Headway
the brain injury association

Sleep problems
after brain injury

For brain injury survivors, a lack of sleep or reduced quality of sleep can intensify effects of brain injury such as headaches, memory problems, planning and problem-solving. However, the brain injury itself can also be a direct cause of sleep problems.

This publication explain show sleep can be affected by brain injury, what you can do about it and where you can get support with this issue.

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Introduction

Sleep is a very important part of our lives. During sleep, our body processes information from the day and undergoes repair work so that we stay healthy.

When we do not get enough sleep, we feel tired, may struggle with concentrating on things or be more irritable with family and friends.

For brain injury survivors, a lack of sleep or reduced quality of sleep can intensify effects of brain injury such as headaches, memory problems, planning and problem-solving. However, the brain injury itself can also be a direct cause of sleep problems.

This publication explains how sleep can be affected by brain injury, what you can do about it and where you can get support with this issue.

The information in this publication does not replace clinical guidance from medical professionals. You should always get advice from your GP or other suitably qualified professional for help with managing the effects of brain injury.

What is sleep?

Sleep is something that we all, and we all need. It is one of the most basic biological processes that allows us to function from day-to-day by giving our bodies a chance to recover from the day's work and process everything that has happened.

Some of the functions of sleep include:

- Consolidating memories - this means that relatively newly formed memories are moved into longer-term 'storage' in our brains and existing memories are strengthened;
- Repairing cells throughout the body;
- Helping to develop the body's immune system.

Sleep is therefore very important to help our bodies to function properly.

Unfortunately, the ability to get to sleep and stay asleep, and the quality of sleep, can be affected following a brain injury. On the other hand, a brain injury may affect someone's ability to stay awake so that they either feel sleepy during the day or fall asleep when they should be awake.

How can brain injury affect sleep?

Having a brain injury can affect sleep in a number of different ways.

Injury to parts of the brain involved in sleep
It may be that there is damage in parts of the brain that are directly responsible for sleep. For instance, closed head injuries can cause damage to a part of the brain known as the

suprachiasmatic nucleus (SCN), which controls the circadian rhythm (an internal 24-hour cycle).

Another area of the brain known as the basal forebrain is involved in sleep initiation, and this can be damaged by acceleration/ deceleration injuries, such as from a road traffic collision. Hormones involved in regulating sleep cycles may be affected following injury to areas such as the hypothalamus.

Psychological states

There is a relationship between stress, depression and anxiety, and sleep, so that these sorts of psychological states commonly experienced after brain injury can cause difficulties with getting to sleep or affect sleep quality.

A brain injury survivor who has post-traumatic stress disorder, for instance if they have been involved in a road traffic collision, blast injury or assault, may have nightmares while they sleep, which can make them feel bad upon wakening and anxious about going to sleep.

Changes in life after brain injury

The many changes that a brain injury can bring to someone's life may also preoccupy one's thoughts so that they struggle with getting to sleep. A survivor may find it difficult to stop thinking about things such as whether they can return to work, changes in relationships, financial stress and their recovery.

Effects of brain injury

Various effects of brain injury may be interfering with the ability to get to sleep or stay asleep through the night.

Pain such as headaches or muscle spasms might make the survivor too uncomfortable to get to sleep.

Survivors who experience fatigue in the day time may rely on napping to get through the day, but depending on the timing and duration of naps, this may actually cause problems with getting to sleep at night time.

Incontinence may disrupt a survivor's sleep if they need to use the toilet through the night.

Medication

Medication that the survivor is on to cope with the effects of their brain injury may actually have a side effect of disrupting sleep. This information should be contained in your medication information leaflet, or you can find information about medications on the NHS website at www.nhs.uk/medicines. You should always discuss any concerns about medication with your GP before making any changes.

Types of sleep problems after brain injury

This section describes some of the types of sleep problems commonly experienced after brain injury.

Excessive daytime sleepiness

This refers to sleepiness during the daytime to an excessive level. There can be a spontaneous need for sleep so that the person is unable to stay awake, often during inappropriate times, with no particular cause, and may suddenly fall asleep.

Insomnia

Being unable to get to sleep us one of the most common sleep related problems after brain injury. This can include finding it hard to get to sleep in the first place, staying asleep (i.e. waking

through the night), waking up too early and being unable to get back to sleep, and feeling tired upon waking. The NHS website offers a test through Sleepio to help with identifying whether you have insomnia, to access this visit www.nhs.uk/conditions/insomnia.

Unusual dreams/ nightmares

It is not uncommon for people to report changes in the content or quality of their dreams after brain injury. Some people report having unusual dreams, while others may experience nightmares. Dreams may be vivid and difficult to 'shake off' upon waking up, although in some cases they may be harmless and just considered unusual. Recurring nightmares can be common if someone is suffering from post-traumatic stress disorder (PTSD) after a traumatic incident; the nightmares may be of the incident itself or featuring themes around it, or memories of times in hospital.

Quality of sleep

Some brain injury survivors may sleep through the night or part of the night and still feel as though the quality is not the same as before their injury, perhaps making them feel tired when waking up. They may consistently wake up in the early morning and be unable to get back to sleep. There may be a general feeling of increased need of sleep after brain injury - this is known as pleisomnia. In fact, some research indicates that following a TBI, patients needed at least 2 more hours of sleep each night than they did before their injury.

Sleep-related breathing disorders

Sleep apnoea is where someone stops breathing while they sleep, and may cause the person to snore, make gasping,

snorting and choking sounds, or wake frequently through the night. The waking may be in brief but frequent episodes, causing a disruption of good quality sleep. It may be difficult to identify these issues if you sleep by yourself, but symptoms can also include feeling tired during the day and a headache upon waking up. Speak to your GP or neurologist if you are concerned about sleep apnoea as it can be serious and there are treatments available.

Sleep/ wake cycle disruption

Our sleep/ wake cycles generally tend to follow a 24-hour cycle - this is called our circadian rhythm. Following a brain injury, some survivors may have disrupted circadian rhythms so that they are unable to follow a set pattern for sleeping, and sleeping times become random. There may be difficulty sleeping and waking at particular, set times, possibly causing the survivor to go to bed late and wake up later than they did before their injury.

Parasomnias

Abnormal movements, talking and actions while sleeping are called parasomnias and can occur following brain injury. This can include talking in one's sleep (somniloquy), teeth grinding (bruxism) and dream re-enactment. These issues can be exacerbated by sleep deprivation and fragmented sleep. A person may appear to others as though they are awake while carrying out these behaviours as they sleep.

The effect of these sleep problems is that it can make someone feel tired, irritable and cause difficulties with concentration through the day. Effects of brain injury, especially cognitive effects such as memory problems and difficulties with planning

or problem-solving, may be worsened. These issues can unfortunately make someone struggle to sleep even more if they cause anxiety, for instance making the survivor worry about their recovery.

Where can I get help for sleep problems after brain injury?

Research has shown that in some cases sleep problems can improve or resolve by themselves over time. However, as sleep is something that we rely on everyday to function, it may be necessary to seek professional support with this issue if the tips provided in this publication further on do not help.

Relevant professionals

There are a number of professionals that may be unable to help by first investigating the underlying case of the sleep problems. For instance, an endocrinologist may be able to test your hormones, while a neuropsychologist or a counsellor may be able to identify and support with issues such as depression, anxiety or post-traumatic stress disorder (PTSD).

It is advisable in the first instance to speak with your GP or neurologist about your sleep issues, as they may be able to check medications you are on and review these, to see whether there are any side effects causing the sleep problems, or whether you can be prescribed anything to help with the sleep problems. They may be able to refer you to professionals or advise on the suitability of acupuncture, which there is some evidence to suggest can help with some sleep problems. Cognitive behavioural therapy (CBT) is a form of therapy that has been found to be effective at improving sleep problems after brain injury in some cases. You can find out more about

CBT on the NHS website. You do not necessarily need a GP referral to access CBT; if you live in England, you can access NHS' IAPT (Improving Access to Psychological Therapies) service, although you do still need to be registered with a GP to access this. For more information, visit www.nhs.uk/service-search/find-apsychological-therapies-service/.

Sleep clinics

In some instances, it may be possible to get a referral to a sleep clinic. There are not many of these around the country and waiting lists for referrals can be very long, so it is not always possible to access them.

Sleep clinics can carry out a series of tests while you sleep, checking things such as your breathing patterns and brain activity, which can help with identifying problems and guide treatment. You will need a referral from a GP to visit a sleep clinic, and you will often need to be prepared to remain there overnight while the tests are carried out.

Sleep diaries

Regardless of which course of professional support you take, it can be helpful to take a sleep diary along with you. A sleep diary is a log you can start keeping for a few days or weeks to monitor your sleep activity. Write down details about how much sleep you get each night, the quality of it, what the sleeping environment was like, timings of sleep, and any daytime symptoms you experience, such as if you were anxious or sleepy through the day. These details can help with identifying sleep patterns and any underlying cases of the sleep problems.

Other tools

Sleepstation (www.sleepstation.org.uk) is a 6-8 week programme that has been designed to help with sleep problems. You usually do not need a referral from a GP to access the programme, however, it may or may not be helpful depending on the nature of your brain injury so you should explore this in some detail and contact Sleepstation to discuss your situation first.

The NHS MyTherappy website lists apps that have been approved by the NHS. There is a designated page for sleep apps to help after brain injury that you can browse through at www.my-therappy.co.uk/apps/brain-injury/sleep.

Tips for improving sleep after brain injury

In the first instance, and if possible, try to identify what may be causing your sleep problems. It might be helpful to start keeping a sleep diary (see previous section), as this may help to identify things that may be affecting your sleep, such as how you feel during the day. Other tips to try include...

Managing the effects of brain injury to improve sleep

- If you are waking through the night from incontinence, try to empty your bladder and bowels just before going to bed every night. You could also try to limit the amount you eat and drink just before going to bed.

- Speak to your GP or neurologist about taking medication to manage pain such as headaches, but be aware that some medications can have side effects that also affect sleep, so discuss this with your GP as well. You could also have a warm bath before bed to help with managing pain.

- If you are experiencing psychological issues such as depression, anxiety, stress or post-traumatic stress disorder (PTSD), especially nightmares associated with PTSD, speak to your GP or seek support from a clinical neuropsychologist or talking therapist such as a counsellor. You could also try techniques such as mindfulness before bed to help you to relax and calm your thoughts.

- Fatigue is a common effect of brain injury that may make you feel overwhelmingly tired during the day, especially following periods of activity. While resting is recommended as a fragmented sleep. A person may appear to others as though they are awake way of managing fatigue, try to avoid doing this in the afternoon as it may disrupt your natural sleep routine at night.

- If you are sensitive to lights and sounds after your brain injury, consider using an eye mask to block out light, or ear plugs to minimise noise, which may help you to get to sleep.

Lifestyle changes

- Reduce caffeine intake, if possible, especially in the afternoon and evenings. Caffeine is a stimulant so it can affect the ability to sleep.

- Sleep related hygiene is a term that describes a general set of rules that can help to improve sleep. This can include things such as not using electronic devices and reducing screen time before bed, having a regular sleep routine (waking up and going to bed at the same time), not staying in bed for longer than necessary after waking up and having a bed time routine.

- Try to make the room that you sleep in comfortable, clean, warm and ventilated.

- You may find that different bedding can help, such as specially shaped pillows to help with pain or one-sided weakness. Or instead, try re-positioning pillows to help with making you feel more comfortable in bed. Disability equipment providers can advise on bedroom equipment that may help.

- Tolerance to alcohol reduces after a brain injury, so it is generally advisable to reduce or avoid drinking alcohol after a brain injury, especially as this can also affect sleep.

- Some types of sleep related issues such as sleep apnoea can be improved with weight loss if you are overweight. Consider discussing this with your GP.

Coping during the night

- If you wake up frequently through the night, try not to check the time constantly as this can make it feel more difficult to get back to sleep if you notice time passing slowly.

- If you cannot get back to sleep for a while after waking up, try not to force yourself to go back to sleep. Instead get up, and do some gentle, light activity for a short while and then return to bed. Try not to do anything too stimulating at this time such as watching TV.

- Try to practice techniques such as mindfulness and breathing exercises when you wake up to help you stay relaxed, which may help with getting back to sleep.

- Try to keep things that you may need through the night at your bedside, such as a drink if you get thirsty or medication. Try not to keep distracting electronic devices such as your mobile phone beside you unless you really need these. If you do keep your phone beside you, try to avoid opening apps such as games or social media during the night.

Other suggestions

- For problems with staying awake during the daytime, consider trying light therapy as there is some small evidence to suggest that this can help.

- Acupuncture is a complementary therapy that may be available to you through the NHS and has been found to help with some types of sleep problems after brain injury, although improvements may only be small and may not last for long. For more information about acupuncture, including information about safety and regulation, visit www.nhs.uk/conditions/acupuncture.

- If you are at risk of sleepwalking, seizures during sleep, or dream re-enactment, keep the environment safe before going to bed by clearing away any tripping hazards and locking windows.

Above all, remember that sleep problems can sometimes resolve by themselves over time. Where there are persistent problems and it is affecting your quality of life, professional help is available through a number of services and your GP.

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We hope that this has been a helpful resource. Please consider sharing your feedback with us by scanning the QR code or by visiting our publication feedback survey https://uk.surveymonkey.com/r/hwpublications.

Learn more and support our work at www.headway.org.uk/get-involved.

This information was last reviewed in 2021.

We're here to listen.

If you need support, or have a question about brain injury, contact our free nurse-led helpline:

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