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Type 1 Diabetes Overview

Type 1 diabetes is also known as insulin-dependent diabetes mellitus (IDDM). It is a chronic condition in which the pancreas produces little or no insulin, a hormone needed to convert sugar (glucose) into energy. It can occur at any age, but usually during childhood or adolescence.

Signs & Symptoms (S&S):

Increased thirst & frequent urination: As excess sugar builds up in your bloodstream, fluid is pulled from your tissues. This may leave you thirsty. As a result, you may drink – and urinate – more than usual.

Extreme hunger – Without enough insulin to move sugar into your cells, your muscles and organs become depleted of energy. This triggers intense hunger that may persist even after you eat. Without insulin, the sugar in your food never reaches your energy starved tissues.

Weight loss – Despite eating more than usual to relieve your hunger, you may lose weight – sometimes rapidly. Without the energy sugar supplies, your muscle tissues and fat stores may simply shrink.

Fatigue – If your cells are deprived of sugar, you may become tired and irritable.

Blurred vision – If your blood sugar level is too high, fluid may be pulled from your tissues – including the lenses of your eyes. This may affect your ability to focus clearly.

How is glucose normally processed in the body? Glucose is a main source of energy for the cells that make up your muscles and other tissues. Glucose comes from 2 major sources: the food you eat and your liver. During digestion, sugar is absorbed into the bloodstream. Normally, sugar then enters cells with the help of insulin.

The hormone insulin comes from the pancreas, a gland located just behind the stomach. When you eat, your pancreas secretes insulin into our bloodstream. As insulin circulates, it acts like a key by unlocking microscopic doors that allow sugar to enter your cells. Insulin lowers the amount of sugar in your bloodstream. As your blood sugar level drops, so does the secretion of insulin from your pancreas.

Your liver acts as a glucose storage and manufacturing center, When your insulin levels are low – when you haven't eaten for awhile, for example – your liver releases the stored glucose to keep your glucose level within a normal range.

In IDDM, your immune system – which normally fights harmful bacteria or viruses – attacks and destroys the insulin-producing cells in the pancreas. This leaves you with little or no insulin. Instead of being transported into your cells, sugar builds up in your bloodstream.

Screening & diagnosis:

Random Blood Sugar Test (regardless of when you last ate) – If the level is 200mg/dl or higher it suggests diabetes.

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Fasting Blood Sugar Test – After an overnight fast. Normal is between 70mg/dl and 100mg/dl. Prediabetes level 100 to 125 mg/dl. If it is 126 or higher on two separate tests, you will be diagnosed with diabetes.

IDDM might be suspected if you have little or no ability to produce insulin, you have antibodies to insulin-producing cells in your blood, or you have toxic acids produced by the breakdown of fat (ketones) in your urine.

HgA1c should be 7 or less. Current recommendation is 6.5 & in some cases 6.

Complications:

IDDM can affect many major organs in your body, including your heart, blood vessels, nerves, eyes and kidneys.

Short-term complications of IDDM require immediate care. Left untreated, these conditions can cause seizures and loss of consciousness (coma).

Hyperglycemia – Your BS level can rise for many reasons, including eating too much, being sick, or not taking enough insulin. S&S – frequent urination, increased thirst, dry mouth, blurred vision, fatigue and nausea. If your BS is persistently above 250mg/dl consult your physician right away.

Increased ketones in your urine (diabetic ketoacidosis) – If your cells are starved for energy, your body may begin to break down fat. This produces toxic acids known as ketones. Watch for loss of appetite, nausea, vomiting, fever, stomach pain and a sweet, fruity smell on your breath – especially if your BS level has been consistently higher than 250mg/dl.

Hypoglycemia – BS can drop for many reasons, including skipping a meal, getting more physical activity than normal or injecting too much insulin. S&S –Early - sweating, shakiness, weakness, hunger, dizziness, and nausea. Later signs and symptoms include slurred speech, drowsiness and confusion. If you develop hypoglycemia during the night, you might wake with sweat-soaked pajamas or a headache. Thanks to a natural rebound effect, nighttime hypoglycemia might cause an unusually high blood sugar reading first thing in the morning.

Long-term complications:

Heart and blood vessel disease

Nerve damage – neuropathy

Kidney damage – nephropathy

Eye damage

Foot damage

Skin and mouth conditions

Osteoporosis