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High-fat Diet and Cancer

A new study shows that a high-fat diet increases the incidence of colorectal cancer, which starts in the colon or the rectum and grows to other parts of the body.

- It found that the fat disrupts the relationship between intestinal cells and the immune cells that watch them for emerging tumors.
- When a cell is infected, immune cells detect the foreign particle by watching over the MHC-II molecules.
    - MHC-II tags are the molecules that distinguish between normal and abnormal cells.
    - They encode a protein that presents foreign substances to the immune system.
- MHC cells activate the immune system to destroy bad cells - in case they are wearing out or about to become cancerous.
- But the study found that a **high-fat diet suppressed MHC-II levels** in intestinal cells. Hence, cells with reduced levels of these tags could not be identified as abnormal and hence, could grow into tumors.
- The crosstalk between stem cells, microbes and immune cells is critical for eliminating tumor-initiating cells. But this **cross-talk can fail** in response to a high-fat diet.
- **Application** - If the level of the immune recognition molecules is altered positively, tumor will more likely be recognized by the immune cell. This can be coupled with the existing strategies to eradicate tumors.

State of the World's Children Report 2021

The UNICEF released its global flagship report titled, 'The State of the World's Children 2021'.

- This UNICEF report is the most comprehensive analysis of global trends affecting children.
- **Purpose** - The 2021 report details the impact of COVID-19 pandemic on the **mental health** of children, adolescents and caregivers.
- It examines how risk and protective factors in the home, school and community shape mental health outcomes.
- It urges global commitment, communication and action to promote good mental health for every child and young people.
- **Findings** - Globally, 1 in 5 young people of 15 to 24-years of age are feeling depressed or having little interest in doing things.
- In India, 1 in 7 young people (14% of 15 to 24-years of age) are reported often feeling depressed or having little interest in doing things.
- Children have not only been living an emotional tragedy, many are also at a higher risk of neglect and abuse.

Industrial Park Rating System Report 2.0

Industrial Park Rating System 2.0 (IPRS 2.0) Report was released by the Department for Promotion

of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry.

- IPRS Report aims to provide important information regarding all Special Economic Zones, Industrial Clusters and Parks.
- It will enhance India's industrial competitiveness and attract investment.
- It categorizes into 3 categories - Leaders, Challengers and Aspirers.

Categories of IPRS 2.0	**Number of Industrial Parks**
Leaders	41
Challengers	90
Aspirers	185

- These ratings are assigned on the basis of 4 pillars - internal infrastructure, external infrastructure, business support services, and environment and safety management.
- The Report is an extension of the India Industrial Land Bank which features more than 4,400 industrial parks in a GIS-enabled database to help investors identify their preferred location for investment.

India Industrial Land Bank

- India Industrial Land Bank (IILB) is a Geographic Information System (GIS)-based portal that was developed by the DPIIT.
- The system was developed by integrating the Industrial Information System (IIS) with state GIS.
- It serves as a **one-stop repository of all industrial infrastructure-related information** such as connectivity, infra, natural resources and terrain, plot-level information, etc.
- It has GIS-enabled database of industrial areas or clusters across the country, which will help investors to get free real-time information about the availability of industrial land and resources.

Outage of Facebook

Facebook Inc.'s services suffered a massive outage for as long as six hours.

- Facebook said that the configuration changes on the backbone routers that coordinate network traffic between their data centres caused the outage.
- But, network experts said that the outage was due to an update to Border-Gateway Protocol (BGP).

Border-Gateway Protocol is a gateway protocol that enables the internet to exchange routing information between autonomous systems (AS).

It allows the network of networks in the Internet to be bound together. It lets one network know it is available to the others.

- Facebook is a network, which advertises its presence to other networks. This enables Internet service providers across the world to route web traffic to different networks via BGP process.
- In the case of Facebook, an **update to the BGP** removed its online properties from being available to world's computers.
- Any time a change made to a network's BGP, be it an announcement or withdrawal, a message

is sent to a router informing the update.
- It was found that the **route withdrawals** from Facebook made its Domain Name System (DNS) servers offline. So, the social network's DNS was not accessible to other networks, and the Internet.
- When a DNS resolver fails to translate a domain name into an IP address, people won't be able to access that specific website.
- As a direct consequence, the webpage won't load. This is what happened in the case of Facebook.

National Road Safety Board

Ministry of Road Transport & Highways has notified constitution of the National Road Safety Board, along with Rules thereof.

- The Head Office of the Board shall be in the National Capital Region and the Board may establish offices at other places in India.
- It shall consist of the Chairman and not less than 3, but not exceeding seven Members, to be appointed by the Central Government.
- The Board shall promote road safety, innovation and adoption of new technology, and regulate traffic and motor vehicles.
- For this purposes, inter alia, the Board shall formulate specific standards for road safety; guidelines for capacity building and development of skills, etc for consideration by the Central Government.
- The Board shall provide technical advice and assistance to the Central Government, State Governments and local authorities on road safety and traffic management.
- It will promote,
    1. Good practices in road safety and traffic management; new vehicle technology in the field of vehicular engineering;
    2. Co-ordination with international organizations; and
    3. Consistency between international technical standards and domestic technical standards, conduct research to improve road safety, traffic management, crash investigation.

Source: PIB, The Hindu, Down To Earth, Financial Express, Economic Times, Forbes, Money Control

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