



Thoracic Outlet Syndrome

Definition: Thoracic outlet syndrome is a condition that is caused by pressure on the nerves and arteries that travel from the neck to the shoulder. When these nerves are compressed, they alter one's sensation and strength.

Common Terms: Thoracic outlet syndrome is oftentimes referred to as TOS.

Typical Mechanism of Injury: Thoracic outlet syndrome can be caused by the presence of a compressing rib, a pinching of the nerves and arteries that bundle between the clavicle (collar bone) and the first rib, trauma to the clavicle or first rib, compression between the pectoralis muscle and the rib cage, or tightness of the front neck muscles. In some cases, hypertrophy (enlargement) of these same muscles can also compress the nerves and/or arteries. Factors that can induce the onset of thoracic outlet syndrome include: repetitive overhead arm movements such as throwing or swimming, wearing a backpack that sustains a great amount of weight over a prolonged period of time, and poor posture including drooping shoulders.

Common Signs and Symptoms: Numbness, pain and weaknesses in the hands are the most common signs. A person may complain of difficulty with fine motor skills such as gripping, as well as a loss of sensation and feeling of coldness in the fingers and hands.

Common Treatment: Treatment may include rehabilitation that focuses on reducing any compression on the nerves and arteries. Individuals may also be provided anti-inflammatory medications, and a stretching program may be advised to assist with managing any tight muscles. This program may also include various forms of massage and self-stretches. In some cases, symptoms persist and surgery is warranted to alleviate pressures on the critical structures.

Prevention: Good posture is a key to preventing TOS. In addition, avoiding excessive repetitive overhead movements when possible, and paying careful attention to high loads of compression on the shoulder such as seen with a heavy backpack are helpful. Stretching the neck and chest muscles on a regular basis may also assist in preventing TOS from developing. In some cases, proper bra fitting is recommended as tight straps can also lead to a compression of the structures.

Expectations: This condition is more commonly seen in women. The majority of individuals will respond well to exercise and rehabilitation programs by decreasing the associated symptoms within a couple of months.

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