

# Vascular dementia

This help sheet describes the types of vascular dementia, and their causes, diagnosis, treatment and progression.

## What is vascular dementia?

Vascular dementia is a general term describing problems with reasoning, planning, judgement, memory and other thinking skills that are significant enough to interfere with daily social or occupational functioning, and are caused by brain damage that has resulted from impaired blood flow in the brain.

Vascular dementia can sometimes develop after a stroke blocks an artery in the brain, but strokes don't always cause vascular dementia. Whether a stroke affects thinking and reasoning depends on the severity and location of the stroke. Vascular dementia more often results from many small strokes or other conditions that damage blood vessels and reduce circulation, reducing the supply of vital oxygen and nutrients to brain cells.

In Alzheimer's disease, memory problems, especially forgetting recent events, is often the most prominent symptom. In vascular dementia however, executive functions (planning, reasoning, judgement), spatial processing and attention are often more impaired.

Pure vascular dementia is not common. Often, vascular damage occurs alongside Alzheimer's disease or other brain disease and exacerbates the dementia, rather than being the primary cause.

## **What causes vascular dementia?**

There are many different forms of vascular disease affecting the brain. Each of these result in restricted blood flow to the brain which damages brain cells. The location and size of this brain damage determines which brain functions are affected. Vascular dementia may be diagnosed when there is evidence of vascular brain damage and symptoms of dementia, and the evidence suggests a link between the vascular disease and the dementia.

### **Strategic infarct dementia**

One single large stroke can sometimes cause vascular dementia depending on the size and location of the stroke. This type of vascular dementia, called strategic infarct dementia, is characterised by the sudden onset of changes in thinking skills or behaviour after a stroke. The symptoms depend on the location of the stroke and what brain functions are affected by the damage. Provided no further strokes occur, the person's symptoms may remain stable or even get better over time. However, if there is other vascular disease also affecting the brain or additional strokes occur, symptoms may get worse.

### **Multi-infarct dementia**

One form of vascular dementia is called multi-infarct dementia and is caused by multiple strokes. This is and is associated with disease of the brain's large blood vessels. The strokes are often silent, that is the person doesn't notice any symptoms when they occur. Over time, as more strokes occur, more damage is done to the brain and reasoning and thinking skills may be affected to the point that a diagnosis of vascular dementia is made. Other symptoms can include depression and mood swings, but the symptoms very much depend on the location of the brain damage. Multi-infarct dementia can have a step-wise progression, where symptoms worsen after a new stroke, then stabilise for a time.

## **Subcortical vascular dementia**

Another form of vascular dementia is called subcortical dementia, or sometimes Binswanger's disease. This is associated with disease in the small blood vessels deep within the brain and damage to deep (subcortical) areas of the brain. It can be a consequence of untreated high blood pressure or diabetes leading to vascular disease. Symptoms often include deterioration of reasoning and thinking skills, mild memory problems, walking and movement problems, behavioural changes and lack of bladder control. Subcortical vascular dementia is usually progressive, with symptoms getting worse over time as more vascular damage occurs, although people's abilities fluctuate.

## **How is vascular dementia diagnosed?**

There is no one specific test that can diagnose vascular dementia. A diagnosis is based on the presence of dementia and vascular disease being the most likely cause of the dementia symptoms. If vascular dementia is suspected, a number of tests will likely be performed.

### **These may include:**

- An assessment of the person's problems with thinking and behaviour and how they are affecting daily function
- A full medical history (especially for stroke or disorders of the heart or blood vessels)
- Laboratory blood tests
- A neurological examination (testing reflexes, senses, coordination and strength)
- Brain imaging (to detect abnormalities caused by strokes or blood vessel disease)
- Neuropsychological tests (to assess changes in thinking abilities)
- Carotid ultrasound (to check for damage in the carotid arteries)

Neuropsychological tests that assess executive and subcortical brain functions, not just memory, are important for the diagnosis of vascular dementia. Determining the type and location of vascular brain damage, and whether this is the likely cause of symptoms, requires brain scanning techniques such as magnetic resonance imaging (MRI) or computerised tomography (CT).

Vascular dementia can be very difficult to distinguish from other forms of dementia, because the symptoms of each type overlap. Also, many people with dementia have both vascular disease and other brain disease such as Alzheimer's, and therefore have a mixed dementia.

### **Who gets vascular dementia?**

Anyone can be affected by vascular dementia, but the risk increases with age, so the condition mostly affects older people. This is because vascular damage in the brain is more likely to occur the older you are. Factors that increase your risk of heart disease and stroke also raise your vascular dementia risk. Controlling these factors can help lower your chances of developing vascular dementia.

Several factors increase the risk of someone developing vascular dementia.

#### **These include:**

- High blood pressure
- High cholesterol
- Diabetes
- Obesity
- Smoking
- Physical inactivity and poor diet
- Heart rhythm abnormalities
- Heart disease
- Blood vessel disease
- History of multiple strokes

## Is there treatment available?

There is no one specific treatment for vascular dementia. If the dementia is stroke-related, treatment to prevent additional strokes is very important. Controlling conditions that affect the underlying health of your heart and blood vessels can sometimes slow the rate at which vascular dementia gets worse, and may also sometimes prevent further decline. Medicines to control high blood pressure, high cholesterol, heart disease and diabetes can be prescribed. Sometimes aspirin or other drugs are prescribed to prevent clots from forming in blood vessels. A healthy diet, exercise and avoidance of smoking also lessen the risk of further strokes or vascular brain damage.

Research suggests that the medications available for the treatment of Alzheimer's disease are also effective for some people with vascular dementia. These drugs can improve memory, thinking and behaviour for a time but they do not cure the disease or prevent eventual deterioration. These drugs include cholinesterase inhibitors (donepezil [common name Aricept], rivastigmine [Exelon] and galantamine [Razadyne]) and memantine [Namenda]. Further information about these medications is available in the help sheet **About Dementia help sheet 9: Drug treatments and dementia**.

Support is available for the person with vascular dementia, their family and carers. This support can make a positive difference to managing the condition. Making adjustments to compensate for the person's changed abilities while maintaining enjoyable activities is important for their well-being. Learning about the condition and strategies for coping can be very beneficial for families and carers.

### Further Information

Dementia Australia offers support, information, education and counselling. Contact the National Dementia Helpline on **1800 100 500**, or visit our website at **[dementia.org.au](http://dementia.org.au)**



For language assistance phone the Translating and Interpreting Service on **131 450**