

WHAT IS VASCULAR DEMENTIA?



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INTRODUCTION

Information in this booklet is for anyone who wants to know more about vascular dementia, including people living with vascular dementia, their carers, families and friends. This booklet gives an overview of the causes, symptoms, diagnosis and treatments.

This information does not replace any advice that doctors, nurses or pharmacists may give you. If you are worried about your health, including memory and thinking problems, you should speak to your doctor as soon as possible.

This booklet was updated in December 2023 and is due for review in December 2025. It was written by Alzheimer's Research UK's Information Services team with input from lay and expert reviewers. Please get in touch using the contact details below if you'd like a version with references or in a different format.

ANY QUESTIONS

If you have questions about dementia or dementia research, or any feedback on this booklet, you can contact the Dementia Research Infoline on **0300 111 5111**. You can also email infoline@alzheimersresearchuk.org or write to us using the address on the back page.

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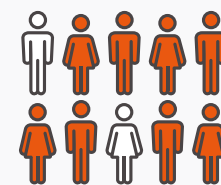
WHAT IS DEMENTIA?

Dementia is a word used to describe a group of symptoms, it is not a disease itself.

These symptoms may include:

- memory loss
- confusion
- language and communication problems
- issues with sight, mood and behaviour changes
- difficulty with day-to-day tasks.

The symptoms of dementia get worse as time goes on. So, over time a person with dementia will need more help and support with everyday life. Dementia is caused by diseases that affect the brain, the most common being Alzheimer's. Vascular dementia is the second most common disease that causes dementia. Sometimes you can have both vascular dementia and Alzheimer's disease at the same time. This is called mixed dementia.



FOR EVERY 10 PEOPLE WITH DEMENTIA, 2 OF THEM WILL HAVE **VASCULAR DEMENTIA.**

WHAT IS VASCULAR DEMENTIA?

Vascular dementia occurs when blood vessels in the brain, specifically arteries, become damaged. These arteries deliver blood from the heart to the brain.

Our blood contains oxygen and nutrients that help brain cells to work properly. When blood vessels are damaged, this reduces blood flow to brain cells. As a result, brain cells do not get enough oxygen and nutrients. These brain cells then become damaged and don't function properly. This is what causes symptoms of vascular dementia, like memory and thinking problems.

The biggest risk factor for vascular dementia is age, followed by high blood pressure. The older we get, the more likely we are to develop vascular dementia. Nine in every 10 people with vascular dementia are over 65 years old. Our arteries get stiffer and narrower as we get older. Long term untreated high blood pressure can also damage our arteries, this damage makes us more likely to go on to develop vascular dementia.

You can read more about other vascular dementia risk factors on page 21 of this booklet.

CAUSES OF VASCULAR DEMENTIA

There are different types of vascular dementia which have different underlying causes. These underlying causes are conditions that lead to blood vessel damage.

Not everyone is told the specific cause for their vascular dementia at the time of diagnosis, and sometimes someone can have more than one cause of vascular dementia.

Conditions that affect our blood vessels and reduce blood flow to the brain cause vascular dementia by damaging brain cells. The most common conditions that cause brain damage in vascular dementia are described on the following pages.

ROUGHLY ONE IN THREE PEOPLE WHO HAVE A STROKE GO ON TO DEVELOP DEMENTIA.



STROKES

Strokes are a common cause of vascular dementia. A stroke occurs when blood supply to a part of the brain is suddenly cut off. This usually happens when a large artery within the brain becomes blocked (called an ischaemic stroke). It can also happen when an artery bursts and blood leaks into the brain, which is called a haemorrhagic (bleeding) stroke.

Both types of strokes damage brain cells near the damaged blood vessel. If someone has sudden problems with memory and thinking after a stroke which do not improve over time, they may be diagnosed with post-stroke vascular dementia.

Unfortunately, people who have a stroke are more likely to have more strokes, and so have a higher risk of developing dementia in the future.

People can have a series of smaller strokes, or 'mini-strokes', which cause progressive damage to the brain. Sometimes these strokes can be so small that someone may not experience any symptoms or know that they are having one. However, over time the repeated damage to the brain builds-up and may lead to symptoms of vascular dementia. This is sometimes referred to as 'multi-infarct dementia'.

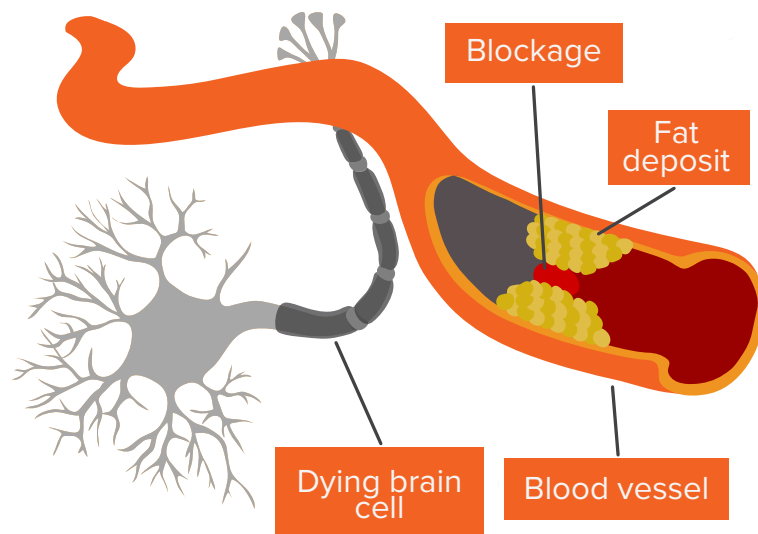
The word 'infarct' means that an area of the brain has had its blood supply cut off and the brain has become damaged.



BLOOD VESSEL DISEASES

Blood vessel diseases can also cause the brain damage that leads to vascular dementia. Some common blood vessel diseases are explained below.

Atherosclerosis is a disease where large or medium blood vessels get narrower, as fat deposits build up and clog the inside of the vessels. This limits blood flow through them and can make a stroke more likely to occur. The diagram below illustrates how atherosclerosis can lead to a stroke, causing brain cells to die.



Cerebral amyloid angiopathy (CAA) is a disease where a harmful protein called amyloid builds up, making blood vessels narrower and leakier. Similar to atherosclerosis, this increases the likelihood of a stroke occurring.

Small vessel disease (SVD) is when small blood vessels deep inside the brain become damaged slowly over time. The brain cells supplied by these tiny vessels don't get enough oxygen and nutrients because of the reduced blood flow. Because these small arteries only supply a tiny area of the brain, at first the damage to brain cells rarely causes any noticeable symptoms.

However, over many years the damage can spread and may lead to dementia symptoms. The gradual decline caused by SVD is different to the sudden change in memory and thinking that can happen after a stroke.

GENETIC DISEASE

In some rare cases people may inherit a faulty gene, which can directly cause vascular dementia. One example of this is a disorder called CADASIL (cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy). This is when the blood vessel walls thicken which blocks blood flow to areas of the brain.



SYMPTOMS

People with vascular dementia can have similar symptoms to Alzheimer's disease and other types of dementia.

These may include memory loss, confusion and problems with reasoning or communication. But there can also be more specific symptoms. These will depend on the underlying cause of the vascular dementia and the area of the brain affected by the lack of blood supply.

Vascular dementia symptoms may include:

- **Thinking problems** – people may have difficulty performing tasks that used to be easy, learning new information and following instructions. Difficulty with paying attention, reading and writing may also occur.
- **Speaking** – struggling to find the right words or using the wrong words, slurring speech or difficulty following conversations.
- **Changes in personality, behaviour, and mood** – people may become depressed, agitated or angry. They may lose interest in things or people around them or become more emotional.
- **Movement problems and stability** – unsteadiness or changes in the way a person walks, or weakness on one side of the body which can be a symptom of post-stroke vascular dementia.

Symptoms in post-stroke dementia might occur immediately or soon after a stroke event. People are sometimes described as having an abrupt or stepwise decline in their overall functioning. Symptoms in small vessel disease often develop in a more gradual way. This means the symptoms will slowly get worse over time. The speed of change can vary over time and from person to person.

In the later stages of dementia, the condition affects most aspects of everyday life. This means that over time people need more help and support with eating, dressing, washing, using the toilet and walking.

Sometimes the blood vessel and brain cell damage can cause memory and thinking problems that are mild and are therefore not diagnosed as dementia. This is sometimes called vascular mild cognitive impairment. For more information about mild cognitive impairment, ask for our **'What is Mild Cognitive Impairment'** information. Our contact details can be found on the back of this booklet.

People may find it hard to come to terms with any symptoms or behaviour changes that they or their loved ones notice, and some may be reluctant to get a diagnosis. It can be useful to keep a diary of any symptoms you notice or experience, to help monitor changes over time.

**GETTING A DIAGNOSIS IS IMPORTANT,
IT ENSURES SOMEONE CAN ACCESS
THE RIGHT SUPPORT AND TREATMENT.**



DIAGNOSIS

Diagnosing dementia is important. It means someone can get the right treatments, support and help with their condition. If you are worried about your dementia symptoms, or someone else's, you should talk to your doctor as soon as possible.

The doctor may:

- Ask about your symptoms and how they are affecting you.
- Ask a relative or close friend if they have noticed any changes.
- Check your medical history.
- Give you a physical check-up, checking your blood pressure and balance.
- Run a blood test, to rule out some other possible causes like vitamin deficiencies and thyroid disorders. They may also ask you for a urine sample.
- Ask you to do some memory and thinking tests.

If your doctor suspects dementia, you may be referred to a memory clinic or another specialist doctor.

A memory clinic or specialist doctor may:

- Do another physical check-up and some more memory and thinking tests.
- Send you for other tests like a brain scan. Brain scans such as CT (computerised tomography) or MRI (magnetic resonance imaging) may be used to show the doctors any changes in blood vessels or signs of a stroke/s.

Together the results of all of these tests will help the doctor to identify the likely cause of the symptoms and whether someone has vascular dementia or not. However, it can be difficult to know the exact cause or underlying reason that someone develops vascular dementia. Researchers are working hard to look for more accurate ways of diagnosing conditions like small vessel disease and cerebral amyloid angiopathy that can lead to vascular dementia.

For more information on what to do if you're worried about dementia symptoms you can ask us for our information '**Getting a dementia diagnosis**'. Get in touch or order this information using the details on the back page.

If you are concerned about rare inherited forms of vascular dementia, you should discuss this with your doctor who may be able to refer you to a specialist clinic. You can also find out more by requesting our '**Genes and dementia**' booklet. Contact details can be found on the back of this booklet.

TREATMENTS

Unfortunately, there are currently no treatments that can slow or reverse the brain cell damage that causes vascular dementia.

However, when someone has vascular dementia a doctor may prescribe or monitor medicines used to treat underlying conditions that can damage blood vessels. These include medications for diabetes, stroke, high blood pressure, high cholesterol and heart problems.

A doctor will also advise making healthy lifestyle changes to help limit the damage caused by these underlying conditions. This could include stopping smoking, doing more exercise, maintaining a healthy weight and eating a balanced diet.

People diagnosed with vascular dementia may benefit from cognitive therapy. These activities are designed to stimulate thinking skills and engage people. They are often group-based and include games and discussions to encourage socialising. Speech therapy may also help to improve communication problems.

A DOCTOR MAY MONITOR AND TREAT UNDERLYING CONDITIONS LIKE HIGH BLOOD PRESSURE, DIABETES AND HIGH CHOLESTEROL.

To treat symptoms like anxiety, agitation and aggression, a health professional may first assess someone's general health and their environment. This can help to identify causes or triggers of agitation or aggression. Working to remove or change these triggers can help to alleviate these symptoms.

Complementary treatments, tailored to the person's preference, that promote wellbeing may also be helpful for people with anxiety, agitation, and aggression. This may include aromatherapy, music therapy and outdoor activities. You can speak to your doctor about any of the therapies mentioned and what might be suitable and available.

For people with both vascular dementia and Alzheimer's (mixed dementia), there are some drugs used to treat Alzheimer's disease that may help with the symptoms of mixed dementia. If you've been diagnosed with mixed dementia you can discuss these treatment options with your doctor.

If someone experiences severe and distressing symptoms that can't be controlled without medication, then antipsychotic drugs may be considered. These drugs help correct the imbalance of chemicals in the brain that cause symptoms like aggression.

However, there are severe side effects, and they are not suitable for everyone. Anyone taking antipsychotics should be carefully and regularly monitored by the doctor.

For more information about dementia treatments, ask for our 'Treatments for dementia' information. Contact details can be found on the back of this booklet.

Summary of treatments for vascular dementia:



Medicines to treat or prevent underlying conditions like stroke, high blood pressure, high cholesterol or diabetes



Complementary treatments to promote wellbeing - music therapy, aromatherapy



Medications for mixed dementia, where someone has vascular dementia and Alzheimer's disease



Medication for anxiety, agitation, and aggression such as antidepressants or antipsychotics when necessary



Cognitive therapy or speech therapy

RISK FACTORS

There are factors that can increase someone's risk of developing vascular dementia. These things increase the likelihood of blood vessel damage or diseases of the blood vessels in the brain developing.

These factors include:

- genetics, for example having a family history of stroke or heart disease
- type 2 diabetes
- obesity
- smoking
- low levels of physical activity
- high blood pressure
- regularly drinking too much alcohol
- high cholesterol
- heart diseases.
- increasing age

Having a stroke also increases your risk of developing vascular dementia. Risk factors that make a stroke more likely to happen are the same as those listed above.

Some of the risk factors listed we can't change, like our age and genetics. Some of the risk factors listed can have a genetic susceptibility. This means we may inherit a higher chance of developing high blood pressure, diabetes, or high cholesterol and these problems can run in families.

Taking control over risk factors that we can change is important. Having a healthy lifestyle and managing health conditions like high blood pressure, protects our brain health and reduces our risk of vascular dementia, stroke and underlying conditions that can lead to them. Some small and early stage research has pointed towards adopting a healthy lifestyle as a way to manage symptoms, and possibly slow down the progression of early stage vascular dementia.

Maintaining a healthy lifestyle in your forties and fifties seems to be particularly important for helping to lower your risk of dementia. This includes not just staying physically active but also keeping mentally and socially active.

For more information about reducing your risk of developing dementia, ask for our **'Reducing your risk of dementia'** information. Contact details can be found on the back of this booklet. You can also explore your brain healthy habits and discover more tips to look after your brain via our thinkbrainhealth.org.uk website.



For good brain and heart health, and to help lower your risk of vascular dementia:



If you have diabetes, ensure your condition is managed well



Keep physically and socially active



Don't smoke



Maintain a healthy weight



Eat a healthy balanced diet



Only drink alcohol in line with government recommendations



Keep high cholesterol and blood pressure under control



Keep your brain active by doing things you enjoy and spending time with others



Have your hearing checked regularly

SUPPORT

There is a range of support organisations that offer practical and emotional support for people with dementia and those helping to care for them.

If you have questions about symptoms, diagnosis, or treatments for dementia you can contact the **Alzheimer's Research UK Dementia Research Infoline** on **0300 111 5111** or infoline@alzheimersresearchuk.org

The **Admiral Nurse Dementia Helpline** is provided by Dementia UK. The Helpline is run by dementia nurses who can give practical and medical advice, support and care tips. Call **0800 888 6678** or email helpline@dementiauk.org

The **Stroke Association** provides information and support for those who have experienced a stroke. Call **0303 3033 100** or visit their website stroke.org.uk

Alzheimer's Society provides dementia care information, emotional support, and local support groups. Call **0300 150 3456** or email dementia.connect@alzheimers.org

Alzheimer Scotland offers support services, information and advice to people in Scotland. Call **0808 808 3000** or email info@alzscot.org

Dementia Carers Count provide support, advice and free courses specifically for dementia carers. Call **0800 652 1102** or visit their website dementiacarers.org.uk

Together In Dementia Everyday (TIDE) help carers feel more supported and less alone through events and programmes that encourage the sharing of stories, advice and practical caring solutions. Call **0151 237 2669** (England) **0771 995 7879** (Scotland), email carer@tidecarers.org.uk or visit their website tide.uk.net

For more details of other helpful dementia organisations, ask us for our booklet '**Support for people affected by dementia: organisations that can help**'. Contact and order details can be found on the back of this booklet.

You can also speak to your nurse, GP or doctors' surgery for advice and signposting to local services.

TAKING PART IN RESEARCH

Through research we'll bring about breakthroughs that will change lives, but scientists need your help.

People with dementia, their carers, and people without dementia are all needed to take part in vital dementia research studies. If you're interested in taking part, you can register at joindementiaresearch.nihr.ac.uk or by calling **0300 111 5111**.



SHARE YOUR STORIES

If you have been diagnosed with vascular dementia and would like to share your story to inspire others, or to help shape our work please get in touch via stories@alzheimersresearchuk.org

RESEARCH

Alzheimer's Research UK has funded more than **£4.5 million** of pioneering research to help advance our understanding of vascular dementia.

We've funded over 69 research projects, including studies investigating how blood vessels can become damaged in the brain and how this damage causes the symptoms seen in vascular dementia. Our scientists are also working hard to develop new ways of preventing and diagnosing vascular dementia. You can read more about recent projects we've funded on vascular dementia on the research section of our website alzheimersresearchuk.org/research.

With your support, we will fund many more studies into vascular dementia. We promise we will not stop until dementia can no longer destroy lives.

**We are Alzheimer's Research UK.
We exist for a cure.**

Alzheimer's Research UK is the UK's leading dementia research charity. We provide free dementia health information, like this booklet and others.

If you would like to view, download or order any of our other booklets please use the details below. If you'd like to help us review and improve our booklets, visit alzres.uk/reviewer

CONTACT US

0300 111 5111

infoline@alzheimersresearchuk.org

Alzheimer's Research UK
3 Riverside, Granta Park, Cambridge CB21 6AD

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