

Having a good night's sleep can be important for everyone. Research also suggests that getting good sleep and dreaming can help our brains create meaning from the day's experiences, and help to strengthen memories.

## are there links between epilepsy and sleep?

The links between epilepsy and sleep are very complex. For some people a lack of sleep can make seizures more likely to happen, for others having seizures at night can make them feel tired during the day. Sleep disorders, such as insomnia (difficulty falling asleep) and obstructive sleep apnoea (OSA) can affect epilepsy, and epilepsy can also affect sleep disorders (see next page).

During sleep the brain is active, processing information to help us to learn. Brain activity changes during the different stages of sleep.

## the different stages of sleep

Sleep happens in an alternating pattern, and is divided into two different, alternating categories of sleep type:

- non-rapid eye movement (NREM), light and deep sleep split into stages; and
- rapid eye movement (REM) sleep.

## non-rapid eye movement sleep

### Light sleep

Stage one – during this stage of NREM sleep, our muscles start to relax, we are half awake and half asleep, and can easily be woken up.

Stage two – during this stage, our heart rate and breathing slow down, and seizures can be more likely to happen for some people with epilepsy as they go from this stage to stage three: deep sleep.

### Deep sleep

Stage three – this is deep sleep (sometimes called slow-wave sleep). Our breathing and heart rate slows and our brain begins to produce 'delta waves', a type of electrical activity associated with deep sleep. Delta waves increase as sleep gets deeper and it is difficult to be woken. If we are woken during this stage we will often be confused. Sleepwalking and night terrors are more likely to happen during deep sleep than during light sleep (see next page - 'Sleep disorders').

Scientists believe that NREM sleep is important for strengthening connections between our brain cells and stabilising long-term memories. Deep sleep also helps the brain to recover from the day's events so that it can function well the next day.

## rapid eye movement sleep

The next stage of sleep is where most dreaming occurs. During REM sleep the brain tries to organise the information we have received throughout the day.

The purpose of REM sleep and dreaming is unclear. However some theories suggest it may be important for making sense of our thoughts, ideas and experiences, and the emotions and memories attached to them. A lack of sleep can affect our memory and judgement. It can also affect our mood and how well our immune system works.

## are there links between seizures and sleep?

Some people have specific triggers for their seizures, for example a lack of sleep. In some types of epilepsy seizures can happen as someone is waking up and within the next few hours. People with epilepsy may have an irregular sleep pattern, as seizures at any time of the night can disrupt sleep, and seizures during the day can affect the next night's sleep. For some people the effects of having a seizure can disrupt their sleep pattern for several days afterwards.

## do anti-epileptic drugs affect sleep?

As with all medications, anti-epileptic drugs (AEDs) can cause side effects for some people. AEDs may have different effects on sleep, and this can vary from person to person, depending on the dose. Some AEDs are classed as sedatives and can cause tiredness. Some can cause insomnia or disrupted sleep. However some AEDs can help to improve the quality of sleep by increasing the length of deep sleep.

 For information on possible side effects of AEDs see our booklet *medication for epilepsy*.



## seizures that start during sleep

Some people with epilepsy have 'asleep seizures' (sometimes called 'nocturnal seizures'), that happen when they are asleep, as they are falling asleep or as they are waking up.

Frontal lobe epilepsy is a type of epilepsy where seizures can commonly happen during periods of NREM sleep as well as when awake. Frontal lobe seizures often happen in 'clusters' (many happening close together in time), but are usually brief. They can include sudden jerking movements, strange postures or movements of the arms or legs, loud cries or screams and wandering about during sleep.

 See our leaflet *seizures* for more information on seizure types.

## Sleep disorders

Some sleep disorders are called 'parasomnias': unusual events that are linked to sleep. These can include confused behaviour during sleep, sleepwalking or night terrors (where a person suddenly wakes from sleep in a state of panic or fright). This may happen when some parts of the brain are awake and others are asleep.

Some parasomnias include making unusual movements or sounds. Sometimes it can be difficult to tell whether someone is having seizures or if what happens to them is part of a parasomnia. It can be helpful to keep a record or video recording of what happens during the event to help with diagnosis.

Seizures often follow a similar pattern each time they happen and it may be clear to see when a seizure starts and when it stops. However, parasomnias do not necessarily follow a pattern and often have no clear end.

Some symptoms of narcolepsy (a rare condition causing uncontrollable urges to fall asleep, at any time of the day) are sometimes mistaken for epilepsy. For example, some people with narcolepsy develop cataplexy, a loss of muscle tone often affecting the jaw, neck and limbs. Symptoms can also include slurred speech or blurred vision and some people may collapse. An episode of cataplexy may be triggered by emotions such as laughter, anger or surprise.

## Epilepsy and sleep disorders

Some people with epilepsy also have sleep disorders that are not related to their epilepsy, and some medical conditions can be confused with epilepsy.

Obstructive sleep apnoea (OSA), where a person snores and then stops breathing for short periods during sleep, can be more common in people with epilepsy. It is sometimes caused by low muscle tone around the airway. This may happen as a result of weight gain, which can be a side effect of some AEDs. As well as disrupting sleep, obstructive sleep apnoea can trigger seizures for some people.

If you snore and are told that you stop breathing during sleep, your GP can arrange for you to have a simple, pain free test to monitor oxygen levels in your blood overnight, to help diagnose obstructive sleep apnoea.

 Visit [sleep-apnoea-trust.org](http://sleep-apnoea-trust.org) for more information and a list of NHS sleep clinics in the UK.

## tips for getting good sleep

There may be some simple things you can do to help you to get a good night's sleep.

- If you usually have a hot drink before bedtime, try a milky drink rather than one that contains caffeine (research suggests that reducing caffeine up to six hours before bed can increase the quality of sleep).
- Try to avoid eating meals or drinking alcohol late at night.
- Try to wake up at the same time every day, and set a regular bedtime.
- Try to reduce distraction and avoid disturbance during the night by keeping mobile devices such as phones and tablets out of the bedroom.
- Try to relax before going to bed and avoid watching television or using a computer just before bedtime.
- Create a calm environment by keeping your room at a comfortable temperature and as dark as possible.
- Make sure your bed is comfortable, and that your pillow gives you enough support.
- If you have a nap during the day, try to restrict yourself to 15 minutes or less. This can help to maintain a regular sleep pattern during the night.

If you have problems with sleep your GP or consultant can refer you to a specialist sleep clinic.

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