

DAILY PT POINTERS

24th July, 2024



HEADLINES OF THE DAY

The Hindu : _GS 3/Economy–Page-1

Tax brackets

Budget 2024: A look at various income tax scenarios following the new slabs

— PAGE 2

14%
INFRA. OUTLAY AS % OF BUDGET

Transport, power, telecom spending retained

INFRASTRUCTURE - PAGES 6, 9

5.5%
SOCIAL SECTOR SHARE IN BUDGET

Health, education, social welfare spending dips from FY24 RE

SOCIAL SECTOR - PAGE 7

9.43%
DEFENCE SHARE IN BUDGET

Defence outlay in Budget is lowest in nine years

ECONOMY - PAGE 6

Small servings, MANY PLATES

FM signals shift from previous trickle-down strategy to a package of schemes for jobless youth, MSMEs, announces tax cuts for middle class, tightens fiscal deficit target to 4.9% of GDP, unveils projects for Fibre, AP

hinds with support for multiple investment projects in Fibre and Andhra Pradesh.

Ms. Sitharaman proposed income tax rate cuts worth up to ₹12,500 a year, putting an extra ₹458 a month in the hands of these taxpayers, and linked standard deductions for salaried taxpayers and pensioners by ₹25,000 and ₹10,000, respectively.

She also vowed to spend ₹2 lakh crore over five years on five schemes which are part of what she called "the Prime Minister's package", aimed at spurring jobs and imparting skills to 4.1 crore youth.

This marked a shift in strategy, or rather a frenetic changing of lanes ahead of a roadshow as drivers in the capital are prone to die from the previous government's preferred reliance on letting multiplier and trickle-down effects work while evoking direct handouts to such sections of society.

A similar lane change was last seen when Ms. Sitharaman's predecessor the late Arun Jaitley, presented his third Budget, in 2017.

Trigger for shift
The trigger for the shift could be the BJP's electoral reversals after a decade of outright majority in Parliament, preceded by several storms such as big business set poll bond purchases. At a briefing after his roughly 90-minute speech which appeared to acknowledge and begin addressing the perceived disenchchantment among specific voter groups like the young, the salaried class, farmers, and small entrepreneurs, Ms. Sitharaman made it clear that the overarching theme of the Budget was "EMPLOYMENT". Used as an acronym, the theme was spelled out - Employment and Education, Micro, Small and Medium Enterprises (EMSMSE), Productivity, Land, Opportunity, Youth, Middle Class, Energy Security, New Generation Reforms; and Technology.

CONTINUED ON PAGE 14
STARTS THIS WEEK PAGE 10

UNION BUDGET 2024-25

INCOME-TAX

- New tax regime sweetened with higher standard deduction

REAL ESTATE

- No indexation benefit for property & family gold sales, LTCG 12.5%

SOCIAL SECTOR

- Customs duty cut on three cancer drugs

EDUCATION

- Interest subsidy for loans up to Rs 10 lakh for education in India

MSMEs

- New credit guarantee scheme for purchase of equipment

REFORMS

- New economic reform framework to address all factors of production



TAX SLABS

OLD REGIME	NEW REGIME
0 TO 3 LAKH	0 TO 3 LAKH
3 LAKH - 6 LAKH	3 LAKH - 7 LAKH
6 LAKH - 9 LAKH	7 LAKH - 10 LAKH
9 LAKH - 12 LAKH	10 LAKH - 12 LAKH
12 LAKH-15 LAKH	12 LAKH-15 LAKH
15 LAKH+	15 LAKH +
NIL	NIL
5%	5%
10%	10%
15%	15%
20%	20%
30%	30%

- Union Finance Minister Nirmala Sitharman on July 23 announced her seventh consecutive budget.
 - The Finance Minister said, for pursuit of 'Viksit Bharat', the budget envisages sustained efforts on the following 9 priorities for generating ample opportunities for all. These are Productivity and resilience in Agriculture, Employment & Skilling, Inclusive Human Resource Development and Social Justice, Manufacturing & Services, Urban Development, Energy Security, Infrastructure, Innovation, Research & Development and Next Generation Reforms
 - An allocation of ₹1.48 lakh crore for education, employment and skill development was announced. government will launch the Pradhan Mantri Janjatiya Unnat Gram Abhiyan by adopting saturation coverage for tribal families in tribal-majority villages and aspirational districts covering 63,000 villages and benefitting 5 crore tribal people.
- For more details please click here <https://www.nextias.com/ca/current-affairs/23-07-2024/daily-current-affairs-23-07-2024>

SC gives split verdict on validity of Centre's nod for GM mustard

The Hindu Bureau
NEW DELHI

The Supreme Court on Tuesday pronounced a split verdict on the validity of the Centre's 2022 decision granting conditional approval for environmental release of genetically modified (GM) mustard crop.

The Bench of Justices B.V. Nagarathna and Sanjay Karol, however, asked the Centre to formulate a national policy with regard to GM crops for research, cultivation, trade and commerce in the country.

The case would now be referred to a three-judge Bench to be constituted by the Chief Justice of India.

On October 18, 2022, the Genetic Engineering Appraisal Committee (GEAC) – a statutory body under the Ministry of Environment, Forest and Climate Change and regulator of genetically modified or-

The Centre has been asked to formulate a national policy with regard to GM crops for research and other purposes

ganisms in the country – recommended the environmental release.

A subsequent decision was taken on October 25, 2022 approving the environmental release of transgenic mustard hybrid DMH-II, a variety of GM mustard.

On Tuesday, in its judgment, the court said the "national policy shall be formulated in consultation with all stakeholders, such as experts in the field of agriculture, biotechnology, State governments, representatives of farmers, etc".

It said the government should conduct a national consultation with the aim of formulating the policy.

- The Supreme Court delivered a split verdict on a petition challenging the conditional approval granted by the Genetic Engineering Appraisal Committee (GEAC) to the Delhi University's Centre for Genetic Manipulation of Crop Plants (CGMCP), for the environmental release of transgenic mustard, DMH-11, and its subsequent approval by the Ministry of Environment, Forest and Climate Change (MoEF&CC), with one of the judges striking it down and the other upholding it. In October 2022, the Genetic Engineering Appraisal Committee (GEAC) recommended the environmental release of the genetically-modified (GM) mustard (Brassica juncea) variety DMH (Dhara Mustard Hybrid)-11 for the development of new generation hybrids, paving the way for the commercialisation of the country's first GM food crop.
- Genetically-modified plants are developed to introduce a new trait to the plant which does not occur naturally. The DNA of the plant is modified using genetic engineering to produce the GM plant varieties which can be grown as food crops or non-food crops.

The Hindu –Science and Tech (GSIII)-Page 24

Drug used to treat clots can protect against cobra venom damage

Researchers found tinzaparin, a drug commonly used to prevent blood clots, significantly reduced damage to human cells caused by spitting cobra venom; the team also found the drug reduced skin damage in mice injected with the venom; the scientists have filed for a patent and may start human clinical trials soon

Srinivas Batta

Irange red in colour and native to Tanzania, the King cobra – the red-spitting cobra – is a formidable, 1.2 metre long fire. When threatened, it raises its hood and hisses loudly. If this display doesn't deter its predator, it will use its most potent weapon, its venom. Within an hour of the snake's venomous glance, searing jets of venom coat the eyes, nose, and mouth of the victim. As the victim's face swells in pain, the cobra takes the opportunity to lunge forward and bite, delivering a massive quantity of venom into the victim's body.

The venom attacks cells in the body and disrupts the nervous system. For most of the cobra's regular victims – birds, frogs, lizards, and other snakes – the only rise to death. A lucky human might be spared, but with a permanent disability.

Had deal on antivenom: Encounters with venomous snakes kill about 1.4 lakh people every year, especially in the tropical regions of Africa and Asia. Despite this alarming number, the treatment for snakebites has remained archaic.

Based on the work of French scientists in the late 1800s, antivenom is made today by injecting domestic animals like horses and sheep with small amounts of snake venom. This tricks the animal's immune system into action, producing antibodies to neutralise the venom. Researchers extract these antibodies from the animal's blood and transport them in cold storage to hospitals, where they are injected into the bodies of snakebite victims.

Difficulties in production, storage, transportation, and administration aside, antivenoms are also expensive and can have some side effects in humans, some of them could be fatal.

That may soon change. In a July 2024 study published in the journal *Science Translational Medicine*, a team of Australian, British, Canadian, and Costa Rican scientists reported that tinzaparin, a drug commonly used to prevent blood clots, significantly reduces damage to cells due to spitting cobra venom. The team also found the drug could reduce skin damage in mice injected with the venom.

According to a press release, the scientists have filed for a patent and may start human clinical trials soon. According to Karthi Saranga, an associate professor at the Centre for Biological Sciences, Indian Institute of Science (IISc), Bangalore, who studies the evolution of snake venoms, "This



One spitting cobra is a fairly harmless. Even more dangerous is the idea of using spitting cobra venom to extract the venom for medical research. Here, Karan Chhabra holds a cobra while performing a snake bite simulation from a possible fangs. (IISc researchers)

discovery could pave the way for a real-world solution for regions that suffer the highest burden of snakebite mortality."

How venom kills cells

The venom of the red and the black-spined spitting cobras – the two species whose venom the researchers used in the study – is "poorly understood," IISc's Krishna Deepak, who studies snake venoms using experimental methods at IISc's (IISc) University, Bangalore, said.

Our understanding of how these venoms kill human cells is sparse, which can be due to the lack of advances in antivenom development.

To address this issue, the researchers first investigated how spitting cobra venom affects human cells. They grew a collection of human cells in the laboratory that had a single gene removed. (They used CRISPR-Cas9, a Nobel-winning genome-editing tool, to kill this collection.) When this gene was knocked out, cells that used the gene to make a protein called a particular protein – a protein researchers suspected was involved in cells being damaged.

The researchers then treated the cells with the venom of either of the two snakes and noticed those that survived. Given that this resistance to spitting cobra venom had been conferred by the absence of a gene, the authors concluded the said gene was involved in buffering the venom's effects on mammalian cells. Further investigation revealed that



The venom attacks cells in the body and damages the nervous system. For most of the cobra's victims – birds, frogs, and other snakes – the only fate is death. A human might survive, but with permanent disability.

many of these genes were involved in the synthesis of a sugar compound called heparan sulphate, which is known to regulate the formation of blood vessels and clots in the human body.

Blood thinner to antidote

The researchers hypothesised that if the venom's toxicity depended on the biological pathway that synthesised heparan sulphate, artificially stopping this pathway could undermine the venom's toxic effects.

One way of doing so is to introduce molecules that closely resemble heparan sulphate. As the body senses its excess of these molecules, it shuts down the pathways responsible for heparan sulphate synthesis. One such molecule is blood thinners.

When the team introduced tinzaparin immediately after subjecting cells to the snake venom, the cells survived. Tinzaparin could protect these cells even when it was introduced an hour after the cells had been exposed to the venom. Further experiments revealed that tinzaparin worked by blocking the

interaction between the venom and its receptor in the cell by binding to venom molecules.

When the researchers injected mice with venom from either of the two cobras along with tinzaparin, they found that skin damage resulting from the venom was much less when the mice were provided with the drug versus when they were deprived of it.

"Hiding right under our noses"

It's despite all the study's use of the "highly efficient CRISPR approach" could potentially resolve the global scientific community's interest in understanding mechanisms underlying snake-venom toxicity.

The venomologist Dr. Saranga added that the study is "one of the few research undertakings where the molecular mechanism of how venom causes damage is taken into account to design a targeted therapy." The therapeutic agent itself that the study proposes – tinzaparin – is inexpensive, widely available, and has been "hiding right under our noses", Dr. Deepak said. He added that he is excited to see how different research groups follow up on the study's findings. In the meantime, he hoped the study would garner enough attention to make a case for increased funding that will allow researchers to employ "advanced methods like CRISPR-Cas9 to address snakebite immunology."

Srinivas Batta is a science journalist and a faculty member at IISc (Bangalore). The author tweets at @sripinbatta.

THE GIST

Researchers found tinzaparin, a drug commonly used to prevent blood clots, significantly reduced damage to human cells caused by spitting cobra venom; the team also found the drug reduced skin damage in mice injected with the venom; the scientists have filed for a patent and may start human clinical trials soon

Researchers grow human cells that had a gene removed. These cells don't produce a particular protein. The cells were treated with venom and those that survived were selected. The authors concluded the said gene regulated the venom's effects.

This gene is involved in the synthesis of heparan sulphate, which regulates blood vessels, introducing molecules that resembled heparan sulphate led the body to shut down pathways responsible for heparan sulphate synthesis. One such molecule is blood thinners.

- Researchers found tinzaparin, a drug commonly used to prevent blood clots, significantly reduced damage to human cells caused by spitting cobra venom; the team also found the drug reduced skin damage in mice injected with the venom; the scientists have filed for a patent and may start human clinical trials soon

Do you know ?

Venomous snakes kill about 1.4 lakh people every year, especially in Africa and Asia. Despite this, treatment for snakebites has remained archaic and is still based on the work of French scientists in the late 1800s

The Hindu–Health (GSII)

'40 million had HIV last year; 1 death every minute'

Associated Press
UNITED NATIONS

Nearly 40 million people were living last year with HIV that causes AIDS, over 9 million weren't getting any treatment, and the result was that every minute someone died of AIDS-related causes, the UN said in a report launched on Monday.

While advances are being made to end the global AIDS pandemic, the report said progress has slowed, funding is shrinking, and new infections are rising in

Nearly 40 million people were living with the HIV virus that causes AIDS last year, over 9 million weren't getting any treatment, and the result was that every minute someone died of AIDS-related causes, the United Nations (UN) said in a new report launched,.

- In 2023, around 630,000 people died from AIDS-related illnesses, a significant decline from the 2.1 million deaths in 2004. But the latest figure is more than double the target for 2025 of fewer than 250,000 deaths

Do you know ?

Human immunodeficiency virus (HIV) is a virus that attacks the body's immune system. Acquired immunodeficiency syndrome (AIDS) occurs at the most advanced stage of infection.

HIV targets the body's white blood cells, weakening the immune system. This makes it easier to get sick with diseases like tuberculosis, infections and some cancers.

HIV is spread from the body fluids of an infected person, including blood, breast milk, semen and vaginal fluids. It is not spread by kisses, hugs or sharing food. It can also spread from a mother to her baby.

HEADLINES OF THE DAY



PIB –History(GSI)

Prime Minister's Office

Prime Minister pays homage to Chandra Shekhar Azad on his birth anniversary

Posted On: 23 JUL 2024 9:59AM by PIB Delhi

The Prime Minister, Shri Narendra Modi has paid tributes to Chandra Shekhar Azad on his birth anniversary.

The Prime Minister posted on X;

“On his birth anniversary, I pay homage to the great Chandra Shekhar Azad. He was a fearless hero, blessed with unwavering courage and commitment to India's freedom.

His ideals and thoughts continue to resonate in the hearts and minds of millions of people, particularly the youth.”

- Chandra Shekhar Tiwari, popularly known as Chandra Shekhar Azad, was born on 23 July 1906
- Azad was dissatisfied when Mahatma Gandhi decided to put an end to the Non-Cooperation Movement in 1922.
- He met Ram Prasad Bismil, who had founded the Hindustan Republican Association (HRA), a revolutionary organisation, through a young revolutionary named Man Nath Gupta.
- Chandra Shekhar Azad then joined the HRA actively and began to raise money for the HRA.
- . In order to take revenge for Lala Lajpat Rai's murder, Chandra Shekhar Azad took part in the Kakori Train Robbery in 1925, the shooting of John P. Saunders in Lahore in 1928, and finally in the attempt to attack the Viceroy of India's train in 1929.
- In order to accomplish the objective of an independent India based on socialist principles, Azad clandestinely restructured the Hindustan Republican Association (HRA) in 1928 alongside Bhagat Singh and other rebels, renaming it as the Hindustan Socialist Republican Association (HSRA) on 8 September.

HEADLINES OF THE DAY

PIB–History–GSI

Prime Minister's Office

Prime Minister pays tributes to Lokmanya Tilak on his birth anniversary

Posted On: 23 JUL 2024 9:57AM by PIB Delhi



- Bal Gangadhar Tilak was born on July 23, 1856, at Ratnagiri, Maharashtra,

Bal Gangadhar Tilak was a great nationalist, social reformer and a mass leader who influenced generations of people with his ideas and ideals. He played a pioneering role in arousing mass political consciousness during the freedom movement. He was one of the strongest advocates of 'Self Rule' (Swaraj). His famous slogan "Swaraj is my birthright, and I shall have it!" inspired millions during India's Freedom Movement. Acknowledged as 'Lokmanya' by the nation, Tilak was also a great scholar and a visionary leader.

- He started a Marathi paper, Kesari.