Prelim Bits 09-02-2022 | UPSC Daily Current Affairs

Goitre

Prevalence of self-reported goitre in National Family Health Survey (NFHS) IV (2015-2016) was 2.2%, while it was 2.9% in NFHS-V (2019-2021).

- Goitre may be an overall enlargement of the thyroid gland, or it may be the result of irregular cell growth.
- The swelling of the thyroid gland forms one or more lumps (nodules) in the front of the neck. The lump will move up & down when you swallow.
- A goiter may be associated with no change in thyroid function or with an increase or decrease in thyroid hormones.
- **Causes of goiter**
    1. Not enough iodine or lack of iodine in your diet (most common),
    2. Hypothyroidism (Underactive thyroid),
    3. Hyperthyroidism (Overactive thyroid),
    4. An inflamed thyroid gland (thyroiditis),
    5. Hormone changes during puberty, pregnancy or the menopause,
    6. Taking some types of medicine, such as lithium, a medicine used to treat some mental health conditions,
    7. Having radiation treatment to your neck or chest area,
    8. Nodules or cysts within the thyroid,
    9. Thyroid cancer.
- **Treatment** depends on the cause of the goiter, symptoms, and complications resulting from the goiter.
- Small goiters that aren't noticeable and don't cause problems usually don't need treatment. A wait-and-see approach is usually recommended.
- Other possible treatments include radioiodine treatment and thyroid surgery.

Thyroid gland

- Thyroid gland is a butterfly-shaped gland located at the base of the neck just below the Adam's apple.
- This gland is just in front of the windpipe (trachea).
- This gland produces thyroid hormones, which help regulate the body's metabolism, the chemical processes that occur in the body.

Reference

1. https://pib.gov.in/PressReleasePage.aspx?PRID=1796440
2. https://www.mayoclinic.org/diseases-conditions/goiter/symptoms-causes/syc-20351829
3. https://www.nhs.uk/conditions/goitre/

Early Diagnosis of Alzheimer's

A new study has revealed a pathological brain activity that precedes the onset of Alzheimer's first symptoms by many years. This finding may help early diagnosis of Alzheimer's.

- Normally, the neuronal activity of the hippocampus decreases during sleep in healthy animals.
- But in early stages of Alzheimer's, there is a pathological brain activity, which is an increased activity in the hippocampus during anaesthesia and sleep.
- [The hippocampal region plays a key role in memory processes, and is known to be impaired in Alzheimer's patients.]
- This pathological brain activity is due to a failure in the physiological regulation, which is the **failure in the homeostatic mechanism that stabilizes the neural network**.
- The discovery of this abnormal activity during specific brain states may enable early diagnosis of Alzheimer's, eventually leading to a more effective treatment of a disease that still lacks effective therapies.
- [Each neural circuit has a set point of activity, maintained by numerous stabilizing mechanisms. This is the homeostasis mechanism.]

Number of people with dementia worldwide will increase from 50 million (2019) to more than 150m (2050).

This huge increase in the prevalence of Alzheimer's (due to the expected rise in population growth and in life expectancy) will continue unless we develop effective treatments.

- **Amyloid deposits**, a hallmark of Alzheimer's disease pathology, are formed in patients' brains as early as 10-20 years before the onset of typical symptoms such as memory impairment and cognitive decline.
- But, most efforts to treat Alzheimer's disease by reducing the amount of amyloid-beta proteins and their aggregation have failed.
- If we could detect the disease at the pre-symptomatic stage, and keep it in a dormant phase for many years, this would be a tremendous achievement in the field.
- So, the key to effective treatment are,
    1. Identifying a signature of aberrant brain activity in the pre-symptomatic stage of Alzheimer's and
    2. Understanding the mechanisms underlying its development.
- **Solution** - The instability in neuronal activity is known from epilepsy.
- An existing drug for multiple sclerosis may help epilepsy patients by activating a homeostatic mechanism that lowers the set point of neural activity.
- This drug stabilizes activity and reduces pathological activity observed during anesthesia.
- To know more about Alzheimer’s disease, click here.

Reference

https://www.sciencedaily.com/releases/2022/02/220201115157.htm

Debt-to-GDP Ratio

- Debt-to-GDP ratio is the ratio of a country's public debt (combined liabilities of the Central and State governments) to its gross domestic product (GDP).

  Debt to GDP Ratio = Total Debt of Country / Total GDP of Country

- This ratio is the metric comparing a country's public debt to its GDP.
- By comparing what a country owes with what it produces, this ratio reliably indicates that particular country's ability to pay back its debts.
- Often expressed as a percentage, this ratio can also be interpreted as the number of years needed to pay back debt if GDP is dedicated entirely to debt repayment.
- The debt-to-GDP ratio can also be interpreted as the number of years it would take to pay back debt if GDP was used for repayment.
- The higher the debt-to-GDP ratio, the less likely the country will pay back its debt and the higher its risk of default, which could cause a financial panic in the domestic and international markets.

Reference

1. https://www.thehindu.com/todays-paper/tp-business/indias-debt-to-gdp-better-than-of-us-officials-riposte/article3839937ece
2. https://www.investopedia.com/terms/d/debtgdpratio.asp#:~:text=What%20Is%20the%20Debt%2Dto,to%20pay%20back%20its%20debts.

National Blood Policy 2002

The Government has notified the Drugs and Cosmetics (Second Amendment) Rules, 2020 to support the National Blood Policy.

The Drugs and Cosmetics (Second Amendment) Rules, 2020 pertain to functioning of Blood Banks, Blood processing and related matters.

- The National Blood Policy formulated by the government back in 2002.
- This Policy aims to ensure easily accessible and adequate supply of safe and quality blood and blood components.
- These components may be collected / procured from a voluntary non-remunerated regular blood donor in well equipped premises, which is free from transfusion transmitted infections.
- It also ensures that these components are stored and transported under optimum conditions.
- It will also ensure the transfusion under supervision of trained personnel for all who need it irrespective of their economic or social status through comprehensive, efficient and a total quality management approach.
- **Related Links** - Concerns in Access to Safe and Sufficient Blood

Reference

1. https://pib.gov.in/PressReleasePage.aspx?PRID=1796434
2. http://www.naco.gov.in/sites/default/files/National%20Blood%20Policy_0.pdf

3. https://vikaspedia.in/health/nrhm/national-health-policies/national-blood-policy

Animal Husbandry Infrastructure Development Fund

- Animal Husbandry Infrastructure Development Fund (AHIDF) is a Central Sector Scheme. So, no funds are released to the States.
- This Rs. 15000 crore AHIDF was set up under Atma Nirbhar Bharat Abhiyan stimulus package. This amount will be disbursed by the Scheduled banks.
- The AHIDF has been approved for incentivizing investments by individual entrepreneurs, private companies, MSME, Farmers Producers Organizations (FPOs) and Section 8 companies to establish
    1. Dairy processing and value addition infrastructure,
    2. Meat processing and value addition infrastructure and
    3. Animal Feed Plant.
- **Objectives of AHIDF** - To help increase milk and meat processing capacity and product diversification to provide greater access for unorganized rural milk and meat producers to organized market.
- To make available increased price realization for the producer.
- To make available quality milk and meat products for the domestic consumer.
- To fulfil the objective of protein enriched quality food requirement of the growing population of the country and prevent malnutrition in one of the highest malnourished children population in the world.
- Develop entrepreneurship and generate employment.
- To promote exports and increase the export contribution in the milk and meat sector.
- To make available quality concentrated animals feed to the cattle, buffalo, sheep, goat, pig and poultry to provide balanced ration at affordable prices.
- **Eligible beneficiaries -**
    1. Farmer Producer Organization (FPO)
    2. Private companies
    3. Individual entrepreneurs
    4. Section 8 companies
    5. Micro Small and Medium Enterprises
- **Loan** - The eligible project under the AHIDF shall be eligible for loan up to 90% of the estimated/ actual project cost from the Scheduled Bank.

Beneficiary	**Beneficiary Contribution**
Micro and Small Units	Up to 10%
Medium Units	Up to 15%
Other categories of enterprises	Up to 25%

- The Government of India will provide 3% interest subvention to eligible beneficiaries.
- Maximum Repayment Period is **8 years** inclusive of moratorium of 2 years on principal amount.
- **Credit Guarantee Fund** - From the Credit Guarantee Fund, Credit guarantee would be provided to those sanctioned projects which are covered under MSME defined ceilings.
- Guarantee Coverage would be upto 25% of Credit facility of borrower.
- **Implementation Agency** - Department of Animal Husbandry and Dairying, Ministry of Fisheries, Animal Husbandry & Dairying

Reference

1. https://pib.gov.in/PressReleasePage.aspx?PRID=1796550
2. https://dahd.nic.in/ahdf
3. https://dahd.nic.in/sites/default/filess/Implementation%20Guidelines-AHIDF.pdf
4. https://vikaspedia.in/schemesall/schemes-for-entrepreneurs/animal-husbandry-infrastructure-development-fund

