

Microsleeps

A microsleep is a short episode of sleep that occurs when a person is trying to stay awake, but cannot do so any longer. Have you ever experienced one? You have worked all night after sleeping poorly the day before, and even though you are fighting to stay awake, your eyes keep closing until suddenly you nod off for a few seconds and then wake with a head snap. That microsleep can be deadly if you are driving home. It can present a fatigue risk on the job if something abnormal occurs and a person is not aware of the situation. Situation awareness can be lost in a few seconds and a fatigued person awaking from a microsleep will require some time to become alert enough to regain awareness.

What are some times when you are fatigued and might be performing monotonous tasks? In one control room at 0300, I observed a couple of controllers whose head lowered and whose eyes closed for a few minutes. They were not performing any active tasks and were monitoring the pipelines systems in a dark control room. They woke up when an alarm sounded on another console. Microsleeps can occur at any time and are more likely to occur in the hours between 0300-0600 and 1400-1600. When driving, microsleeps are likely to occur during the hours before dawn. For shiftworkers, they might occur driving home after night shift.

Microsleeps are unintended. Those controllers did not want to fall asleep. They were not even aware it was happening. I once called a shipper at the beginning of a delivery in the middle of night shift and was supposed to call him back five minutes later on a 200-barrel line wash figure. During the five minutes, I fell asleep and did not make the call on time. In my case, I had cumulative sleep debt from working consecutive night shifts and staying awake during the daytime to attend college classes. I was not using the opportunity between shifts to get eight hours of sleep. Stupid idea! Don't be like me; get adequate sleep and rest between shifts.

Sleep disorders, such as insomnia, can make us susceptible to microsleeps. Even if we are using the opportunities between shifts to try to sleep, we might not be able to do so. Eventually, parts of the brain will shut down for brief periods and "microsleep" even if some other parts of the brain are still functioning as if awake. Of course, we need the whole brain to be functioning when we need to be alert on the job or while driving a vehicle. If you have problems sleeping, consult a doctor.

Have you ever misplaced your keys or poured coffee instead of milk in your cereal? Some researchers have discovered that nerve cells in a sleep-deprived yet awake brain can briefly go "off line," into a sleep-like state, while the rest of the brain appears awake. That forgetfulness or lapse in attention may be due to sleep deprivation. [Dr Chiara Cirelli Article](#)

"Even before you feel fatigued, there are signs in the brain that you should stop certain activities that may require alertness," says Dr. Chiara Cirelli, professor of psychiatry at the School of Medicine and Public Health at the University of Wisconsin Madison. "Specific groups of neurons may be falling asleep, with negative consequences on performance."

"We know that when we are sleepy, we make mistakes, our attention wanders and our vigilance goes down," says Cirelli. "We have seen with EEGs that even while we are awake, we can experience shorts periods of 'micro sleep.' " But the new research found that even before that stage, brains are already showing sleep-like activity that impairs them, she says. And there were behavioral consequences to the local sleep episodes.

Those consequences were mistakes in simple tasks performed by the mice in the research lab. Pipeliners are performing complex tasks 24-7-365. And those tasks are performed live and in real time. What is the only way to prevent microsleeps? Get an adequate amount of sleep and use fatigue countermeasures on the job.

