Scientists Say Alzheimer's May Not Be Permanent After All, This New Study Is Giving Families Real Hope

Alzheimer's disease has long been seen as a one-way road. Once memory starts slipping, the decline feels inevitable. Families are told to prepare for gradual loss, not recovery. For more than a century, medicine has focused on slowing Alzheimer's down, not turning it around.

That's why a new study is turning heads. Published in Cell Reports Medicine, the research suggests Alzheimer's may not be permanent after all. In carefully designed experiments, scientists were able to restore memory and brain function in mice that already had advanced Alzheimer's-like damage. It's an early finding, but it's a powerful one.

Right now, more than 55 million people worldwide are living with dementia, most of them with Alzheimer's. Every year, around 10 million more are diagnosed. By 2050, that number is expected to nearly double, hitting lower-income countries the hardest. Until now, treatments have only aimed to slow the damage. This study dares to ask a different question: what if the brain can recover?

The tiny molecule that made a big difference

The breakthrough centers on a molecule called NAD+, which acts like fuel for brain cells. Healthy brains rely on it to stay energised and function properly. In Alzheimer's, NAD+ levels drop sharply, and brain cells begin to struggle.

The researchers discovered that this energy loss may be driving the disease more than previously thought.

Using a drug called P7C3-A20, which helps maintain NAD+ levels, scientists treated older mice that already showed memory loss and brain damage. The results were surprising. The mice didn't just stop getting worse; their memory improved, and their brain chemistry returned to normal levels.

In simple terms, once the brain's energy supply was restored, it seemed capable of repairing itself.

What the researchers actually tested

To make sure this wasn't a fluke, the team worked with two different mouse models of Alzheimer's. One group developed amyloid plaques, while the other showed tau tangles, the same hallmarks seen in human Alzheimer's patients.

Here's what stood out:

1. Mice given treatment early were largely protected from developing Alzheimer's symptoms
2. Even when treatment began later, after damage had set in, memory and brain function improved
3. The mice performed better in learning and behavior tests, showing real recovery, not just slowed decline

This shifts the focus of Alzheimer's research toward how brain cells produce and use energy, rather than only targeting plaques and tangles.

Alzheimer's research is entering a hopeful phase

This study isn't happening in isolation. Around the world, researchers are exploring new ways to repair the brain in Alzheimer's. Some teams are using nanotechnology to fix the blood-brain barrier, helping remove toxic proteins. Others are testing lithium-based compounds that appear to improve memory in animal models.

Together, these approaches suggest that Alzheimer's may be more flexible than once believed.

Why this matters so deeply

Alzheimer's doesn't just affect memory, it erodes independence, identity, and relationships. For patients and families, the idea that the disease could be reversed has always felt out of reach. Seeing lost brain function return, even in animals, brings a level of hope the field hasn't seen in decades.

What comes next?

It's important to be clear: this research is still in the lab. These results haven't yet been tested in humans, and that process will take time. But for the first time, scientists aren't just talking about slowing Alzheimer's, they're talking about restoring what was lost.

HEALTH

Woman's eyesight saved by cutting-edge test after mystery infection

A 29-year-old doctor from Bristol has had her eyesight saved after a "game-changing" test identified a mystery infection that had plagued her health for five years.

Ellie Irwin suffered persistent inflammation in her right eye that didn't go away, resulting in blurred vision. No treatment helped and at one point she even considered having her eye removed.

It was only after Ellie was offered a "last resort" analysis called metagenomics, that she was diagnosed with a rare bacterial infection which was cured with antibiotics.

"It's been transformative," Ellie told the BBC. "I feel so fortunate."

Professor Carlos Pavesio, consultant ophthalmologist at Moorfields Eye Hospital in London, says Ellie's case is a "breakthrough in the diagnosis of infectious diseases".

"There are many patients we treat with chronic infections for years, but despite multiple tests we cannot identify the bug responsible," he says.

In 2019, while still at medical school, Ellie began suffering from inflammation in her right eye. All tests for infection came back negative and it was assumed she had an autoimmune condition.

Ellie was prescribed steroid eye drops and immunosuppressants, some of which needed to be given by intravenous infusion.

"It was completely dominating my life," Ellie says. "I needed eye drops every single hour and it was difficult to balance that alongside starting work as a junior doctor. My vision was really variable, and I would have some bad days.

"I was on so much medication and going to so many appointments, yet I didn't feel I was getting any better."

The treatment and inflammation led to Ellie developing a cataract that had to be surgically removed, just after she graduated from medical school.

Ellie says she eventually reached "breaking point", and even began considering having her affected eye removed.

"Whilst losing sight in one eye is terrifying," she says, "my biggest fear was that it might spread to my left eye."

It was one of Ellie's doctors at Southmead Hospital in Bristol who suggested metagenomics - a last resort test not generally available to patients and only used where standard diagnostic tools have failed to identify or rule out infection.

Metagenomics technology uses cutting-edge genomic sequencing, which can identify all bacteria, fungi or parasites present in a sample by comparing them against a database of millions of pathogens.

A team at Moorfields Eye Hospital arranged for a sample of fluid to be taken from inside Ellie's eye and sent to the metagenomics labs at Great Ormond Street Hospital (GOSH) - the only lab in the UK officially recognised to carry out these diagnostic tests for patients, and one of only a few in the world.

Currently, the standard method for detecting bacterial infections is by trying to grow a sample of it in a Petri dish.

For viruses, the most common diagnostic tool is a PCR test. These will be familiar to many from the pandemic, when millions sent off swabs in the post to confirm whether they had Covid.

However, Dr Julianne Brown, principal clinical scientist at the GOSH metagenomics service, says PCR has some drawbacks.

"The trouble with PCR is that you have to think of the viruses that might be causing an infection and do a separate test for each and every one," she says. "So if you've got an infection with something that's unexpected, rare or not previously known, you won't find it."

Dr Brown says metagenomics is "an enormous step up - it's a complete game-changer".

In Ellie's case, metagenomics diagnosed a rare strain of the bacterial infection leptospirosis found in South America.

It is now presumed Ellie picked up the bug swimming in the Amazon river in 2018, while on a trip to Ecuador and Colombia.

Ellie says it was an emotional moment when she was given the results of the test.

"I broke down - I just had to cry. I never imagined that it would come back positive and be for something that was treatable," she says.

"I was given three weeks of antibiotics and within days my vision was clearer and the inflammation subsided."

A single metagenomics test costs around £1,300, which is far more than standard diagnostics. However, as the technology is developed that price is likely to fall rapidly.

Virologist Professor Judy Breuer, who has been developing metagenomics at GOSH and University College London (UCL) for more than a decade, says her team currently receives three or four samples a week from hospitals around the UK for metagenomic testing in addition to those it carries out on its own patients.

These are often samples from parts of the body that are normally sterile sites, where bacteria are not usually found such as the brain, central nervous system, liver and eye.

"In the future, we think metagenomics will become a first line test and be able to diagnose infection in any sample, probably within the same day," she says.

It's also likely to become faster, cheaper and easier to do, explains Dr Brown, meaning it will become available to more patients rather than just a small number who are severely unwell.

Resolving her eye problems has allowed Ellie to concentrate on her training as a GP and arrange her wedding.

Ellie was married in Newcastle on 29 March, the same day the city celebrated Newcastle United's win in the Carabao Cup.

She says: "We got a shout-out from Ant and Dec and went up on a scissor lift above the Newcastle United fans, which was incredible."

Prof Breuer says she is thrilled with how the treatment is changing lives.

Here's how Ayurveda tourism is redefining wellness travel

From being merely an alternative remedy, Ayurveda is now offering transformative, personalised healing boosting tourism as well as redefining wellness travel.

Ayurveda, which is India's 5,000-year-old system of healing rooted in ancient wisdom and sustainable living, is increasingly boosting tourism by offering an experience rich in healing, culture, sustainability, and self-discovery.

"This century, the world will witness the rise of Ayurveda not only as a system of healthcare but also as a system of prevention and wellness," Lakshman Shrivastava, Director, of Maharishi Ayurveda Hospital, was quoted as saying in a media report.

"Ayurveda was the only medical science to originally believe in prevention as well as cure."

Shrivastava indicated a rise in wellness travel that seeks "authentic, natural healing" which Ayurveda offers through well-being through diet, detoxification, meditation, and personalised therapies.

Unlike, the typical spa getaway Ayurveda tourism promises long-term transformation for conditions ranging from autoimmune diseases to anxiety, and digestive disorders.

"Ayurveda stands apart by nurturing long-term health across the physical, mental, and spiritual dimensions," Shrivastava said. Further, he said that modern Ayurvedic centers are adapting to the needs of both patients, offering treatment as well as enriching "the guest experience".

The modern Ayurvedic are offering a softer, more accessible version of traditional Ayurvedic therapies, "tailored to suit the modern traveller."

Ayurveda tourism model not only preserves ecological balance but also protects India's cultural heritage.

"Our Vedic lifestyle -- from food to daily routines -- is deeply influenced by Ayurveda. So when guests experience Ayurveda, they're also experiencing India's soul," Shrivastava said

It also offers personalisation -- from a visit to an Ayurvedic doctor to a customised treatment, dietary plan, and daily routines. These are accompanied by workshops, yoga sessions, and guided meditations sessions

"Ayurveda is deeply experiential," notes Shrivastava. "It's a journey that changes how one lives, eats, breathes, and thinks."

Drink black tea, eat berries, apples to age healthy

Want to age healthy? Higher intakes of black tea, berries, citrus fruits, and apples may help, according to global research.

Researchers from Edith Cowan University (Australia), Queen's University Belfast (UK), and Harvard T.H. Chan School of Public Health (US), found that foods rich in flavonoids could help to lower the risk of key components of unhealthy ageing, including frailty, impaired physical function and poor mental health.

"The goal of medical research is not just to help people live longer but to ensure they stay healthy for as long as possible," said Dr Nicola Bondonno, Adjunct Lecturer at Edith Cowan.

Previous studies have showed people who have a higher flavonoid intake tend to live longer, and they are also less likely to get any of the major chronic diseases such as dementia, diabetes, or heart disease.

"Our research shows that people who consume more flavonoids tend to age better," Bondonno said. The study, which analysed data from 62,743 women and 23,687 men over 24 years, found that women with the highest flavonoid intakes had a 15 per cent lower risk of frailty, a 12 per cent lower risk of impaired physical function, and a 12 per cent lower risk of poor mental health compared to those with the lowest intakes.

While fewer associations were observed in men, higher flavonoid intake was still linked to a lower risk of poor mental health.

"Flavonoids are well known for reducing oxidative stress and inflammation, supporting blood vessel health, and even helping to maintain skeletal muscle mass -- all of which are important for preventing frailty and maintaining physical function and mental health as we age," said Professor Aedin Cassidy from Queens.

Further, the study showed that participants who increased their intake of flavonoid-rich food by three servings a day had a 6 per cent to 11 per cent lower risk across all three ageing outcomes in females, and a 15 per cent lower risk of poor mental health in males.

"Overall, these findings underscore the potential for simple dietary modifications to impact the overall quality of life and contribute to the optimisation of healthy ageing," added Professor Eric Rimm from Harvard.

Why Some People Are More Prone To Anxiety

LONDON: People suffering from anxiety perceive the world in a fundamentally different way than others, a finding that may help explain why certain people are more prone to anxiety.

The research shows that people diagnosed with anxiety are less able to distinguish between a neutral, "safe" stimulus (in this case, the sound of a tone) and one that had earlier been associated with gaining or losing money.

In other words, when it comes to emotionally-charged experiences, they show a behavioural phenomenon known as "over-generalisation", said the team from the Weizmann Institute of Science in Israel.

"We show that in patients with anxiety, emotional experience induces plasticity in brain circuits that lasts after the experience is over," said lead researcher professor Rony Paz.

The result is an inability to discriminate between the experience of the original stimulus and that of a new, similar stimulus.

"Therefore, anxiety patients respond emotionally to the new stimuli as well and exhibit anxiety symptoms even in apparently irrelevant situations. They cannot control this response: it is a perceptual inability to discriminate," Paz added in a paper reported in the Cell Press journal Current Biology.

To reach this conclusion, Paz and colleagues trained anxiety patients to associate three distinct tones with one of three outcomes: money loss, money gain or no consequence.

In the next phase, the participants were presented with one of several new tones and were asked whether the tone was one they had heard before while in training.

Functional magnetic resonance images (fMRIs) of the brains of people with anxiety and those of healthy controls revealed differences in the activity of several brain regions.

These differences were mainly found in the amygdala, a region related to fear and anxiety, as well as in the primary sensory regions of the brain.

The results strengthen the idea that emotional experiences induce long-term changes in sensory representations in anxiety patients' brains.

Deepfakes leveled up in 2025: Here's what's next

Over the course of 2025, deepfakes improved dramatically. AI-generated faces, voices, and full-body performances that mimic real people advanced far beyond what even many experts expected just a few years ago. At the same time, they were increasingly used to deceive.

In many everyday settings — particularly low-resolution video calls and content circulating on social media — realism is now high enough to reliably fool non-expert viewers. In practical terms, synthetic media have become indistinguishable from authentic recordings for ordinary users and, in some cases, even for institutions.

The surge is not limited to quality. The volume of deepfakes has grown explosively. Cybersecurity firm DeepStrike estimates an increase from roughly 500,000 online deepfakes in 2023 to about 8 million in 2025, with annual growth nearing 900%.

Several technical shifts explain this escalation. First, video realism has taken a major leap thanks to models designed to maintain temporal consistency. These systems generate coherent motion, stable identities and content that makes sense from one frame to the next. By separating information about identity from motion, the same movements can be mapped onto different people, or a single identity can perform a wide range of actions. As a result, faces no longer suffer from the flicker, warping or distortions around the eyes and jawline that once served as reliable forensic clues.

Second, voice cloning has crossed what might be called the "indistinguishable threshold." Just a few seconds of audio now suffice to produce a convincing clone, complete with natural intonation, emotion, pauses and even breathing sounds. This capability is already fueling large-scale fraud.

Third, consumer tools have reduced the technical barrier almost to zero. Advances such as OpenAI's Sora 2, Google's Veo 3 and a wave of startups mean that anyone can describe an idea, have a large language model draft a script, and generate polished audiovisual content in minutes. AI agents can automate the entire process. The ability to create coherent, storyline-driven deepfakes at scale has effectively been democratised.

This combination of volume and realism creates serious challenges for detection, especially in a media environment where content spreads faster than it can be verified. Real-world harm is already evident, from misinformation and targeted harassment to financial scams that take hold before people realise what is happening.

Looking ahead, the trajectory is clear. Deepfakes are moving toward real-time synthesis, generating live or near-live videos that closely mirror human nuance and evade existing detection systems. The frontier is shifting from static realism to temporal and behavioral coherence.

Identity modeling is converging into unified systems that capture not just how a person looks, but how they move, sound and behave over time. Entire video-call participants may soon be synthesized in real time, alongside interactive AI-driven actors and scammers deploying responsive avatars.

As the perceptual gap between synthetic and authentic media continues to narrow, defense will increasingly shift away from human judgement. Simply looking harder at pixels will no longer be enough.