

Are near-death experiences hallucinations? Experts explain the science behind this puzzling phenomenon

December 4 2018, by Neil Dagnall And Ken Drinkwater



Credit: AI-generated image ([disclaimer](#))

In our never-ending quest to understand what happens to us after we die, humans have long seen the rare phenomenon of near-death experiences as providing some hints. People who've had a brush with death often report seeing and experiencing life-altering events on "the other side,"

like a bright white light at the end of a long tunnel, or being reunited with lost relatives or beloved pets. But despite the seemingly supernatural nature of these experiences, experts say that science can explain why they happen – and what's really going on.

What are near-death experiences?

A near-death experience is [a profound psychological event](#) with mystical elements. It typically occurs in people [close to death](#), or during situations of intense physical or emotional pain, but may also happen after [heart attacks or traumatic brain injuries](#), or even during [meditation](#) and syncope (loss of consciousness due to a fall in blood pressure). They're surprisingly common, with [a third of people](#) who have come close to death reporting having experienced one.

[Common characteristics](#) people report are feelings of contentment, psychic detachment from the body (such as [out-of-body experiences](#)), rapid movement through a long dark tunnel, and entering a bright light.

Culture and age may also influence the kind of near-death experience people have. For example, many Indians report meeting [the Hindu king of the dead, Yamraj](#), while Americans often claim to have met Jesus. Children typically describe [encountering friends and teachers](#) "in the light".

Most reported near-death experiences are positive, and have even helped in reducing death anxiety, affirming life, and increasing well-being. However, [some near-death experiences are negative](#) and [include feelings](#) such as lack of control, awareness of nonexistence, hellish imagery, or perceived judgement from a higher being.

Why do near-death experiences happen?

Neuroscientists Olaf Blanke and Sebastian Dieguez have proposed [two types of near-death experiences](#). Type one, which is associated with the brain's left hemisphere, features an altered sense of time and impressions of flying. Type two, involving the right hemisphere, is characterised by seeing or communicating with spirits, and hearing voices, sounds and music. While it's unclear why there are different types of near-death experiences, the different interactions between brain regions produce these distinct experiences.

The [temporal lobes](#) also play an important role in near-death experiences. This area of the brain is involved with processing sensory information and memory, so abnormal activity in these lobes can produce strange sensations and perceptions.

Despite several theories used to explain near-death experiences, getting to the bottom of what causes them is difficult. Religious people believe near-death experiences provide evidence for life after death – in particular, the separation of the spirit from the body. Whereas [scientific explanations](#) for near-death experiences [include depersonalisation](#), which is a sense of being detached from your body. Scientific author Carl Sagan even suggested that the stress of death produces a [remembrance of birth](#), suggesting the "tunnel" people see is a reimagining of the birth canal.

But due to the fanciful nature of these theories, other explanations have emerged. Some researchers claim that endorphins released during stressful events [may produce something like near-death experience](#), particularly by reducing pain and increasing pleasant sensations. Similarly, anaesthetics [such as ketamine](#) can simulate near-death experience characteristics, such as out-of-body experiences.

Other theories suggest near-death experiences arise from dimethyltryptamine (DMT), a psychedelic drug that [occurs naturally in](#)

[some plants](#). Rick Strassman, a professor of psychiatry, observed in a study from 1990 to 1995 that people had [near-death and mystical experiences](#) following injection of DMT. According to Strassman, the body has natural DMT released at birth and death. However, there is no conclusive evidence to support this view. Overall, chemical-based theories lack precision and can't explain the full range of near-death experience features people experience.

Researchers have also explained near-death experiences via [cerebral anoxia](#), a lack of oxygen to the brain. One researcher found air pilots who experienced unconsciousness during rapid acceleration [described near-death experience-like features](#), such as tunnel vision. Lack of oxygen may also trigger temporal lobe seizures which causes hallucinations. These may be similar to a near-death experience.

But the most widespread explanation for near-death experiences is the [dying brain hypothesis](#). This theory proposes that near-death experiences are hallucinations caused by activity in the brain [as cells begin to die](#). As these occur during times of crisis, this would explain the stories survivors recount. The problem with this theory, though plausible, is that it fails to explain the full range of features that may occur during near-death experiences, such as why people have out-of-body experiences.

Currently, there is no definitive explanation for why near-death experiences happen. But ongoing research still strives to [understand this enigmatic phenomenon](#). Whether paranormal or not, near-death [experiences](#) are extremely important. They provide meaning, hope, and purpose for many people, while offering an appreciation of the human desire to survive beyond death.

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