

1. How doctors treated a genetic disorder in the womb for the first time

Introduction



A two-and-a-half-year-old girl has shown no signs of a genetic disorder — known as spinal muscular atrophy (SMA) — becoming the first person in the world to be treated for the disease while in the womb. The girl's mother began taking the gene-targeting drug during late pregnancy, and the child continues to take it.

The results of the treatment were published last week in the journal the New England

Journal of Medicine.

What is spinal muscular atrophy?

SMA is a debilitating genetic condition which affects motor neurons that control movement, and leads to progressive muscle weakening. "About one in every 10,000 births have some form of the condition — making it a leading genetic cause of death in infants and children."

How was SMA treated in the womb?

For the treatment, scientists used an oral drug called risdiplam, which is given to patients to slow the progression of SMA. Risdiplam is typically given to a patient soon after birth — the earlier the intervention, the better the results seem to be. Therefore, in the new trial, scientists decided to administer the drug before birth for the first time.

The mother, who was 32 weeks pregnant, took Risdiplam daily for six weeks. The baby started taking the drug from roughly one week old.

The scientists found that the girl had higher levels of the SMN protein in her bloodstream, compared to those usually born with the condition. The girl "seemed to have lower levels of nerve damage, and even after 30 months had normal muscle development with no sign of atrophy."

Scientists said that the success of the trial had opened doors for larger studies to see whether the findings could be replicated.

Relevance: GS Prelims; Science & Technology

Source: Indian Express

2. Indian commitments to UN Peacekeeping Missions

Introduction

Since the 1950s, India has contributed over 290,000 peacekeepers across more than 50 UN Peacekeeping missions. Today, more than 5,000 Indian peacekeepers are currently deployed in nine of the 11 active peacekeeping missions.

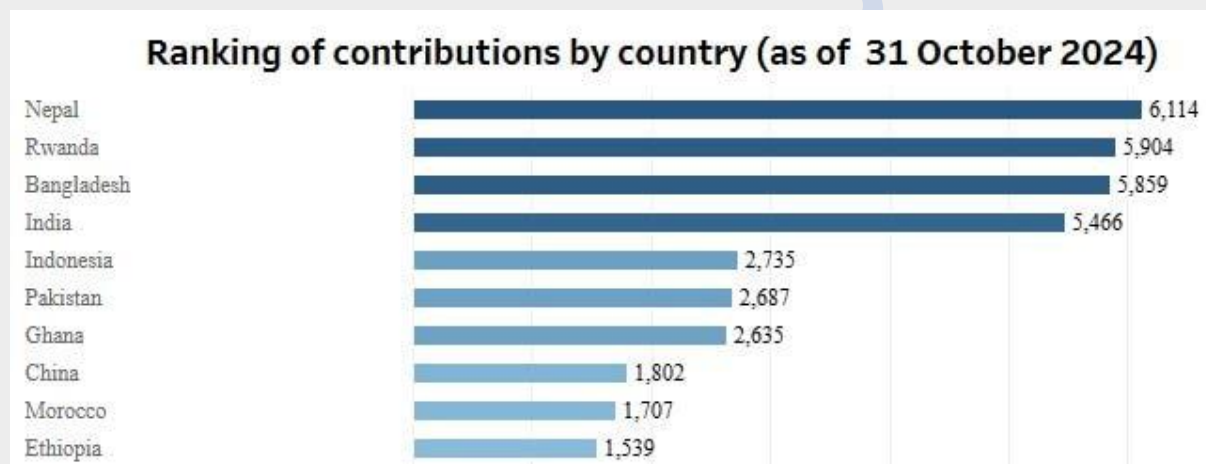
First, what are UN Peacekeeping missions?

The idea of UN Peacekeeping stems from the UN having no military forces. Therefore, Member States voluntarily provide the military and police personnel that are periodically required for each peacekeeping operation from their national forces.

Peacekeepers usually wear their countries' uniforms and are identified as UN peacekeepers only by a UN blue helmet or beret and a badge. They are tasked with protecting civilians, actively preventing conflict, reducing violence, strengthening security, and empowering national authorities to assume these responsibilities.

How many UN Peacekeeping missions have been carried out?

More than 71 Field Operations have been undertaken since 1948, following collaborations between the UN Secretariat, the Security Council, and the countries that contribute uniformed personnel. More than 100,000 military, police, and civilian personnel from 125 countries currently serve in 14 peacekeeping operations.



First UN Peacekeeping mission

The first UN peacekeeping mission was established in May 1948, when the UN Security Council authorised the deployment of a small number of UN military observers to the Middle East to form the United Nations Truce Supervision Organization (UNTSO) to monitor the Armistice Agreement between Israel and its Arab neighbours. Early on, troops and police came from a relatively small number of countries and were almost exclusively men.

Who funds UN Peacekeeping Missions?

The UN Security Council makes decisions about establishing, maintaining, or expanding peacekeeping operations, while all UN Member States are collectively tasked with financing them. Every member is legally obligated to pay their respective share under Article 17 of the Charter of the United Nations. The United States (26.95%) and China (18.69%) pay the most, partly because they are part of the UNSC. India's share is around 0.2088%.

Peacekeeping soldiers are paid by their Governments according to their own national rank and salary scale. Countries volunteering uniformed personnel to peacekeeping operations are reimbursed by the UN at a standard rate, approved by the General Assembly, of US\$1,428 per soldier per month as of 1 July 2019.

What's behind India's contributions?

Permanent Seat in UNSC: For one, sustained participation in a key UN programme is thought to help bolster India's standing in the international community. It may also help its claims towards securing a seat in the UN Security Council as a permanent member. However, the expansion of the P5 is based on multiple factors, perhaps the most important being how willing the existing members are to share power.

Death of Personnel: The efficacy of peacekeeping missions has also been questioned, given the costs. UN data states that as many as 179 Indian military personnel, including some central armed police forces personnel, have laid down their lives while serving as UN peacekeepers.

More contribution from Developing Countries: There is also disagreement among countries about the provision of troops, with most coming from developing countries. Troops and police personnel data from October 2024 says the US provided 26 workers while the UK provided 275. The biggest contributor, Nepal, was at 6,114 while India stood fourth at 5,466.

Another view traces the distribution of troops as being dependent on the interests of respective countries rather than a genuine interest in conflict resolution. This could mean foreign exchange for poor African and Asian countries, or strategic interest — such as China looking at commercial gain in Africa or India seeking to bolster its claim to a permanent Security Council seat.

Relevance: GS Prelims & Mains Paper II; International Organisations

Source: Indian Express

3. Why gharials are endangered, how MP has emerged the leader in their conservation

Introduction



Madhya Pradesh Chief Minister Mohan Yadav last week released 10 gharials, a critically endangered species, into the Chambal river at the National Chambal Gharial Sanctuary in Morena.

Madhya Pradesh's decades-long conservation efforts have earned it the title of a "gharial state," hosting over 80 per cent of India's gharials.

What are gharials?

The gharial is a species of *Gavialis gangeticus*—long-snouted, fish-eating crocodylians. The name 'gharial' comes from the Hindi word ghara, meaning pot or vessel, referring to the bulbous snout tip of adult males, which resembles an inverted pot. In Indian mythology, gharials hold sacred significance, often depicted as the

divine mount of the goddess Ganga. Their slender snouts, lined with numerous sharp, interlocking teeth, are adapted to trap fish, the mainstay of their diet.

Reproduction among Gharials

Males grow from 3-6 meters, and females 2.6–4.5 meters. Gharials mate during November, December, and January. Sandbanks, sandbars, and islands are critical to their ecology, serving as preferred sites for basking and nesting. From March to May, as river levels recede, female gharials climb onto exposed sandbanks and islands to nest communally, with many laying eggs in the same area. Females provide parental care for the first few days after hatching.

Gharials are important for a river's ecosystem, as they clean up carrion.

Gharial Population Status

The state boasts the highest number of gharials in India, with a 2024 census recording 2,456 individuals in the sanctuary.

Globally, Gharial populations saw a steady recovery until 1997, but between 1997 and 2006, numbers plummeted by 58%, dropping from 436 adults to 182, according to a 2007 research paper.

Wildlife researchers have said the species is likely extinct in Myanmar and Bhutan, with only small, uncertain populations remaining in Pakistan, Nepal, and Bangladesh's upper Brahmaputra.

What threats do gharials face?

Historical threats included overhunting for skins, trophies, eggs, and traditional medicine. Modern challenges—dam construction, irrigation canals, siltation, river course changes, embankments, sand-mining, pollution, and fishing—continue to devastate populations. Gill nets, in particular, kill gharials of all sizes, even in protected areas.

What are the conservation efforts?

Between 1975 and 1982, India established 16 captive breeding and release centers and five gharial sanctuaries. Today, the species survives primarily in five refuges: National Chambal Sanctuary (NCS), Katerniaghat Sanctuary, Chitwan National Park, Son River Sanctuary, and Satkosia Gorge Sanctuary.

Conservation efforts include captive breeding programmes to rear and release hatchlings back into the river, monitoring populations, actively managing threats like sand mining, and engaging local communities in habitat preservation and awareness campaigns

Why is the Chambal sanctuary crucial?

Spanning three states, the Chambal sanctuary protects a 435-km stretch of one of India's cleanest rivers. Apart from gharials, the stretch hosts over 290 bird species, including rare Indian Skimmers (80% of the national population).

The sanctuary has also been helpful in reviving gharial populations elsewhere. Gharials had disappeared from the rivers of Punjab around 1960-70. Gharials were sent to Punjab from the

Deori Gharial Center of Chambal in 2017. In 2018, 25 gharials were sent to the Sutlej River, and in 2020, 25 gharials were sent to the Beas River.

Relevance: GS Prelims; Environment

Source: Indian Express

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