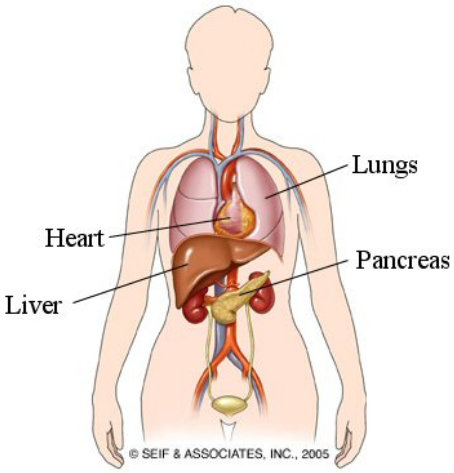
Insulin Resistance

Glucose (type of sugar) levels are controlled by a hormone called insulin. Insulin is made by your pancreas. When your blood glucose goes up, insulin is released into your blood. Insulin is required for your body to function normally. However, your body can become resistant your own insulin or to insulin given to treat diabetes. In either case, insulin resistance can lead to serious problems. Taken together, these problems are called Insulin Resistance Syndrome, Metabolic Syndrome, Syndrome X, or Dysmetabolic Syndrome. These problems include:



- Diabetes Mellitus Type 2.
- Heart disease.
- High blood pressure.
- Stroke.
- Polycystic ovary syndrome.
- Fatty liver.

CAUSES

Insulin resistance can develop for many different reasons. It is more likely to happen in people with these conditions or characteristics:

- Obesity.
- Pregnancy. This includes gestational diabetes (temporary diabetes during pregnancy).
- Family history of Diabetes Type 2.
- High blood pressure.
- Stress of severe illness.
- Corticosteroid treatment.
- Polycystic ovarian syndrome.
- Non-Caucasion race.
- Cardiovascular disease.
- A darkening and thickening of the skin in fold areas such as the neckline and armpit (*acanthosis nigricans*).

SYMPTOMS

There are no symptoms. You may have symptoms related to the various complications of insulin resistance.

DIAGNOSIS

Several different things can make your caregiver suspect you have insulin resistance,. These include:

- High blood glucose.
- Abnormal cholesterol levels.
- High uric acid levels.
- Changes related to blood pressure.
- Changes related to inflammation.
- Presence of acanthosis nigricans (see above).

Insulin resistance can be determined with blood tests. An elevated insulin level when you have not eaten might suggest resistance. Other more complicated tests are sometimes necessary.

TREATMENT

Lifestyle changes are the most important treatment for insulin resistance.

- If you are overweight and you have insulin resistance, you can improve your insulin sensitivity by loosing 10-15 % of your weight.
- Moderate exercise for 30-40 minutes, 4 days a week, can improve insulin sensitivity.

Some medications can also help improve your insulin sensitivity. Your caregiver can discuss these with you if

they are appropriate.

HOME CARE INSTRUCTIONS

- **Do not smoke.**
- Keep your weight at a healthy level.
- Get exercise.
- If you have diabetes, follow your caregiver's directions.
- If you have high blood pressure, follow your caregiver's directions.
- Take prescribed medications according to the directions.

SEEK MEDICAL CARE IF:

- You are diabetic, and you are having problems keeping your blood sugar at target range.
- You are having episodes of hypoglycemia.
- You feel you might be having side effects from your medicines.
- You have symptoms of an illness that is not improving after 3-4 days.
- You have a sore or wound that is not healing.
- You notice a change in vision or a new problem with your vision.
- You develop fever of more than 100.5° F (38.1° C).

SEEK IMMEDIATE MEDICAL CARE IF:

- Your blood sugar goes below 70, especially if you have confusion, lightheadedness or other symptoms with it.
- Your blood sugar is very high (as advised by your caregiver) twice in a row.
- An unexplained oral temperature above 102.0° F (38.9° C) develops.
- You pass out.
- You have chest pain and/or trouble breathing.
- You have a sudden, severe headache
- You have sudden weakness in one arm and/or one leg.
- You have sudden difficulty speaking and/or swallowing.
- You develop vomiting and/or diarrhea that is getting worse or not improving after 1 day.

Document Released: 02/06/2007 Document Re-Released: 10/15/2010
ExitCare® Patient Information ©2011 ExitCare, LLC.