

Not so fast: scientists recreate near-death experiences in rats, atheists go wild

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4. Not so fast: scientists recreate near-death experiences in rats, atheists go wild

LOS ANGELES, CA (Catholic Online) - A study which made headlines yesterday concerned research into near-death experiences in rats. Researchers seeking to study the enigmatic phenomenon hooked rat's brains to sensors, then proceeded to kill the rats by inducing cardiac arrest.

In the 30 seconds following the stopping of the heart, scientists noticed a dramatic increase in brain activity. These brainwaves are the same ones that are related to consciousness in humans.

What they learned is that the dying experienced heightened brain activity, not less as is commonly expected. The rats apparently experience hyper-awareness rather than immediate death. It's thought this may be the same for humans.

Humans who have had near-death experiences frequently claim to see a tunnel of light and to experience out-of-body sensations. This is universally reported across cultures and religions, and appears to be a common human experience.

In fact, near death experiences have been artificially induced in humans before. Decades ago, test pilots reported similar experiences during high-stress maneuvers and training.

That scientists believe they can recreate these experiences in rats leads some to conclude that the mystery is solved and no God is required. This is a ridiculous conclusion and it is not one reported by the research.

It should also be noted that a conclusion specific to rats doesn't necessarily mean it will also be true for humans.

But about those atheists.

Science has shown us many things. It has demonstrated that disease is caused by parasites and pathogens. It has explained human origins and the creation of the universe and Earth. Science is a useful tool, but it does not rule out the existence of God, nor does it invalidate the personal experiences and faith-based beliefs of billions of people.

To take a gruesome study involving rats and extrapolate that to conclude there is no God is quite a stretch.

Just as diseases have biological explanations, so also must near-death experiences have the same. This does not replace God as the creator or heaven as the destination for the faithful. Indeed, we have learned from science that God has used physical laws to rule the universe. We have also documented exceptions, which we understand as miracles.

Both science and God happily coexist because science is an expression of God Himself. To use His laws and our limited understanding of them to reach an inherently flawed conclusion is the height of hubris.

So temper your enthusiasm. Science is best when it is used to better understand the world about us, but when it is turned against theology as a weapon, it will always fail. Indeed, despite the volume of scientific knowledge compiled to date, faith remains strong, right alongside it.

Science & Environment

Near-death experiences are 'electrical surge in dying brain'

By Rebecca Morelle

Science reporter, BBC World Service

- 13 August 2013
- From the section [Science & Environment](#)

A surge of electrical activity in the brain could be responsible for the vivid experiences described by near-death survivors, scientists report.

A study carried out on dying rats found high levels of brainwaves at the point of the animals' demise.

US researchers said that in humans this could give rise to a heightened state of consciousness.

The research **is published in the Proceedings of the National Academy of Sciences.**

The lead author of the study, Dr Jimo Borjigin, of the University of Michigan, said: "A lot of people thought that the brain after clinical death was inactive or hypoactive, with less activity than the waking state, and we show that is definitely not the case.

"If anything, it is much more active during the dying process than even the waking state."

Consciousness

Under certain unfamiliar and confusing circumstances - like near-death - the brain becomes over-stimulated and hyper-excited

From bright white lights to out-of-body sensations and feelings of life flashing before their eyes, the experiences reported by people who have come close to death but survived are common the world over.

However, studying this in humans is a challenge, and these visions are little understood.

To find out more, scientists at the University of Michigan monitored nine rats as they were dying.

In the 30-second period after the animal's hearts stopped beating, they measured a sharp increase in high-frequency brainwaves called gamma oscillations.

These pulses are one of the neuronal features that are thought to underpin consciousness in humans, especially when they help to "link" information from different parts of the brain.

In the rats, these electrical pulses were found at even higher levels just after the cardiac arrest than when animals were awake and well.

Dr Borjigin said it was feasible that the same thing would happen in the human brain, and that an elevated level of brain activity and consciousness could give rise to near-death visions.

"This can give us a framework to begin to explain these. The fact they see light perhaps indicates the visual cortex in the brain is highly activated - and we have evidence to suggest this might be the case, because we have seen increased gamma in area of the brain that is right on top of the visual cortex," she said.

"We have seen increased coupling between the lower-frequency waves and the gamma that has been shown to be a feature of visual awareness and visual sensation."

However, she said that to confirm the findings a study would have to be carried out on humans who have experienced clinical death and have been revived.

Commenting on the research, Dr Jason Braithwaite, of the University of Birmingham, said the phenomenon appeared to be the brain's "last hurrah".

"This is a very neat demonstration of an idea that's been around for a long time: that under certain unfamiliar and confusing circumstances - like near-death - the brain becomes overstimulated and hyperexcited," he said.

Striking

"Like 'fire raging through the brain', activity can surge through brain areas involved in conscious experience, furnishing all resultant perceptions with realer-than-real feelings and emotions."

But he added: "One limitation is that we do not know when, in time, the near-death experience really occurs. Perhaps it was before patients had anaesthesia, or at some safe point during an operation long before cardiac arrest."

"However, for those instances where experiences may occur around the time of cardiac arrest - or beyond it - these new findings provide further meat to the bones of the idea that the brain drives these fascinating and striking experiences"

Dr Chris Chambers, of Cardiff University, said: "This is an interesting and well-conducted piece of research. We know precious little about brain activity during death, let alone conscious brain activity. These findings open the door to further studies in humans."

"[But] we should be extremely cautious before drawing any conclusions about human near-death experiences: it is one thing to measure brain activity in rats during cardiac arrest, and quite another to relate that to human experience."

What is the Biblical View of the Afterlife?

By: The John Ankerberg Show

Skeptics, NDE's, OBE's & the Biblical Heaven

Based upon modern NDE research, cross-cultural studies and other data it is difficult to argue that every NDE is necessarily unreal or imaginary as skeptics, rationalists and materialists maintain – their materialistic, anti-supernatural assumptions are simply not credible, philosophically, scientifically, biblically or otherwise. Biblically, for example we know that spirit does, in fact, leave the body at true death (e.g., [1 Kings 17:22](#); [Ecclesiastes 12:6-7](#); [Luke 8:55](#); [2 Corinthians 5:6-8](#)), so the real question becomes can it temporarily leave the body prior to true death? It is at least theoretically possible that a) some natural “trigger mechanism” (such as extreme physiological stress) – or b) spiritistic influence – could occasionally produce a similar result prior to death. It may be possible, then, to temporarily enter a spiritual dimension where, for example, angels (both good and evil) might exist.

In occult literature spirits (morally fallen or evil angels) have claimed the ability to induce out-of-body (OBE's) experiences in humans. And biblically we are told that the devil does have, in some sense, an influence over death ([Hebrews 2:14](#)). In our opinion, the evidence from the testimony of psychics, gurus, occultists, etc. regarding astral projection or out-of-body experiences indicates that the separation of the body and spirit of the living is most likely a temporarily possible condition. Exactly where people would go in something like so-called astral travel is unknown, but such an experience should never be sought as in the world of the occult. On the other hand, given the devil's power as described in the Bible, one also cannot rule out demonic deception, or a manipulation of the mind that only gives people the feeling or experience of being out of their bodies when, in fact, they actually are not (cf. [Luke 4:5](#)).

Regardless, the typical NDE still does not supply a biblically accurate description of Heaven (or Hell for that matter, which is experienced as temporary and remedial, similar to a purgatory but not divinely just and retributive in relationship to eternal punishment of sin and the rejection of Jesus Christ). As described in my book, *How to Know You're Going to Heaven* the Bible describes Heaven as an astonishing new order of existence that is wonderful beyond comparison. But it is only for those redeemed through the blood of Jesus Christ who have exercised personal trust in Him. The common cultural myths— Heaven as a reward for good deeds, people floating on clouds, plucking harps or polishing halos, Peter at the pearly gates checking invitations, etc.—are caricatures. What we can understand from the biblical descriptions is that the redeemed receive entirely new bodies like that of Jesus Himself with amazing new powers. They become truly one with God, yet retain their unique individuality—spiritual beings who are distinct personalities and are not, as in Eastern traditions, absorbed into God. We are still who we are, but wonderfully recreated to live forever with God in an infinite universe of endless possibilities. The common analogy suggested from nature is that of the simple larva emerging as a magnificent butterfly. But the heavenly experience will be vastly greater.

Because the Scripture clearly teaches that God is love (1 John 4:8, 16), a fact so thoroughly demonstrated at the cross on Calvary, Heaven will be a place that is permeated with love beyond our capacity to imagine. It will be a completely loving environment—a place where we eternally enjoy the presence of the very essence of love, peace, joy, beauty, creativity, and everything that is sublime, awe-inspiring and more. This glorious future is hinted at in 1 Corinthians 2:9: “Things which eye has not seen and ear has not heard, and which have not entered the heart of man, all that God has prepared for those who love Him.”

It is God's nature to give, and we can only guess at what God will give those He loves throughout eternity, those he gave His only Son for. “He who did not spare his own Son, but gave him up for us all—how will he not also, along with him, graciously give us all things?” (Romans 8:32) Jesus simply said, “Great is our reward in heaven,” and the Apostle Paul, who was surrounded with the worst of sufferings, assured us that “the

sufferings of this present time are not even worthy to be compared with the glory that is to be revealed to us” ([Romans 8:18](#)).

Perhaps the most awesome fact of Heaven is not only that we will be in the presence of Jesus, but also that we shall be “like Him” ([1 John 3:2](#)). We are reminded of the statement by C.S. Lewis that if any person on earth could now see one of the redeemed, they would be tempted to worship him or her as a god. Each of us shall be completely sinless, joyful, and powerful. We will not only instantaneously know the personalities of the Bible, but also our own saved friends and relatives who have joined us for eternity, and even our “guardian angels” as we think of them, and the other angels. We will be content, with no wants. We will be with, talk with, and constantly commune with the God who loves us and has redeemed us forever. Time and space will no longer exist as we know them, but we will continue in fellowship with the Maker of time and space for all eternity in joy, happiness and bliss beyond imagining.

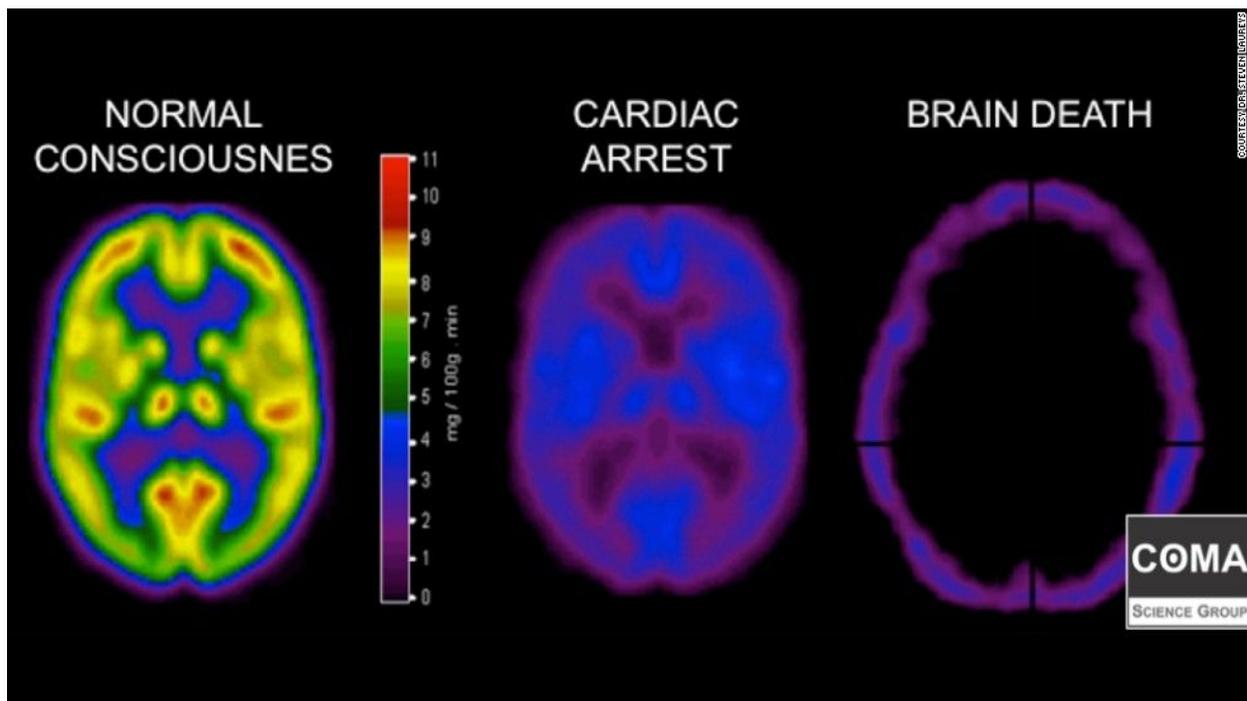
We will have every question answered, and yet because God is infinite there will be throughout eternity new things to learn about Him. And because we will always be learning new things about an infinitely perfect God, our joy of necessity will also increase and of necessity also our love. But whatever we learn, we shall forever be mindful of the infinite love of God for us expressed in the life, death, and resurrection of His Son, Jesus Christ. The wonderful thing about Heaven is that it never, ever ends – after trillions of years, eternity won’t even have started.

In essence, to inherit Heaven is to inherit all that God is and has ([1 Corinthians 3:21-23](#)), all that exists in “the new heavens and new earth” and even more.

'Afterlife' feels 'even more real than real,' researcher says

By Ben Brumfield, CNN

Updated 5:21 AM ET, Wed April 10, 2013



Scans compare neurological activity in a brain that is healthy, one that is comatose and another that is dead

Story highlights

- Near-death experiences can be vividly real to those who have them
- Many people who were in comas remember having them
- One need not die to have an out-of-body experience

- Belgian researchers want to see more empirical research on NDEs

You're about to go to "heaven" and live to tell about it. And your story will become the subject of [scientific research](#).

It's the perfect day. You're strolling down a sidewalk, listening to an ensemble of bird songs, soaking up a balmy breeze fragranced with fresh spring flowers, and gazing up at a cloudless sky of pure azure.

Pleasantly distracted, you step off the sidewalk into the street. Brakes screech; horns blare; people shriek in horror. You snap back to reality ... just as the truck hits you.

You fly for yards like a rag doll; you land hard. You're numb all over and fading fast. It's all over; you know it. Your life flashes before you like an epic movie. The End.

You leave your body and look down at it. People are bending over it. Someone is sobbing uncontrollably. As the ambulance rushes up, a blinding light surges above you. It beckons you softly.

You follow it through a tunnel to a place much more vividly real and spectacular than the banner Sunday afternoon you just left behind. You are sure you have arrived in the hereafter.

Weeks later, you wake up to the steady beeps of an EKG monitor next to your hospital bed.

[Secrets spilled in life's final minutes](#)

The scientific journey begins

If your hospital is in Belgium, [Dr. Steven Laureys](#) may pay you a visit, interested to hear what you remember from your NDE, or near-death experience.

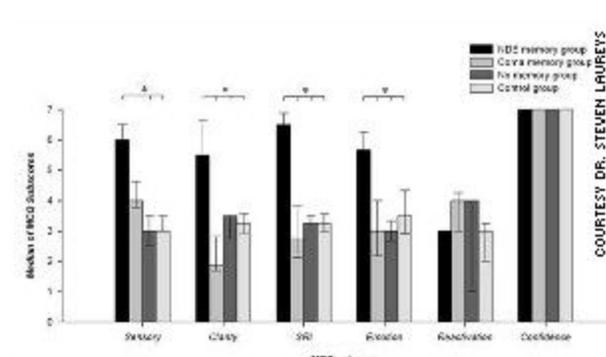
He tells you that many people have gone down this road before you and that you can trust him with your experience.

"Patients in intensive care are scared to tell their stories," he said. They are afraid people won't take them seriously, especially doctors and scientists.

Laureys heads the [Coma Science Group](#) at the university hospital in the city of Liege. He and his colleagues [published a scientific study](#) on NDEs late last month.

People who go on these fantastic journeys are often forever changed. Many seem to come back happier and no longer fear death, he said. The experience becomes a cornerstone of their lives.

NDEs feel "even more real than real," Laureys said. It's this sparkling clarity and living color of the experience, which many have when they lose consciousness, that he and his team have researched.



Results of a psychological test reveal memories of Near Death Experiences to be more vivid than any other memory

But he doesn't think it comes from a spirit world. Laureys is a scientist, he emphasizes. He prefers not to mix that with religion.

His hypothesis is that near-death experiences originate in human physiology. "It is this dysfunctional brain that produces these phenomena," he said.

Laureys and his staff are interested in how the brain creates the mind and its perception of reality. "Our main focus is consciousness research in comatose patients," he said. His team hopes to raise the quality of their comfort and care.

The same story, again and again

Over the years, many patients have awakened from comas to tell Laureys about trips to the hereafter.

Their stories all have elements that are the same or very similar.

"After being close to death, some people will report having had an out-of-body experience, having seen a bright light or being passed through a tunnel; all well-known elements of the famous Near-Death Experience," according to the study by [Laureys and his team of six scientists](#).

Raymond and Nadine, both from Belgium, had heart attacks. When oxygen was cut off from their brains, they had out-of-body sensations, Laureys said.

"I felt as if I were sucked out of my body at one point," said Raymond. "I was going through a completely black tunnel, very, very quickly, a speed you cannot express, because you just don't experience it."

When Nadine's heart attack came on, she could see herself from outside her body. "It's as if you are on a cloud, even if it's not really that," she said.

It eluded her control, and that frightened her. She went into a dark hole. "[You wonder if you will really return to your body,](#)" she said.

A light appeared at the end of Raymond's tunnel. He, too, was at first afraid and resisted. The light was female, and she "communicated" with him.

He surrendered to her. "I realized that I shouldn't struggle, and I let myself go. It was at that moment that the experience took place."

Psychological test

Scientific research on people having NDEs is tough, because the exact instant that they occur is unknown, making them nearly impossible to observe, Laureys said.

It would also be cruel to run brain scans on someone who was possibly facing the moment of death.

So, Laureys and his team studied the near-death memories of people who survived -- in particular those of coma patients -- with the help of a psychological examination.

The Memory Characteristics Questionnaire tests for sensory and emotional details of recollections and how people relive them in space and time. In other words, it gauges how present, intense and real a memory is.

They compared NDEs with other memories of intense real-life events like marriages and births, but also with memories of dreams and thoughts -- things that did not occur in physical reality.

The researchers paralleled new memories with old ones. And they compared the patients who had NDEs with groups of others who didn't.

Memories of important real-life events are more intense than those of dreams or thoughts, Laureys said.

"If you use this questionnaire ... if the memory is real, it's richer, and if the memory is recent, it's richer," he said.

The coma scientists weren't expecting what the tests revealed.

"To our surprise, NDEs were much richer than any imagined event or any real event of these coma survivors," Laureys reported.

The memories of these experiences beat all other memories, hands down, for their vivid sense of reality. "The difference was so vast," he said with a sense of astonishment.

Even if the patient had the experience a long time ago, its memory was as rich "as though it was yesterday," Laureys said.

"Sometimes, it is hard for them (the patients) to find words to explain it."

True believers

The questionnaire asks people about their level of certainty that a remembered experience was a real event and not imagined or dreamed. "They (the patients) are very convinced that it is real," Laureys said.

A simple Internet search reveals hundreds of accounts of near-death experiences -- some real, some perhaps invented. Many people are convinced they are proof positive that an afterlife exists outside of the physical realm -- and that it is wondrous.

There are reports of religious images appearing at times in NDEs, but they are not limited to one single religion, and they don't always appear. Sometimes Buddha, Jesus or Mohammed appear, but usually they don't, Laureys said.

Nevertheless, an NDE can make a convert of a skeptic. Dr. Eben Alexander is a well-known case of an agnostic scientist who became convinced of the existence of the spiritual.

He has often shared his story in television interviews with journalists and expressed his views in lectures and [in books and video presentations, which he sells on his website](#).

Alexander, a neurosurgeon, according to his autobiography, has described his experience in the same terms as the Belgian researchers: "hyper-reality," "too real to be real."

In the beginning, he tried to interpret his experience as a brain function, he wrote on his website, but he became increasingly spiritual. He has come to the conclusion that people are reincarnated.

Alexander says his experience could not have been a hallucination, because the parts of the brain necessary to produce his experiences were basically dead when he had them.

It's your brain, Laureys tells you

Laureys strongly disagrees. "There is no evidence there can be conscious experience without brain activity," he said.

Lying in your hospital bed, you have become a true believer, and you are happier for it.

But your brain never died, the doctor tells you. You were in a coma. Perhaps your heart stopped for a while; maybe it didn't. But that's not even necessary to have an out-of-body experience.

"Many individuals having had NDEs were not physically in danger of death suggesting that the perception, on its own, of the risk of death seems to be important in eliciting NDEs," the study said.

It's enough just to think you're dying to have one.

[Mapping the brain, exploring its secrets](#)

The American Psychological Association concurs. It defines near-death experiences as "profound psychological events with transcendental and mystical elements, typically occurring to individuals close to death or in situations of intense physical or emotional danger."

In the case of coma patients, the brain producing the NDE may be functioning minimally, but it is still alive, Laureys hypothesized. He said one can stimulate certain parts of the brain to produce single elements of the experience.

It's a vivid hallucination, Laureys' report surmises. "It was a normal brain activity that produced their extraordinary perceptions."

Needs more research

Though the results of his studies were marked and consistent, the Belgian research team has tested only a small number of patients so far.

And it has not been able to scan brain images of patients having NDEs to get hard data on the hypothesis of the physiological nature of the experience.

Laureys' research alone is not enough. He wants to see more scientists get involved. As a doctor, he feels it's the compassionate thing for them to do.

Too many people have the experience for serious researchers to ignore it, he said, and a lot of people are afraid that their consciousness will linger long after they pass away, making them witnesses to whatever happens to their bodies.

"The public is historically afraid to be buried alive," Laureys said. "People are afraid to sign up as organ donors." They are scared they may have to watch them being extracted from their bodies.

There are more than enough spiritual models for NDEs, he said -- and superstitious ones. "There are a lot of crazy explanations out there."

It's high time for more hard science, Laureys said. A high percentage of his coma patients report having had NDEs, and he believes many of us go through these "afterlife" experiences when we die.

Laureys doesn't want to speculate on the existence of heaven or hell, but he does say that only a small minority of near-death experiences are horrifying. Most of them are pleasant and uplifting.

From his accounts, it sounds like more people go to "heaven" than to "hell."

Brains Of Dying Rats Yield Clues About Near-Death Experiences

A burst of brain activity just after the heart stops may be the cause of so-called near-death experiences, scientists say.

The insight comes from research involving nine lab rats whose brains were analyzed as they were being euthanized. Researchers discovered what appears to be a momentary increase in electrical activity in the brain associated with consciousness.

Although the experiment relied on animals, the results could apply to humans, too, the researchers say.

"Now science tells us the experiences really could be real for these individuals, and there is actually biological basis for that," says [Jimo Borjigin](#), of the University of Michigan in Ann Arbor, who led the research. "There's a scientific basis in their brain. It's all really happening in their brain during this very early period of cardiac arrest."

People regularly report having powerful experiences when they come close to dying. They often say they had an overwhelming feeling of peace and serenity. Frequently they describe being in a dark tunnel with a bright light at the end. Many report meeting long-lost loved ones.

"Many of them think it's evidence they actually went to heaven — perhaps even spoke with God," Borjigin says.

Borjigin wanted to find out if there was something happening in the brains of these people who had close calls with death that could help explain these experiences.

"If the near-death experience comes from the brain, there's got to be signs — some measurable activities of the brain — at the moment of cardiac arrest," she says.

But it's really hard to study this in people. So Borjigin and her colleagues decided to study rats. They implanted six electrodes into the brains of nine rats, gave the animals lethal injections and collected detailed measurements of brain activity as they died.

"We were just so astonished," Borjigan tells Shots.

Just after the rats' hearts stopped, there was a burst of brain activity. Their brain suddenly seemed to go into overdrive, showing all the hallmarks not only of consciousness but a kind of hyperconsciousness.

"We found continued and heightened activity," Borjigan says. "Measurable conscious activity is much, much higher after the heart stops — within the first 30 seconds."

Borjigin and her colleagues think they essentially discovered the neurological basis for near-death experiences. "That really just, just really blew our mind. ... That really is consistent with what patients report," she says.

Patients report that what they experienced felt more real than reality — so intense that it's often described as life-altering.

But Borjigan thinks the phenomenon is really just the brain going on hyperalert to survive while at the same time trying to make sense of all those neurons firing. It's sort of like a more intense version of dreaming.

"The near-death experience is perhaps is really the byproduct of the brain's attempt to save itself," she says.

Other scientists praised the research, which is [being published](#) in the *Proceedings of the National Academy of Sciences*.

"It shows us in considerable more detail than ever done before what happens when the brain is dying," says [Christof Koch](#), a neuroscientist at the Allen Institute for Brain Science in Seattle.

"When you turn off a light switch, the light immediately goes from on to off," Koch says. "The brain doesn't immediately go off, but it shows a series of sort of complicated transitions."

But other scientists are unconvinced. They question how much rat brains can really tell us about humans. "I don't think that this particular study helps in any way to explain near-death experiences in human beings," says [Sam Parnia](#), who studies dying and near-death experiences at the Stony Brook University School of Medicine in New York.

"We have no evidence at all that the rats had any near-death experiences or whether animals can have any such type of experience, first of all," Parnia says.

Borjigin and Koch argue that rat brains and human brains are similar enough to think they probably work in similar ways when they're dying. But they acknowledge that the new research is just the first step in trying to understand the neurological basis of near-death experiences.