

Problems with memory and thinking after a **stroke**



This guide explains the different ways a stroke can affect your memory and thinking (also known as cognition). It's aimed at people who have had a stroke but there is information for family and friends as well.

Find more useful information and practical tips at **stroke.org.uk** or call our Helpline for printed copies.

Useful topics include:

- Behaviour changes after a stroke: **stroke.org.uk/behaviour**
- Communication problems after stroke: **stroke.org.uk/communication-problems**
- Emotional changes after stroke: **stroke.org.uk/emotional-changes**
- Fatigue after stroke: **stroke.org.uk/fatigue**
- Information for carers: **stroke.org.uk/caring**

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What are memory and thinking?

Every second you receive a huge amount of information from the world around you, through your senses of sight, hearing, touch, smell and taste. Your brain has to understand, organise and keep the information you need. This is also known as memory and thinking, or cognition.

Problems with memory and thinking, or cognitive problems, can affect people in many different ways, including:

- Problems with concentration.
- Having trouble remembering certain things.
- Finding it hard to work out how to do something.
- Not recognising things.
- Not realising something is near you, even though you can see it.

Stroke and cognitive problems

A stroke damages part of the brain. Different parts of your brain work together to produce cognitive skills like thinking and memory. If one of those parts of your brain is damaged by a stroke, this can lead to cognitive problems.

Cognitive problems are very common after stroke. They can affect many aspects of your life, including:

- Communication.
- Relationships with partners and friends.
- Planning and doing tasks at home or at work.
- Being motivated to do things like therapy and fitness.
- Travelling and leisure.
- Reading and writing.

Diagnosing cognitive problems after a stroke

When you're in hospital, you should be assessed to find out if you have any cognitive problems. However, some cognitive problems are not easy to identify, and some might only be noticeable after you return home. You should be assessed again at regular intervals after you leave hospital.

Types of cognitive problem

Problems with focus and concentration

When you concentrate on something, your brain has to screen out a lot of information coming in from the world around you. A stroke can affect your brain's ability to do this, also known as 'selective attention'. It can affect your ability to stay focused on something for a period of time, also known as 'sustained attention'.

Concentration problems are especially common in the early stages after a stroke. They can affect you in several ways, as we rely on concentration for all of our other thinking processes. If you find it hard to focus on something, then you may find it hard to respond or to remember it later.

Other effects of stroke can make your concentration worse. Tiredness, pain or emotional problems like anxiety or low mood can all affect your ability to take information in and stay focused.

Signs of concentration problems

If you're having problems with concentration, you may find it hard to:

- Filter out what's going on around you. It may be difficult to chat to someone in a noisy room or find what you're looking for in the supermarket.
- Stay focused on a single task, like reading a book or watching a TV programme.
- Move from one task to another easily. If you're interrupted, you may find it difficult to return to whatever you were doing before.
- Do more than one thing at once. You may find it difficult to chat to someone and make a cup of tea at the same time.
- Process information. You may find it hard to follow people who talk very quickly or it may take you longer to do things than it used to.

Memory problems

We store all kinds of information in our memory. We also have different types of memory for storing information for different lengths of time. This is known as short-term and long-term memory.

- **Short-term memory** is like a temporary storehouse for information. It allows you to remember things just long enough for you to use them. For example, when you read a telephone number, you use your short-term memory to remember it for the few seconds it takes you to dial. This is also known as working memory.
- **Long-term memory** keeps information that you will need to recall later, such as events and feelings from the past.

Many people have problems with their memory after a stroke, especially in the first weeks and months. It often affects short-term memory more than long-term. Someone might find it hard to remember something they have just been told, but might recall something that happened 10 years ago.

Memory problems may not always be due to a problem with your memory itself. They can often be due to problems with attention and concentration, because if you're unable to focus on what you're being told, you're not going to be able to remember it later. If you have difficulty sleeping after your stroke, this may also make it harder to remember things. This is because your brain needs sleep to move information from short to long-term storage.

Emotional problems like anxiety can also make it hard to concentrate. This can make you feel as if you have memory problems.

Signs of memory problems

If your short-term memory has been affected, you may find it difficult to remember:

- What someone just said to you.
- What you were about to do.

If your long-term memory has been affected, then you may find it difficult to remember:

- Important dates or when you've got an appointment.
- Where you've put something.
- Someone's name or what they told you last time you met.

Problems with planning and problem-solving (executive function)

Many other thinking processes happen without us being aware of them, known as automatic processes. Together, many of these automatic processes are known as executive function.

Executive function is about planning and problem-solving. It includes all the things that allow us to organise, make decisions and know when we need to do something. It also involves the way we monitor what's going on around us, and adjust what we think and do in response.

Signs of problems with executive function

If a stroke affects your executive function, you may find it hard to:

- Work out how to do certain things. This could be a task that seems quite simple like changing the channel on the TV remote control, or it could be more complicated, like making a meal.
- Plan how to complete a task. You may not be able to think of all the steps that are needed to do something, such as making a cup of tea, or put the steps in the correct order.
- Begin or finish a task on your own. You may not realise that you need to do something, like get dressed, until someone tells you, or you may need someone to prompt you throughout a task to help you to complete it.
- Solve problems on your own. You may not be able to work out what to do if something goes wrong.
- Do more than one thing at a time (multi-task). You may find it hard to switch between tasks and remember where you were with each task.

Problems noticing things on one side (spatial neglect)

A stroke can make you lose awareness of things to one side of your body. Even if you have good eyesight, your brain does not process the information it's getting from one side. This is called neglect or inattention.

These kinds of problems can be obvious to the people around you, but you may not notice anything is wrong. This is because your brain does not know that something is missing. So you will not know that you've missed half of the food on your plate until someone else brings your attention to it. It often affects the same side of the body with muscle weakness (your affected side).

Signs of spatial neglect

If you have neglect, you may:

- Miss things that are placed on your affected side.
- Ignore people or bump into things without realising that they are there.
- Not dress one side of your body or shave one side of your face.
- Not eat food on one side of your plate.
- Not read one side of a book or page.
- Have problems finding your way around because you may not notice doors or landmarks on one side.

Problems moving or controlling your body (apraxia)

Every time we move, our brain has to plan what it wants our body to do and make sure we do it in the right order. A stroke can affect your ability to do this, making it difficult to move parts of your body in the way you want to. This is called apraxia.

If you have apraxia, you'll find it difficult to move when you're asked to, even though you understand exactly what you're being asked to do and know how to do it. This is because apraxia is a problem with planning movements. Even though you cannot wave properly to someone when they ask you to, you may wave without any problem when they go to leave, because you're doing it without thinking. It often affects the ability to use 'tools' such as cutlery, when you need to make intentional movements to complete a task, like cutting up food on your plate.

Apraxia is quite common after a stroke and it can take some time to improve. It can also be difficult to notice it. Very often, people assume that their problem is physical. However, a doctor or therapist should be able to pick up on apraxia through the assessments they do with you.

Signs of apraxia

If you have apraxia, you may:

- Hesitate before doing things or seem to do them very slowly.
- Do things with the wrong amount of force. You may bang your mug on the table when you put it down.
- Move in the wrong way, like waving your hand forwards and backwards to say goodbye, rather than side to side.

Problems with movement and finding your way around (visual perception)

We use information from our eyes to determine the size, shape and position of the objects we see. Our brain uses this to work out how far away they are from us and where they are in relation to other things. This is called visual or spatial perception.

Signs of visual perception problems

If a stroke affects your visual perception, you may not be able to:

- Judge depths or distances. You may not know how close you are to something, or when a cup is almost full, or how high a step is. This can make getting around difficult, especially when you go up and down stairs or through doorways.
- Tell the difference between foreground and background. You may not be able to spot a white plate on a white table, or see the item you're looking for in a cluttered drawer.
- Interact with objects very easily, like putting a lid back on a jar or putting food on a fork.
- Follow terms like 'in front of' or 'inside'. If someone tells you that the sugar is behind the teabags, you may not know where you need to look.

For more information about spatial neglect and visual perception, visit stroke.org.uk/vision-problems, or call our Helpline for printed copies.

Problems recognising things (agnosia)

There are two stages to recognising something. The first stage uses the information you get from your senses about the way it looks, feels and sounds, to develop a picture of what it is. The second stage compares this to the information in your memory, so that you can remember what it's called and what it does. A stroke can affect both of these stages.

Types of agnosia

1. Apperceptive agnosia is when your stroke affects how your brain processes the information you receive about an object.
2. Associative agnosia affects the way you remember information about objects.

Agnosia may only affect you in very specific ways. For example, some people find that although they cannot recognise an actual object, they can recognise a picture of it. Some people have agnosia for colour or faces. Having trouble recognising faces is known as prosopagnosia, sometimes called face-blindness.

Signs of agnosia

Apperceptive agnosia can affect any sense. You may lose the ability to recognise objects by touch, sound or sight. It usually affects just one sense, so although you may not be able to recognise an object by looking at it, you may be able to by touching it.

Problems recognising an object by sight are most common. It's not that you cannot see the object at all. If someone asks you to describe the object they're holding, you'll be able to tell them about some of its features. You'll know that it's white, or that it's got a handle, for example. But you will not be able to recognise that it's a cup. However, if you're asked what a cup is, you'll know exactly what it looks like and what it's for.

If you have associative agnosia, you'll have a full picture of the object you're looking at, but you will not be able to remember what it's called. So you'll often use the wrong name. Even if you're told the correct name, you may not be able to explain what it's used for.

Confusion and denial (anosognosia)

Sometimes after a stroke, people are not able to recognise the effect that it has on them. You may not know that you've lost movement in your arm or leg, for example. This is called anosognosia.

If you experience this kind of confusion, it's more likely to be with movement or visual problems, although it can apply to other problems too. People who have neglect are more likely to experience anosognosia.

Anosognosia can be quite distressing, because you may not understand why you're in hospital or why people think you cannot do things for yourself. We do not really understand why it happens, but it can be quite common, especially in the very early stages after stroke.

It can also come and go, so you may not experience it all the time. However, it will get better and only lasts a few days or weeks in most cases. Only a small number of people continue to experience anosognosia months after their stroke.

Signs of anosognosia

If you have anosognosia you may:

- Not notice the effects of your stroke, or show much concern about them.
- Be aware of some problems but not others.
For example, you may be aware that you have communication problems, but not know that you cannot move one side of your body.
- Be aware of problems but not know what they mean, so you may try to walk, even if you know that you cannot move your leg.
- Think that your affected limbs do not belong to you.
- Not accept that you have any problems at all, even when someone shows you that you do.

Are there treatments that can help?

Cognitive problems are usually worst during the first few months after a stroke, but they can and do get better.

Problems are likely to improve most quickly over the first three months, as this is when your brain is at its most active, trying to repair itself. It's still possible for problems to improve after this, but you may find that it takes longer. Recovery can continue at a slower pace for months or years.

Treatments for cognitive problems focus on ways to cope with the problems, rather than 'fix' them.

An occupational therapist can assess you and help you learn coping strategies. This may involve using aids to help you manage, such as writing in a diary or using labels and reminders. Or it may involve learning other techniques that can help you.

If your problems are quite specific or severe, you may be referred to a clinical neuropsychologist or clinical psychologist. These healthcare professionals specialise in the way the brain works.

Whether you receive treatment or not, your problems should continue to be monitored to make sure you get the support you need for them. Even if you do not need support straight away, you may once you've been discharged from hospital, so your doctor and stroke team should make sure that you get it.

Cognitive assessments

It's likely that you'll need to complete a cognitive assessment. This will tell you more about the problems you're having and why they're happening.

The assessment is usually done by a doctor, occupational therapist or sometimes a psychologist. It involves a lot of questions, which can make you feel like you're taking an exam, even though you are not. The results of the assessment will help your stroke team decide the best way to help you. The findings should be explained to you.

What can I do about cognitive problems?

1

Get some help

If you think you may be experiencing some of the problems described, the first thing to do is to speak to your GP. They will check if there is anything else that could be causing the problems, such as an infection or side effects of medication.

Depression, anxiety and sleep problems are common after stroke, and can make you perform less well on cognitive tasks. So if you feel depressed, anxious, or have difficulty sleeping, then let your GP or occupational therapist know.

It's easy for people, including doctors, to forget that there are effects of stroke you cannot see. So do not wait to be asked about them. If you're finding it hard, tell someone. Make it clear how your problems are affecting you and ask what support you can get.

2

Do not be too hard on yourself

Having cognitive problems after a stroke is not something you can control. Be patient with yourself. You're not stupid, even though you may feel that way.

Allow yourself more time to get things done and do not expect too much of yourself. Brain injury is a serious condition that needs diagnosis and rehabilitation, in the same way you need rehabilitation after another type of physical injury, like a broken leg.

3

Stay active

Being as active as you can may help with cognitive problems. It can also help with emotional problems like low mood and anxiety. If you can, try to aim for aerobic exercise that gets your heart beating and makes you slightly out of breath. This could be a sport like swimming or running, or you can try gardening or brisk walking.

For more ideas about being active after a stroke, visit stroke.org.uk/getting-active or call our Helpline for printed copies.

4

Get enough rest

Fatigue is very common after a stroke. It can make it even harder to concentrate or remember things. Plan your day so that you balance being busy with taking breaks and resting.

You're not going to be able to take life at the same pace as you did before, at least not to begin with. Take breaks when you need to and make sure you get good quality sleep at night. It will help you to focus if you do.

Returning to work

Cognitive problems can take a long time to improve. If you go back to work too soon, you could find it more difficult than if you went back a little later. An occupational therapist can give you advice about the best time to go back to work. They can also talk to your employer about how they can support you when you do.

5

Look into aids and equipment

There are aids and equipment that you may find helpful, especially for problems with memory. Your occupational therapist will be able to suggest some to you.

6

Find ways to relax

Your mind needs to rest just as much as your body. Even small things like going for a short walk, listening to music or having a quiet moment to yourself in another room can help to calm your mind. Some people find mindfulness or meditation really helpful.

Relaxing can be difficult if you have a busy home life, but it's important to find a way to rest your mind when you get tired or frustrated.

7**Tell people what's going on**

Cognitive problems are nothing to be embarrassed about. Tell people about them. Explaining how someone can help will make it easier for you both. This might include speaking slowly or writing things down. It will also stop people getting offended if you forget something or get distracted.

8**Talk to someone who understands**

Cognitive problems can affect your confidence and how you feel about yourself. Talking about it can really help. Many people find support groups useful, because you can talk about problems with people who are going through the same thing.

If you prefer not to join a group, try talking to a friend or family member whom you feel comfortable with.

What can I do about my concentration?

Just do one thing at a time

- If you're making something to eat, do not try to use the phone at the same time. Even talking to someone in the same room can be tricky.
- Focus on completely finishing a task before moving on to another.
- If someone's giving you information, ask them to keep it simple. If it helps, get them to write it down.

Remove distractions

- If you need to concentrate on something, check if there's anything that may distract you. Turn off the TV and radio or move to a quiet room. Ask other people in the house not to disturb you for a little while.
- Try to remove clutter, so you will not have any visual distractions either. If you just keep the kettle, cups, teabags and sugar on the kitchen counter, this may help when you come to make a cup of tea.

Make things easier for yourself

- It may help to write a 'to do' list the night before and decide which tasks are the most important. That way, you'll know what to focus on and what can be left until another time.
- When you're talking to people, try to repeat things that they tell you in your own words. This may help you to follow the conversation and feel confident that you've understood.

Know your limits

- Remember that you're not going to be able to concentrate for long periods. Keep your activities to half an hour, or however long you can manage. If an activity is going to take longer than this, take a break and come back to it later. You'll probably be able to focus on it a lot better if you do.
- If you know you're going to be doing something that needs concentration, like going to an appointment, then plan to have a rest immediately before or afterwards.
- If you find it hard to follow a whole TV programme, think about what you're watching. News, sports, or cookery programmes will probably be easier to keep up with than dramas or documentaries, which rely on you watching the whole thing.

Try using your phone. Smartphones have alarms, calendars, address books and cameras that can help you keep notes and set up alerts and reminders.

What can I do about my memory?

Write things down

- Use calendars or diaries to keep track of appointments and important dates. You can also use them to record things that happened that day.
- Keep a notepad and pen with you. Make a note of small tasks as you do them, so that you know if you've fed the cat or phoned someone.
- Write short notes after you've spoken with someone. If you do this after a doctor's appointment, or even a chat with a friend, you can remind yourself of what you talked about the next time you see them.

Use prompts

- Set your phone or a cooking timer to remind you to take your medication.
- Leave things like your keys or wallet near the front door, so that you'll see them when you go out.
- Add pictures of people next to their details in your contacts book, to help you remember who they are.
- A pill or dosette box can help you organise the medication you need to take each day, so you can easily see whether you've taken it or not. Most pharmacists will sort your medication into special packs for you, so you know what you need to take each day.

Put reminders where you will see them

- Leave notes in noticeable places. Buy a pen that you can use to write on your bathroom mirror, or set up a whiteboard somewhere obvious.
- You could put up signs in the kitchen to remind you to turn the cooker off, or on the back of the door to remind you to lock it when you go out.

Keep things in the same place

- Labels on cupboards and drawers will help you know where things go. They do not have to be written labels, you could use pictures instead. It may help to keep your glasses on a chain around your neck, to stop you from losing them.

If writing is difficult

- You could make voice recordings using a dictaphone or an app on your smartphone.
- Use pictures: you can take photos on most phones.
- Ask people to help you. Ask them to write down the main points of your conversation, so that you can take it away to read over afterwards.

Plan your day

- Keep to a routine and do certain tasks, like taking your medication or locking your doors, at the same time every day.
- Write a 'to do' list for the next day before you go to bed. That way you'll know what you have to do as soon as you get up. You could make it part of your routine to sit down with a family member or carer and do this at the end of every day.
- Tiredness and stress will make it more difficult for you to concentrate, take in information and remember it later. Leave extra time to do things. Make sure you plan time to rest throughout the day as well.

Try mental techniques

- Verbal prompts can help. Some people use acronyms or sayings to help them remember things. The acronym 'SLAC' could help you remember to **S**et the alarm, **L**ock the door **A**nd **C**lose the gate when leaving the house.
- Try using mental pictures. For example, if you need to remember an address on Clifton Road, picture a road leading up to a cliff.
- Focusing on a particular feature can help you remember people. You may remember that your consultant is the doctor with curly hair, rather than the one with the glasses.
- Some people find repeating information can help them remember it. When you've been told something new, you could get someone to ask you a few seconds later if you remember it, and then again a few seconds after that. Once you've remembered it for a short period, it may be more likely to stick.

Can memory games help?

There are number of games and exercises, most of them computer-based, which aim to improve your memory. However, it's difficult to say for certain whether these really help.

Research has shown that some memory exercises can help people to improve, but they need a therapist to work through the tasks with them, to make sure that they're doing them in the right way. Even then, the improvements people see do not tend to last very long and are difficult to apply to tasks that are not part of the training.

What can I do about my planning and problem solving?

Practise, practise, practise

- Planning and problem solving can be improved, but only with lots of practice. Your occupational therapist, clinical psychologist or clinical neuropsychologist can help you decide what activities to focus on, as it will be different for everyone.
- Once you've mastered one task, like making a sandwich, you'll move on to more difficult ones, like cooking a meal.

Keep to a routine

- Dressing yourself in the same order every day will make it easier for you to relearn the steps and spot when you miss one.
- Developing a weekly routine can also help. If you know that Tuesday is laundry day or Wednesday is shopping day, it will prompt you to do these things.
- A daily timetable may also be useful. This can be especially helpful if you have problems getting motivated, also known as apathy, which is fairly common after a stroke.

Use prompts and reminders

- Write out instructions or checklists to follow when you do something.
- Stick up notes around the house to remind you of things that you may not think of on your own, like brushing your teeth.
- You could use brightly coloured stickers on the microwave or remote control, to remind you which buttons to press.
- Prompts do not have to be written down. Use pictures or recordings instead. Some people make up songs or acronyms to help them remember how to do things.

Talk it through

- It can help to talk through a task with someone before you do it, to go over the steps.
- Also think about what could go wrong, so that you know what to do if that happens.

What can I do about other cognitive problems?

Usually if you have problems like neglect, apraxia or agnosia, they will be picked up by your doctors or therapists while you're in hospital or by your community team when you're back at home. If they have not been, and you start to notice you may be having problems, then contact your GP.

If these problems are making day-to-day life difficult, then you need to be referred to an occupational therapist. They will work with you to find ways to help you cope. They will also be able to suggest aids and equipment that can help you.

Having cognitive problems does not mean that you have dementia. Many people worry about this, but dementia gets worse over time, whereas cognitive problems after stroke often get better.

For more information about dementia visit **stroke.org.uk/vascular-dementia** or call our Helpline for printed copies.

Tips for family and friends

It can be difficult to know how to help someone with cognitive problems, so here are some tips to help you.



Be patient

Someone might need longer to respond or carry out a task. This can feel frustrating if you're trying to help. Let your friend or family member do things in their own time. If there's something bothering you, explain the problem calmly and focus on what you can both do to make it better.



Be encouraging

Do therapy exercises with your friend or family member and think of ways to make them fun. Cooking a meal can be a good way to practise planning and problem-solving, for example. If progress is slow, it can be easy to think that things will never get better, so help them by celebrating all their successes, however small.



Give information in the right way

If your friend or family member is finding it hard to concentrate or remember things, you can help by giving information in a way that suits them, including:

- Breaking tasks down into individual steps.
- Giving simple instructions, one at a time, rather than a list of things to do.
- Keeping it brief: they might not be able to follow a 20-minute update about your day. Just start with the main points.



Don't do everything for them

It's natural to want to help, but it's better to help someone do things on their own rather than do it all for them. So if they ask you what day it is, suggest they look at the paper to find out. You could help by preparing an activity, such as putting out the things they need. Tidy up and de-clutter the area. They may be able to dress themselves or make a sandwich, if they have the things they need and a clear space.



Help them get support

If someone needs more support, contact the GP or stroke team.

Where to get help and information

From the Stroke Association

Helpline

Our Helpline offers information and support for anyone affected by stroke, including family, friends and carers.

Call us on **0303 3033 100**,
from a textphone **18001 0303 3033 100**.
Email **helpline@stroke.org.uk**

Read our information

Log onto **stroke.org.uk**, where you can find easy-to-understand information, videos and an online community to support you. You can also call the Helpline to ask for printed copies of our guides.

Other sources of help and information

Alzheimer's Society

Website: alzheimers.org.uk

Support line: **0300 150 3456**

Information about living with memory problems.

Living made easy

Website: livingmadeeasy.org.uk

Helpline: **0300 123 3084**

Advice and information for using equipment and practical tips to help people living with a disability.

Headway

Website: headway.org.uk

Helpline: **0808 800 2244**

Information and advice about cognitive problems.

Research continues to look into ways of treating cognitive problems, so there may be a clinical trial that you can take part in. You can find details of research trials that are currently taking place on the National Institute for Health Research website at bepartofresearch.nihr.ac.uk

Notes:

About our information

We want to provide the best information for people affected by stroke. That's why we ask stroke survivors and their families, as well as medical experts, to help us put our publications together.



How did we do?

To tell us what you think of this guide, or to request a list of the sources we used to create it, email us at **feedback@stroke.org.uk**



Accessible formats

Visit our website if you need this information in audio, large print or braille.



Always get individual advice

This guide contains general information about stroke. But if you have a problem, you should get individual advice from a professional such as a GP or pharmacist. Our Helpline can also help you find support. We work very hard to give you the latest facts, but some things change. We don't control the information provided by other organisations or websites.

When stroke strikes, part of your brain shuts down. And so does a part of you. Life changes instantly and recovery is tough. But the brain can adapt. Our specialist support, research and campaigning are only possible with the courage and determination of the stroke community. With more donations and support from you, we can rebuild even more lives.

Donate or find out more at stroke.org.uk

Contact us

We're here for you. Contact us for expert information and support by phone, email and online.

Stroke Helpline: **0303 3033 100**

From a textphone: **18001 0303 3033 100**

Email: helpline@stroke.org.uk

Website: stroke.org.uk

Rebuilding lives after stroke



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