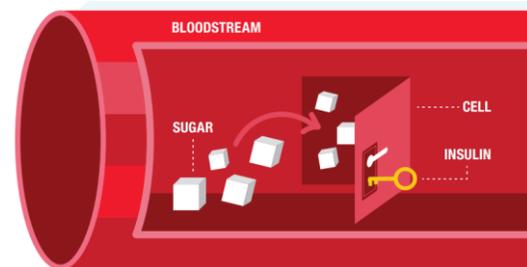


How Diabetes Works: The Lock and Key Model of Blood Sugar Control

When we eat, our body breaks down most foods into sugar (glucose), which enters the bloodstream. As blood sugar levels rise, the pancreas releases insulin, a hormone that helps move glucose from the bloodstream into our cells to be used for energy.

Think of insulin as a key and our cells as locked doors. Glucose needs insulin to unlock the door and enter the cell. In people without diabetes, insulin fits the lock perfectly, allowing glucose to move into the cells smoothly.



What happens when the key no longer works?

Diabetes is a chronic condition in which the body cannot effectively manage blood sugar levels. This happens when the insulin “key” and the cell “lock” stop working correctly.

There are several types of diabetes, each with different causes and treatments:

Type 1 diabetes is an autoimmune disease where the body’s immune system mistakenly attacks and destroys insulin-producing cells in the pancreas. The body can no longer produce insulin. Around 10% of people with diabetes in Canada have type 1, which requires daily insulin injections or the use of an insulin pump.

Pre-diabetes is a warning sign that the body is starting to struggle with blood sugar control. The body begins to resist insulin or no longer makes enough to maintain healthy blood sugar levels. Blood sugar levels are high but not yet high enough to be diagnosed as type 2 diabetes. Lifestyle changes are recommended to prevent and/or delay the onset of a diagnosis.

Type 2 diabetes is the most common type of diabetes, with approximately 90% of people with diabetes in Canada having type 2. The body may experience insulin resistance/or may not produce enough insulin. Type 2 diabetes can be managed through lifestyle changes, medication, and in some cases, medication.

Gestational diabetes is a form of diabetes that develops during pregnancy. Gestational diabetes occurs when the mother's body struggles to make insulin as a result of the growing baby’s needs and changing hormone levels. Gestational diabetes usually resolves after childbirth, but it increases the risk of developing type 2 diabetes later in life for the individual and their child.

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