the brain injury association

Sleep problems after brain injury

This publication has been written to offer information on sleep issues after brain injury. It explains what sleep is, how brain injury can affect sleep, how to get professional support and offers self-help tips for coping.

For more guidance on how Headway supports people affected by brain injury, visit our website at www.headway.org.uk.

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Introduction

Sleep is a very important part of our lives. During sleep, our body processes

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information from the day and undergoes repair work so that 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.

A brain injury can cause a range of sleep problems. A lack of sleep or reduced quality of sleep can also worsen effects of the injury such as headaches, memory problems or difficulties with planning and problem-solving.

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

The information in this publication does not replace clinical guidance from medical professionals.

What is sleep?

Sleep is something that we all do 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:

- Strengthening memories and moving newly formed memories into longer-term 'storage' in our brains (this is known as consolidating memories)
- 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 by 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 that are involved in sleep

The brain injury may have affected parts of the brain that are directly responsible for sleep. For instance, closed head injuries can cause damage to a part of the brain involved in sleep known as the suprachiasmatic nucleus - this controls the body's internal 24-hour cycle (known as the body's circadian rhythm).

Another area of the brain, known as the basal forebrain, is involved in sleep initiation. This can be damaged by acceleration/deceleration injuries, such as from a road traffic collision.

Damage to parts of the brain responsible for producing and regulating hormones, such as the hypothalamus, may also interfere with sleep.

Psychological stress

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

For example, a brain injury survivor who is anxious about their changed circumstances may find it difficult to get to sleep if they are thinking about issues such as their recovery, going back to work, finances or changes in relationships. Or someone who sustained their injury through an assault may experience nightmares, causing them to feel anxious about going to sleep.

Effects of the brain injury

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

Pain, such as from headaches or muscle spasms, may cause too much discomfort for the brain injury survivor to sleep.

Fatigue may cause the survivor to nap frequently through the day, affecting their

nightly sleep.

Incontinence may disrupt a person's sleep quality if they are frequently waking to use the toilet at night.

Medication

Medications used after brain injury may cause side effects that disrupt sleep. This information should be contained in medication information leaflets, or you can find information about medications on the NHS website at www.nhs.uk/medicines.

Never make changes to your medications without first consulting your GP.

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 survivor is unable to stay awake, often during inappropriate times, with no particular cause.

Insomnia

Being unable to get to sleep is 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.

Unusual dreams/nightmares

People sometimes report having different quality dreams after brain injury. Some people's dreams become unusual, while others experience nightmares more frequently. Dreams may feel more intense and difficult to 'shake off' after waking.

Recurring dreams or nightmares can occur if someone is suffering from post-traumatic stress disorder (PTSD) related to the brain injury.

Quality of sleep

Brain injury survivors may sleep through the night but still feel the quality of their sleep has changed, for instance still feeling tired upon waking. There may be a general feeling of increased need of sleep after brain injury - this is known as pleisomnia.

Research suggests that following a traumatic brain injury, people need at least 2 more hours of sleep each night than they did before their injury.

Sleep-related breathing disorders

Sleep apnoea is a condition in which someone stops breathing while they sleep. This may cause them to snore, make gasping, snorting or choking sounds, or wake frequently through the night. The waking may be brief but frequent, disrupting good quality sleep.

Speak to your GP or neurologist if you are concerned about sleep apnoea, as it can be serious, but there are treatments available.

It may be difficult to identify sleep apnoea if you sleep by yourself. Some signs can include feeling tired during the day, struggling to concentrate and having a headache upon waking up. These are also common effects of brain injury, so it may be helpful to ask if someone can monitor you while you sleep to check.

Sleep/wake cycle disruption

Our sleep/wake cycles tend to follow a 24-hour cycle - this is called our circadian rhythm. A brain injury can disrupt this cycle, affecting the brain injury survivor's ability to follow a set pattern for sleeping. Sleep times may become random, and the survivor may go to bed and wake up at different times from before their injury.

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Parasomnias

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

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

Research has shown that in some cases, sleep problems after brain injury can improve by themselves over time. However, as sleep is something that we rely on everyday to function, it may be necessary to get professional support for coping with this issue.

Relevant professionals

It is advisable to start getting support by talking to your GP about your sleep issues. They may be able to review your medication or refer you to specialists who can investigate and support other issues that may be affecting your sleep. For example, an endocrinologist may be able to test your hormones to check whether these are affecting your sleep, while a neuropsychologist may be able to help if your sleep problems are caused by anxiety or depression related to the brain injury.

Your GP may also be able to advise you on the suitability of acupuncture, which there is some evidence to suggest can help with sleep problems.

Cognitive behavioural therapy (CBT) is a specialised form of therapy that has been found to be effective at improving sleep problems after brain injury. You can find out more about CBT on the NHS website at www.nhs.uk/tests-and-treatments/cognitive-behavioural-therapy-cbt.

Sleep clinics

Sleep clinics are clinics that investigate and diagnose sleep problems. 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 carry out a series of tests while someone sleeps, such as checking breathing patterns and brain activity. This can help with identifying problems and guiding treatment. You will need a referral from a GP to access a sleep clinic, and you will often need to be prepared to remain there overnight while the tests are carried out.

Sleep diaries

Sleep diaries are a helpful tool that you can keep at home to log your sleep activity. This can be helpful for any professional who is supporting you with your sleep problems. It is a log containing details of your sleep, such as how long you slept, how often you woke, the quality of your sleep, what your sleeping environment was like and daytime symptoms. It can helpful to keep this for a few days, weeks or months to help with identifying patterns.

Other tools

There are a wide range of apps and digital tools available nowadays that have been designed to help people with sleep. However, these should always be checked carefully for suitability. Sleepio and Sleepstation are two programmes that have been recommended by NHS, however these have not been designed specifically for brain injury so you should get advice before exploring these options.

Tips for improving sleep after brain injury

The first thing you should try to do is to identify the cause of your sleep problems. If you can do this, it will be easier to find ways to improve your sleep. Keeping a sleep diary (see previous section) can help with this. Other tips to try include the following.

Managing the effects of brain injury to improve sleep

- Fatigue after brain injury may be causing you to take frequent naps to cope

through the day. Try not to take naps later in the afternoon, as this may be interfering with your ability to sleep at night.

For more information on coping with fatigue, see our publication *Fatigue after brain injury*.

- If pain is causing you difficulties with sleeping, talk to your GP about medications or getting a referral to a pain clinic. Do mention that your pain is affecting your ability to sleep, as some medications may have side effects that also interfere with sleep. You could also try to take a warm bath before bed to help with managing pain.

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

For more information on coping with incontinence, see our publication *Continence problems after brain injury*.

- 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.

- If you are experiencing anxiety, depression or PTSD, speak to your GP about accessing talking therapy such as counselling or CBT, or getting a referral to a neuropsychologist. You could also try techniques such as mindfulness before bed to try and calm your thoughts before sleeping.

For more information on coping with anxiety, depression and PTSD, see our publications *Anxiety after brain injury*, *Depression after brain injury* and *Psychological effects of brain injury*.

Lifestyle changes

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

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- Practice good sleep related hygiene. This is a term that describes a general set of rules that can improve sleep, such as not using electronic devices in bed, reducing screen time before bed, having a regular sleep routine, not staying in bed for longer than is necessary in the morning and having a relaxing bed time routine.

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

- If possible, consider rearranging pillows to make you more comfortable in bed or buying specially shaped pillows to help with pain or weakness. Disability equipment providers can advise on bedroom equipment that may help.

- Try to avoid drinking alcohol, as tolerance to this greatly reduces after brain injury and this may interfere with sleep.

- Consider losing weight if you are experiencing sleep apnoea. Your GP may be able to help with this.

Coping during the night

- Try not to constantly check the time if you wake through the night, as this can make it harder to get back to sleep.

- Try not to force yourself to get back to sleep if you have been trying for a while with no success. Instead, engage in some light and gentle activity for a short while before returning to bed. Try not to do anything too stimulating in this time such as watching TV.

- Try to practice relaxation techniques such as deep breathing and

mindfulness to help you stay relaxed when you wake up.

- Try to keep things that you may need through the night at your bedside, such as a drink 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 through the night.

Other suggestions

- For problems with staying awake during the daytime, consider talking to your GP about trying light therapy, as there is some small evidence to suggest that this can help, but it is not be suitable for everyone.

- Talk to your GP about trying acupuncture, as this may be available to you through the NHS and has been found to help with some types of sleep problems after brain injury. However, effects may only be small and may not last for long.

Familiarise yourself with acupuncture safety and regulation before exploring this option. More guidance is available on www.nhs.uk/tests-and-treatments/herbal-medicines-and-complementary-therapies.

- 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 improve by themselves over time. Where there are ongoing problems and it is affecting your quality of life, professional help is available through a number of services and your GP.

Remember that you can contact our nurse-led helpline if you want to talk about your experiences or feelings on sleep problems after brain injury.

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As a charity, we rely on donations from people like you to provide free information to those affected by brain injury. To donate or find out how to support our work, visit www.headway.org.uk/get-involved.

If you would like to leave feedback for this publication, please complete our short survey at www.surveymonkey.co.uk/r/hwpublications or contact us at publications@headway.org.uk.

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