

Our lives really DO flash before us: Scientists record the brain activity of an 87-year-old man at the moment he died, revealing a rapid 'memory retrieval' process

- Researchers recorded brain activity of 87-year-old as he died from a heart attack
- Brain waves indicated rapid memory retrieval process occurred at time of death
- Findings suggest our life does flash before our eyes through 'memory retrieval'

By JONATHAN CHADWICK FOR MAILONLINE

PUBLISHED: 18:14 AEDT, 23 February 2022 | UPDATED: 01:27 AEDT, 24 February 2022

[f](#) Share
 [Twitter](#)
[Pinterest](#)
[Facebook](#)
[WhatsApp](#)
[Email](#)
[Share](#)
4.5k
shares
546
View comments

What happens in the brain as we die has been a source of mystery for centuries, but a new study suggests our lives really do flash before our eyes in our final moments.

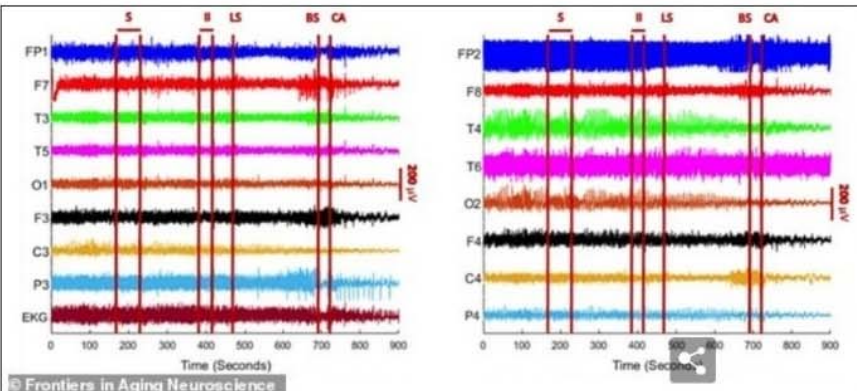
Neuroscientists inadvertently recorded a dying brain while they were using electroencephalography (EEG) to detect and treat seizures in an 87-year-old man, and he suffered a cardiac arrest.

It was the first time ever that scientists had recorded the activity of a dying human brain, according to the team.

Rhythmic brain wave patterns were observed to be similar to those occurring during memory retrieval, as well as dreaming and meditation.

This supports a theory known as 'life recall' - that we relive our entire life in the space of seconds like a flash of lightning just prior to death.

In fact, the brain may remain active and coordinated during and after the transition to death, and may even be programmed to 'orchestrate the whole ordeal', according to the researchers.



The team recorded a dying brain while they were using electroencephalography (EEG) to detect and treat seizures in an 87-year-old man and the patient suffered a heart attack. Pictured is EEG output over a 900 second period encompassing a seizure (S), suppression of left cerebral hemisphere activity (LS), suppression of bilateral cerebral hemisphere activity (BS), and cardiac arrest (CA). Point of death is CA, coinciding with changes in EEG patterns. FP1, F7, T3 and so on refer to different electrodes of the EEG which are attached or contact different regions on the scalp of the patient. Left indicates left brain hemisphere, right indicates right brain hemisphere

Site Web Enter your search Search

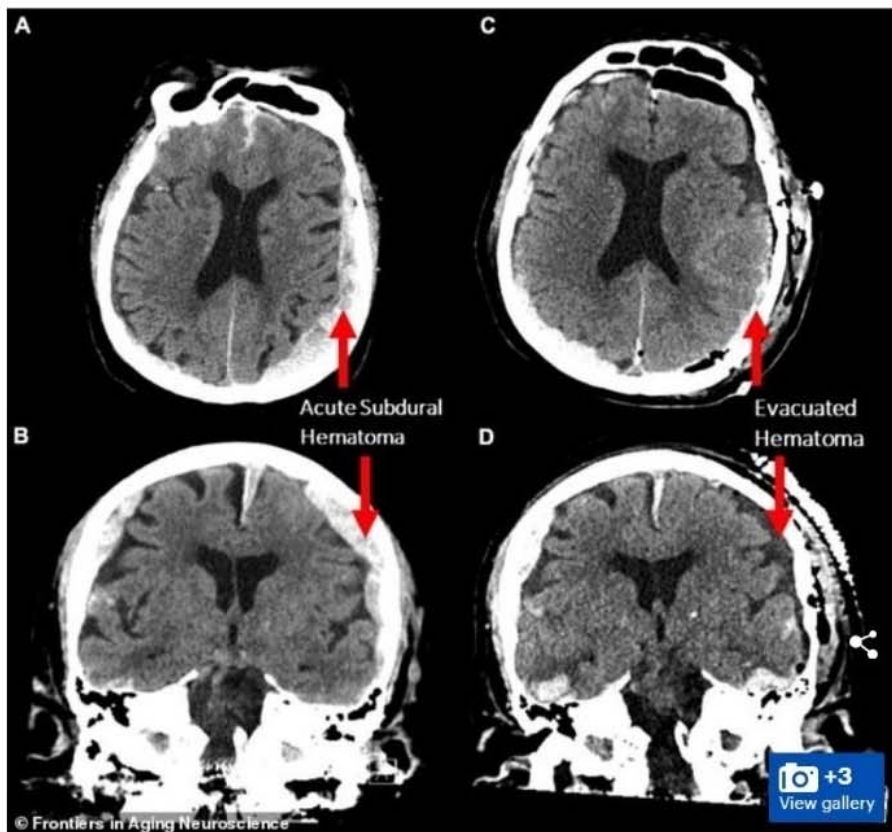
[f](#) Follow Daily Mail
 [YouTube](#) Subscribe Daily Mail
 [Instagram](#) Follow @DailyMail
 [Pinterest](#) Follow Daily Mail
 [Twitter](#) Follow @dailymailtech
 [Snapchat](#) Follow Daily Mail
 Download our iPhone app
 Download our Android app

Today's headlines Most Read

- The world's biggest airplane soars again: with a 385ft wingspan takes...**
 - What IS a 'vacuum bomb'? Savage superweapon Ukraine claims Russia has detonated uses oxygen from the...
 - Simple cheek swab of both mothers and fathers-to-be could tell doctors whether their baby will be born...
 - The red light that could stop short sight getting worse: Researchers find that looking into special device...
 - NatWest and RBS banking apps are finally back up following a two hour outage that left hundreds of...**
 - Is social media making teenagers' tics worse? Young people report their condition was affected by increased...
 - Cosmic shock! Astronomers create detailed images of the largest shockwave in the universe, finding it is 6.5...**
 - NASA orbiter will hunt for the impact crater left behind by a rogue rocket that may be part of a 2014...
 - The King and Queen of the dinosaurs? T.Rex might actually have been THREE species - including the...**
 - European Space Agency fully implements sanctions imposed on Russia - and says its Rosalind Franklin ExoMars...
 - NASA's Curiosity rover spots a coral-like mineral formation on the surface of the Red Planet that was likely...**
 - Inside Putin's nuclear arsenal: Russia's military is armed with some of the most brutal weapons to exist...
 - Pregnant elephant seals have a 'built-in GPS' that tells them exactly when to make the 6,200-mile-journey...**
 - UK's first space flight will blast off from the Shetland Islands by the end of 2022 after £43 MILLION...
 - Window of opportunity to save the planet is 'rapidly closing': UN issues gravest report yet on impacts of...**
- [MORE HEADLINES](#)

DON'T MISS

- Sean Penn has walked 'miles' to the Polish border after abandoning his car and witnesses women and children fleeing Ukraine as he films war documentary
- Ferne McCann is seen with her beau Lorri Haines for the first time since he was filmed sniffing from bags of suspicious powder



© Frontiers in Aging Neuroscience
 Scientists have recorded the brain activity of a 87-year-old male epilepsy patient while he was dying from a heart attack. Pictured are CT scans of the patient, whose identity was not disclosed. A and B show effects of subdural hematoma - a serious condition where blood collects between the skull and the surface of the brain - with a larger mass effect on the left side. C and D show the same scan sequences after decompressive craniotomy - a surgery to treat the condition

The patient, who is unnamed, was admitted to the Vancouver General Hospital in British Columbia, where neurosurgeon Dr Ajmal Zemmar was working at the time.

The researchers took EEG recordings from his brain before he eventually underwent a fatal cardiac arrest.

EEG is a method of recording electrical activity of the brain that involves electrodes placed along the scalp.

'We measured 900 seconds of brain activity around the time of death and set a specific focus to investigate what happened in the 30 seconds before and after the heart stopped beating,' said Dr Zemmar, now based at the University of Louisville, Kentucky.

'Just before and after the heart stopped working, we saw changes in a specific band of neural oscillations, so-called gamma oscillations, but also in others such as delta, theta, alpha and beta oscillations.'

Brain oscillations (more commonly known as 'brain waves') are patterns of rhythmic brain activity normally present in living human brains.

The different types of oscillations, including gamma, are involved in high-cognitive functions, such as concentrating, dreaming, meditation, memory retrieval, information processing, and conscious perception, just like those associated with memory flashbacks.

THE LIFE RECALL THEORY

Imagine reliving your entire life in the space of seconds.

Like a flash of lightning, you are outside of your body, watching memorable moments you lived through.

This process, known as 'life recall', can be similar to what it's like to have a near-death experience.

What happens inside your brain during these experiences and after death are questions that have puzzled neuroscientists for centuries.



▶ Kate dresses down in a £200 Seeland jacket as she and Prince William get up close with goats at an Abergavenny farm St David's Day visit



▶ Mark Wright 'is replaced by Michelle Keegan's ex fiancé Max George on The Games after being 'BANNED' by ITV when he quit new show by text'



EXCLUSIVE 'Lexi has signed with Storm!': Amanda Holden reveals daughter, 16, is joining Kate Moss's modelling agency



▶ 'We have NEVER coparented!' Kerry Katona claims she has 'always been the one to parent' her and ex Brian McFadden's daughters Molly and Lilly-Sue



▶ Kristina Rihanoff's yoga studio is nearly £500,000 in debt... after Russian star raged 'Boris Johnson is destroying my business!'



▶ Pregnant Frankie Essex shows off her baby bump as she collects a brand new Mercedes SUV after revealing she's expecting twins



▶ Michael Owen's daughter Gemma, 18, wows in a nude plunging thong swimsuit as she celebrates the launch of her collection



▶ Adrian Dunbar cuts a laid-back figure as he's spotted on the set of his upcoming police drama Ridley in Manchester



▶ Katie Price takes a moonlit stroll with fiancé Carl Woods as couple enjoy a romantic minibreak in Bangkok after flying to Belgium for MORE cosmetic surgery



EXCLUSIVE Robbie Williams begins work on a super basement with 'virtually silent' air conditioning units at his £17.5m London mansion after Jimmy Page row



▶ Blake Lively wows in a low-cut rainbow gown while gazing lovingly at husband Ryan Reynolds as she leads the glamour at The Adam Project premiere



▶ Lottie Moss shares throwback snaps from her rehab stint in a tiny



SHARE THIS ARTICLE



4.5k shares

RELATED ARTICLES



Is THIS why our brains slow down as we age? Older people...



Why we forget: Scientists claim 'forgetting' is actually



Surgeons successfully transplant two PIG KIDNEYS into brain...



Exercise 'sweet spot' found to reverse cognitive decline in...

'Through generating oscillations involved in memory retrieval, the brain may be playing a last recall of important life events just before we die, similar to the ones reported in near-death experiences,' Zemmar said.

'These findings challenge our understanding of when exactly life ends and generate important subsequent questions, such as those related to the timing of organ donation.'

While this study is the first of its kind to measure live brain activity during the process of dying in humans, similar changes in gamma oscillations have been previously observed in rats kept in controlled environments.

This means it is possible that, during death, the brain organises and executes a biological response that could be conserved across species.



Electroencephalography (EEG) is a method of recording electrical activity of the brain that involves electrodes placed along the scalp (file photo)

These measurements are, however, based on a single case and stem from the brain of a patient who had suffered injury, seizures and swelling.

This complicates the interpretation of the data, although Dr Zemmar said he hopes to investigate more cases in future.

'As a neurosurgeon, I deal with loss at times. It is indescribably difficult to deliver the news of death to distraught family members,' he said.

'Something we may learn from this research is: although our loved ones have their eyes closed and are ready to leave us to rest, their brains may be replaying some of the nicest moments they experienced in their lives.'

The study has been published in **Frontiers in Aging Neuroscience**.

her rehab stint in a tiny string bikini after seeking treatment for cocaine addiction



Victoria Secret's Angels Candice Swanepoel and Lais Ribeiro wow in fashion-forward looks as they take to the runway at Off-White show for Paris Fashion Week



The Queen returns to duties nine days after catching Covid: Monarch, 95, hosts two virtual meetings with foreign ambassadors at Windsor Castle



Pregnant Georgina Rodriguez shows off her growing bump as she enjoys a sunny day out with boyfriend Cristiano Ronaldo and their children



Boyzone's Mikey Graham, 49, becomes a grandad as his daughter Hannah gives birth to a 'stunningly beautiful' baby girl named Bonnie



Pregnant Rihanna highlights her baby bump in a leather mini dress and shearing coat as she attends the Off-White show with beau ASAP Rocky



Ellie Goulding bundles up in a black padded coat and cream jumper as she heads out for a stroll with son Arthur, nine months, in Notting Hill



Damian Hurley suffers beauty blunder as he forgets to wash Sudocrem off his nose before heading out in London

'Be on time and don't be an a**!': Dame Helen Mirren, 76, shares her mantra for success after Lifetime Achievement triumph at the SAG Awards

Rochelle Humes puts on a leggy display in a slinky black mini dress as she poses with her suave husband Marvin before a cosy date night

Pharrell Williams and his wife Helen Lasichanh make a rare public appearance with son Rocket, 12, as they sit front row for Off-White PFW show

Putin chum Steven Seagal sparks fury saying he sees both sides of the Ukraine war

100-hour MRI shows the most detailed look yet of the human brain



as 'one family': Blames outside propaganda for provoking escalation

▶ Purple reign! Kendall Jenner triumphs in buckled burgundy leather as auburn haired supermodel returns to the Ritz

▶ Virgil Abloh's wife Shannon sits front row with their children to watch his final Off-White show for Paris Fashion Week... after designer's death aged 41

▶ It's Trevor from EastEnders! Soap icon Alex Ferns, 53, looks unrecognisable as he makes a surprise appearance in The Batman

▶ Paul Pogba struts his stuff at Paris Fashion Week as the Man United star and his wife return to France for glitzy event

▶ Kim Kardashian clone Chaney Jones, 24, poses NAKED in sizzling new Instagram snaps after sharing first public selfie with Kanye West, 44

▶ Kourtney Kardashian sets pulses racing in a brown bikini as she shares a sexy throwback snap after leaving Jimmy Kimmel Live

▶ Britney Spears goes naked AGAIN as she strips off completely nude on the beach... after sharing snaps with beau Sam Asghari on a romantic getaway

▶ Avril Lavigne showcases her edgy style with orange hair pieces and black zipper detail trousers as she heads out to perform on Jimmy Kimmel Live in LA

▶ Jesy Nelson wears Lakers T-shirt and camouflage trousers as she parties with singer Sinead Harnett at after show party in London

▶ Back on the runway! Heidi Klum, 48, shows off her endless legs in thigh high boots and a racy gold bodysuit in sizzling snaps

▶ 'Arms day!' Phillip Schofield, 59, shows off his huge biceps while flexing his muscles after a workout

▶ 'It must have slipped down there': Alice Evans finds a curtain

ELECTROENCEPHALOGRAPHY (EEG) EXPLAINED

An electroencephalogram (EEG) is a recording of brain activity which was originally developed for clinical use.

During the test, small sensors are attached to the scalp to pick up the electrical signals produced when brain cells send messages to each other.

In the medical field, EEGs are typically carried out by a highly trained specialist known as a clinical neurophysiologist.

These signals are recorded by a machine and are analysed by a medical professional to determine whether they're unusual.

An EEG can be used to help diagnose and monitor a number of conditions that affect the brain.

It may help identify the cause of certain symptoms, such as seizures or memory problems.

More recently, technology companies have used the technique to create brain-computer interfaces, sometimes referred to as 'mind-reading' devices.

This has led to the creation and design of a number of futuristic sounding gadgets.

These have ranged from a machine that can decipher words from brainwaves without them being spoken to a headband design that would let computer users open apps using the power of thought.



Read more: Frontiers | Enhanced Interplay of Neuronal Coherence and Coupling in the Dying Human Brain | Aging Neuroscience

Share or comment on this article: Brain activity of a dying man suggests our lives really do flash before our eyes as we die



Taboola Feed

