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DTE Dec 24

FLIP MUTATION
(Syllabus: GS Paper 3 - Sci and Tech)

"FLip" mutations of SARS-COV-2 may be evading immunity and leading to surge in COVID cases, suggest researchers

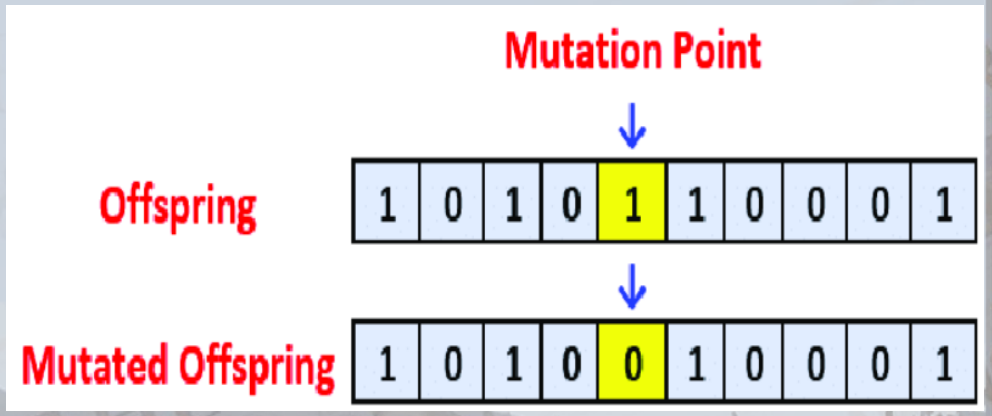
Context: Recently, researchers at the University of Tokyo revealed that the omicron subvariant JN.1, with a notable mutation in its spike protein known as L455S or "FLip" mutation, is poised to emerge as the predominant lineage of the SARS-CoV-2 virus globally.

Mutation

- **About**: A mutation is a change in the DNA sequence of an organism. Mutations can result from errors in DNA replication during cell division, exposure to mutagens or a viral infection.
- **Types of Chromosomal Mutations**: Deletion, Duplication, Inversion, and Translocation.
- **Causes**: DNA replication errors, Exposure to mutagens, Errors during DNA repair, and Environmental factors.
- **Examples**: Sickle Cell Anemia, Melanism, and Antibiotic Resistance.

Flip Mutation

- **About:** This mutation occurs through binary crossover, where a randomly chosen bit within a chromosome is inverted.
- **Referred to as "FLip" mutations**: Such as L455S and L455F, they are named for their role in swapping the positions of amino acids F and L on the spike protein, thereby enhancing transmissibility.
- **Example of the "FLip" Mutation**: F456L, which was found in several XBB descendant strains developed this year, such as XBB.1.5.10, FE.1, and FD.1.1.

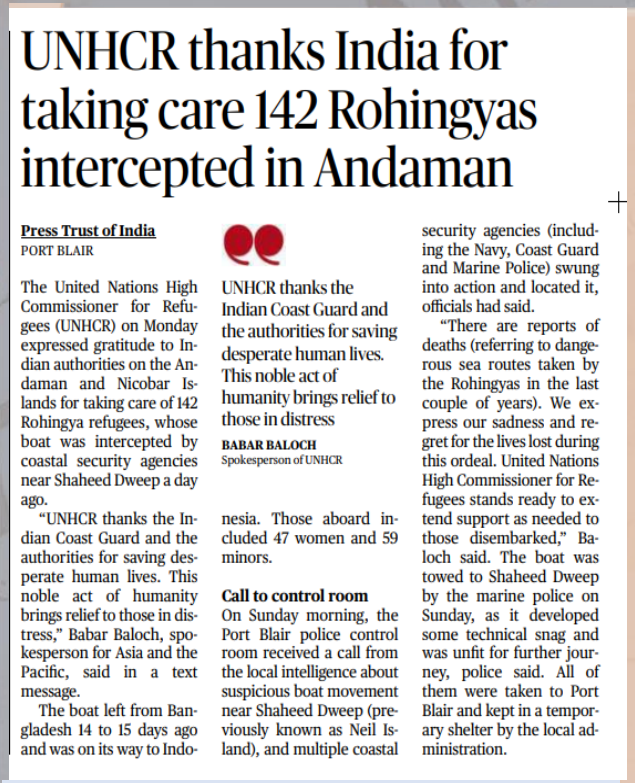


THE HINDU

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ROHINGYA REFUGEES

(Syllabus GS Paper 2 – IR)



UNHCR thanks India for taking care 142 Rohingyas intercepted in Andaman

Press Trust of India
PORT BLAIR

The United Nations High Commissioner for Refugees (UNHCR) on Monday expressed gratitude to Indian authorities on the Andaman and Nicobar Islands for taking care of 142 Rohingya refugees, whose boat was intercepted by coastal security agencies near Shaheed Dweep a day ago.

"UNHCR thanks the Indian Coast Guard and the authorities for saving desperate human lives. This noble act of humanity brings relief to those in distress," Babar Baloch, spokesperson for Asia and the Pacific, said in a text message.

The boat left from Bangladesh 14 to 15 days ago and was on its way to Indonesia. Those aboard included 47 women and 59 minors.

UNHCR thanks the Indian Coast Guard and the authorities for saving desperate human lives. This noble act of humanity brings relief to those in distress

BABAR BALOCH
Spokesperson of UNHCR

Call to control room

On Sunday morning, the Port Blair police control room received a call from the local intelligence about suspicious boat movement near Shaheed Dweep (previously known as Neil Island), and multiple coastal security agencies (including the Navy, Coast Guard and Marine Police) swung into action and located it, officials had said.

"There are reports of deaths (referring to dangerous sea routes taken by the Rohingyas in the last couple of years). We express our sadness and regret for the lives lost during this ordeal. United Nations High Commissioner for Refugees stands ready to extend support as needed to those disembarked," Baloch said. The boat was towed to Shaheed Dweep by the marine police on Sunday, as it developed some technical snag and was unfit for further journey, police said. All of them were taken to Port Blair and kept in a temporary shelter by the local administration.

Context: United Nations High Commissioner for Refugees (UNHCR) on December 25 expressed gratitude to Indian authorities at Andaman and Nicobar Islands for taking care of 142 Rohingya refugees, whose boat was intercepted by coastal security agencies near Shaheed Dweep.

Rohingya Refugees

- **About**: The Rohingya, primarily Muslims, constitute an ethnic group residing predominantly in the Western Myanmar province of Rakhine.
- **Cultural Distinctiveness**: They communicate in a Bengali dialect, distinguishing themselves from the widely spoken Burmese language.
- **Myanmar's Classification**: Despite generations of residence, Myanmar views them as migrants who arrived during the Colonial era, categorizing them as "resident foreigners" or "associate citizens."
- **Legal Status in Myanmar**: Myanmar officially designates the Rohingya as "resident foreigners" or "associate citizens," reflecting a distinct legal classification within the country.
- India's Policy on Refugees
- **Non-Signatory Status**: India has not ratified the 1951 UN Convention on the Status of Refugees and the 1967 Protocol.
- **Legal Framework for Foreign Nationals:** Undocumented foreign nationals in India are governed by The Foreigners Act (1946), The Registration of Foreigners Act (1939), The Passport (Entry into India) Act (1920), and The Citizenship Act (1955).

United Nations High Commissioner for Refugees (UNHCR)

- **About**: UNHCR is a worldwide organization committed to saving lives, protecting rights, and fostering a brighter future for refugees, forcibly displaced communities, and stateless individuals.
- **Supportive Initiatives**: UNHCR actively aids these populations in their voluntary repatriation, resettlement, or local integration efforts, promoting stability and well-being.
- **Headquarters:** Geneva, Switzerland,
- **Legal Foundation**: The 1951 Refugee Convention and its 1967 Protocol constitute the fundamental legal framework that underpins the mission and actions of UNHCR, guiding its efforts to address the needs of displaced and stateless individuals worldwide.

PIB Dec 25

ASTROSAT
(Syllabus: GS Paper 3 – Sci and Tech)

Milli-second burst detected by AstroSat in new high magnetic field neutron star can help understand such stellar entities

Context: Recently, **AstroSat detected bright sub-second X-ray bursts** from a new and unique neutron star with an ultrahigh magnetic field (magnetar), providing valuable insights into the intriguing extreme astrophysical conditions of magnetars.

- **Magnetars are neutron stars having an ultrahigh magnetic field** that are much stronger than the terrestrial magnetic field.

Astrosat

- **About**: India's premier multi-wavelength space observatory, AstroSat, focuses on studying celestial sources in X-ray, optical, and UV spectral bands simultaneously.
- **Launched by**: The Indian PSLV from Sriharikota on September 28, 2015
- **Orbit:** 650 km orbit inclined at an angle of 6 degrees to the equator.
- **Mission Operations**: The spacecraft is managed by the Mission Operations Complex (MOX) at ISRO's Telemetry, Tracking, and Command Network (ISTRAC) in Bengaluru throughout its mission life.
- **Duration**: Around 5 years, ensuring sustained scientific observations.
- **Scientific Payloads**: Equipped with five scientific payloads, AstroSat enables imaging and studying the temporal and spectral properties of cosmic sources in various wavelengths on a unified platform.
- **Objectives**
  - Investigate high-energy processes in binary star systems containing neutron stars and black holes.
  - Estimate magnetic fields of neutron stars.
  - Explore star birth regions and high-energy processes in star systems beyond our galaxy.
  - Detect new, briefly bright X-ray sources in the sky.

BOOSTING OF PULSE PRODUCTION

(Syllabus: GS Paper 3 – Economy)

Procurement of tur dal soon at above MSP

SANDIP DAS
New Delhi, December 25

TO ENSURE THAT farmers' get remunerative prices and creation of a buffer, the government will soon start procurement of tur dal which is currently ruling above the minimum support price (MSP) through a 'dynamic price' formula.

Sources told *FE* that agencies such as National Cooperative Consumers Federation (NCCF) and farmers' cooperative Nafed will purchase the pulse variety directly from farmers or primary agricultural credit societies at a price derived on the basis of prevailing mandi prices of one week duration.

"We have started registration of farmers for procurement of tur in key producing states including Maharashtra, Karnataka and Uttar Pradesh," an official told *FE*.

The official said that purchase of tur dal above MSP will give a signal to the farmers to augment production which would reduce the country's import dependence.

Conext: To ensure that farmers get remunerative prices and build up the buffer, the government will soon start procurement of tur dal which is currently ruling above the minimum support price (MSP) through a 'dynamic pricing' formula.

Boosting Domestic Pulse Production for Self-Reliance

- **Signaling Increased Production**: Allowing tur dal to be sold above the Minimum Support Price (MSP) acts as a signal to farmers, encouraging them to enhance production and consequently reducing the country's dependence on imports.
- **Replication for Urad Dal**:
- A similar procurement mechanism will be applied to urad dal, ensuring consistency in the effort to bolster domestic pulse production.
- **Pulse Inflation Statistics**: In November, inflation in the pulses category surged to 20.23%, up from 18.7% in October. Notably, arhar pulses experienced a substantial price increase of 42%.
- **Tur Dal Imports**: In the fiscal year 2022-23, India imported 0.9 million tonnes (MT) of tur dal. Notably, in the current fiscal (April-October), imports have already exceeded 0.45 MT.
- **Major Imported Pulses**: Tur, urad, and masoor (lentils), predominantly sourced from countries such as Mozambique, Malawi, Tanzania, Myanmar, Canada, and Australia.

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Minimum Support Price (MSP)

- **About**: MSP serves as a government-established rate at which crops are bought from farmers, providing them with protection against significant declines in agricultural prices.
- **Announced by**: The Commission for Agricultural Costs & Prices (CACP) recommends MSPs for 22 mandated crops and Fair and Remunerative Prices (FRP) for sugarcane.
- **Origin of Concept**: MSP was initially introduced in 1966, drawing inspiration from the Green Revolution.
- **Crops covered**: 7 types of cereals (paddy, wheat, maize, bajra, jowar, ragi and barley)

THE HINDU Page 13

Risk of stagflation receding: RBI officials

Lalatendu Mishra
MUMBAI

Reserve Bank of India (RBI) officials believe the risk of stagflation – a portmanteau of economic stagnation with high inflation – has lowered further to 1% compared with 3% in August based on data.

In the first approach, stagflation risk was assessed based on phases of lower economic growth coinciding with high inflation. The second approach used the 'at-risk' frameworks viz. "Inflation at Risk" (IaR) and "Growth at Risk" (GaR) by employing quantile regression to assess the likelihood of stagflation.

"Based on data spanning from Q1:1996-97 to Q2:2023-24, empirical findings suggest supply-side shocks such as spikes in commodity prices coupled with tighter financial conditions and relatively higher depreciation of the domestic currency turn out to be the major determinants of stagflation risk in India," wrote Deba Prasad Rath, Silu Muduli and Himani Shekhar in the latest edition of the RBI Bulletin.

"Elevated risks of stagflation were experienced during specific episodes like the Asian Crisis, the Global Financial Crisis, the taper tantrum, and the COVID-19 pandemic.

"Latest estimates, incorporating data up to Q2:2023-24, however, assign a very low probability of only 1% to the risk of stagflation," they wrote.

In August, the RBI officials had stated the risk of stagflation was with a probability of 3% with easing of financial conditions, stability of rupee/U.S. dollar exchange rate and steady domestic fuel prices.

Destabilising factor

Stating stagflation had the potential to destabilise the entire macroeconomic framework of an economy by creating an environment of uncertainty, they said it was a major concern for the RBI as it was entrusted with the primary objective of maintaining price stability while keeping in mind the objective of growth requiring constant monitoring of any stagflation risk.

Further, higher commodity prices and the appreciation of the U.S. dollar post-pandemic raised concerns of stagflation globally. The delays in the monetary-normalisation process after the pandemic have also raised concerns about the potential for a costly stagflation, they observed.

"Similar results after using the integrated IaR and GaR frameworks to evaluate the stagflation risks adds further credence to our findings. However, given the weak pass-through of crude oil prices to domestic petrol and diesel prices, it has limited predictive power for stagflation.

"Given the focus of central banks on maintaining price stability and healthier financial positions of financial institutions, the long-term inflation expectations have largely remained well-anchored to the inflation target unlike during the 1970s when inflation expectations were weakly-anchored and went to exorbitantly high levels."

STAGFLATION

(Syllabus: GS Paper 3 – Economy)

Context: Reserve Bank of India (RBI) officials believe the risk of stagflation — a portmanteau of economic stagnation with high inflation — has lowered further to 1% compared with 3% in August based on available data, using two approaches.

Stagflation

- **About**: Stagflation is a state characterized by a simultaneous increase in prices and stagnation of economic growth.
- **Coined Term**: The term "Stagflation" was introduced by Iain Macleod, a Conservative Party MP in the United Kingdom, in November 1965.
- **Economic Situation Description**: Stagflation is depicted as an economic scenario where the growth rate slows down, unemployment remains persistently high, and inflation or price levels remain elevated simultaneously.
- **Economic Peril**: Stagflation poses a significant threat to the economy.
- **Economic Stimulus**: In situations of typically low growth, central banks and governments often attempt to stimulate the economy through increased public spending and lower interest rates to boost demand.
- **Challenge in Economic Tools**: However, these measures, while aiming to spur growth, may also contribute to higher prices and inflation. Consequently, breaking out of the low growth-high inflation trap becomes challenging when inflation is already prevalent.

ECONOMIC TIMES

Dec 25

RED SEA

(Syllabus: GS Paper 1 – Geography)

Red Sea attacks disrupt world trade, more ships vow to avoid waters

Context: Germany and Hong Kong recently announced their decision to avoid the Red Sea, joining other shipping companies in response to Yemeni attacks on vessels that have disrupted global trade, leading to the establishment of a naval task force.



Red Sea

- **About**: The Red Sea is an inlet of the Indian Ocean between Africa and Asia.
  - About 12 percent of global trade passes through the Red Sea, which connects to the Mediterranean Sea via the Suez Canal, including 30 percent of container traffic.
- **Bordering Countries**: Egypt, Saudi Arabia, Yemen, Sudan, Eritrea and Djibouti.
- **Part of**: African Rift Valley(Great Rift Valley).

Nearby important locations:

- **Bab el Mandeb Strait**: It connects the Red Sea to the Gulf of Aden. (in the Indian ocean).
- **Gulf of Aqaba**: A large gulf at the northern tip of the Red Sea, east of the Sinai Peninsula and west of the Arabian Peninsula. Its coastline is divided among four countries: Egypt, Israel, Jordan, and Saudi Arabia.
- **Resource**: These resources include petroleum deposits, evaporite deposits (resulting from evaporation, such as halite, sylvite, gypsum, and dolomite), sulfur, phosphates, and heavy-metal deposits.

PIB

Dec 25

NATIONAL CONSUMER DAY

(Syllabus: GS Paper 3 – Economy)

National Consumer Helpline 2.0 with new techlogies will address consumer grievance in a better way: Shri Piyush Goyal on National Consumer Day

Context: The Department of Consumer Affairs celebrated the National Consumer Day 2023 in New Delhi with focus on leveraging technology for consumer protection and grievance redressal.

National Consumer Day

- **About:** In India, National Consumer Day is commemorated on the 24th of December each year.
- **World Consumer Rights Day**: 15 March
- **Focus**: On leveraging technology for consumer protection and grievance redressal
- **Reasons for Celebrating**: The celebration aims to raise awareness about consumer rights and responsibilities.
- **Origin**: In 1986, on this day, the Consumer Protection Act received presidential assent, intending to educate people about their consumer rights.
- **Significance**: It provides an opportunity for the government to highlight the protection of consumer rights and encourages citizens to actively engage in this cause.

Consumer Rights

- **About**: The right to have information about the quality, potency, quantity, purity, price and standard of goods or services', as it may be the case, but the consumer is to be protected against any unfair practices of trade.
- **Right to Safety**: It means right to be protected against the marketing of goods and services, which are hazardous to life and property.
- **Right to be Informed**: It means right to be informed about the quality, quantity, potency, purity, standard and price of goods so as to protect the consumer against unfair trade practices.
- **Right to Choose**: It means right to be assured, wherever possible of access to variety of goods and services at competitive price.
- **Right to be Heard**: It means that consumer's interests will receive due consideration at appropriate forums.
- **Right to Seek Redressal**: It means right to seek redressal against unfair trade practices or unscrupulous exploitation of consumers.
- **Right to Consumer Education**: It means the right to acquire the knowledge and skill to be an informed consumer throughout life. Ignorance of consumers, particularly of rural consumers, is mainly responsible for their exploitation.

THE PRINT Dec 26

PMGSY
(Syllabus: GS Paper 2 – Govt Schemes)

Parliamentary panel flags poor quality of rural roads built under PMGSY, asks govt to 'tighten grip'

Context: A **parliamentary panel has asked the Union Rural Development Ministry** to "tighten its grip" in its supervision of r**oad construction in rural areas under the Pradhan Mantri Gram Sadak Yojana** (PMGSY), flagging the use of poor-quality materials.

Pradhan Mantri Gram Sadak Yojana (PMGSY)

- **About**: PMGSY is a nationwide initiative aimed at providing all-weather road connectivity to previously unconnected villages in India.
- **Launched**: Introduced in 2000 by then-Prime Minister Atal Bihari Vajpayee.
- **Funding**: Initially, a 100% centrally sponsored scheme; funding shifted to a 60:40 ratio between the Centre and the State from 2015-16.
- **Eligibility Criteria**: Rural areas with a population of 500 and above in plain areas.
    - Hill states, NE, desert states, tribal areas, and other backward areas with a population of 250 and above.

Steps taken by Ministry to Check Quality

- **Establishment**: The ministry has implemented a robust three-tiered quality audit mechanism to assess the construction quality of roads under the Pradhan Mantri Gram Sadak Yojana (PMGSY).
- **Role of PIUs**: The Programme Implementation Units (PIUs) play a crucial role in ensuring process control.
- **Field Laboratory Tests**: PIUs conduct mandatory tests on materials and workmanship at the field laboratory to uphold construction quality standards.
- **Key Responsibilities of SQMs**: State Quality Monitors (SQMs) are involved in the second tier of checks to ensure thorough inspection.
- **Role of Independent NQMs**: The third tier involves independent National Quality Monitors (NQMs) deployed by the National Rural Infrastructure Development Agency (NRIDA).
- **Random Inspection**: NQMs conduct random inspections of roads and bridges, contributing to unbiased quality assessments as per the ministry's directives.

NEW INDIAN EXPRESS

Dec 25

LEPROSY

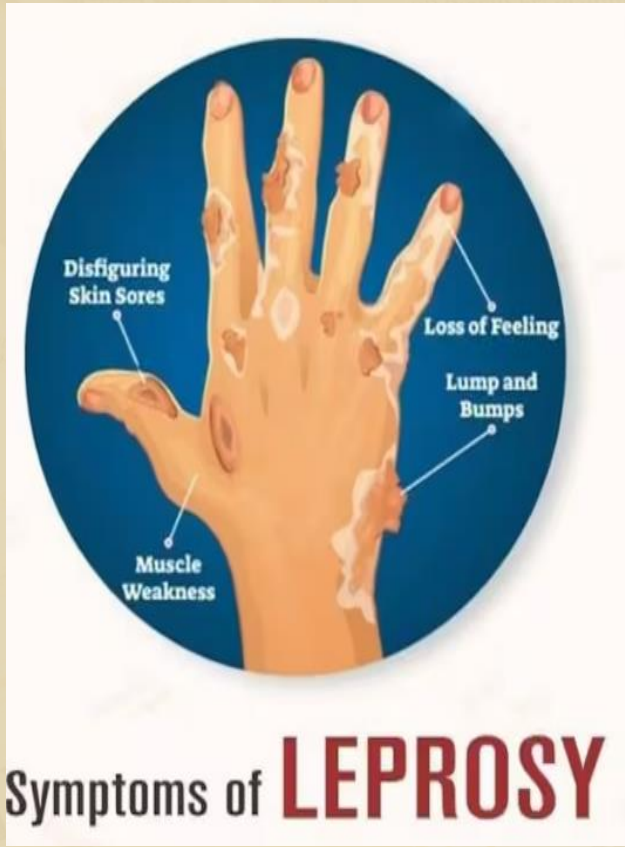
(Syllabus: GS Paper 3 – Sci and Tech)

Odisha declares leprosy a reportable disease

Context: The Odisha government recently declared leprosy a reportable disease in the state.

Leprosy

- **About:** Leprosy, or Hansen's disease, is a chronic infectious condition caused by Mycobacterium leprae.
- **Affected Areas**: The disease primarily impacts the skin, peripheral nerves, mucosal surfaces of the upper respiratory tract, and the eyes.
- **Consequences of Untreated Leprosy**: If left untreated, leprosy may lead to progressive and permanent disabilities.
- **Age Range**: It can occur at any age, spanning from early childhood to old age.
- **Transmission**
  - Spread through droplets from the nose and mouth.
  - Prolonged, close contact over months is necessary for transmission.
  - Casual contact, such as shaking hands or hugging, does not facilitate the spread.
- **Symptoms and Onset**: Typically manifest 3 to 5 years after exposure, with disfiguring skin sores and nerve damage leading to loss of feeling, muscle weakness, and possible nasal issues.
- **Treatment**: Curable with multidrug therapy (MDT).



National Leprosy Eradication Programme (NLEP)

- **About:** It is Centrally sponsored Health Scheme under the National Health Mission.
- **Headed by**: Deputy Director of Health Services (Leprosy) under the Directorate General Health Services.
- **Focus**: On early case detection and providing free-of-cost, complete treatment to prevent Grade II Disability (G2D).

TIMES OF INDIA

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GAUCHER DISEASE

(Syllabus: GS Paper 3 – Sci and Tech)

Big Jolt For Kids With Rare Genetic Disorder

Future Bleak As One-Time Financial Aid From Central Govt Exhausted, Treatment Stopped

Anuja.Jaiswal@timesgroup.com

New Delhi: Five-year-old Alishba Khan of Delhi's Shaheen Bagh had shown considerable improvement after her treatment for the rare genetic Gaucher disorder. However, her condition has been deteriorating since the treatment stopped last month.

And Alishba is not alone. Many other children like her who suffer from such rare diseases are staring at a bleak future as their treatment has been stopped by the centres of excellence (CoEs) after exhausting their one-time support from the Union health ministry.

Diagnosed with lysosomal storage disorders like Gaucher disease and Hurler syndrome (mucopolysaccharisosis type I)—a group 3(a) condition notified under the National Policy for Rare Diseases 2021, the families of such children have made several requests to CoEs and the ministry for sustainable funding for their life-threatening chronic conditions, but to no avail.

Patient advocacy groups have also written to members of the parliamentary standing committee on health and family welfare for urgent intervention for the life-saving treatment of these patients who were beneficiaries of the ministry-supported programme that started in August 2022. "Without timely infusions, our children will not be able to survive for long," said a member of an advocacy group. The current budgetary provision up to Rs 50 lakh is only one-time.



Alishba Khan

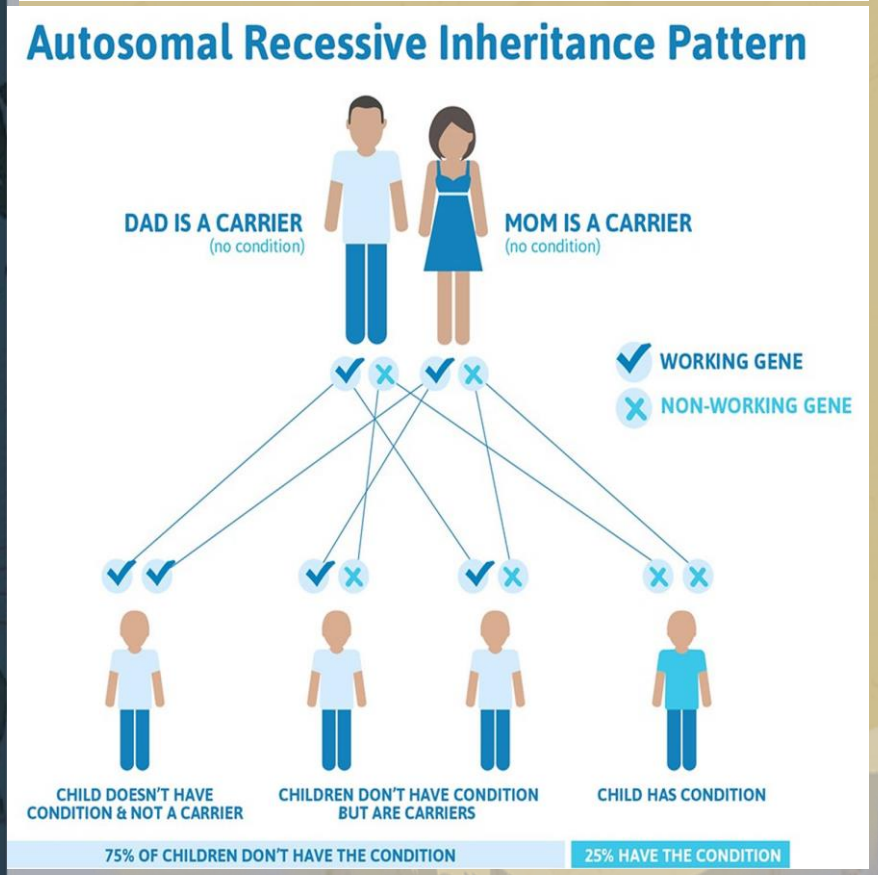
Alishba's father Maqsood Alam, who works as a translator, told **TOI**, "My daughter started receiving treatment in March 2020 after court intervention. After two years, her treatment was discontinued. Subsequently, in 2023, she was put on treatment for three months through a charitable access programme of a pharma company on judicial orders till November last week."

Alam added, "She was completely fine like a normal child while receiving continuous treatment. Once her treatment stopped, her health started deteriorating." At the beginning of the year, Alishba lost her hearing capacity and was operated upon for the same in April. "Her hearing capacity improved 25%, but she is again back to square one," the distraught father rued.

The girl has stopped eating, her abdomen has enlarged, she has pain in her bones and feels weak, and her haemoglobin has gone down along with platelets. "Seeing our child in such a condition is painful," said Alam, adding that every time he has to rush to the high court with an appeal for continuing her treatment. Though AIIMS doctors are helpful, there should be a policy for the life-long treatment of such patients, he added.

Manjit Singh, the national president of the Lysosomal Storage Disorders Support Society, said several such patients, mostly children, had now been without treatment. "There is an immediate need to prioritise, ensure sustainable funding support for all notified ultra-rare diseases — conditions that are chronic in nature, but have approved therapies with excellent clinical outcomes."

The co-founder and director of the Rare Diseases India Foundation, Saurabh Singh, said, "We were told that in the absence of any directive from the ministry, the treatment cannot be resumed." Unless the government steps in, these children may not survive, he pointed out.



Context: Recently, the five-year-old child exhibited considerable improvement following her treatment for the rare genetic Gaucher disorder.

Gaucher Disease

- **About**: It is a rare genetic disorder passed down from parents to children (inherited).
- When you have Gaucher disease, you are missing an enzyme that breaks down fatty substances called lipids. Lipids start to build up in certain organs such as your spleen and liver.
- **Affected Part**: Lungs, brain, eyes, and bones.
- **3 Types of Gaucher Disease**
  - **Type 1**: This is the most common type of Gaucher disease. It affects about 90% of people with the disease.
  - **Type 2**: This form of the disease affects babies by age 3 to 6 months. It is fatal. In most cases children don't live beyond 2 years old.
  - **Type 3**: Symptoms include skeletal problems, eye movement disorders, seizures that become more obvious over time, blood disorders, breathing problems, and liver and spleen enlargement.
- **Causes**: Passed down from parents to children (is inherited). It is caused by a problem with the GBA gene. It is an autosomal recessive disorder.
- **Symptoms**: Enlarged spleen, Enlarged liver, Eye movement disorders, Yellow spots in the eyes, Not having enough healthy red blood cells (anemia), Extreme tiredness (fatigue), Bruising, Lung problems and Seizures.
- **Treatment**: Enzyme replacement therapy, Bone marrow transplant.

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