

Biotechnology & Health

I. Public Health & Policy in India

Gujarat Launches India's First Tribal Genome Mapping Project:

On July 17, 2025, Gujarat initiated a pioneering large-scale genome mapping project focusing exclusively on its tribal communities. Teams of scientists will collect over 4,158 biological samples from 17 districts, aiming to create approximately 2,000 whole genome sequences representing more than 20 tribal communities. This initiative, part of the 2025-26 State budget and implemented by the Gujarat Biotechnology Research Centre (GBRC), aims to understand tribal genetics, assess disease probabilities (like sickle cell anemia and thalassemia), and enable personalized healthcare. It's hailed as a bridge between science and tradition.

CBSE's 'Oil Board' Mandate to Curb Student Obesity:

As of July 15, 2025, the Central Board of Secondary Education (CBSE) has issued a circular encouraging affiliated schools to adopt "Oil Boards." These visual displays, similar to the earlier "Sugar Boards," will warn against excessive consumption of unhealthy fats and oils, promoting healthier dietary choices among students. The initiative responds to rising concerns about obesity in India, with schools urged to integrate health-conscious messages, offer healthier food options, and promote physical activity.

ICMR Flags High Salt Intake in India: The Indian Council of Medical Research's National Institute of Epidemiology (ICMR-NIE) has launched a three-year intervention project in Punjab and Telangana to reduce India's salt consumption. Research shows average daily salt intake in urban (9.2 grams) and rural (5.6 grams) India significantly exceeds WHO's recommended limit of 5 grams, increasing risks of hypertension, stroke, and heart disease. The project will assess the effectiveness of structured salt reduction counseling by health

workers and highlights awareness and access gaps for low-sodium salt substitutes.

Eat Right India Initiative Progress: As of July 6, 2025, the Food Safety and Standards Authority of India (FSSAI)'s "Eat Right India" initiative, launched in July 2018, continues to promote safe, healthy, and sustainable food practices. Key achievements include over 1.2 million food handlers trained, 284 Eat Right Stations, and 249 Clean Street Food Hubs certified. Over 5.5 million liters of used cooking oil have been collected, with 3.9 million liters converted into biodiesel.

Collaborative Technology Ecosystems Boost Health Innovation:

The Translational Health Science and Technology Institute (THSTI) recently hosted SYNCHN 2025, an industry-business meet aimed at accelerating India's health innovation. Discussions focused on multidisciplinary partnerships between academia and industry to advance vaccine development, cell and gene therapy, and medical product development. India's growing role as a global hub for affordable vaccines and generics was emphasized.

Government Healthcare Schemes & Progress:

Various government programs continue to strengthen healthcare. As of June 3, 2025, over 78 crore Ayushman Bharat Health Accounts (ABHAs) have been created. The Pradhan Mantri Ayushman Bharat Health Infrastructure Mission (PM-ABHIM) has an outlay of ₹64,180 crore for 2021-2026. Significant progress has been reported in reducing Maternal Mortality Ratio (MMR), Neonatal Mortality Rate (NMR), Infant Mortality Rate (IMR), and Under-5 Mortality Rate (U5MR). The eSanjeevani telemedicine service has served over 36 crore patients. Over 5.72 crore people have been screened for Sickle Cell Disease.



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II. Biotechnology & Medical Breakthroughs (Global & India)

Global Health Innovative Technology (GHIT) Fund Investment: On July 17, 2025, the GHIT Fund announced a total investment of approximately **JPY 1 billion (USD 7.3 million)** in four R&D projects for malaria and tuberculosis (TB) vaccine, drug, and diagnostics development. A significant portion (USD 5.5 million) is for a preclinical malaria vaccine development project led by the European Vaccine Initiative and other global partners.

Merck to Initiate Phase 3 Trials for Once-Monthly HIV Prevention Pill: Merck announced the initiation of the EXPrESSIVE Phase 3 clinical trials for MK-8527, an investigational once-monthly, oral nucleoside reverse transcriptase translocation inhibitor for HIV prevention. The trials will begin enrolling in August 2025, with collaborations including the Gates Foundation, to address the urgent need for more accessible PrEP options globally.

WHO Recommends Injectable Lenacapavir for HIV Prevention: The WHO has recommended a public health approach to HIV testing using HIV rapid tests to support the delivery of long-acting injectable PrEP, including lenacapavir (LEN), as part of new guidelines. LEN, a twice-yearly injectable PrEP product, offers a highly effective alternative to daily oral pills.

AI in Healthcare and Traditional Medicine at UN Summit: The AI for Good Global Summit (July 8-11, 2025) in Geneva included a session focused on artificial intelligence (AI) in healthcare and traditional medicine. Leaders from WHO, ITU, and WIPO discussed the potential of AI to be a "game-changer" in public health and clinical medicine, emphasizing governance and regulation for AI-based health systems. A technical brief mapping AI applications in traditional medicine was unveiled.

Funding Surge in HealthTech Startups (India): Three healthtech startups in India – **EMVision, Biopeak, and Iom Bioworks** – have secured significant funding.

- **Biopeak (Bengaluru-based):** Raised \$3.5 million (~INR 29 crore) in seed funding to scale AI-powered preventive health clinics, combining molecular diagnostics, non-invasive imaging, and AI for personalized wellness.
- **Iom Bioworks:** Received ₹4 crore in seed funding for its AI-led gut microbiome platform, leveraging computational biology for personalized insights on digestion, metabolism, immunity, and mental well-being.
- **EMVision:** (Not detailed in the provided snippet but mentioned as securing funding for brain scanning solutions).

Biotechnology News & Discoveries (ScienceDaily):

- Discovery of a secret motor protein (myosin XI) in plants that helps leaves close pores to conserve water, aiding drought survival.
- Uncovering a "tissue code" of five rules that govern cell division, movement, and death, shaping organs.
- Kenyan fig trees using microbes to convert internal crystals into limestone-like deposits for carbon sequestration.
- Discovery that starving and refeeding worms can reveal aging controls (TFEB gene).
- Lyme disease bacteria hijacking tick's cell functions to steal cholesterol.
- Mojave Lichen surviving lethal UVC radiation, suggesting extraterrestrial life possibilities.
- Discovery of a natural cancer-fighting sugar in sea cucumbers that blocks an enzyme (Sulf-2) cancer cells use to spread.

Biotech Industry Discussions at BIO 2025: Experts at BIO 2025 emphasized the urgent need to address antimicrobial resistance (AMR) and cancer. Discussion



also covered the importance of patents for innovation, the challenges of onerous reporting requirements for small biotechs, and the need for collaborative global guidelines for regulating cell and gene therapies.

Intelligent Bio Solutions Global Growth: Intelligent Bio Solutions Inc. announced a global distribution agreement with SMARTOX® to bring its SmarTest® Patch drug detection product to market, strengthening its position in non-invasive drug testing solutions.

III. Conferences & Events

16th Elets Healthcare Innovation Summit & Awards, Hyderabad 2025: Scheduled for July 17, 2025.

Workshop on Basics of Flow Cytometry & Data Analysis (IIT Madras): Phase I on July 17-18, 2025 (full), Phase II on July 19-20, 2025 (open for registration).

AI for Good Global Summit (UN): Ran from July 8-11, 2025, in Geneva, focusing on AI-driven solutions for global challenges, including health.

MCQs

1. On what date did Gujarat launch India's first tribal genome mapping project?

- a) July 15, 2025
- b) July 16, 2025
- c) July 17, 2025
- d) July 10, 2025

Correct Answer: c) July 17, 2025

Explanation: The news states, "On July 17, 2025, Gujarat initiated a pioneering large-scale genome mapping project focusing exclusively on its tribal communities."

2. What is the primary purpose of CBSE's new 'Oil Board' mandate for affiliated schools?

- a) To increase the consumption of healthy oils
- b) To warn against excessive consumption of unhealthy fats and oils
- c) To promote oil painting in art classes
- d) To regulate cooking oil prices in school canteens

Correct Answer: b) To warn against excessive consumption of unhealthy fats and oils

Explanation: The news states, "These visual displays, similar to the earlier 'Sugar Boards,' will warn against excessive consumption of unhealthy fats and oils, promoting healthier dietary choices among students."

3. In which two Indian states has ICMR-NIE launched a three-year intervention project to reduce salt consumption?

- a) Maharashtra and Gujarat
- b) Uttar Pradesh and Bihar
- c) Punjab and Telangana
- d) Karnataka and Kerala

Correct Answer: c) Punjab and Telangana

Explanation: The news states, "The Indian Council of Medical Research's National Institute of Epidemiology (ICMR-NIE) has launched a three-year intervention project in Punjab and Telangana to reduce India's salt consumption."

4. As of July 6, 2025, approximately how many food handlers have been trained under FSSAI's 'Eat Right India' initiative?

- a) Over 500,000
- b) Over 800,000
- c) Over 1.0 million
- d) Over 1.2 million

Correct Answer: d) Over 1.2 million

Explanation: The news states, "Key achievements include over 1.2 million food handlers trained..."

5. The Translational Health Science and Technology Institute (THSTI) recently hosted SYNCHN 2025 with the aim of accelerating what in India?

- a) Space research
- b) Health innovation
- c) Agricultural development
- d) Digital literacy

Correct Answer: b) Health innovation

Explanation: The news states, "The Translational Health Science and Technology Institute (THSTI) recently hosted SYNCHN 2025, an industry-business meet aimed at accelerating India's health innovation."

6. As of June 3, 2025, approximately how many Ayushman Bharat Health Accounts (ABHAs) have been created?

- a) Over 50 crore
- b) Over 65 crore
- c) Over 70 crore
- d) Over 78 crore

Correct Answer: d) Over 78 crore

Explanation: The news states, "As of June 3, 2025, over 78 crore Ayushman Bharat Health Accounts (ABHAs) have been created."

7. What is the total investment announced by the Global Health Innovative Technology (GHIT) Fund on July 17, 2025, for R&D projects in malaria and tuberculosis?

- a) Approximately USD 5.5 million
- b) Approximately USD 6.0 million
- c) Approximately USD 7.3 million
- d) Approximately USD 10.0 million

Correct Answer: c) Approximately USD 7.3 million

Explanation: The news states, "On July 17, 2025, the GHIT Fund announced a total investment of approximately JPY 1 billion (USD 7.3 million) in four R&D projects..."

8. Merck is set to initiate Phase 3 clinical trials in August 2025 for what investigational once-monthly HIV prevention pill?

- a) Truvada
- b) Lenacapavir
- c) MK-8527
- d) Islatravir

Correct Answer: c) MK-8527

Explanation: The news states, "Merck announced the initiation of the EXPRESSIVE Phase 3 clinical trials for MK-8527, an investigational once-monthly, oral nucleoside reverse transcriptase translocation inhibitor for HIV prevention."

9. The WHO has recently recommended the use of which twice-yearly injectable product for HIV prevention?

- a) Truvada
- b) MK-8527
- c) Cabotegravir
- d) Lenacapavir

Correct Answer: d) Lenacapavir

Explanation: The news states, "The WHO has recommended a public health approach to HIV testing using HIV rapid tests to support the delivery of long-acting injectable PrEP, including lenacapavir (LEN)..."

10. Bengaluru-based healthtech startup Biopeak raised how much in seed funding?

- a) \$1.5 million
- b) \$2.0 million
- c) \$3.5 million
- d) \$4.0 million



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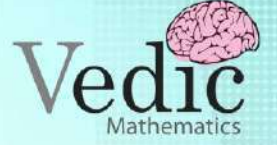
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Correct Answer: c) \$3.5 million

Explanation: The news states, "Biopeak (Bengaluru-based): Raised \$3.5 million (~INR 29 crore) in seed funding..."

11. Which biotech company announced a global distribution agreement with SMARTOX® for its SmarTest® Patch drug detection product?

- a) Biopeak
- b) Iom Bioworks
- c) Intelligent Bio Solutions Inc.
- d) Merck

Correct Answer: c) Intelligent Bio Solutions Inc.

Explanation: The news states, "Intelligent Bio Solutions Inc. announced a global distribution agreement with SMARTOX® to bring its SmarTest® Patch drug detection product to market..."

12. The 16th Elets Healthcare Innovation Summit & Awards is scheduled to be held in which Indian city on July 17, 2025?

- a) New Delhi
- b) Bengaluru
- c) Hyderabad
- d) Mumbai

Correct Answer: c) Hyderabad

Explanation: The news states, "16th Elets Healthcare Innovation Summit & Awards, Hyderabad 2025: Scheduled for July 17, 2025."

13. The AI for Good Global Summit, which included discussions on AI in healthcare and traditional medicine, took place in which city?

- a) New York
- b) London
- c) Geneva
- d) Singapore

Correct Answer: c) Geneva

Explanation: The news states, "The AI for Good Global Summit (July 8-11, 2025) in Geneva included a session focused on artificial intelligence (AI) in healthcare and traditional medicine."

