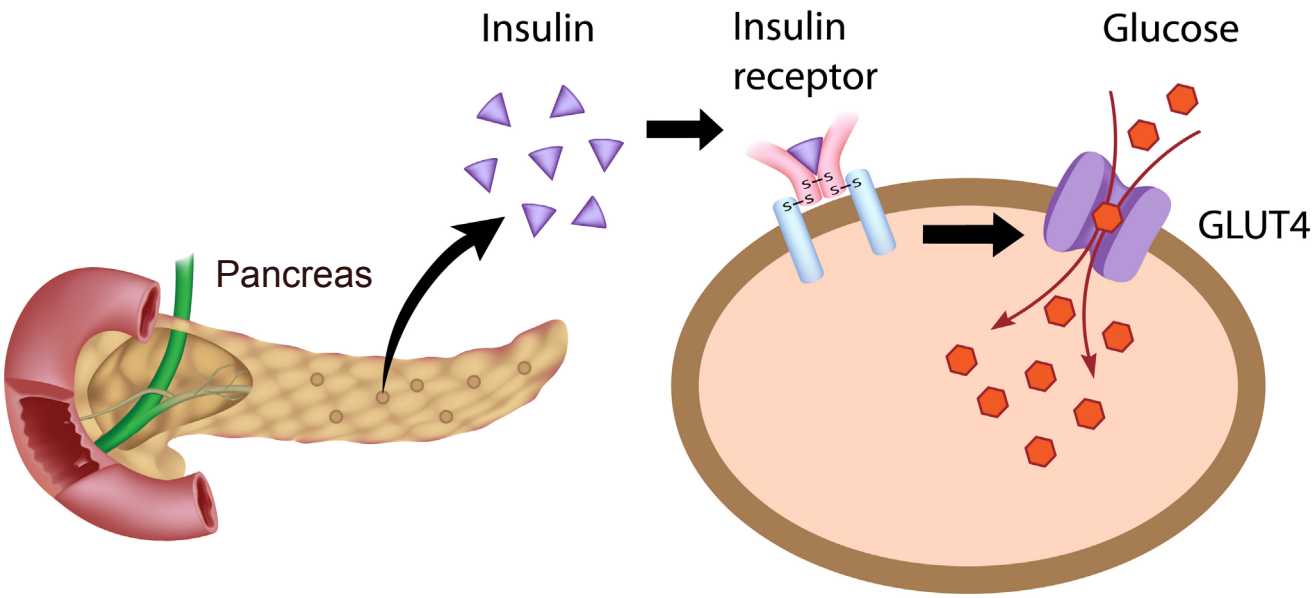
Diabetes Fact Sheet

Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia resulting from insulin resistance or insulin deficiency. Diabetes mellitus is one of the leading causes of death and disability worldwide. According to the World Health Organization (WHO), diabetes is a major cause of blindness, kidney failure, heart attacks, stroke, and lower limb amputation.

The body relies on glucose to fuel the functions of the brain, muscles, and organs. In a well-functioning body, blood sugar (glucose) is regulated by insulin—a very important hormone produced and released by the pancreas. But when the pancreas isn't able to produce enough insulin, or when the insulin can't work properly, our blood sugar levels rise and the body struggles to use the sugar and fat we eat. This is diabetes: when the glucose from what we eat is unable to enter the cells that need it.

Normal Glucose Transport Process

There are receptors on the surfaces of cells that recognize insullin released from the pancreas. Insulin can act as a key to activate these receptors, triggering specific glucose transporters to let glucose into the cells that need it.



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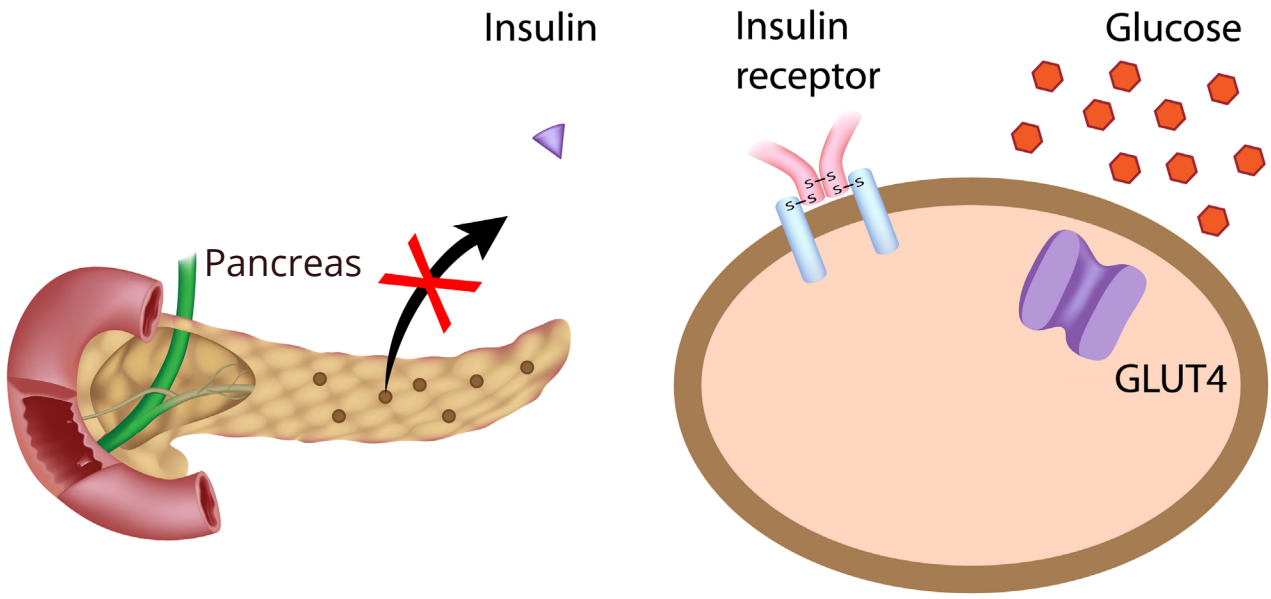
Type 1 Diabetes

Type 1 diabetes is caused by the autoimmune destruction of the insulin-producing beta-cells of the pancreas, resulting in absolute insulin deficiency and hyperglycemia. Insufficient insulin prevents the activation of glucose transporters and glucose can't enter cells. Type 1 diabetes requires insulin treatment along with therapeutic lifestyle interventions that are aimed at minimizing insulin doses and protecting against vascular complications.



Type 1.5 diabetes

Also known as Latent Autoimmune Diabetes in Adults (LADA), Type 1.5 diabetes is a slowly progressive form of autoimmune diabetes characterized by older age at diagnosis and the lack of an absolute insulin deficiency at diagnosis. Although patients with LADA present with more preserved beta-cell function than those with classic Type 1 diabetes, they tend to have a rapid and progressive loss of beta-cell function necessitating intensive insulin intervention.

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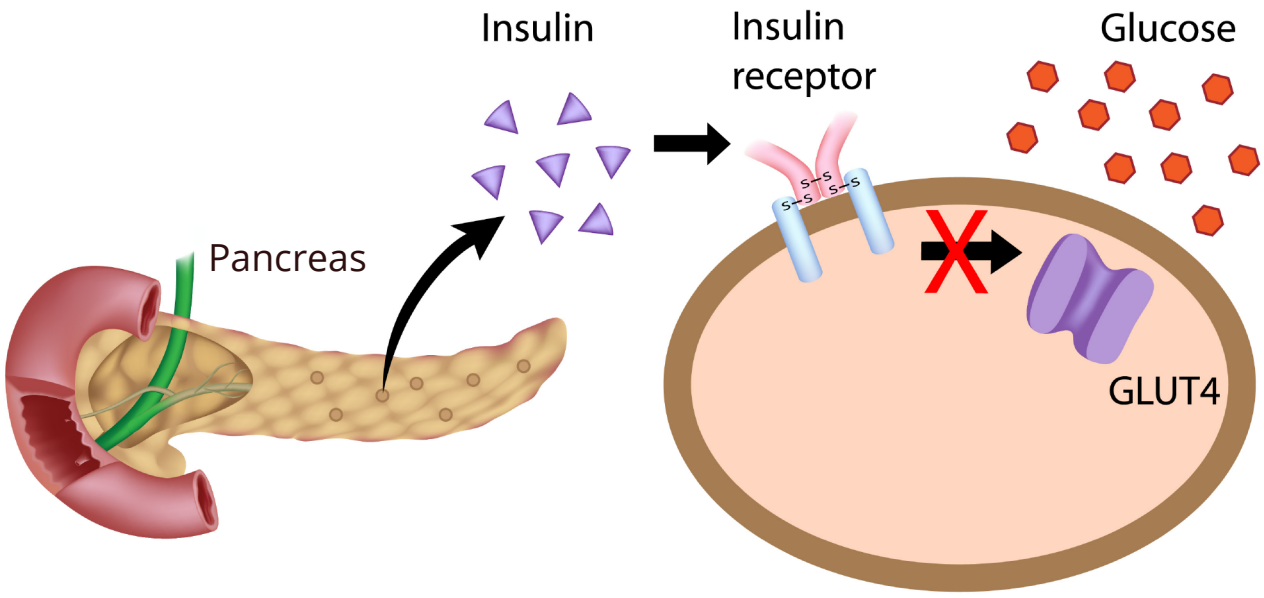
Prediabetes

Type 2 diabetes may be preceded by prediabetes, in which blood glucose levels are above the normal range but not yet at the level of diabetes. Prediabetes is highly amenable to lifestyle interventions.

Type 2 Non-Insulin-Dependent Diabetes

Accounting for more than 90% of diabetes cases, Type 2 non-insulin-dependent diabetes is characterized by insulin resistance and relative, rather than absolute, insulin deficiency. It is often seen as a lifestyle disease that causes one's body to not respond to insulin effectively, making them insulin resistant. The condition begins with the accumulation of lipid particles in muscle and liver cells, coming largely from the diet. This accumulation of intramyocellular lipid and hepatocellular lipid causes insulin resistance, in which muscle and liver cells are less responsive to insulin's action and less able to remove glucose from the bloodstream. Type 2 non-insulin-dependent diabetes is highly amenable to lifestyle interventions.



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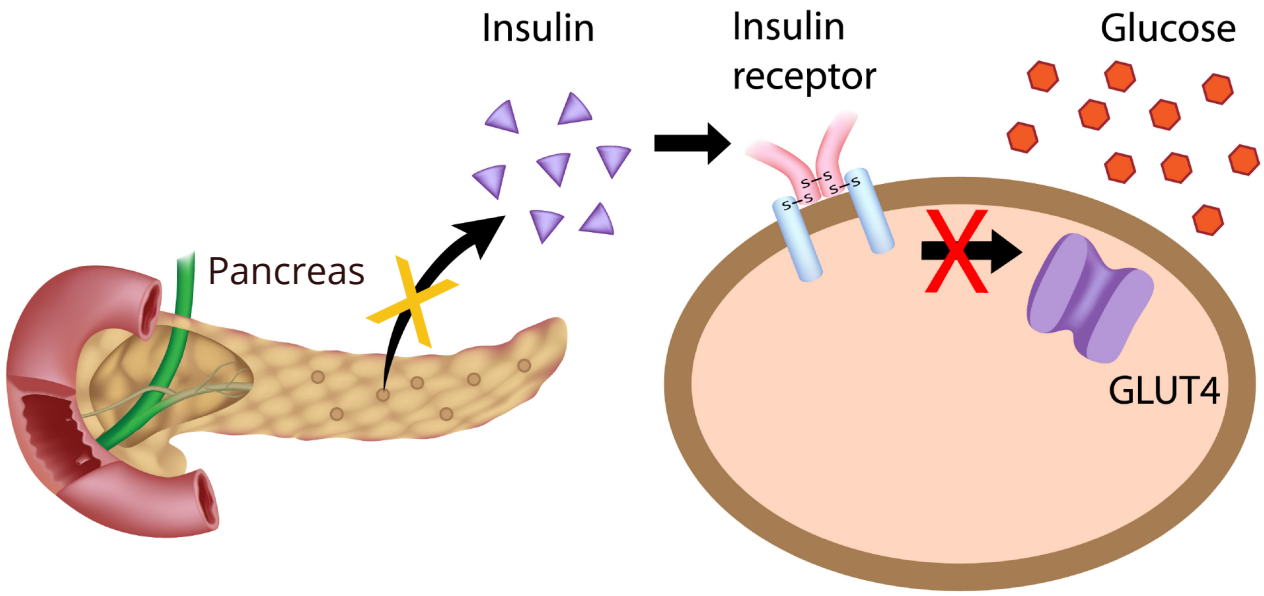
Type 2 Insulin-Dependent Diabetes

Type 2 insulin-dependent diabetes is a progression of Type 2 non-insulin-dependent diabetes. The pancreas doesn't produce enough insulin and the individual now requires insulin treatment along with therapeutic lifestyle interventions that are aimed at minimizing insulin doses and protecting against vascular complications.



Gestational diabetes

Gestational diabetes refers to impaired glucose tolerance during pregnancy. Although blood glucose levels often normalize postpartum, women who had gestational diabetes have a high risk of developing Type 2 diabetes. This risk may be reduced with diet and lifestyle changes.