New study provides insight into what blind people dream about and why we have nightmares.

Blind people have considerably more nightmares than people with normal sight and those who became blind later in life.

It’s something that 41-year-old Heidi Andersen, who was born blind, can recognise. She is often plagued by nightmares and her sleep interrupted by fears of being hit by passing traffic, falling on the ground, and being followed.

“At the core of my nightmares is a feeling of complete helplessness,” says Andersen.

She is not the only blind person to experience such nightmares.

In fact, the study, recently published in the journal Sleep Medicine, shows that an average of 25 per cent of the dreams experienced by people born blind are nightmares -- while nightmares account for only six per cent of the dreams of people whose sight is intact.

“The study confirms an already existing hypothesis that people’s nightmares are associated with emotions they experience while awake. And blind people apparently experience more threatening or dangerous situations during the day than people with normal sight,” says study lead-author Amani Meaidi, a research assistant at the Danish Centre for Sleep Medicine at Glostrup Hospital and BrainLab at the University of Copenhagen.

We dream with our senses

Over a period of four weeks, the team of scientists from the University of Copenhagen and Glostrup Hospital followed:

- 11 people who were born blind,
- 14 who had become blind later in life, and
- 25 normally-sighted people

They asked participants to take note of what they dreamt.

The results show that:

- People who are born blind didn’t have dreams with visual content and 25 per cent of their dreams were nightmares.
People who lost their sight later in life may have visual content in their dreams, although the longer they have been blind the fewer dreams they have with any visual content. Seven per cent of their dreams were nightmares.

The dreams of normally-sighted people are based on images and they have nightmares only six per cent of the time.

The trial subjects’ nightmares were often related to threats experienced in everyday life. One woman often had nightmares about being run over by a car or getting into embarrassing social situations such as spilling a cup of coffee.

“The study also points out that the sensory input and experiences we get while awake are decisive when it comes to what we dream. So people without visual sensory input dream to a much greater extent in terms of sounds, tastes, smells, and touch” says Meaidi.

**Blind people have a greater need to process things**

We presumably use sensory input from our everyday lives as a way of processing impressions, says Meaidi.

“Because people who lose their sight later in life have previously seen their surroundings it might be that their brains do not experience being threatened by circumstances to the same degree as people who are born blind. For this reason they may not need to process impressions from everyday life to the same extent by means of nightmares,” he says.

Previous studies suggests that one reason for dreaming is to remember information that is important to our survival and welfare.

People who are born blind have a greater need for this, says Professor Albert Gjedde, head of the Institute of Neuroscience and Pharmacology at the University of Copenhagen.

“It might help them navigate the world with confidence, in traffic for instance,” she says. He was not involved in the study, but has previously studied what happens in the brain before and after sleep.

**Emotions tell us what is important**

We generally dream about things that have provided us with an emotional response whilst we are awake, says Gjedde.

“The best guess is that dreams are a way of wiping the slate clean. Our emotions help us to evaluate what’s worth remembering and what isn’t,” he says. “When we sleep the brain sorts information, committing the most important bits to memory. We dream whilst this commitment to memory is taking place.”

“The emotions can just as well be positive as negative, although strong positive experiences are perhaps more seldom because they don’t ensure survival to the same extent. Negative emotions tell us what we should look out for and what we should be aware of to keep ourselves alive,” says Gjedde.

**Blind people don’t notice they have more nightmares**

It came as a surprise to most of the blind test subjects that they have more nightmares than people who can see.
“This isn’t something that causes problems for them in their everyday lives, for which reason several of them are surprised to hear the result,” says Maeidi.

The Danish research team tested their blind-from-birth test subjects to see if they suffered from pronounced anxiety or depression and therefore had more negative emotions than people who can see. This was not the case.

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Read the original article in Danish on Videnskab.dk [9]

Fact box

There are four stages from the waking state to deep sleep. We pass through all four stages 4 to 6 times and each 'circuit' lasts around 90 minutes.

The first dream we have usually last around 5 to 10 minutes. The next dream is slightly longer and they gradually get even longer until the last dream of the night, which may last between 30 and 40 minutes.

Fact box

Studies suggests that REM sleep, the stage during our sleep where experience the heaviest dream activity is of positive significance when it comes to stress and anxiety.

For instance, people who are deprived of dreaming react with greater anxiety to horror films the second time they see them than people who are able to dream every now and then.


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