World Diabetes Day – insulin's discoverer and India's burden

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Why in news: 14 November is World Diabetes Day, observed on the birthday of Sir Frederick Banting, who co-discovered insulin in 1921. The International Diabetes Federation (IDF) has chosen 'Early Action on Diabetes' as the two-year theme for 2026–27.

Key points

- The day: created in 1991 by the International Diabetes Federation and the World Health Organization; it became an official United Nations day through UN General Assembly resolution 61/225 of 20 December 2006, and has been marked as a UN day since 2007. Its logo is the blue circle.
- The discovery: Frederick Banting (born 14 November 1891) and Charles Best isolated insulin at the University of Toronto in 1921; the 1923 Nobel Prize in Physiology or Medicine went to Banting and J.J.R. Macleod. Insulin is a hormone made by the beta cells of the islets of Langerhans in the pancreas; it lowers blood glucose. Glucagon, from the alpha cells, raises it.
- Types: Type 1 diabetes – the body makes little or no insulin (autoimmune destruction of beta cells), usually seen in children and young people, needs insulin for life. Type 2 – the body does not use insulin properly (insulin resistance); it is the most common type and is linked to overweight, physical inactivity and unhealthy diet, and can often be prevented or delayed. Gestational diabetes occurs in pregnancy.
- India's burden: the ICMR–INDIAB national study (published in The Lancet Diabetes & Endocrinology, June 2023) estimated about 101 million people with diabetes (11.4%) and 136 million with prediabetes (15.3%) in India. The IDF says more than 500 million people worldwide live with diabetes and nearly half of them are undiagnosed – hence the 2026–27 call for early screening and diagnosis.
- Programme link: India screens people aged 30 and above for diabetes, hypertension and common cancers under the National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD), through Ayushman Arogya Mandirs (health and wellness centres). Tamil Nadu angle: in August 2021 the State began 'Makkalai Thedi Maruthuvam' (medicine at the people's doorstep), which screens people at home and delivers medicines for diabetes and hypertension.

In the exam: TNPSC – World Diabetes Day (14 November), insulin and the islets of Langerhans, glucagon, Type 1 vs Type 2 diabetes, Banting and Best, 1923 Nobel Prize; important days. UPSC Prelims – endocrine glands and hormones, non-communicable disease programmes; Mains GS-II (health) – the NCD burden and early screening.

Questions

1. World Diabetes Day is observed on 14 November because it is the birth anniversary of

A. Charles Best

B. Frederick Banting

C. J.J.R. Macleod

D. Paul Langerhans

2. Consider the following statements:

1. Insulin is secreted by the beta cells of the islets of Langerhans in the pancreas.

2. Glucagon lowers the level of glucose in the blood.

3. Type 2 diabetes is mainly due to insulin resistance and is the most common type of diabetes.

Which of the statements given above are correct?

A. 1 and 2 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

Answers with explanations

1. **B) Frederick Banting** – Frederick Banting was born on 14 November 1891. With Charles Best he isolated insulin at Toronto in 1921, and he shared the 1923 Nobel Prize in Physiology or Medicine with J.J.R. Macleod. Paul Langerhans described the pancreatic islets named after him in 1869.

2. **C) 1 and 3 only** – Statement 2 is wrong: glucagon, secreted by the alpha cells, raises blood glucose by releasing glucose from the liver; insulin, from the beta cells, lowers it. Type 2 diabetes, linked to insulin resistance, is the most common form.

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