



Arterial dissection occurs when a tear forms in the innermost layer of an artery, allowing blood to enter and separate the layers of the arterial wall. This condition can affect arteries throughout the body, including the carotid arteries in the neck and the arteries supplying the brain.

Arterial dissection causes a disruption in blood flow and can potentially lead to serious complications, such as stroke or organ damage. Arterial dissection can be spontaneous or triggered by trauma, connective tissue disorders, or certain activities. Early diagnosis and intervention are crucial for preventing complications and improving outcomes in patients with arterial dissection.

## Symptoms

Symptoms of arterial dissection can vary depending on the location and severity of the tear in the artery. Common symptoms include:

- Sudden, severe headache
- Neck pain or stiffness
- Facial droop or asymmetry
- Vision changes or loss of vision in one eye
- Weakness, numbness, or tingling on one side of the body
- Difficulty speaking or understanding speech
- Dizziness or loss of balance
- Hearing a rhythmic sound in the ears (pulsatile tinnitus)
- Fainting or loss of consciousness
- Chest or back pain
- Sudden onset of weakness in the legs

Arterial dissection symptoms can develop rapidly and may worsen over time, particularly if the dissection leads to reduced blood flow to vital organs. If any of these symptoms occur suddenly or are severe, patients should seek immediate medical attention.



Patients should seek immediate medical attention if they experience any of the symptoms previously described.

## Talk to a Doctor

Discuss symptoms of arterial dissection with a doctor as soon as possible, especially if symptoms are sudden, severe, or persistent. Patients should seek immediate medical attention if they experience any of the symptoms previously described.

Early recognition and treatment of arterial dissection can help prevent complications and improve outcomes.

## Causes and Risks

While the exact cause of arterial dissection is not always clear, several factors and conditions may increase the risk, including:

- **Trauma:** Injury or trauma to the artery, such as from a car accident, sports injury, or blunt force trauma, can cause arterial dissection
- **Connective tissue disorders:** Certain connective tissue disorders, such as Ehlers-Danlos syndrome, Marfan syndrome, or fibromuscular dysplasia, can weaken the arterial walls and predispose them to dissection
- **High blood pressure:** Chronic hypertension can put increased pressure on the arterial walls, making them more susceptible to tearing
- **Atherosclerosis:** The buildup of plaque (atherosclerosis) within the arteries can lead to weakening and damage to the arterial walls, increasing the risk of dissection
- **Pregnancy and childbirth:** The hormonal changes and physical stress associated with pregnancy and childbirth may increase the risk of arterial dissection in some women
- **Genetic factors:** There may be a genetic predisposition to arterial dissection if individuals

have a family history of the condition

- **Certain medical procedures:** In rare cases, medical procedures such as angiography, angioplasty, or chiropractic manipulation may trigger arterial dissection

While arterial dissection can occur spontaneously, certain risk factors may increase the likelihood of its development. It's important for patients to be aware of these risk factors and seek medical attention immediately if they experience symptoms.

## Diagnosis

Diagnosing arterial dissection typically involves a combination of clinical evaluation, imaging studies, and diagnostic tests. The process may include the following steps:

- Medical history and physical examination
- Imaging studies such as:
  - Magnetic resonance imaging (MRI) and magnetic resonance angiography (MRA)
  - Computed tomography angiography (CTA)
  - Doppler ultrasound
  - Catheter angiography

- Laboratory tests, including blood tests, may be conducted to assess for signs of inflammation, coagulation disorders, or other underlying conditions that may contribute to arterial dissection.

Once a diagnosis of arterial dissection is confirmed, further evaluation may be conducted to assess the extent of the dissection, determine the underlying cause, and guide treatment decisions. Prompt and accurate diagnosis is essential for initiating appropriate management and preventing complications associated with arterial dissection.

## Role of Vascular Surgeon

Overall, vascular surgeons play a pivotal role in the comprehensive management of arterial dissection. They offer expertise in diagnosis; treatment planning; and interventions aimed at restoring blood flow, preventing complications, and improving patient outcomes.

## Treatment

The treatment of arterial dissection aims to relieve symptoms, prevent complications, and restore normal blood flow to the affected artery. Treatment is individualized based on the specific needs and circumstances of each patient and depends on several factors, including the location and severity of the dissection, the presence of complications, and the patient's overall health.

In many cases, medications are prescribed to manage symptoms and reduce the risk of complications. For example, blood pressure

medications control hypertension and reduce stress on the arterial walls. Treatment might also include minimally invasive procedures to repair the arterial dissection and restore normal blood flow. These procedures include:

- Stent placement, when a small mesh tube is inserted into the affected artery to support the arterial wall and keep it open, allowing blood to flow freely
- Balloon angioplasty, when a balloon catheter is used to widen the narrowed or blocked portion of the artery, improving blood flow
- Thrombectomy or thrombolysis, which is used in cases where a blood clot is causing or complicating the dissection, and involves using a catheter to remove the blood clot or thrombolytic medications administered directly into the artery to dissolve the clot

In some situations, open surgical repair may be necessary, particularly if the dissection is extensive or if endovascular therapy is not feasible. Surgical options include:

- Arterial bypass grafting, in which the surgeon creates a bypass to redirect blood flow around the affected artery, bypassing the dissection site
- Arterial reconstruction, in which the surgeon removes the damaged portion of the artery and connects the remaining ends to restore blood flow

After treatment, patients with arterial dissection require close monitoring to assess the effectiveness of treatment, monitor for complications, and adjust medications as needed. Follow-up appointments with healthcare providers and imaging studies may be scheduled to evaluate the healing process and ensure long-term vascular health.

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