

East End Neuropsychiatric Associates
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What is Vascular Dementia?

Dementia is diagnosed when both memory and another cognitive function are each affected severely enough to interfere with a person's ability to carry out routine daily activities.

—*The Journal of the American Medical Association*

The word dementia describes a set of symptoms that can include memory loss and difficulties with thinking, problem-solving or language. In vascular dementia, these symptoms occur when the brain is damaged because of problems with the supply of blood to the brain.

What are the causes?

Vascular dementia is caused by reduced blood supply to the brain due to diseased blood vessels.

To be healthy and function properly, brain cells need a constant supply of blood to bring oxygen and nutrients. Blood is delivered to the brain through the vascular system. If the vascular system within the brain becomes damaged - so that the blood vessels leak or become blocked - then blood cannot reach the brain cells and they will eventually die. This death of brain cells can cause problems with memory, thinking or reasoning. Together these three elements are known as cognition. When these cognitive problems are bad enough to have a significant impact on daily life, this is known as vascular dementia.

The types of vascular dementia

There are different types of vascular dementia. They differ in the cause of the damage and the part of the brain that is affected. The different types of vascular dementia have some symptoms in common and some symptoms that differ

Subcortical dementia

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Subcortical vascular dementia is caused by diseases of the very small blood vessels that lie deep in the brain. These small vessels develop thick walls and become stiff and twisted; meaning that blood flow through them is reduced.

Small vessel disease often damages the bundles of nerve fibers that carry signals around the brain, known as white matter. It can also cause small infarcts near the base of the brain.

Small vessel disease develops much deeper in the brain than the damage caused by many strokes. This means many of the symptoms of subcortical vascular dementia are different from those of stroke-related dementia. Subcortical dementia is thought to be the most common type of vascular dementia.

Symptoms often include changes in facial expressions with a mask like appearance; difficulty with multi step process and somatic misperceptions. Many times a person with subcortical dementia will have a hard time interacting with the world around them due to difficulty executing tasks, this often looks like “they are being lazy” but in fact is a symptom of white matter or periventricular damage.

Stroke-related dementia

A stroke happens when the blood supply to a part of the brain is suddenly cut off. In most strokes, a blood vessel in the brain becomes narrowed and is blocked by a clot. The clot may have formed in the brain, or it may have formed in the heart and been carried to the brain. Strokes vary in how severe they are, depending on where the blocked vessel is, and whether the interruption of blood supply is permanent or temporary.

Post-stroke dementia

A major stroke occurs when the blood flow in a large vessel in the brain is suddenly and permanently cut off. Most often this happens when the vessel is blocked by a clot. Much less often it is because the vessel bursts and bleeds into the brain. This sudden

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interruption in the blood supply starves the brain of oxygen and leads to the death of a large volume of brain tissue. A person who has a stroke is then at increased risk of having further strokes. If this happens, the risk of developing dementia is higher.

Single-infarct and multi-infarct dementia

These types of vascular dementia are caused by one or more smaller strokes. These happen when a large or medium-sized blood vessel is blocked by a clot. The stroke may be so small that the person doesn't notice any symptoms. Alternatively, the symptoms may only be temporary - lasting perhaps a few minutes - because the blockage clears itself. (If symptoms last for less than 24 hours this is known as a 'mini-stroke' or transient ischemic attack (TIA).

If the blood supply is interrupted for more than a few minutes, the stroke will lead to the death of a small area of tissue in the brain. This area is known as an infarct. Sometimes just one infarct forms in an important part of the brain and this causes dementia (known as single-infarct dementia). Much more often, a series of small strokes over a period of weeks or months lead to a number of infarcts spread around the brain. Dementia in this case (known as multi-infarct dementia) is caused by the total damage from all the infarcts together.

Mixed dementia (Vascular dementia and Alzheimer's disease)

At least 10 per cent of people with dementia are diagnosed with mixed dementia. This generally means that both Alzheimer's disease and vascular disease are thought to have caused the dementia. The symptoms of mixed dementia may be similar to those of either Alzheimer's disease or vascular dementia, or they may be a combination of the two.

Who gets vascular dementia?

There are a number of things that can put someone at risk of developing vascular dementia. These are called risk factors. Most of these are things that contribute to

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underlying cardiovascular diseases. Some of these risk factors (i.e. lifestyle) can be controlled, but others (i.e. age and genes) cannot. Men are at slightly higher risk of developing vascular dementia than women.

A person who has had a stroke, or who has diabetes or heart disease, is approximately twice as likely to develop vascular dementia. Sleep apnea, a condition where breathing stops for a few seconds or minutes during sleep, is also a major risk factor. Someone can reduce their risk of dementia by keeping these conditions under control, through taking prescribed medicines (even if they feel well) and following professional advice about their lifestyle.

Cardiovascular disease - and therefore vascular dementia - is linked to high blood pressure, high cholesterol and being overweight in mid-life. Someone can reduce their risk of developing these by having regular check-ups (over the age of 40), by not smoking, and by keeping physically active. It will also help to eat a healthy balanced diet and drink alcohol only in moderation. Generally anything that is thought of as “good for the heart” is also good for the brain.

Researchers think there are some genetic factors behind the common types of vascular dementia. Someone with a family history of stroke, heart disease or diabetes has an increased risk of developing these conditions. Overall, however, the role of genes in the common types of vascular dementia is small.

Treatment and support

There is currently no cure for vascular dementia: the brain damage that causes it cannot be reversed. However, there is a lot that can be done to enable someone to live well with the condition. This will involve drug and non-drug treatment, support and activities.

The person should have a chance to talk to a health or social care professional about their dementia diagnosis. This could be a psychiatrist or mental health nurse, a clinical

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psychologist, occupational therapist or Primary Care Provider. Information on what support is available and where to go for further advice is vital in helping someone to stay physically and mentally well. Please ask your clinician if you need help finding resources.

Control of cardiovascular disease

If the underlying cardiovascular diseases that have caused vascular dementia can be controlled, it may be possible to slow down the progression of the dementia. For example, after someone has had a stroke or TIA, treatment of high blood pressure can reduce the risk of further stroke and dementia. For stroke-related dementia in particular, with treatment there may be long periods when the symptoms don't get significantly worse.

In most cases, a person with vascular dementia will already be on medications to treat the underlying diseases. These include medications to reduce blood pressure, prevent blood clots and lower cholesterol. If the person has a diagnosed heart condition or diabetes they will also be taking medicines for these. It is important that the person continues to take any medications and attends regular check-ups as recommended by a doctor.

Someone with vascular dementia will also be advised to adopt a healthy lifestyle, particularly to take regular physical exercise and, if they are a smoker, to quit. They should try to eat a diet with plenty of fruit, vegetables and oily fish but not too much fat or salt. Maintaining a healthy weight and keeping to recommended levels of alcohol will also help. Your providers should be able to offer advice in all these areas.

Prognosis

Vascular Dementia is a progressive disease. As there are more disruptions to blood flow new symptoms may appear. The goals of all treatment to prolong quality of life and

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delay progression. While there is no cure, quality of life and personal dignity can be maintained. By aggressively treating the underlying causes, progression can be slowed. It is not possible to accurately predict disease progression in most cases nor can life span be determined from the onset. Each person's brain is unique and the effects of vascular dementia will vary person to person.