

29 June, 2024

Motor Neuron Disease

Context: At the NIMHANS conference in Bengaluru, it was highlighted that symptomatic and supportive treatments are key to managing MND effectively.

➤ Overview of Motor Neuron Disease (MND)

- MND refers to a group of rare neurodegenerative diseases affecting motor nerves in the spine and brain.
- Motor neurons, crucial for muscle function, gradually lose function over time.

➤ Types of MND

- **ALS (Amyotrophic Lateral Sclerosis):** Most common type affecting upper and lower motor neurons, leading to muscle weakness and respiratory issues.
- **Primary Lateral Sclerosis:** Affects neurons in the brain, progresses slower than ALS.
- **Progressive Bulbar Palsy (PBP):** Involves the brain stem, causing difficulty in speech and swallowing.
- **Progressive Muscular Atrophy:** Rare, affects lower motor neurons, causing muscle wasting.
- **Spinal Muscular Atrophy (SMA):** Inherited form in children, affecting trunk, legs, and arms.

➤ Causes of MND

- Exact causes unclear; genetic, toxic, viral, and environmental factors may play roles.
- Approximately 10% of cases are hereditary.

➤ Symptoms of MND

- Early Stage: Weak grip, muscle cramps, slurred speech, difficulty swallowing, fatigue.
- Middle Stage: Muscle shrinkage, joint pain, difficulty moving, changes in emotional states.
- Advanced Stage: Severe muscle weakness, difficulty breathing, need for assistance with daily activities.

➤ Risk Factors

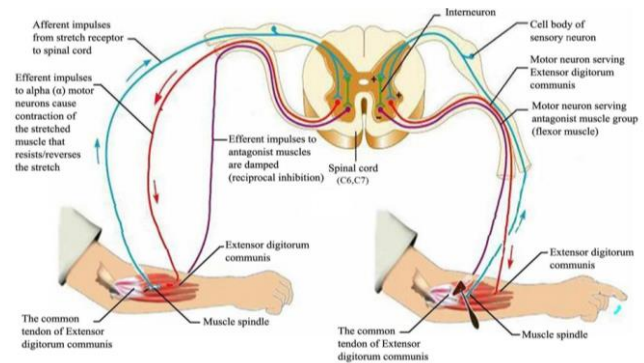
- More common in males, onset typically after age 50.
- Hereditary forms present at birth; veterans and professional athletes may have increased risk.

➤ Diagnosis of MND

- Challenging in early stages, may resemble other conditions like multiple sclerosis.
- Involves medical history, neurological examination, and diagnostic tests like MRI and electromyography.

➤ Treatment of MND

- No cure; focus on symptom management and improving quality of life.
- Medications like edaravone and nusinersen for slowing progression.
- Supportive care includes physical therapy, assistive devices, and pain management.



73rd Statistical Review of World Energy (SRWE)

Context: In 2023, global primary energy consumption hit record highs, rising 2% from 2022, according to the 73rd Statistical Review of World Energy (SRWE).

➤ Overview of SRWE 2023

- The 73rd Statistical Review of World Energy (SRWE), released annually by the Energy Institute, reported a record 2% increase in global primary energy consumption in 2023.

➤ Energy Mix in 2023

- Renewable energy accounted for 14.6% of total primary energy consumption, while fossil fuels dominated at 81.5%.

➤ Regional Contrasts

- The Global South represented 56% of total energy consumption, with the Asia-Pacific region alone responsible for 47% of global energy demand.
- Leading contributors included China, India, Indonesia, South Korea, and Japan.

➤ Regional Energy Demand

- Energy demand grew significantly in Southern and Central America and the Asia-Pacific region, but saw a slight decline in Africa.
- Africa and South Asia, despite large populations, collectively accounted for less than 10% of global energy demand.

➤ Greenhouse Gas Emissions

- Global average greenhouse gas emissions per person were 6.7 MtCO₂e, notably lower in Africa, South Asia, Southern and Central America compared to North America (11.5 MtCO₂e).

➤ Global Emissions

- Global emissions rose by 2.1%, exceeding 40 billion tonnes of CO₂ equivalents, driven by increased flaring and industrial processes.

➤ Fossil Fuel Consumption

- Oil consumption reached 100 million barrels per day, driven by China's economic recovery post-pandemic.

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- US remained the largest oil producer, while Russia's production declined due to international sanctions.
- Southern and Central America showed significant growth in oil production.

➤ Natural Gas

- Global natural gas consumption remained stable, with notable declines in Europe's demand and production.
- US set a production record, surpassing Qatar as the top LNG exporter for the third consecutive year.

➤ Coal Production and Consumption

- Coal production hit record levels, predominantly from the Asia-Pacific region (Australia, China, India, Indonesia).
- China led global coal consumption, surpassing combined consumption in Europe and North America.

➤ Renewable Energy

- Renewables contributed 30% to global power generation, driven by record solar and wind capacity installations (67% increase).
- Southern and Central America recorded 72% of power generation from renewables despite significant oil production growth.

➤ Global Energy Transition

- The SRWE underscores significant fossil fuel consumption and emissions from the Global South, where economies are expanding and population is concentrated.
- Developed countries in the Global North lead in fossil fuel production and consumption, highlighting the slow transition despite historical emissions.

➤ Call for Transition

- Emphasizes the need for developed countries in the Global North to lead the fossil fuel transition, acknowledging their historical responsibility and overuse of the Global Carbon Budget.

Rise in global drug use

Context: Global drug use has risen significantly, reaching 292 million users worldwide in 2022, marking a 20% increase over the past decade, according to a UNODC report.

➤ Global Drug Use Statistics:

- Cannabis is the most widely used drug globally, with 228 million users.
- Followed by opioids (60 million users), amphetamines (30 million users), cocaine (23 million users), and ecstasy (20 million users).

➤ Treatment Disparities:

- Only one in 11 people with drug use disorders receives treatment, despite 64 million affected globally.
- Treatment access is significantly lower for women (1 in 18) compared to men (1 in 7).

➤ Response and Prevention:

- Urgent need for coordinated responses to combat rising drug use globally.
- Advocacy for evidence-based prevention programs, particularly for youth.

➤ Impact of Drug Trafficking:

- Drug trafficking fuels organized crime, extending into wildlife trafficking, financial fraud, and illegal resource extraction.
- Comprehensive strategies required integrating prevention, treatment, and strengthened law enforcement.

➤ Opium Production Trends:

- Global opium production plummeted by 74% in 2023, driven by Afghanistan's 95% reduction and Myanmar's 36% increase.
- Long-term implications include potential shifts in heroin purity and increased demand for opiate treatment services.

NEWS IN BETWEEN THE LINES

Keshava Temple



Recently, the Karnataka Tourism Department plans to promote the UNESCO World Heritage Site of the Keshava temple at Somanathapur as part of the Mysuru tourism circuit before Dasara this year.

About the Keshava Temple:

- The Keshava Temple is located in Somanathapur, in the district of Mysuru, **Karnataka**.
- It is a **Hoysala temple** that was added to the **United Nations Educational, Scientific and Cultural Organization (UNESCO)** World Heritage list in September 2023.
- It was built in 1268 CE by **Somanatha Dandanayakad** during the reign of **Narasimha III**, and is **located on the left bank of the Kaveri River**.
- The temple is **dedicated to Lord Vishnu** and is one of the finest examples of Hoysala temple art.
- It is also a **Trikuta temple**, meaning it has **three shrines** and three vimanas, dedicated to Keshava, Janardhana, and Venugopala.
- In **March 2024**, the **45th session of UNESCO's World Heritage Committee in Riyadh**, Saudi Arabia, added the temples to the list as India's **42nd World Heritage Site** in the Cultural category.

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Financial Action Task Force



Recently, India has achieved an outstanding outcome in the mutual evaluation conducted during 2023-24 by the Financial Action Task Force (FATF).

About the Financial Action Task Force:

- The Financial Action Task Force is an **intergovernmental organization with 39 member countries, including India.**
- It was **established in 1989** during the **G7 Summit in Paris** as the **international watchdog** to **combat money laundering, terrorist financing** and other related threats to the integrity of the international financial system.
- It also includes **2 regional organizations** (the European Commission and the Gulf Cooperation Council).
- FATF maintains lists such as the **"Grey list"** for jurisdictions under increased monitoring and the **"Black list"** (Non-Cooperative Countries or Territories list) for jurisdictions considered non-compliant with its standards.
- **India** became a member of FATF in **2010**.
- Its headquarter is in **Paris, France**.

Motion of Thanks



Recently, the Rajya Sabha discussed the motion of thanks on President Droupadi Murmu's address to Parliament amid opposition uproar over the NEET examination issue.

Motion of Thanks:

- The Motion of Thanks is a **motion in the Indian Parliament that follows the President's address** to the **joint sitting of Lok Sabha and Rajya Sabha**.
- **Article 87** of the Constitution mandates the President to **address both Houses of Parliament** after each general election and at the commencement of the first session of every fiscal year.
- In the address, the **President outlines the government's policies and programs** for the previous and following years.
- This motion is moved in both the Lok Sabha and the Rajya Sabha **by a Member of Parliament from the ruling party**, following the President's address.

Biomass Briquettes



Recently, the global focus on sustainability has highlighted biomass briquettes as an eco-friendly fuel alternative for power generation.

About the Biomass Briquettes:

- Biomass briquettes are a **type of biofuel** that are **made from organic materials** like husks, shells, bagasse and agricultural and municipal solid waste.
- The raw materials are **compressed into small, round logs** using a biomass briquette machine to make them easier to burn and transport.
- They are **used as an inexpensive cooking fuel** in developing countries, as a **coal substitute** in Indian thermal power plants and for electricity generation in developed countries.
- Biomass briquettes have several environmental benefits, including serving as a sustainable **renewable energy source**, **producing fewer greenhouse gases** than fossil fuels due to partially completing the carbon cycle, and significantly **lowering carbon footprints**.
- However, biomass briquettes can also have some problems, such as **transportation, storage**, and handling.
- Briquettes **made with binders** like **starch**, clay, **molasses** or **wood tar** are **not waterproof** and will break down if they get wet or are stored in humid conditions.

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Place in News

Togo

Recently, India and Togo have reviewed bilateral relations and discussed ways to further strengthen bilateral ties between the two countries.

Togo (Capital: Lomé)

Location: Togo, officially known as the Togolese Republic, is a country in West Africa.

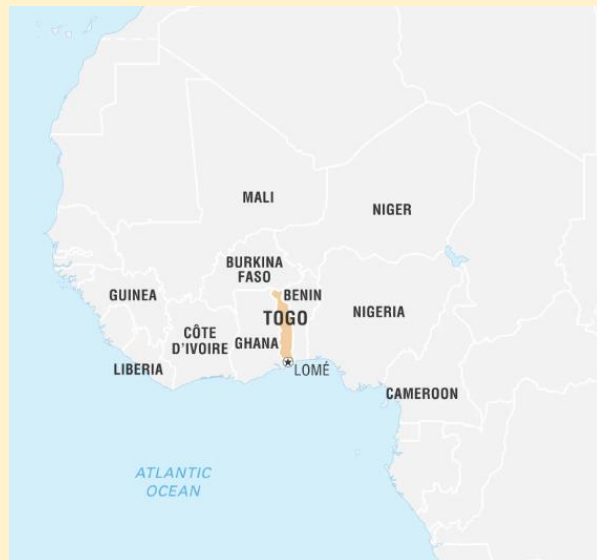
Boundaries: Togo shares its borders with **Benin** (East), **Ghana** (West), **Burkina Faso** (North) and **Gulf of Guinea** (Atlantic Ocean) to the South.

Physical Features:

- The highest point in Togo is **Mont Agou**, located in the southwestern part of the country, near the border with Ghana.
- The major rivers in Togo are the **Mono River** and the **Oti River**.
- Togo is rich in minerals such as **phosphates, limestone** and **marble**.
- Togo has a tropical climate.

Membership:

Togo is a member of the **African Union (AU)**, **Economic Community of West African States (ECOWAS)**, **United Nations (UN)**, **Organisation Internationale de la Francophonie (OIF)**, **World Trade Organization (WTO)**, **International Monetary Fund (IMF)**, **World Bank** and **International Criminal Court (ICC)**.



POINTS TO PONDER

- Who has been appointed as the next Foreign Secretary of India, succeeding Vinay Mohan Kwatra? – **Vikram Misri**
- Who was awarded the 12th Vishwa Hindi Samman for her contributions to Hindi literature in an event organized by the Embassy of India in Nepal? – **Dr. Usha Thakur (This award is given by the Ministry of External Affairs, Government of India)**
- Who recently handed over Indian citizenship certificates to three applicants in Madhya Pradesh for the first time under the Citizenship Amendment Act (CAA)? – **Madhya Pradesh Chief Minister Dr. Mohan Yadav**
- What is the name of the new initiative launched by the UN-backed network Principles for Responsible Investment (PRI) to halt or reverse nature loss by 2030? – **Spring Initiative**
- Who designed ABHYAS, a High-speed Expendable Aerial Target (HEAT), recently completing 10 developmental trials? – **Defence Research and Development Organisation (DRDO)**

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