At first, the extra insulin helps. But after a while, even extra insulin can't open the cell doors and the glucose builds up in your blood. If your blood glucose gets too high, you may have either pre-diabetes or diabetes.

What raises your risk for insulin resistance, pre-diabetes, and diabetes?

You are at risk if you
• are overweight
• are physically inactive
• are a woman with a waist measurement at your belly button over 35 inches or a man with a waist size over 40 inches
• have a parent, brother, or sister with type 2 diabetes
• are African American, Hispanic/Latino, American Indian, Asian American, or Pacific Islander
• have polycystic ovary syndrome, also called PCOS
• have had gestational diabetes, which is diabetes that develops during pregnancy

Physical activity, such as walking, can prevent or reverse insulin resistance.

• have given birth to a baby weighing more than 9 pounds
• are age 45 or older
• have had above-normal blood glucose levels
• have blood pressure levels of 140/90 mmHg or higher
• have low HDL (good) cholesterol levels (below 35 mg/dL)
• have high levels of blood fats called triglycerides (higher than 250 mg/dL)
• have had heart disease, a stroke, or disease of the blood vessels in your neck or legs.
• have darkening of the skin under your armpits or around your neck

Some of these risk factors also raise your risk for heart disease.

How is insulin resistance diagnosed?

At this time, there is no commonly used test to diagnose insulin resistance. People with insulin resistance usually have no symptoms. Your health care provider can

review your risk factors and then consider whether you're likely to have insulin resistance. If you're at risk, your health care provider should check your blood glucose levels to see whether you might have pre-diabetes or diabetes.

How can you prevent or reverse insulin resistance?

You can eat less calories and be physically active. If you do, it's more likely you'll lose weight. Remember, you don't have to lose a lot of weight. Even a loss of 5 to 10% (about 10 to 20 pounds) can help.

Eat less

Place a check mark next to the steps you'd like to try to eat less calories. A dietitian can help you find other ways to eat less and plan healthy meals.

- ❏ Eat smaller serving sizes.
- ❏ Order the smallest serving size when eating out—or share your main dish.
- ❏ Try calorie-free drinks or water instead of regular soft drinks and juice.
- ❏ Choose baked, grilled, and steamed foods instead of fried.
- ❏ Use a smaller plate—8" or 9" instead of 10" or 12".
- ❏ Fill half your plate with greens and veggies. Fill ¼ with meat or other protein, and ¼ with carbs, such as brown rice or whole grain pasta.
- ❏ Eat more vegetables, whole grains, and fruit.
- ❏ Ask for salad dressings and sauces "on the side" and then use as little as possible.
- ❏ Use nonstick pans or cooking sprays.
- ❏ Cut back on high-fat toppings, such as butter, margarine, sour cream, regular salad dressing, mayonnaise, and gravy. Instead, season foods with barbecue sauce, salsa, lemon juice, or other low-fat options.
- ❏ Eat small servings of low-calorie, low-fat snacks.
- ❏ Another way I'll try to eat less calories is to

Be physically active

Place a check mark next to the ways you'll try to add physical activity to your routine.

- ❏ Take the stairs instead of the elevator.
- ❏ Walk around while you talk on the phone or during TV commercials.
- ❏ Find an activity you enjoy, such as dancing, gardening, or playing with the kids. Move more around the house. For example, clean the house, work in the garden, or wash the car. Retire the remote control—get up to change the TV channel.
- ❏ Take the dog for a walk.
- ❏ Park at the far end of the shopping center lot and walk to the store.
- ❏ Schedule extra time for grocery store shopping and walk down every aisle.
- ❏ Walk every day after lunch, working up to 30 minutes of brisk walking, 5 days a week—or split the 30 minutes into two-15 or three-10 minute walks.
- ❏ Try strength training by lifting light weights 2 to 3 times a week.
- ❏ Another way I'll try to add physical activity to my day is to

Does insulin resistance affect people who already have type 2 diabetes?

Yes, insulin resistance usually starts before type 2 diabetes is diagnosed. Then it continues, making it harder for you to reach your blood glucose targets. If you have type 2 diabetes, fight insulin resistance by eating less calories, being more active, and losing weight if you need to. Talk with your health care team about ways to achieve your goals using meal planning, physical activity, and medicines.

Provided By

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