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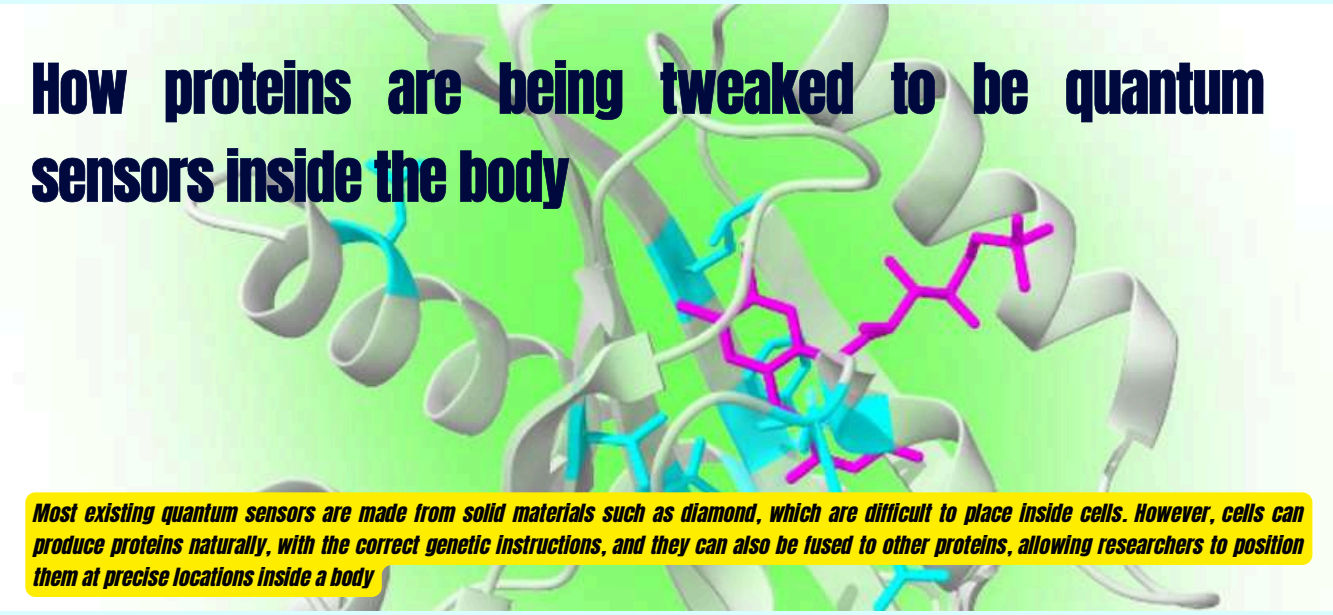
How proteins are being tweaked to be quantum sensors inside the body



Most existing quantum sensors are made from solid materials such as diamond, which are difficult to place inside cells. However, cells can produce proteins naturally, with the correct genetic instructions, and they can also be fused to other proteins, allowing researchers to position them at precise locations inside a body

For decades, fluorescent proteins have been essential tools in biology, lighting up cells so scientists can track molecules, cancer growth, and neural circuits — work honoured with the 2008 Nobel Prize.

Now, two studies in Nature show these proteins can do more than glow. Modified versions can sense magnetic fields and radio waves inside living cells, effectively acting as quantum sensors — devices that rely on electron spin at the smallest scales.

Quantum technology has typically required ultra-cold, highly controlled labs. Living cells, warm and crowded, were thought too noisy for fragile quantum effects. These new results challenge that view and open the door to genetically encoded quantum sensors.

How it works

When a fluorescent protein absorbs light, an electron jumps to a higher energy state before falling back and emitting light. In some proteins, the excited electron briefly forms a "radical pair" with a nearby molecule. The spins of the two electrons become linked and are sensitive to weak magnetic fields, which subtly change the protein's fluorescence.

Although this effect has long been known in chemistry, harnessing it reliably inside living cells had remained out of reach.

Two advances

At the University of Chicago Pritzker School of Molecular Engineering, researchers studied a variant of enhanced yellow fluorescent protein (EYFP). They showed its electron spin could be initialised, controlled with microwaves, and read out optically — the basic operations of a qubit. Remarkably, this worked inside living human kidney cells (at low temperature) and in Escherichia coli at room temperature.

Meanwhile, a team at the University of Oxford engineered plant-derived proteins into magnetically sensitive fluorescent sensors called MagLOV.

These proteins exhibit optically detected magnetic resonance in living bacteria at room temperature, meaning radio waves can directly modulate their glow. Compared with earlier biological candidates, MagLOV proteins are more stable, sensitive, and genetically adaptable.

Together, the studies show proteins can be programmed via DNA to function as quantum sensors.

Why this matters

Most quantum sensors are solid-state devices, such as diamond-based systems, which are highly sensitive but difficult to place inside cells. Protein sensors, by contrast, can be produced naturally by cells and targeted to precise locations.

This could allow scientists to measure subtle magnetic and electronic effects involved in enzyme reactions, free radicals, respiration, and photosynthesis — processes previously almost impossible to probe in living systems.

The MagLOV team also demonstrated improved imaging by using magnetic modulation to separate signal from background fluorescence, similar in principle to MRI but using genetically encoded proteins.

What's next

Protein-based quantum sensors are not yet as sensitive as solid-state devices, and challenges such as short coherence times and photobleaching remain. But fluorescent proteins themselves took decades to mature into routine tools. With continued refinement, genetically encoded quantum sensors could enable nanoscale measurements of magnetic fields, temperature, and chemical changes directly inside living cells — offering entirely new ways of seeing biology.

Source:https://www.thehindu.com/sci-tech/science/engineered-proteins-maglov-qubits-quantum-sensors-inside-cells/article70662833.ece
Dated: February 23, 2026 , https://www.thehindu.com

UV camera snaps treetops glowing as thunderstorm passed overhead

Researchers have captured the first direct evidence of coronae in the wild as they observed a sweetgum tree and loblolly pine with a special camera as a thunderstorm passed overhead

Thunderstorms generate large amounts of electricity that appear as lightning. Scientists have long believed that electrical currents can also flow through trees during storms, causing them to emit a faint ultraviolet glow known as corona discharge. Although predicted nearly a century ago, these glows had never been directly measured in natural environments.

In a study published in Geophysical Research Letters, researchers from Pennsylvania State University reported the first direct observations of these coronae using a mobile instrument called the Corona Observing Telescope System (COTS). The system used a specialized ultraviolet camera that could detect electrical discharges without interference from sunlight because the Earth's ozone layer blocks that wavelength of light.

Mounted on a research vehicle with a periscope, COTS allowed scientists to observe tall trees during storms while measuring electrical activity and environmental conditions. During a thunderstorm in North Carolina, researchers detected corona discharges on a sweetgum tree and a loblolly pine. The ultraviolet glow moved across leaves and branches and sometimes followed branches swaying in the wind.

These discharges lasted from fractions of a second to several seconds. By comparing field observations with laboratory experiments, the team linked the brightness of the glow to the electrical current flowing through the trees. A typical discharge emitted about one hundred billion photons and carried a current of roughly one microampere.

Although small, these currents can add up across entire forests during storms. Observations from additional storms across the eastern United States suggest that such glowing coronae are common during intense thunderstorm activity.

The researchers also found that corona discharges produce hydroxyl radicals (OH), which help break down pollutants in the atmosphere and influence air quality in forests. However, the electrical surges can slightly damage leaves by burning their tips. The study suggests that the combined electrical activity of millions of trees may even influence the electrification of storm clouds above them.

Source:https://www.thehindu.com/sci-tech/energy-and-environment/uv-camera-snaps-treetops-glowing-as-thunderstorm-passed-overhead/article70722113.ece
Dated: March 09, 2026 , https://www.thehindu.com

ENVIRONMENT

238 bird species spotted in Thiruvananthapuram district during Great Backyard Bird Count and Campus Bird Count

A total of 238 bird species were documented across Thiruvananthapuram district during the Great Backyard Bird Count (GBBC), an annual four-day global citizen science initiative held from February 13 to 16.

Endemic species such as Grey-fronted Green-Pigeon, Malabar Imperial-Pigeon, Malabar Grey Hornbill, Malabar Flameback, Malabar Parakeet, Malabar Woodshrike, Malabar Starling, Nilgiri Flowerpecker were listed from various locations, mostly in the forest fringe areas.

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The local effort by approximately 125 volunteer birders, resulted in 1,160 individual observations submitted from across the district, A.K. Sivakumar, Senior Education Officer, WWF-India, and GBBC coordinator of Thiruvananthapuram district, and WWF-India State director Renjan Mathew Varghese said in a statement. The district-wide initiative was bolstered by the Campus Bird Count (CBC), a specialised sub-event coordinated by the WWF-India Kerala State Office. This component engaged 110 birders across 11 educational and institutional campuses.

Malabar Trogon

Migratory birds including Indian Pitta, Indian Golden Oriole, Ashy Drongo, Indian Paradise Flycatcher, Brown Shrike, Orange-headed Thrush, Asian Brown Flycatcher, Brown-breasted Flycatcher, Blue-throated Flycatcher, Blyth's Reed Warbler and Rosy Starling were observed from across the district.

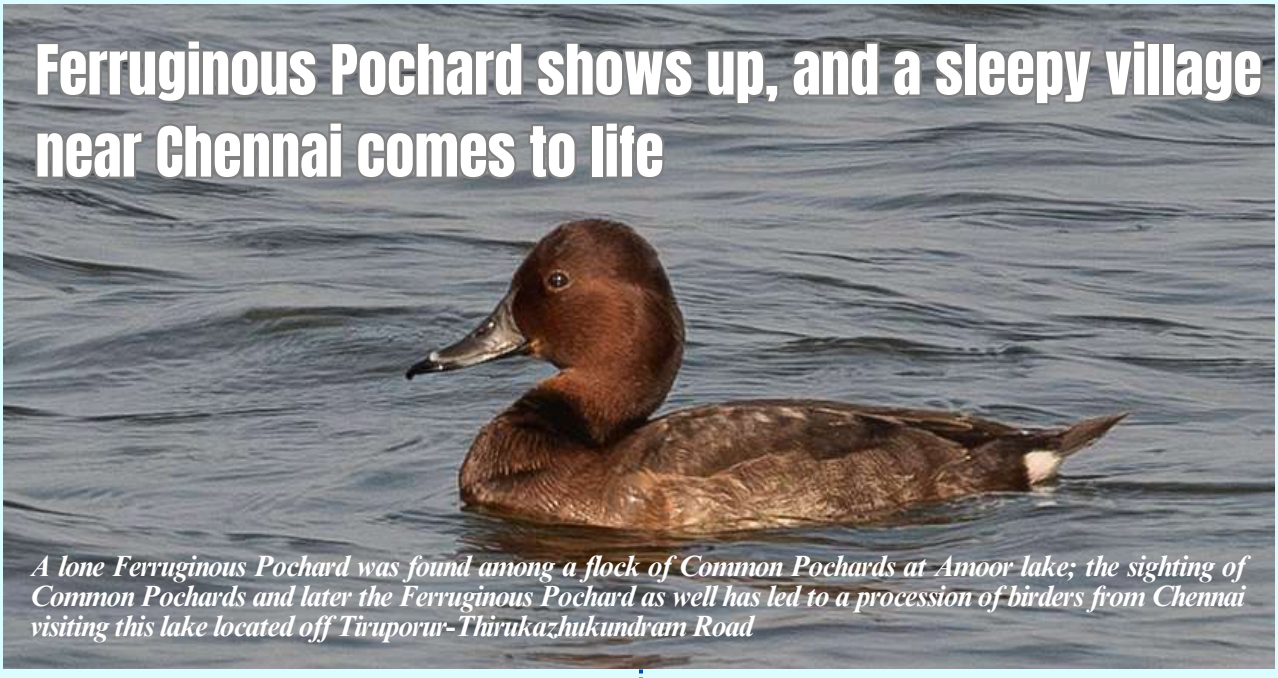
Other species that were sighted included the Fork-tailed Drongo cuckoo, Crested Hawk Eagle, Barn Owl, Black-naped Monarch and the Lesser Yellownape.

CBC is a grassroot collaborative initiative led by representatives of campuses with expert support that encourages observing and documenting the birds found within their campuses and recording them on global citizen science platforms.

Source:https://www.thehindu.com/sci-tech/energy-and-environment/238-bird-species-spotted-in-thiruvananthapuram-district-during-great-backyard-bird-count-and-campus-bird-count/article70657081.ece
Dated: February 21, 2026 , https://www.thehindu.com/

Blue-throated Flycatcher

Ferruginous Pochard shows up, and a sleepy village near Chennai comes to life



A lone Ferruginous Pochard was found among a flock of Common Pochards at Amoor lake; the sighting of Common Pochards and later the Ferruginous Pochard as well has led to a procession of birders from Chennai visiting this lake located off Tiruporur-Thirukazhukundram Road

A sleepy village can be thrust into the limelight when a motorcade of VIPs roll into it. On the trail of these hallowed wheels, might roll wheels of a lesser god. These are the star-struck seeking a glimpse of the glitterati, the shimmering specks of their stardust flying about in the air. Sometimes, just sometimes, a lone VVIP would have slipped in unnoticed among the motorcade, their identity coming to light only when the motorcade screeches to its final halt at the village.

This scenario is playing out at Amoor village off Tiruporur-Thirukazhukundram Road, thanks to a flutter of unusual wings at its lake. Just a couple of kilometres from Sirudavoor lake, Amoor lake became a destination of choice for birders over the last couple of weeks. The VIPs that have been pulling in wheels from Chennai are a sizeable flock of Common Pochards, a rarity in these parts. The lone VVIP that has heightened the level of interest in this waterbody is a Ferruginous Duck (also known as Ferruginous Pochard) that has tagged along with the flock of Common Pochards. A Ferruginous Pochard is more than a rarity anywhere near Chennai, let alone within it.

On February 14, three birders from Chennai, Sundaravel Palanivel, Sivakumar Shanmugasundaram and Saravana Manian spotted a female Ferruginous Pochard when they were training their cameras with those incredibly elongated lenses on the flock of Common Pochards. They did not conclude the odd one out was a Ferruginous Pochard straightaway.

They posted images of the different-looking duck in bird identification forums, a firm word was out that the bird in question was indeed a Ferruginous Pochard. The record was also up on eBird.

Where the Common Pochard (Aythya ferina) and the Ferruginous Pochard (Aythya nyroca) are concerned, the females can get mixed up in a birder's head, the female of one species being mistaken for the female of the other. This confusion crops up often as the Common Pochards and the Ferruginous Pochards are both diving ducks that are hugely affable towards each other, hanging out together even when they have flown to their winter destination. And they are also known to take this friendship sometimes to a different level, in other words, ending up as more-than-just-friends. And that takes you to a whole new category called Ferruginous Pochard (Hybrid), a cross between the Common Pochard and the Ferruginous Pochard.

When the Pochard literates in these bird identification groups were peering at the images of the lone Ferruginous Pochard from Amoor lake, they had to consider the possibility of it being a hybrid. That possibility was ruled out without an iota of lingering doubt. The verdict is: Ferruginous Pochard female. And that makes it the second time that this species has been sighted in the Chennai Metropolitan Area; the earlier sighting had happened at the Pallikaranai marsh in 2023, that record is also up on eBird.

Source:https://www.thehindu.com/news/cities/chennai/ferruginous-pochard-shows-up-and-a-sleepy-village-near-chennai-comes-to-life/article70662897.ece
Dated: February 24, 2026, https://www.thehindu.com/

KASHMIR SCIENTISTS DEVELOP WHEAT VARIETIES TO SOLVE CROP CYCLE ISSUE

The new wheat varieties are suited for mid-altitude regions up to about 1,850 m.

Wheat is sown in October and typically harvested in early summer; in Kashmir, however, where rice is the dominant kharif crop, the timing is critical: farmers need to vacate their fields by May-June to transplant paddy; if wheat stays in the field until June, the rice-wheat rotation breaks down

Scientists at Sher-e-Kashmir University of Agricultural Sciences and Technology, Kashmir (SKUAST-K) have developed two early-maturing wheat varieties to support a successful rice–wheat cropping system in Kashmir and improve food grain production.

Earlier wheat varieties, sourced mainly from sub-tropical states, matured too late for Kashmir's climate, disrupting the rice cycle. To address this, researchers bred Shalimar Wheat-4 (SW-4), which matures by late May, and Shalimar Wheat-3 (SW-3), ready in early June—allowing farmers to prepare fields for paddy transplantation on time.

Developed over nearly a decade through conventional cross-breeding and multi-stage field trials, both varieties combine early maturity with good yield, cold tolerance, and resistance to yellow rust, a common fungal disease in the region. SW-3 is also biofortified with over 40 ppm iron and zinc, contains 12% protein, and can yield up to 38 quintals per hectare.

Suitable for mid-altitude areas up to 1,850 metres, the varieties are now being scaled up for distribution. In October 2025, SW-3 seeds were introduced to farmers in Gurez valley, aiming to strengthen food security, stabilise the rice–wheat cycle, and improve fodder availability in remote regions.

Source:https://www.thehindu.com/sci-tech/energy-and-environment/kashmir-scientists-develop-wheat-varieties-to-solve-crop-cycle-issue/article70643671.ece
Dated: February 20, 2026, https://www.thehindu.com/

Turning carrot waste into edible material again

In an approach that reduces food waste and improves food security, researchers have turned discarded carrot parts into vegan patties made from pink oyster mushroom mycelia, offering a protein-rich alternative

As the global population continues to grow, the need for sustainable and nutritious food sources becomes increasingly important. In this context, the book Biomass Conversion and Sustainable Biorefinery, edited by Lubis et al. (2024), highlights recent advances in the utilisation of waste biomass through bioconversion and biorefinery concepts. It discusses how biomass waste and by-products can be minimised through systematic reuse. The World Health Organization has also emphasised that with rising populations, it is crucial to develop methods for converting wasted biomass into edible and useful products.

In our daily diets, we use a variety of vegetables, eggs, and meat, while discarding the inedible portions as waste. One such commonly used vegetable is the carrot. During its preparation, the skin and the small portions at the top and bottom (the crown and the root tip) are usually discarded. Carrots are also used to prepare sweets and other dishes, during which additional small portions are often wasted as leftovers or because they are considered inedible. An article by Gagan J. Kaur et al., titled "Assessment of Carrot Rejects and Wastes for Food Product and as a Biofuel" and published in the aforementioned book, examines this issue in detail.

In a related context, a paper published in December 2025 in the Journal of Agricultural and Food Chemistry (doi:10.1021/acs.jafc.5c11223) by an international group of researchers led by Martin Gand from the Institute of Food Chemistry at Giessen University, Germany, proposes the use of fungi to utilise carrot waste. Fungi (the plural of fungus) form a diverse kingdom of life that is distinct from plants and animals, mainly because of their unique way of acquiring nutrients.

Unlike plants, fungi do not perform photosynthesis. They also do not have roots in the conventional sense. Instead, they obtain nutrients from external sources. However, unlike animals, fungi do not ingest their food before digesting it. Rather, they release powerful enzymes into their surroundings that break down organic matter.

The resulting nutrients are then absorbed through structures called mycelia—thread-like, root-like networks that spread through the substrate.

This specialised feeding mechanism allows fungi to thrive in a wide range of environments and plays a crucial ecological role. Notably, fungi possess the remarkable ability to break down almost all types of organic material, including food wastes that humans cannot digest.

A common example of fungi is the mushroom, which is widely used in soups, curries, pasta, and pizzas. Mushrooms are entirely vegetarian and are rich in vitamins, minerals, and antioxidants. They grow by utilising available organic material, including food waste. Nutritionists often recommend mushrooms as a healthy component of the human diet. In the December 2025 study, researchers tested more than 100 mushroom species from various countries and found them to be remarkably efficient at decomposing otherwise indigestible waste materials.

The researchers specifically investigated carrot waste to understand how fungi could digest it and produce edible biomass. For example, the team cultivated pink oyster mushrooms on carrot waste and later processed the resulting mycelia into "vegan patties" that could potentially replace soy-based ingredients in certain recipes.

Carrots are widely used in diets around the world—in curries, salads, snacks, and sweets. However, chefs and nutritionists suggest that incorporating more mushrooms into these dishes could enhance their nutritional value. In the future, food security may increasingly depend on innovative approaches such as converting food waste into high-quality proteins and vitamins using fungi.

Source:https://www.thehindu.com/sci-tech/science/turning-carrot-waste-into-edible-material-again/article70702031.ece
Dated: March 06, 2026, https://www.thehindu.com

HEALTH

IISc researchers find out how the brain suppresses itch during stress

IISc said that itch and pain are both unpleasant sensations triggered by harmful or irritating stimuli, but they lead to different behavioural responses

Researchers at the Indian Institute of Science (IISc) have identified a neural circuit in the brain that helps explain the complex link between stress and itch. Their findings, published in Cell Reports, show how specific stress-activated neurons can directly regulate the sensation of itch.

According to IISc, both itch and pain are unpleasant sensations triggered by harmful or irritating stimuli, yet they prompt very different behavioural responses. Pain typically causes withdrawal — such as pulling a hand away from a flame — whereas itch triggers the urge to scratch.

Although scientists have long known that emotional states like stress and anxiety can alter the intensity of such sensations, the underlying neural pathways have not been equally understood. While the connection between stress and pain has been extensively studied, how stress affects itch has remained largely unclear.

In the new study, the IISc team focused on the lateral hypothalamic area (LHA), a brain region known to regulate stress, motivation, and emotional states. Using genetically engineered mouse models, they identified a specific group of neurons in the LHA that become active during acute stress.

The researchers then investigated whether these stress-responsive neurons directly influence itch. "In our pilot experiments, we were surprised to find that acute stress could suppress acute itching," said Jagat Narayan Prajapati, PhD student at the Centre for Neuroscience (CNS), IISc, and first author of the study.

When the team artificially activated these stress-related neurons, scratching behaviour decreased in both short-term chemically induced itch and a psoriasis-like chronic itch model. In contrast, when the neurons were silenced, stress no longer reduced scratching. This demonstrated that the identified neurons are both necessary and sufficient for stress-induced suppression of itch.

"We show that a specific circuit in the lateral hypothalamus can suppress itch during acute stress, revealing how the brain directly links emotional states to sensory perception," said Arnab Barik, Assistant Professor at CNS and corresponding author of the study. "By identifying this neural circuit, we open up possibilities for targeting brain mechanisms to better manage chronic stress-related worsening of itch."

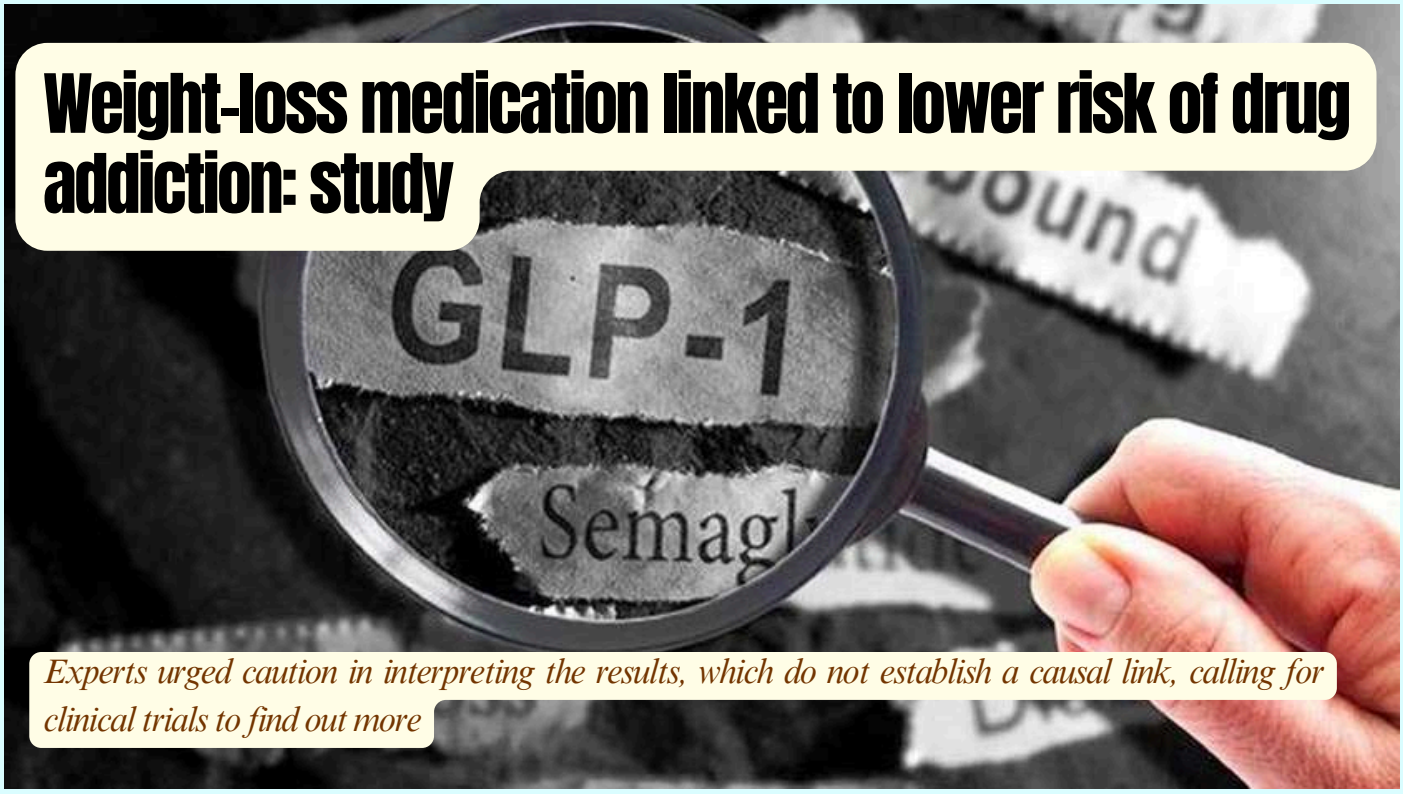
Conducted in collaboration with PhD student Aynal Haque and Giriraj Sahu, Assistant Professor at the Molecular Biophysics Unit, IISc, the study also uncovered important differences between acute and chronic itch.

Chronic itch affects millions worldwide. Current treatments primarily target the skin and immune system, but these findings underscore the central role of the brain in shaping how itch is perceived.

"Most existing therapies for chronic itch are peripheral — they address symptoms rather than root causes," Barik added. "However, the interaction between stress, anxiety, and sensations like itch occurs in the brain. Understanding these neural circuits provides a framework for developing therapies that target the central mechanisms underlying stress-related itch."

Source:https://www.thehindu.com/sci-tech/science/iisc-researchers-find-out-how-the-brain-suppresses-itch-during-stress/article70668126.ece
Dated: February 24, 2026 , https://www.thehindu.com/

Weight-loss medication linked to lower risk of drug addiction: study



Experts urged caution in interpreting the results, which do not establish a causal link, calling for clinical trials to find out more

A new generation of weight-loss medications has been linked to a significantly lower risk of addiction and death from substances such as cocaine and alcohol, according to a large U.S. study published.

The widely used drugs, known as GLP-1 agonists, may even reduce the risk of death from various harmful substances by up to half, according to research published in the BMJ journal.

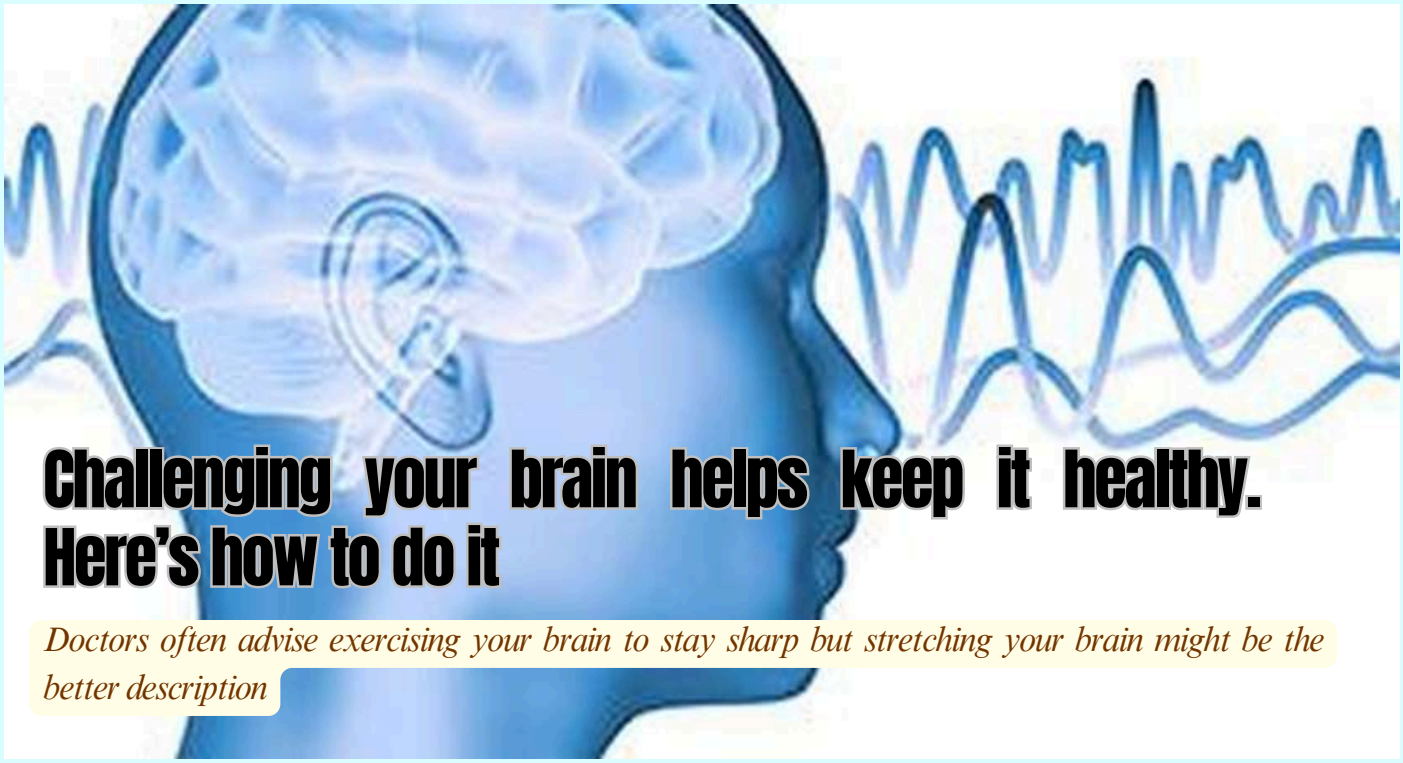
However, experts outside the study have urged caution when interpreting the findings. They emphasized that the results do not prove a direct cause-and-effect relationship and called for controlled clinical trials to confirm the potential benefits.

GLP-1 medications, such as Ozempic, have transformed the treatment of diabetes and obesity in recent years. Interestingly, they have also shown potential benefits for a surprising range of other health issues, including addiction. In the study, researchers in the United States analyzed medical records of more than 600,000 people with type 2 diabetes from the U.S. Department of Veterans Affairs healthcare database. The patients had taken either GLP-1 drugs or an older class of diabetes medication.

The researchers then examined outcomes related to substances such as alcohol, cannabis, cocaine, nicotine, and opioids over a three-year period. Among veterans who already had substance addiction, those taking GLP-1 drugs experienced a 50% lower death rate and a 40% lower rate of overdose.

Emergency department visits were more than 30% lower, while hospital admissions and reports of suicidal thoughts or attempts were reduced by about 25%. For veterans with no prior history of substance addiction, taking GLP-1 drugs was associated with a 14% lower risk of developing addiction.

Source: https://www.thehindu.com/sci-tech/health/weight-loss-medication-linked-to-lower-risk-of-drug-addiction-study/article70711976.ece
Dated: March 06, 2026, https://www.thehindu.com/



Challenging your brain helps keep it healthy. Here's how to do it

Doctors often advise exercising your brain to stay sharp but stretching your brain might be the better description

Experts often advise people to "exercise your brain" to help prevent dementia, but what does that mean? Rather than repeating the same activity, research shows that varied mental challenges help keep the brain healthy as we age.

Activities such as reading, writing, learning a new language, playing chess, solving puzzles, or visiting museums can strengthen different cognitive systems. Neuropsychologist Andrea Zammit explains that these activities "stretch your brain," helping build knowledge and mental skills over time.

A study of nearly 2,000 adults aged 53 to 100 found that lifelong learning and intellectually stimulating activities were linked to a lower risk of Alzheimer's disease and slower cognitive decline. Those with the highest level of lifelong learning developed Alzheimer's about five years later than those with the least.

Researchers also found that people who stayed mentally active had stronger thinking and memory skills even when their brains showed signs of Alzheimer's. Scientists call this cognitive reserve—the brain's ability to remain resilient by forming stronger neural connections.

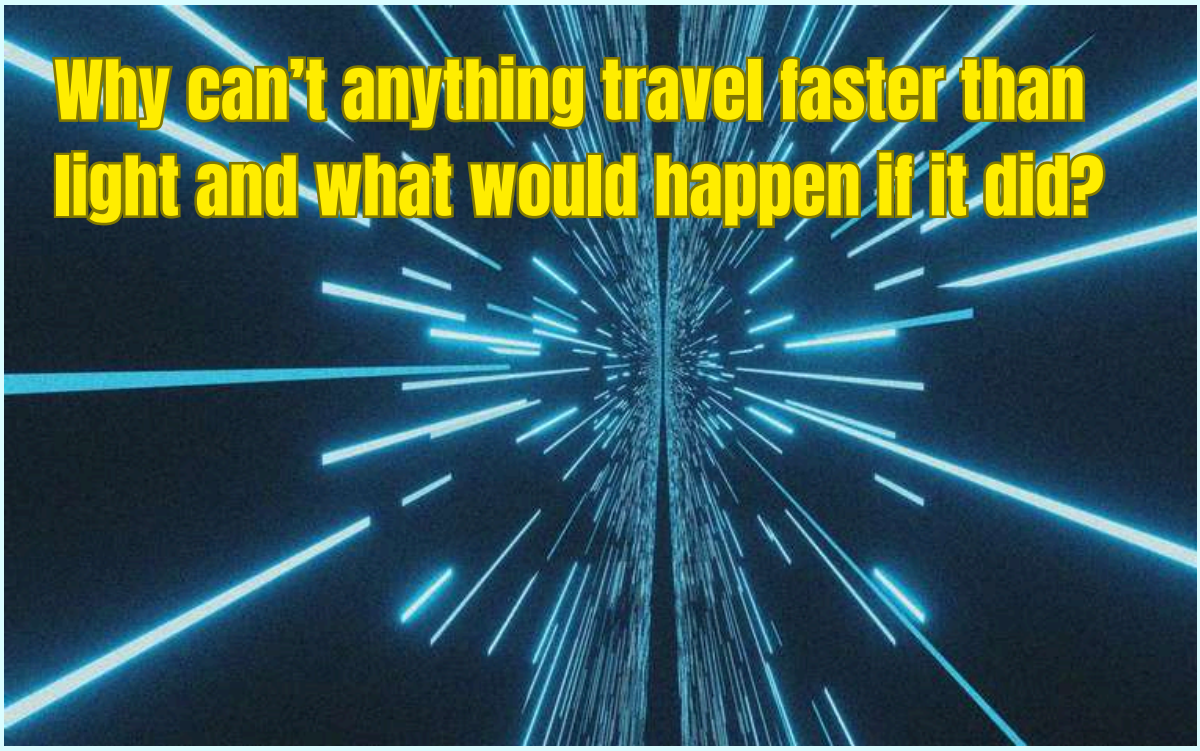
Experts emphasize that it's not about doing just one activity but choosing meaningful hobbies you enjoy and sticking with them. Middle age is an especially important time to adopt such habits.

Physical health also plays a key role in brain health. Regular exercise, good sleep, controlling blood pressure and diabetes, eating healthy foods, and even vaccination against shingles may help reduce dementia risk.

Although there is no guaranteed way to prevent dementia, healthy lifestyle choices and continuous learning may help slow cognitive decline and keep the brain sharper for longer.

Source: https://www.thehindu.com/sci-tech/health/challenging-your-brain-helps-keep-it-healthy-heres-how-to-do-it/article70727281.ece
Dated: March 10, 2026, https://www.thehindu.com/

OTHERS



Albert Einstein's equation $E = mc_2$ says energy and mass are linked. If you push an object to go faster, you add energy to it. At everyday speeds, this just increases the object's velocity. But as you approach the speed of light, the extra energy starts adding up to the object's effective mass instead.

As the object becomes heavier, it also becomes harder to accelerate. To reach the actual speed of light, an object with mass would become infinitely heavy and require an infinite amount of energy to move. Since the universe contains a finite amount of energy, reaching light speed is impossible for anything made of matter.
Because space and time are woven together, travelling faster than light in vacuum would likely mean travelling backwards in time. You might see a glass shatter before it hits the floor or receive an answer to a question you haven't asked yet. Physically, the laws of nature would break, creating paradoxes the universe currently prevents.

It's possible to travel faster than light in a particular medium, e.g. electrons can outpace light in water. The limit is light's speed in vacuum.

Source:https://www.thehindu.com/sci-tech/science/why-cant-anything-travel-faster-than-light-and-what-would-happen-if-it-did/article70726250.ece
Dated: March 11, 2026 , https://www.thehindu.com/

New genus and species of blind miniature fish discovered in Assam

Newly-discovered species of fish, living in a hand-dug well in a village in Assam, has been named Gitchak nakana. Complete absence of a skull roof is its most bizarre feature. In a departure from almost all other bony fish, the top of its brain is covered only by skin rather than bone

An international team of researchers from Germany, India, and Switzerland has discovered a remarkably unusual new species of fish living in a hand-dug well in a village in Assam. The discovery of Gitchak nakana marks a significant scientific milestone, as it is the first documented aquifer-dwelling fish from Northeast India and the Eastern Himalayan region.

The findings were recently published in Scientific Reports, a journal in the Nature portfolio. The research team included Ralf Britz and Amanda Pinion from the Senckenberg Museum in Dresden, Germany; Rajeev Raghavan from the Kerala University of Fisheries and Ocean Studies (KUFOS), Kochi; Wimarithy Marak and Kangjam Velentina from Assam Don Bosco University, Guwahati; Yumnam Lokeshwor from Dhanamanjuri University, Manipur; and Lukas Rüber from the Natural History Museum in Bern, Switzerland.

No Skin Pigment

The new species has been named Gitchak nakana, with its name derived from the Garo language to describe its distinctive appearance. “Gitchak” means red, while “na-tok” and “kana” refer to the absence of eyes. This tiny fish grows to no more than two centimeters in length and belongs to a newly identified genus within the loach family. However, it differs from all other members of the family Cobitidae in several unique ways.

Living deep underground in water-bearing rock layers, the fish has adapted completely to its dark environment. It is entirely blind, with no visible eyes, and its body is translucent, lacking any skin pigment. As a result, its blood is visible through its body, giving the fish a striking bright-red appearance.

One of the most unusual biological features of this species is the complete absence of a skull roof. Unlike almost all other bony fish, the top of its brain is covered only by skin rather than bone. This rare anatomical structure, combined with its extremely small size, makes the species an evolutionary mystery.

Scientists believe this discovery highlights the existence of a highly specialized and largely hidden ecosystem within the groundwater systems of Northeast India—an environment previously thought to host such species mainly in southern parts of the country.

Conservation Concerns

The fish has so far been found only in a single well and in very small numbers. For this reason, researchers have decided to keep the exact location confidential. They fear that revealing the site could lead to illegal collection for the international aquarium trade, which has already threatened other rare cavefish in neighbouring Meghalaya.

“Surprisingly, the cave mahseer from Meghalaya, Neolissochilus pnar, has recently appeared in the international aquarium pet trade, even though a better understanding of its population size, wider distribution, and potential threats to its habitat is still lacking. Such information is essential for planning conservation priorities and actions for subterranean fish with such restricted distributions,” said Dr. Raghavan, who also serves as the South Asia Chair of the IUCN SSC Freshwater Fish Specialist Group.

Experts believe that sustained, long-term research on subterranean aquatic ecosystems will likely lead to the discovery of many more species that are currently unknown to science.

“The subterranean fish research group led by Dr. Raghavan at KUFOS has been credited with some of the most remarkable discoveries of groundwater-dwelling fishes in the Indian subcontinent, including Neolissochilus pnar, the world’s largest cavefish. The group has also described four subterranean fish species and one blind subterranean shrimp from different parts of Kerala,” said A. Biju Kumar, Vice-Chancellor of KUFOS.

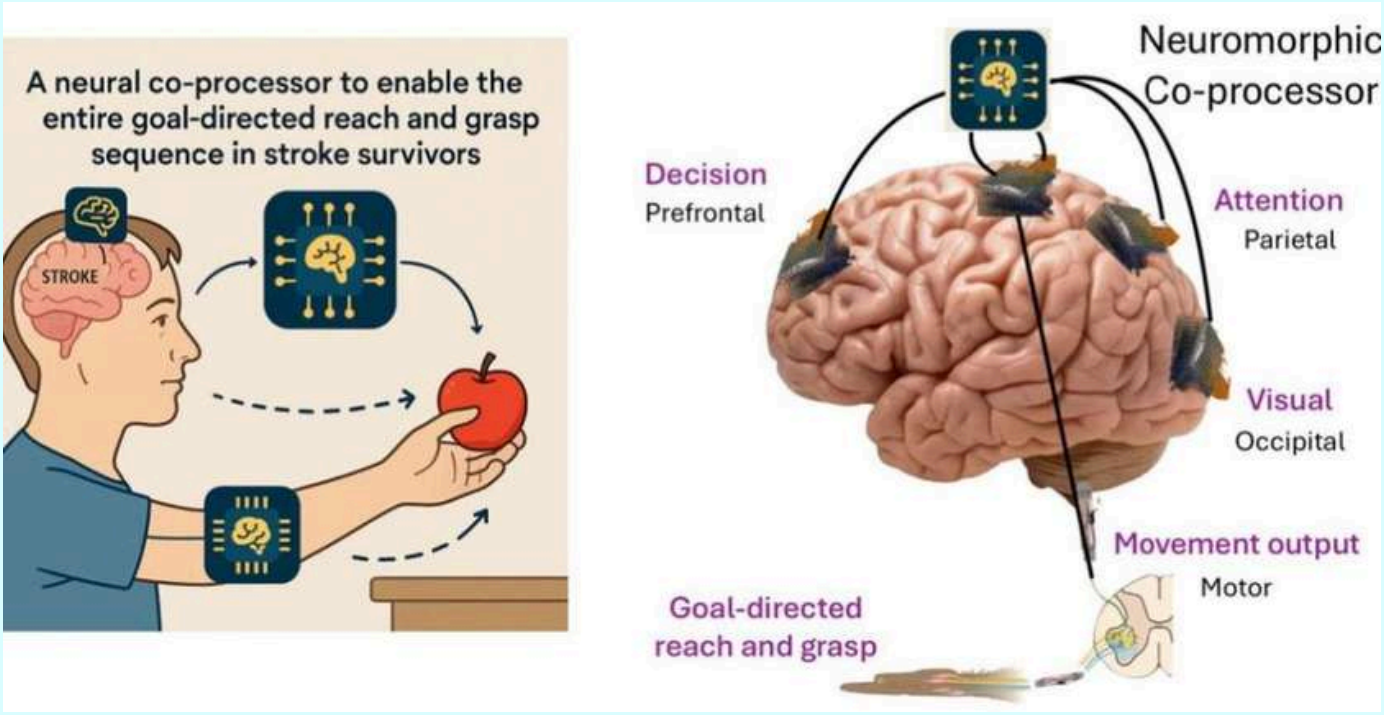
He added that subterranean fishes are among the most enigmatic and evolutionarily distinct groups of fish worldwide. As a national hub for groundwater and subterranean fish research, KUFOS has made major contributions to understanding these rare and poorly known species through innovative citizen-science initiatives and extensive international collaborations.

Source:https://www.thehindu.com/sci-tech/energy-and-environment/new-genus-and-species-of-blind-miniature-fish-discovered-in-assam/article70699781.ece
Dated: March 03, 2026, https://www.thehindu.com/

OTHERS

IISC AND PRATIKSHA TRUST LAUNCH MOONSHOT PROJECT ON BRAIN CO-PROCESSORS

The primary goal of the moonshot project is to develop both implantable and non-invasive brain co-processors that can decode brain activity from neural recordings, process it with an AI algorithm, and re-encode signals back into the brain via neural stimulation or neurofeedback



The Indian Institute of Science (IISc) launched a moonshot project on March 4 to develop brain co-processors that combine neuromorphic hardware and AI to enhance or restore brain function. The initiative is funded by the Pratiksha Trust, founded by Senapathy "Kris" Gopalakrishnan and Sudha Gopalakrishnan.
The project evolved from a pilot under IISc's Brain, Computation and Data Science initiative, involving over 20 faculty members. Its goal is to create implantable and non-invasive brain co-processors that decode neural signals, process them using AI, and send signals back to the brain through stimulation or neurofeedback.
These devices aim to help stroke survivors regain functions such as reaching and grasping by restoring sensorimotor coordination. The technology will use an AI-powered closed-loop system connected to different brain regions.

The project also aims to develop indigenous implants, hardware, and AI systems suitable for low-resource clinical settings in India. It will build India-specific neural data databases and create open-source AI tools and datasets.

In the first phase, researchers will develop and test a non-invasive neural co-processor for stroke rehabilitation. The second phase will focus on a minimally invasive implant to restore sensorimotor coordination in patients with chronic stroke-related deficits.

IISc researchers will collaborate with medical professionals and global institutions to validate and deploy these devices according to international standards. By integrating neural recording, AI-based analysis, and personalised rehabilitation, the project aims to create a first-of-its-kind brain co-processor for stroke recovery.

Source:https://www.thehindu.com/sci-tech/science/iisc-and-pratiksha-trust-launch-moonshot-project-on-brain-co-processors/article70703666.ece
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