

India's First Diabetes Biobank

December 17, 2024 • vajiramandravi.com



Key Features of the Biobank

- The diabetes biobank is a **repository of biological samples** collected from different populations to aid scientific research. It is designed to:
 - **Collect, process, store, and distribute biospecimens** to support ongoing and future studies.
 - House blood samples for various forms of diabetes, including **Type 1 diabetes, Type 2 diabetes,** and **gestational diabetes**.

About Diabetes:

- **Diabetes** is a **chronic disease** that occurs when the **pancreas** is unable to produce insulin or when the body cannot use insulin effectively. **Insulin** is a hormone that helps regulate **blood glucose levels**.
- If the body fails to produce or use insulin properly, it results in **high blood glucose levels**, a condition known as **hyperglycemia**. Over a long period, **hyperglycemia** can cause significant **damage to various organs and tissues**.
- Diabetes is a **major cause** of critical health conditions such as **blindness, kidney failure, heart attacks, stroke,** and **lower limb amputations**.

- **Epidemiological Study on Diabetes in India:** This study, conducted between **2008 and 2020**, sampled **1.2 lakh individuals** across the country. The participants included **33,537 urban residents** and **79,506 rural residents** from **31 states and Union Territories**.

Types of Diabetes:

- **Type 1 Diabetes:** It is an **autoimmune condition** where the body's **immune system** destroys the **insulin-producing beta cells** in the pancreas. As a result, the body produces **very little or no insulin**.
 - Patients with Type 1 diabetes require **daily administration of insulin** to keep their blood glucose levels under control.
 - This condition is usually diagnosed in **children and young adults** and was earlier referred to as **juvenile diabetes**.
 - The **common symptoms** of Type 1 diabetes include: Excessive urination (**polyuria**), Extreme thirst (**polydipsia**), Constant hunger, **Unexplained weight loss**, **Vision changes**, **Fatigue**
- **Type 2 Diabetes:** It results from the body's **ineffective use of insulin**, even though it may produce the hormone.
 - This type of diabetes accounts for **more than 95%** of all diabetes cases globally.
 - The primary causes of Type 2 diabetes are **excess body weight** and **lack of physical activity**.
 - The **symptoms** of Type 2 diabetes are often **less severe** compared to Type 1. Therefore, the disease may remain **undiagnosed for several years**, leading to delayed treatment.
- **Gestational Diabetes (GDM):** **GDM** refers to **high blood glucose levels** that develop during **pregnancy**. It can lead to **complications** for both the **mother** and the **child**.
 - In most cases, **gestational diabetes disappears after childbirth**. However, women who develop gestational diabetes, along with their children, are at an **increased risk** of developing **Type 2 diabetes** later in life.

Q1) What is Glucose?

Glucose is the main type of sugar in the blood and is the major source of energy for the body's cells. Glucose comes from the foods we eat or the body can make it from other substances. Glucose is carried to the cells through the bloodstream. Several hormones, including insulin, control glucose levels in the blood.

News: India sets up its first diabetes biobank – The Hindu

Source: <https://vajiramandravi.com/current-affairs/indias-first-diabetes-biobank/>

© Vajiram & Ravi. For personal use only.