

1. Type 5 diabetes recognised as distinct form of disease: why is this significant?**Why in News?**

Type 5 diabetes, which affects lean and undernourished young adults in low- and middle-income countries, has at last been officially recognised as a distinct form of the disease by the International Diabetes Federation (IDF).

Neglected for decades in research, and frequently misdiagnosed, it has taken a long time for Type 5 diabetes, caused by malnutrition-induced lowering of insulin production, to gain official recognition.

**What Is Type 5 Diabetes
Connected To Malnutrition?****What is Type 5 diabetes?**

Type 5 diabetes is a form of diabetes affecting lean and malnourished teenagers and young adults in low- and middle-income countries. The disease causes pancreas to function abnormally, leading to insufficient production of insulin.

This is unlike Type 2 diabetes, the most prevalent form of the disease, where the main problem is insulin resistance — while the pancreas continues to produce insulin, the body does not respond properly to the hormone.

So, what causes Type 5 diabetes?

Malnutrition. And it all begins in the womb. If a baby does not get the right amount of nutrition while growing in the womb, it can increase the risk of diabetes later in life. For a long time, many Indians were undernourished due to hard labour, colonisation, and famines. But in the past 50 years, with rapid urban growth and development, overeating has also become a problem. When a baby is under or over nourished before birth and then gains too much weight later, it can lead to Type 2 diabetes. But if the baby stays undernourished both before and after birth, it can lead to this malnutrition-related diabetes, or as now christened, Type 5 diabetes.

How can Type 5 diabetes be treated?

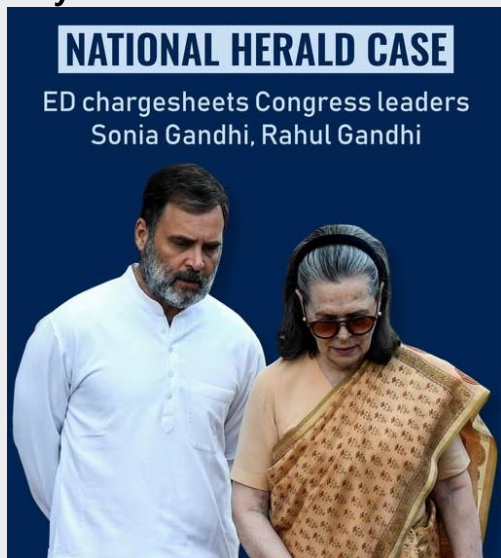
Given it has only now been officially recognised, specific diagnostic criteria and therapeutic guidelines are yet to be finalised. This is what the aforementioned Working Group will be doing over the next two years, by looking at diverse populations, especially in low-income, low-resource settings.

According to doctors, a high protein diet is important. Depending on the person's low BMI and physical activity levels, an adequate amount of carbs and fats are also needed to ensure weight gain.

Relevance: GS Prelims & Mains Paper III; Science & Technology

2. National Herald: What exactly is the ED case against the Gandhis?

Why in News?



For the first time, former Congress president Sonia Gandhi and leader of the opposition in Lok Sabha Rahul Gandhi have been charged under the Prevention of Money Laundering Act (PMLA). Paving the way for framing of criminal charges against them and their trial in the National Herald money-laundering case, Enforcement Directorate (ED) on April 9 filed a prosecution complaint (chargesheet) in the case involving alleged proceeds of crime worth Rs 5,000 crore.

The case pertains to allegations of financial irregularities during the acquisition of Associated Journals Limited (AJL) — which published the newspaper — by the Gandhi-owned Young Indian

Limited in 2010.

What is the National Herald, and why is it so important?

In 1938, India's first Prime Minister, Jawaharlal Nehru, launched a newspaper called The National Herald. A year before that, in 1937, Associated Journals Limited (AJL) was established with support from 5,000 freedom fighters who held shares in the company. AJL also brought out Qaumi Awaz in Urdu and Navjeevan in Hindi. Backed by some of the most prominent leaders of the independence era, The National Herald quickly became a symbol of the country's nationalist spirit and was widely seen as a voice of the freedom movement. Known for its bold and uncompromising editorials, the newspaper clashed with the British regime, which shut it down in 1942. It, however, resumed publication in 1945.

When India became independent in 1947, Nehru stepped down from his position as chairman of the AJL board, as he became the Prime Minister. Over the decades, The National Herald was guided by some of the country's leading journalists and grew into one of India's most respected English-language newspapers, with financial support from the Congress party.

In 2008, due to economic constraints, the newspaper shut down once again. It eventually returned in 2016 as an online news portal, with the organisation promising to bring out its print edition soon to complete it as a multi-media outlet.

What is The Associated Journals Limited (AJL)?

The Associated Journals Limited (AJL) was the publisher of National Herald, a newspaper launched by former Prime Minister Jawahar Lal Nehru in the late 1930s. Besides Nehru, over 5,000 other freedom fighters were stakeholders of the AJL. However, the number of stakeholders came down to about 1,000 by 2010. AJL's registered office was at ITO in New Delhi.

What is Young Indian Ltd?

Young Indian Ltd (YIL) is a private company that was set up in November 2010. Congress president Sonia Gandhi and her son Rahul Gandhi together hold a majority share of 76 per cent in the company while the remaining 24 per cent was held by party leaders Motilal Vora and Oscar Fernandes.

How Congress got involved?

After suffering heavy losses over the years, the National Herald newspaper became defunct and suspended operations in 2008. Notably, it is estimated that National Herald had properties in Delhi, Lucknow and Mumbai worth over Rs 2,000 crore. The Congress made a proposal to revive the newspaper as it was deeply entrenched in the Indian freedom movement. For this, Congress extended a Rs 90 crore interest-free loan from the party fund. In 2010, the Congress assigned the AJL debt to its newly-founded YIL. Since AJL was unable to repay the loan, its entire shareholding was transferred to the Gandhi-owned YIL for a sum of Rs 50 lakh.

This is when the deal turned controversial. A complaint filed by BJP MP Subramanian Swamy in 2013 questioned how the Congress took over a company (AJL) with over a 1,000 shareholders and prime real estate worth over Rs 2,000 crore at just Rs 50 lakh. Swamy accused Sonia, Rahul and others of committing fraud by obtaining the right to recover Rs 90.25 crore debt that AJL originally owed to the Congress. Besides the Gandhis, Motilal Vora, Oscar Fernandes, Suman Dubey and Sam Pitroda are among the accused in the case. He also questioned how Congress gave money to AJL from the party fund since it is illegal for political parties to lend money for commercial purposes.

In retaliation, the Congress had said it did not gain commercially from extending loan to AJL. In 2015, senior lawyer Shanti Bhushan claimed that his father Vishwamitra owned shares in AJL and the decision to transfer the ownership to Young Indian was taken without the consent of the shareholders.

How has the National Herald case progressed?

In 2014, Metropolitan Magistrate Gomati Manocha summoned all the accused in the case, including the Gandhis. The magistrate said that the complainant had established a prima facie case against the accused under Section 403 (Dishonest Misappropriation of Property), Section 406 (Criminal Breach of Trust) and Section 420 (Cheating) read with Section 120B (Criminal Conspiracy) of the Indian Penal Code (IPC). In 2014, ED launched the probe to find out if there was any money laundering.

In 2015, the Patiala house court granted bail to Sonia and Rahul Gandhi in the case. In February 2016, the Supreme Court refused to quash proceedings against the accused. Then, in 2019, ED attached National Herald properties worth Rs 16.38 crore in Mumbai, and continued its probe to understand the shareholding pattern, financial transactions and role of the promoters of Young Indian and AJL. The agency also registered a fresh case under the criminal provisions of the PMLA after a trial court took cognisance of an Income Tax Department probe against Young Indian Pvt Ltd on the basis of Swamy's complaint.

Relevance: GS Prelims & Mains Paper II; Governance

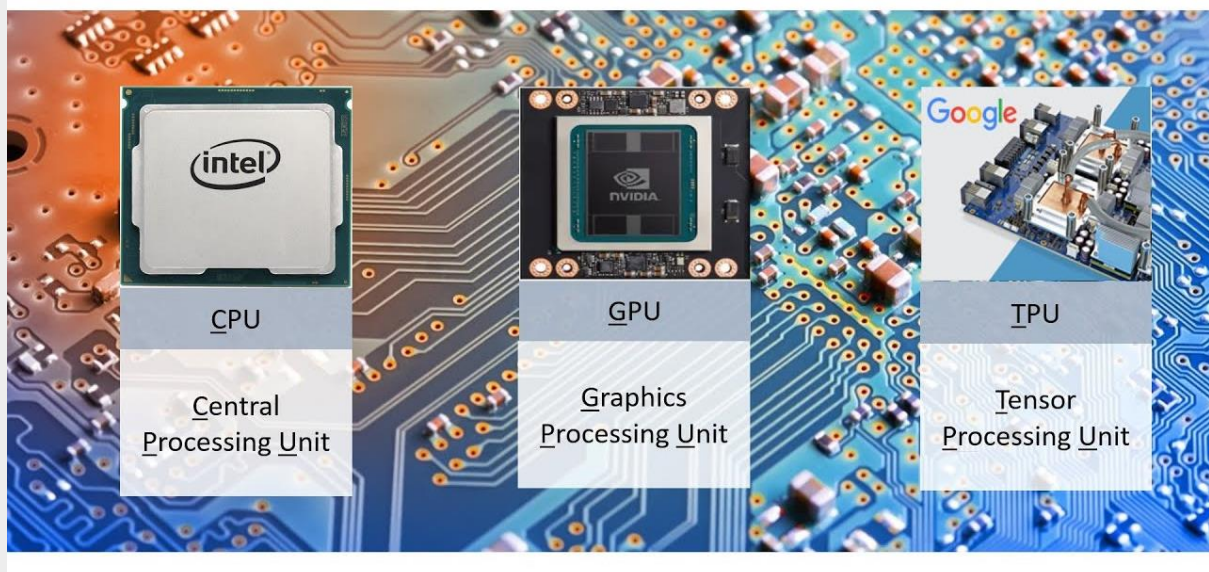
Source: Times of India

3. AI basics: How TPU is different from CPU and GPU

Why Now?

Google last week launched a new computer chip, called Ironwood. It is the company's seventh-generation TPU, or tensor processing unit, which has been designed to run artificial intelligence (AI) models.

Here is a look at what TPU is and how it is different from other processors such as the central processing unit (CPU), and graphics processing unit (GPU).



But first, what are processing units?

Processing units are essentially hardware units that are the brain of a computer. Like the human brain handles tasks such as reading and solving a math problem, processing units also perform tasks. These could be doing calculations, taking a picture, or sending a text.

What is a CPU?

Developed in the 1950s, a CPU is a general-purpose processor that can handle various tasks. It is like a conductor in an orchestra, controlling all the other components of the computer — from GPUs to disk drives and screens — to perform different tasks.

A CPU has at least a single core — the processing unit within the CPU that can execute instructions. In the initial years, CPUs used to have just one core but today, they can contain from two to up to 16 cores. As each core of the CPU can handle one task at a time, the ability to multitask is determined by the number of cores in the hardware.

What is a GPU?

Unlike a CPU, a GPU is a specialised processor (it is a type of application-specific integrated circuit, or ASIC) which has been designed to perform multiple tasks concurrently rather than sequentially (like in a CPU). Modern GPUs comprise thousands of cores which break down

complex problems into thousands or millions of separate tasks and work them out in parallel, a concept known as parallel processing. This makes GPUs far more efficient than CPUs.

Initially developed for graphics rendering in gaming and animation, GPUs today are far more flexible and have become the bedrock of machine learning.

This does not mean that GPUs have replaced CPUs. That is because, in certain situations, it is more efficient to perform a task sequentially rather than opting for parallel processing. Therefore, today, GPUs are used as a co-processor to increase performance.

What is a TPU?

A TPU is also a type of ASIC, meaning it is designed to perform a narrow scope of intended tasks. First used by Google in 2015, TPUs were specially built to accelerate machine learning workloads.

TPUs are engineered to handle tensor — a generic name for the data structures used for machine learning — operations. They excel in processing large volumes of data and executing complex neural networks efficiently, enabling fast training of AI models. While AI models can take weeks to be trained with the help of GPUs, the same process can be executed within hours using TPUs.

Relevance: GS Prelims & Mains Paper III; Science & Technology

Source: Indian Express

'Join PrepMate IAS'

WhatsApp 'Name' and 'State' on 75979-00000 to receive daily current affairs in simple and concise language.