

Science has made great progress in deepening our understanding of dreaming. Still, there is no answer to the question: *Why do we dream?*

There are, however, a great number of theories being explored. While some scientists posit that dreaming has *no* direct function—but instead is a consequence of other biological processes that occur during sleep—many studying sleep and dreams believe dreaming serves a *primary* purpose. Theories of dreaming span scientific disciplines, from psychiatry and psychology to neurobiology. Some current theories suggest that dreaming is:

- A component and form of *memory processing*, aiding in the consolidation of learning and short-term memory to long-term memory storage.
- An extension of waking consciousness, reflecting the experiences of waking life.
- A means by which the mind works through difficult, complicated, unsettling thoughts, emotions, and experiences, to achieve psychological and emotional balance.
- The brain responding to biochemical changes and electrical impulses that occur during sleep.
- A form of consciousness that unites past, present and future in processing information from the first two, and preparing for the third.
- A protective act by the brain to prepare itself to face threats, dangers and challenges.

There is not likely ever to be a simple answer, or a single theory that explains the full role of dreaming to human life. Biological, cognitive, psychological—it's very likely that dreaming may serve important functions in *each* of these realms.

Like sleep, dreams are vulnerable to disruption from problems with mental and physical health. There are a number of conditions (as well as medications) that may affect dreams, and that can make dreams more difficult and disturbing.

Depression and anxiety often are accompanied by nightmares, and the presence of nightmares may be an indication of the severity of depression. Research has found that among patients with Major Depressive Disorder, the presence of frequent nightmares is associated with suicidal tendencies. People who are depressed or anxious are more likely to have stressful, disturbing, or frightening dreams, sometimes in the form of recurring dreams.

There's evidence that one type of drug commonly used to treat depression may alter dreaming. Selective Serotonin Uptake Inhibitors (SSRI) appear to affect dreaming in several ways. SSRI may decrease dream recall—the ability to remember dreams. This type of drug may intensify dreaming. SSRI may also lead to the presence of more positive emotions in dreams. Withdrawal from SSRI, on the other hand, may lead to nightmares and may also intensify dreaming.

Drugs and alcohol also can affect dreaming. Alcohol disrupts the normal, healthy sleep cycle and leads to fragmented sleep. Consuming alcohol heavily and too close to bedtime may alter and diminish time spent in REM sleep. Studies show that alcohol-dependency is linked to dreams with more negative emotional content. Marijuana also disrupts and reduces REM sleep. Withdrawal from marijuana and cocaine has been shown in studies to induce strange dreams.

Certain sleep disorders may be accompanied by altered dreaming. Insomnia can heighten dream recall, and also lead to more stressful and disturbing dreams. (Depression and anxiety are also more likely in people with insomnia.) Obstructive sleep apnea, because of its ability to disrupt normal REM sleep, can cause disturbed dreaming with more bizarre and negative dream content. Narcolepsy, a disorder that involves extreme daytime tiredness and altered sleep-wake cycles, can also lead to more negative and bizarre dreams. Restless Leg Syndrome, a neurological disorder and a sleep disorder, can also be accompanied by nightmares.

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REM behaviour disorder (RBD) is a condition where the normal paralysis that occurs during REM sleep doesn't take place. People with REM behaviour disorder can move during this sleep phase, and often act out physically in reaction to their

dreams. This activity can be violent—thrashing, kicking, getting out of bed—and can lead to injury to the sleeper or a bed partner. We don't know precisely what causes RBD, but it is associated with neurological illness and injury, as well as to withdrawal from alcohol or narcotics, or use of some anti-depressants.

Nightmares and disturbed dreaming are a hallmark of post-traumatic stress disorder(PTSD), as is disrupted sleep. People who suffer from PTSD often experience frequent and recurring nightmares, which may be accompanied by acting out during dreams, with symptoms similar to REM behaviour disorder. PTSD occurs in some people who've experienced forms of trauma, including assault, disaster, war and combat. Soldiers who've served in active combat often experience sleep problems and disordered dreaming linked to trauma and PTSD. After years of observing a particular group of symptoms among combat soldiers, sleep scientists are now proposing the creation of a new sleep disorder: Trauma Associated Sleep Disorder, with symptoms that include nightmares, sleepwalking and other disruptive night-time behaviours.

Altered dreaming is also linked to degenerative neurological conditions, including Parkinson's disease and some forms of dementia. Violent and aggressive dreams, along with RBD—physically acting out during dreams—are frequent symptoms of neurological degeneration. These dream-related symptoms also have been identified as a strong predictor of future development of degenerative neurological disease. Studies show that REM behaviour disorder (RBD) is a strong predictor for both some types of dementia and Parkinson's disease.

What about dreaming's influence over our waking lives? Dreaming is a universal, enduring aspect of being human (though not limited to humans, since animals dream as well). Dreaming is something we do daily from the time we are very young to very old. Are dreams more than a nightly de-cluttering of the mind? Are there ways that dreams might help us live better? There is a long-held view of dreams as a creative portal—and scientific study may be giving that belief some credence. Evidence suggests that dreams may assist in daytime function and performance, especially as they relate to creativity and problem solving.

