

Defining diabetes

Types, symptoms and advancements in treatment

Diabetes affects nearly 30 million people in the U.S. — another 86 million have pre-diabetes risk factors. According to the American Diabetes Association, the total estimated cost of diagnosed diabetes in this country is a staggering \$245 billion.

Diabetes is a metabolic disease in which the body isn't able to produce any or enough insulin. The result is elevated levels of glucose in the blood. Area experts define the types of diabetes as well as identify symptoms and explain advancements in care.

TYPE 1

According to Dr. Vanessa Rein, endocrinologist and associate chief of clinical affairs for UW-Health, people with Type 1 diabetes have an autoimmune condition. "Patients with Type 1 diabetes make antibodies that attack and damage the cells in their pancreas that produce insulin," she says. "They have high blood sugar because they have an insulin deficiency from that autoimmune disease."

Type 1 typically affects children, teens and young adults, although individuals can be diagnosed with type 1 diabetes at any age.

Trish Behnke, RN and certified diabetes educator at Aurora Bay-

Care Medical Center in Green Bay, explains the onset of type 1 typically happens quickly. Common symptoms include frequent urination, extreme thirst, blurry vision, extreme fatigue and rapid weight loss.

Type 1 patients must test their blood sugar, take insulin and carefully monitor their diet.

In recent years, there has been great advancements in diabetes care. Dr. Rein explains it's common for type 1 patients to be on insulin pumps and developments have resulted in user-friendly pumps with better features. In 2016, the Food and Drug Administration (FDA) approved the first artificial pancreas. Behnke explains patients are excited about the artificial pancreas because it will continuously monitor their blood sugar and automatically make adjustments.

The American Diabetes Association states only 5 percent of people with diabetes have this form of the disease.

TYPE 2

Type 2 diabetes occurs when the body is no longer making enough insulin — the body



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eventually becomes insulin resistant.

"Insulin is a hormone that lowers blood sugar — it takes sugar out of the bloodstream and carries it to cells in the body. When you have insulin resistance your cells don't recognize the insulin as well as it used to," explains Dr. Rein.

Behnke adds, "Insulin has an important role in getting sugar from our bloodstream to the cells that need it. In the case of type 2 patients, they are not making as much as they were at one time, so the sugar can't get in the cell. It stays in the bloodstream, causing blood sugars to go high."

Type 2 diabetes is typically seen in adults and has a strong link to obesity. Behnke explains the majority of the population with diabetes has type 2.

Symptoms are similar to type 1 — frequent urination, extreme thirst, blurry vision, extreme fatigue and rapid weight loss — although these conditions occur over time, making it more difficult to detect type 2 diabetes.

"In terms of treatment, type 2 is more lifestyle related. This includes learning about carbohydrates, eating healthy meals, having a more active lifestyle and possibly taking medication," says Behnke. "Some are able to manage type 2 with diet and exercise."

She explains advancements in type 2 diabetes care include new medications that aren't necessarily insulin-related. Dr. Rein adds advances include new oral agents, injectable medicines to help lower blood sugar, concentrated insulins and insulins that have better pharmacologic properties for patients with diabetes.

IMPORTANCE OF DIABETES AWARENESS AND CARE

While those with diabetes must live with and manage the disease daily, those unfamiliar with diabetes may not realize the importance of continuous care.

"Taking care of your body when you have diabetes prevents long-term complications," says Behnke. "We explain to our patients that when our blood sugar gets too high in our bloodstream it's like shards of glass. It damages the lining of your blood vessels and that results in long-term complications."

Dr. Rein reveals diabetes is the leading cause of blindness, kidney failure and non-traumatic amputations in the U.S. It is also a major risk factor for developing cardiovascular disease. [W](#)

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