

# Vertebrobasilar disease

**Vertebrobasilar** disease is a broad classification describing the condition where there is an insufficient delivery of blood flow via the **vertebral artery** and/or **basilar artery** to the brain.

Patients with blockage of the blood vessels that supply blood to the back of the brain, known as vertebrobasilar disease (VBD), are at risk of having a **stroke** or temporary symptoms of a stroke known as **transient ischemic attack** (TIA).

The risk of repeated stroke associated with **Vertebrobasilar disease** may be affected by several **risk factors**, including the degree to which the blockage reduces the **blood flow** to the brain. Patients with VBD have different levels of blockage ranging from partial blockage to complete blockage, which can affect the **blood flow** to the brain by variable amounts. The purpose of a research was to determine if patients with symptomatic VBD who demonstrate low blood flow to the back of the brain on magnetic resonance (MR) imaging are at higher risk of developing another stroke or TIA than patients with normal blood flow <sup>1)</sup>

Atherosclerosis or “hardening of the arteries” is the primary cause of vertebrobasilar disease. The narrowing of the vertebral or basilar arteries caused by atherosclerosis creates vertebrobasilar insufficiency (VBI), or an insufficient delivery of blood flow to the posterior structures of the brain. As a result of decreased blood flow, the symptoms of Vertebrobasilar Disease are varied and are often referred to as a whole as vertebrobasilar insufficiency (VBI) or vertebral basilar ischemia. The symptoms can include: vertigo (dizziness), visual disturbances (blurring, graying, double vision), drop attack (sudden falls), numbness or tingling and slurred or lost speech. Since the portions of the brain most typically impacted are responsible for movement and balance, symptoms of VBI can often result in falls. More significantly, patients with vertebrobasilar disease are at increased risk for transient ischemic attack (TIA) and stroke. Transient ischemic attack or “mini strokes” create stroke-like symptoms that resolve themselves in less than 24 hours. Strokes, however, that occur in this portion of the brain are particularly devastating and often result in death. Vertebrobasilar disease is twice as common in men than women and typically occurs in the elderly, although patients with risk factors relating to atherosclerotic disease (diabetes, hypertension, obesity, high-cholesterol, smokers, etc.) are at increased risk for earlier onset. Conditions Treatments Vertebrobasilar Disease (also known as: Vertebrobasilar Circulatory Disorder, Global Cerebral Ischemia, Vertebrobasilar Insufficiency, VBI, Vertebral Basilar Ischemia, vertebrobasilar atherothrombotic disease, VBATD, basilar artery occlusion) Endarterectomy Bypass grafting Vertebral Artery Reconstruction Angioplasty and stenting What are some of the Symptoms of Vertebrobasilar Disease? The symptoms of vertebrobasilar disease relate to the portion or portions of the brain impacted by the obstruction of blood flow. Because so many separate structures of the brain can be involved, symptoms of vertebrobasilar disease can vary, but common symptoms include: Vertigo (dizziness) Visual disturbances (blurring, graying, double vision) Drop attack (sudden falls) Numbness or tingling Slurred or lost speech Confusion Issues with swallowing Brain Structure Function Occipital Cortex Vision Cerebellum Movement, posture, and balance Thalamus Relays visual, auditory and sensory signals to the cerebral cortex Brainstem:

Midbrain	Vision, hearing, eye movement, body movement
Pons	Sleep, level of consciousness, movement, posture
Medulla	Breathing, heart rate

**What Causes Vertebrobasilar Disease?** Atherosclerosis or “hardening of the arteries” is the primary cause of vertebrobasilar disease. The narrowing of the vertebral arteries creates an insufficient delivery of blood flow to the posterior structures of the brain and places the individual at increased risk for temporary ischemic attack (TIA) and stroke. Risk factors for atherosclerosis include: Diabetes Hypertension Obesity High-cholesterol Smoking Advanced age Inactive lifestyle

**How is Vertebrobasilar Disease Diagnosed?** It is important to discuss any symptoms that you are experiencing with your physician. This is necessary in helping to rule out other conditions that might create similar patterns of symptoms. Diagnostic tests that your physician might use to confirm vertebrobasilar disease include magnetic resonance angiography or standard angiography. These tests use an injected dye to track the flow of blood and are useful in identifying areas of stenosis or narrowing within a blood vessel.

**How is Vertebrobasilar Disease Treated?** Medical Management & Lifestyle Changes The very first step in the treatment of vertebrobasilar disease is lifestyle modification. Patients should carefully follow their physician's instructions to: Stop smoking Exercise Eat a diet low in cholesterol Control their diabetes Your physician may additionally prescribe medications to help control your cholesterol and platelet function. Common medications include: Hypercholesterolemia Medications (Lipitor™, Zocor™, etc.) Aspirin, Clopidogrel (Plavix™)

**Surgical Options** Endarterectomy Bypass grafting Vertebral artery reconstruction Endovascular Options Angioplasty and Stenting

**What can I do to prevent Vertebrobasilar Disease?** The most common cause of vertebrobasilar disease is atherosclerosis. You can help prevent atherosclerosis by following these guidelines: Don't smoke Eat foods low in fat and cholesterol Lose weight if you are overweight Exercise regularly according to your physician's recommendations Lower your blood pressure if it is high Lower your blood sugar if it is high If you have diabetes, see your health care provider regularly and follow all diet and medication instructions

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<https://clinicaltrials.gov/ct2/show/NCT00590980>

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