



Your
Vascular
Health™

A Guide for Patients: Thoracic Outlet Syndrome



Thoracic outlet syndrome (TOS) is an uncommon medical condition that happens when the nerves and blood vessels between the neck and shoulder are pinched and compressed between the collarbone and top rib. This area is called the thoracic outlet. TOS can cause arm and hand pain, numbness, weakness, and swelling.

The thoracic outlet is shaped like a triangle and is found at both sides of the body. When the thoracic outlet is working normally, the nerves and blood vessels of the arms are not damaged by being squeezed when a person uses their arms or turns their head.

With TOS, the nerves or blood vessels of the arms are pinched or squeezed and damaged. TOS can happen genetically if the clavicle bone, first rib bone, or another neck bone is too large or too narrow. TOS can also happen

when the muscle in the thoracic outlet gets too big, such as with some sports players (baseball players or swimmers, for example) and in some people with jobs that require lifting their arms above their heads repeatedly (window washers, for example).

Symptoms

Neurogenic TOS is the most common type of TOS. In neurogenic TOS, the nerves are pinched in the thoracic outlet triangle. When those nerves are pinched, patients may feel tingling or pain in their arms and hands. The hands or parts of the arm may also feel numb and weak.

In **venous TOS**, the subclavian vein becomes pinched, which can cause blood clots and swelling in the arm.

Arterial TOS is rare. In arterial TOS, the subclavian artery becomes pinched. Pinching this artery can cause pain and color changes in the fingers or even an aneurysm to form.



Physical therapy (PT) is usually the first step to treating TOS. Sometimes, a shot into a muscle in the thoracic outlet can help fix neurogenic TOS.

Causes and Risks

The causes of TOS can vary and may include:

- Congenital: genetic causes
- Traumatic: caused by accident or injury
- Functional: occupational or athletic causes

Diagnosis

There is no single test to diagnose TOS. A doctor will order several tests to ensure the patient isn't suffering from a more common diagnosis of the arms, such as arthritis, muscle sprain, or pinched neck nerves.

Role of a Vascular Surgeon

Vascular surgeons are educated and trained in the diagnosis and treatment of TOS. It is important to consult with a vascular surgeon early when TOS is suspected as delays in care can lead to worse outcomes.

Treatment

Physical therapy (PT) is usually the first step to treating TOS. Sometimes, a shot into a muscle in the thoracic outlet can help fix neurogenic TOS.

Surgery might be needed when PT or shots don't relieve the problem. In these cases, a vascular surgeon will remove the top rib and adjacent muscle to open up the thoracic triangle and relieve the compression. If the artery or vein is affected, additional treatments to restore health to the blood vessels may be needed during the operation.

YourVascularHealth.org

PRESENTED BY: **SVS** | Society for Vascular Surgery



Your
Vascular
Health™