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Diabetes

The International Diabetes Foundation estimates that 537 million people across the world are afflicted with diabetes.

- Diabetes is a chronic (long-lasting) health condition that affects how our body turns food into energy.
- Most of the food we eat is broken down into sugar (glucose) and released into your bloodstream.
- When blood sugar goes up, it signals the pancreas to release insulin.
- Insulin allows the blood sugar into the body's cells for use as energy, and then stores the rest in the liver and other organs for future use.
- If a person has diabetes, either their body does not make enough insulin or can't use the insulin it makes as well as it should.
- When there isn't enough insulin or cells stop responding to insulin, too much blood sugar stays in your bloodstream. Over the time, this can cause serious health problems.

Types of Diabetes

- There are three main types of diabetes - Type 1, Type 2, and Gestational diabetes (diabetes while pregnant).
- Type 1 diabetes is largely genetic in nature, while Type 2 depends on the lifestyle of the individual.
- Approximately 5-10% of the people who have diabetes have type 1, while 90-95% of people with diabetes have type 2.
- **Type 1 diabetes** is thought to be caused by an autoimmune reaction that stops your body from making insulin.
- Symptoms of type 1 diabetes often develop quickly. It is usually diagnosed in children, teens, and young adults.
- Injecting molecule insulin every day will needed for type 1 diabetes.
- Currently, no one knows how to prevent type 1 diabetes.
- **Type 2 diabetes** is caused when your body does not use insulin well and can't keep blood sugar at normal levels.
- It is largely lifestyle-based and does not need insulin injection.
- It is age-related; it often develops at the age of 45 and beyond.
- It develops over many years and is usually diagnosed in adults (but more and more in children, teens, and young adults).
- It's seen more among urban populations than in rural populations.
- **Gestational diabetes** is caused by the insulin-blocking hormones that are produced during pregnancy.
- This type of diabetes only happens during pregnancy. It is often seen in people with preexisting pre-diabetes and a family history of diabetes.
- About 50% of people diagnosed with gestational diabetes go on to develop type 2 diabetes.

An ICMR-funded study has estimated that there are about 77 million diabetic patients across India today.

Prevention of Type 2 Diabetes

- While the Type 1 Diabetes is not preventable, the Type 2 Diabetes can be prevented if an individual makes lifestyle changes, like
    1. Losing small amount of weight,
    2. Eating a healthy diet,
    3. Reducing total carbon intake in the food, and
    4. Doing physical exercise regularly.
- Brisk 30-minute-walk five times a week, or cycling for 10 minutes a day, or weight-lifting or yoga can also help prevent Type 2 diabetes.
- To fight diabetes, it is best to consume a high-fibre diet, with low carbohydrate intake.
- In India, people who eat rice as staple food can add wheat (which has higher fibre content) to their diets, along with high-protein grains, maize, carrots, cabbage, pulses and vegetables in their daily diets.
- For non-vegetarians, eggs, fish and mutton offer high fibre and proteins.

Reference

1. https://www.thehindu.com/sci-tech/fighting-the-type-2-diabetes-pandemic/article65560993.ece
2. https://www.cdc.gov/diabetes/basics/diabetes.html
3. https://www.healthline.com/health/diabetes/types-of-diabetes

Yasuni National Park

Decades of oil drilling in the Yasuni national park is deteriorating the area.

- The Yasuni National Park and Biosphere Reserve is a **Humid Tropical Rain Forest** located in the Amazon region of **Ecuador**.
- Established in 1979, the Yasuní National Park is one of the world's most biodiverse regions.
- Yasuni National Park is home to 40% of Ecuador's crude oil reserves - in the Ishpingo-Tiputini-Tambococha (ITT) oil fields.
- Exploring the region's oil reserves has threatened many native species and habitats, as well as the lifestyle of the indigenous Waorani people.
- In 2007, Ecuador initiated a unique plan to preserve a portion of the forest within its borders, which lies in Yasuní National Park.
- Ecuador agreed to forgo development of heavy oil deposits beneath the Yasuní rainforest if other countries and private donors contributed half of the deposits' value to a UN-administered trust fund for Ecuador.
- In 2013, however, Ecuador abandoned the plan.

Reference

1. https://www.thehindu.com/sci-tech/energy-and-environment/green-humour-by-rohan-chakravarty/article6556971ece
2. https://education.nationalgeographic.org/resource/yasuni-national-park
3. https://en.unesco.org/biosphere/lac/yasuni
4. https://www.britannica.com/place/Yasuni-National-Park

ISRO's POEM Platform

Besides placing three Singaporean satellites in precise orbit, the Indian Space Research Organisation (ISRO) has also successfully launched the PSLV Orbital Experimental Module (POEM) of the PSLV-C53 Mission.

> PSLV-C53 is the second dedicated commercial mission of NewSpace India Limited (NSIL). It is designed to orbit DS-EO satellite. This is the 55th mission of PSLV and 15th mission using PSLV-Core Alone variant.

- The ISRO's Polar Satellite Launch Vehicle (PSLV) is a 4-stage rocket where,
    1. The first 3 spent stages fall back into the ocean, and
    2. The final stage (PS4) ends up as space junk, after launching the satellite into orbit.
- The PSLV Orbital Experimental Module (POEM) is an **orbital platform** that performs in-orbit scientific experiments using the spent final stage (PS4) of the PSLV.
- The 'POEM' is a technological upgrade over what ISRO had initially attempted in 2019, during the launch of PSLV-C44 mission.
- For the first time, in PSLV-C53 mission, the PS4 stage would orbit the earth as a "stabilized platform" to perform experiments. The PS4 stage is carrying six payloads.
- **Stabilization** - POEM has a dedicated Navigation Guidance & Control (NGC) system for attitude stabilisation, which stands for controlling the orientation of any aerospace vehicle within permitted limits.
- The NGC will act as the platform's brain to stabilize it with specified accuracy.
- POEM will derive its power from solar panels mounted around the PS4 tank, and a Li-Ion battery.
- It will navigate using 4 sun sensors, a magnetometer, gyros & NavIC.
- It carries dedicated control thrusters using Helium gas storage. It has been enabled with a tele-command feature.

Reference

1. https://indianexpress.com/article/explained/everyday-explainers/explained-what-is-isros-poem-platform-8001754/
2. https://www.isro.gov.in/launcher/pslv-c53-ds-eo-mission
3. https://www.wionews.com/science/in-a-first-isros-poem-will-remain-stable-in-space-and-facilitate-science-experiments-492950

Prosopagnosia

- Prosopagnosia, also known as **face blindness,** is a cognitive disorder.
- In this **neurological condition**, the patient finds it difficult to recognise familiar faces and is unable to recognise people who he/she has known earlier, by face.
- However, the patient will be able to recognise another individual through voice and/or other gestures.
- **Causes** - This condition arises when there is some problem in the Temporo-Occipital area of the right side of the brain.
- There are 2 types of prosopagnosia:
    1. Developmental prosopagnosia - where a person has prosopagnosia without having brain damage. It is caused by congenital conditions

2. Acquired prosopagnosia - where a person develops prosopagnosia after brain damage, often following a stroke, hampered blood circulation, haemorrhage or head injury.

- The occurrence of the disorder could also be attributed to degenerative conditions, including Alzheimer's disease, Parkinson's disease, but this happens very rarely.
- **Risk factors** - People develop conditions like brain haemorrhage and stroke mostly after the age of 50.
- Those who suffer from hypertension, diabetes and smokers, too, develop a high risk of developing prosopagnosia.
- **Symptoms -** This varies across patients.
- Since the disorder involves the Occipito Temporal area, it can lead to some symptoms like loss of vision.
- Individuals might experience drowsiness due to edema or swelling in the region.
- **Treatments -** The treatment of this cognitive disorder will be in accordance with the treatment of the underlying cause.
- If the disorder is caused by a stroke, then that has to be contained first.
- If the underlying cause is a tumour, then an operation, chemotherapy or radiotherapy can be used.
- If it is caused by haemorrhage, then it will have to be treated accordingly.

Reference

1. https://indianexpress.com/article/lifestyle/health/shenaz-treasury-face-blindness-cause-treatment-7998952/
2. https://www.nhs.uk/conditions/face-blindness/#:~:text=Prosopagnosia%2C%20also%20known%20as%20face,or%20all%20of%20their%20life.

iGOT Karmayogi

Ministry of Road Transport and Highways (MoRTH) has urged its officials to register for the service of the e-learning platform iGOT Karmayogi.

- **Integrated Government Online Training** (iGOT) platform is an online training platform launched by the Department of Personnel and Training.
- It was launched for the capacity building of frontline workers to tackle the pandemic.
- It is hosted on the Digital Infrastructure Knowledge Sharing (DIKSHA) platform of the Human Resources Development Ministry.
- **iGOT Karmayogi** is an e-learning platform developed as an integral part of the Digital India stack for **capacity building of all government employees**.
- It is designed for providing necessary digital infrastructure to upload courses and conduct online training.
- It will allow the ministry to provide training resources and opportunities to its employees at a hitherto impossible scale.
- **Mission Karmayogi** is the biggest bureaucratic reform initiative that was launched in 2020.
- It is aimed at building capacity to make government employees more creative, proactive, professional and technology-enabled, ending the culture of working in silos and ensuring transparency.
- **Related Links** - Mission Karmayogi

Reference

1. https://www.newindianexpress.com/nation/2022/jul/01/e-learning-platform-igot-karmayogi-rea

dy-to-give-lessons-to-babus-2471673.html
2. https://dopttrg.nic.in/igotmk/
3. https://www.dnaindia.com/india/report-centre-launches-igot-training-module-for-frontline-covid-19-warriors-2820319

