



Memory

Living with memory difficulties

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Living with memory difficulties

Throughout our lives memories are being made, stored, and found by our brain. Links made between our brain cells help us to remember the thoughts, skills, experiences, and knowledge that make each of us unique.

Memory can be one of the key things that can be affected in people with epilepsy.

This leaflet looks at some of the issues around epilepsy and memory, and what might help.

Memory is the brain's ability to store information and find it again later. Chemical and electrical changes happen in the brain when new memories are made.

Making and using memories involves three stages: **learning** new information, **storing** it, then **retrieving** it later on. Memory can be affected if any of these stages are disrupted.

- **Learning** – this is when you take in new information that you want to remember later on. It may involve reading or watching something new several times or linking it to an existing memory.
- **Storing** – this is when the information learnt is stored in the brain.
- **Retrieving** – this is when you find and use the information that has been learnt. For example, remembering a friend's social media details or their home address.

Types of memory

Long-term memory

This is information stored over a long time. There are many types of long-term memory.

- **Semantic memory** – this is memory of knowledge and facts about people, places, and things. For example, recalling that a banana is a yellow fruit, or that Edinburgh is the capital of Scotland.
- **Episodic memory** – this is memory about events or episodes that have happened. For example, conversations, holidays, or recalling your first day at school. Episodic memories are personal and different for everyone.
- **Prospective memory** – this is memory for things you have to do in the future. For example, recalling a doctor's appointment next week, or sending a card for a friend's birthday.
- **Procedural memory** – this is memory for skills and how to do things. For example, knowing how to ride a bike, or to tie a shoelace. These tasks often require effort to learn but once learnt are rarely forgotten.

Short-term memory

Sometimes called 'working memory' or 'attention span', short-term memory is information that is only kept for the length of time you need to use it.

Most people can usually keep about seven to nine letters, words, or numbers in their mind at once. An example is remembering a telephone number while you dial.

Because you only need this type of information for a short time, your brain doesn't store it. This type of information is easily forgotten unless we actively try to store it in our memory.

How epilepsy may affect memory

It is not unusual for people with epilepsy to have memory problems, which usually happen for a number of reasons.

Epilepsy

The cause of your epilepsy may also be the cause of some of your memory difficulties. Memory difficulties and seizures may both be symptoms of the same underlying problem in the brain.

Seizures

It is normal to have little or no memory of events that happen during a seizure. This is because the brain is not able to store new memories during a seizure.

It can take a while for the brain to completely recover from a seizure, so memory can be disrupted for some time afterwards for some people.

Any type of epileptic seizure could potentially affect your memory, either during, or after, the seizure.

If you have lots of seizures, particularly in a short space of time, your memory can be disrupted for a longer period of time.

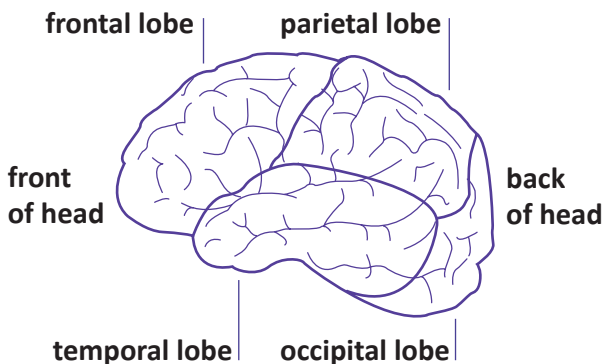
This may happen if the brain doesn't have enough time to recover fully between the seizures.

Some people have generalised seizures that affect all of the brain. Others have focal seizures that affect only part of the brain. Some people have both generalised and focal seizures.

Visit [epilepsysociety.org.uk/epileptic-seizures](https://www.epilepsysociety.org.uk/epileptic-seizures)

The brain has two halves called hemispheres. Each half has four parts called lobes: the frontal, temporal, parietal, and occipital lobes.

One hemisphere of the brain (side view)



Abnormalities in the temporal or frontal lobes of the brain are the most common reason for memory problems in people with epilepsy, but memory problems can happen in all types of epilepsy.

The types of memory problems you have will depend on the cause of your seizures and the part of your brain that is affected.

- People with temporal lobe epilepsy often have difficulty taking in new information.
- Frontal lobe epilepsy may make it difficult to recall events from the past.

However, all kinds of memory difficulties can occur in all kinds of epilepsy. It really depends on how your epilepsy affects you.

After a seizure

You may have difficulty remembering information straight after a seizure. The length of time it takes for memory to return to normal can vary from person to person.

Does medication affect memory?

Memory difficulties can happen due to the side effects of some anti-seizure medications (ASMs). Drowsiness, or concentration problems, caused by ASMs, can affect your short-term memory, and may make it difficult to take in and store new information.

You may be more likely to have memory difficulties if you take high doses, or more than one type, of ASM. Changing ASM may sometimes help to reduce memory problems but they rarely disappear completely.

If you are concerned about the effect of ASM on your memory, you could talk to your doctor or specialist.

Visit [epilepsysociety.org.uk/anti-seizure-medication](https://www.epilepsysociety.org.uk/anti-seizure-medication)

What else can affect memory?

Mood and concentration

Often the way you feel can affect how well you are able to remember information. Feeling confident and happy can affect the way your brain works by increasing your ability to concentrate and take in information.

If you feel anxious or stressed it may be more likely that your brain will have difficulties at the 'learning' stage. Also, when you have trouble recalling information, worrying might make it harder to find the correct information.

Lack of sleep

Tiredness, lack of sleep, or feeling unwell can affect concentration and memory. For some people lack of sleep can make them more likely to have seizures, for others it may be that having seizures during the night causes tiredness.

Not getting enough sleep can also contribute to memory difficulties. During sleep our brains process information and experiences.

Research suggests that getting good sleep can help to make memories more stable and preserve long-term memory.

If you have problems with sleep you could talk to your GP or consultant about being referred to a specialist sleep clinic.

Visit [epilepsysociety.org.uk/sleep-epilepsy](https://www.epilepsysociety.org.uk/sleep-epilepsy)

Age

As we get older, storing and recalling information can be more difficult. This is a completely normal part of ageing.

People with epilepsy might notice these difficulties earlier than others, as they may already be aware that they are having memory problems.

These changes happen because the brain changes physically throughout our lives, and also because the demands on our memory can change.

Managing different areas of your life such as work, family, study, and social life, can be complicated and may increase the chance of you forgetting things.

Understanding what your memory issues are, may help you develop strategies to manage memory difficulties in everyday life (see Memory aids and reminders on page 10).

Surgery

There are risks to memory from brain surgery. Any risks will be different for everyone and your doctors will explain beforehand what the risks are for you.

Even if the surgery stops your seizures from happening, you may have memory problems afterwards.

Visit [epilepsysociety.org.uk/epilepsy-and-brain-surgery](https://www.epilepsysociety.org.uk/epilepsy-and-brain-surgery)

Memory aids and reminders

Anyone can have difficulty remembering information. Keeping your brain alert and active is a good thing but, on its own, it may not necessarily improve your memory.

Memory aids may help you to cope with memory problems, and may work best if they are used regularly as part of a routine.

Sticky notes

Sticky notes, such as Post it Notes™ can help you to remember to do things. For example, sticking a note to your front door to remind you to pick up your keys before you go out.

Calendars, diaries, and 'to do' lists

Using a calendar can be helpful, particularly if it is placed somewhere you will see it easily and often, such as on the fridge door.

Using a diary, or calendar, can help you to keep a note of appointments, birthdays, or phone numbers. Keeping more detailed notes in a diary may be helpful to keep track of people you have met, where you have been, and what you did.

A 'to do' list can be useful to record daily tasks, for example, phone calls to make or bills to pay. Email, mobile phone, and computer software packages often include diaries and 'to do' lists.

Drug wallets (pill boxes)

Drug wallets can help remind you to take your medication and how many tablets to take. They usually have seven small containers to keep medication in, one for each day of the week. Each container is divided into sections, for the morning, afternoon, and evening, and can be removed if you want to take your medication out with you. Some have an alarm to remind you when to take your medication. With a drug wallet you can see at a glance that you have taken medication, and avoid taking it twice by mistake.

Alarms and mobile phones

Alarm clocks, or wristwatch and mobile phone alarms, can be a useful reminder. For example, reminding you to take your medication or to feed a pet.

Many mobile phones have a reminder function. You can write a message and set a date and a time for the phone to send the message to you. Or you can set an alarm. This can help you remember everyday tasks as well as something that is not part of your usual routine, for example a dentist's appointment.

Smartphones can access the internet to download software applications (apps) to your phone. There are many apps available which you can use to support your memory.

Taking lots of photographs on your phone and reviewing these at the end of the day can help you store important memories, particularly for special events.

What techniques can help?

Some memory techniques can help the brain to store and find information. They often need practice and may not work for everyone. They may be helpful when you can't use memory aids, such as in an exam.

These techniques often use rhymes, stories, or images to help you to link ideas to make a stronger memory.

Remembering a word 'on the tip of your tongue'

If you have trouble remembering a word, alphabetical searching may help. In your head go through the alphabet asking yourself if the word begins with a, b, c... If this does not work, try using a different word. If you are talking to someone at the time, you may want to tell them that it's not quite the word you were looking for. They may try to help by suggesting another word.

Remembering someone's name

The following techniques might help to make a name more memorable:

- When you meet someone for the first time try to concentrate on their name, repeat it to yourself and use it while you talk to them.

It may be helpful to write their name down and think of a way to remember it later.

- Use a rhyme, for example Joan always moans or Mr Shah drives a sports car.
- Imagine a picture of the person and include in it something to do with their name, for example, Mr Bridge sitting on a famous bridge.
- A silly image may help you to remember names. For example you could imagine Mr Pearman as a pear.

Remembering where you put something

To help you remember where you put something, picture in your mind the object in the place you're putting it. Also, saying out loud 'I am putting...' while doing this can help your brain to create a link to the memory of doing that task.

Writing down what you have done, in a diary or other place which you look at regularly, may also help.

Going over in your mind what you were doing the last time you had the missing item is another technique. Physically going back to where you were at the time can also help.

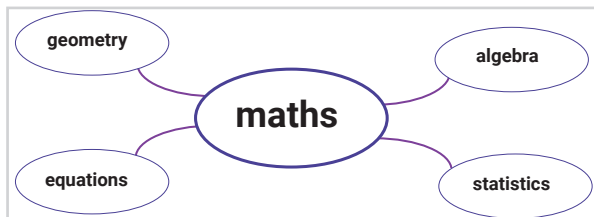
It can be helpful to have a filing system, a standard routine, and places to keep things, such as always keeping your keys in the same place.

Using sayings or rhymes

Sayings or rhymes are often used to recall information. Using the first letter of each word in a sentence may help you to remember a list. For example, **R**ichard of **Y**ork **g**ave **b**attle in **v**ain, can be used to remember the colours of the rainbow: red, orange, yellow, green, blue, indigo, and violet.

Using pictures or mind mapping

Drawing a picture that represents what you are learning may help you recall the information. Mind maps, or 'spidergrams', where you draw a diagram or map the information using keywords or phrases, can also be helpful.



Preparing for exams

These ideas may help you revise for exams:

- Revise in a quiet place where you won't be disturbed or distracted, to help you focus.
- Test yourself before the exam. Past papers or revision guides can help.
- Linking what you are reading to a personal experience, or to something you already know, may help you to store the information.

- Try to get a good night's sleep before the exam. The brain's ability to recall information works better when it's alert.
- When the exam begins you could quickly write or draw your revision aids on rough paper, to help you remember your preparation work.

Brain training

There are several 'brain training' computer packages available. Companies that sell brain training claim that doing these exercises increases brain power, improving memory and other brain functions, but independent research has shown that brain training does not generally improve memory performance in everyday life.

Memory assessments

Your GP or specialist can refer you for a memory assessment, which is usually done by a neuropsychologist who can suggest ways to manage memory difficulties.

Epilepsy Society is grateful to Professor Sallie Baxendale, Consultant Neuropsychologist, UCLH, London and Professor of Clinical Neuropsychology, University College London, who reviewed this information.

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Chesham Lane,
Chalfont St Peter,
Buckinghamshire
SL9 0RJ

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