

Carpal tunnel syndrome

BY ANTHONY LETT

What is it?

Carpal tunnel syndrome (CTS) is a condition that affects the hand and wrist. It occurs when the median nerve, which runs from the forearm into the hand, becomes compressed or squeezed as it passes through a narrow passageway called the carpal tunnel. The carpal tunnel is a narrow space in the wrist formed by bones and a thick ligament, and it contains the tendons that control finger movement.

IMAGE A

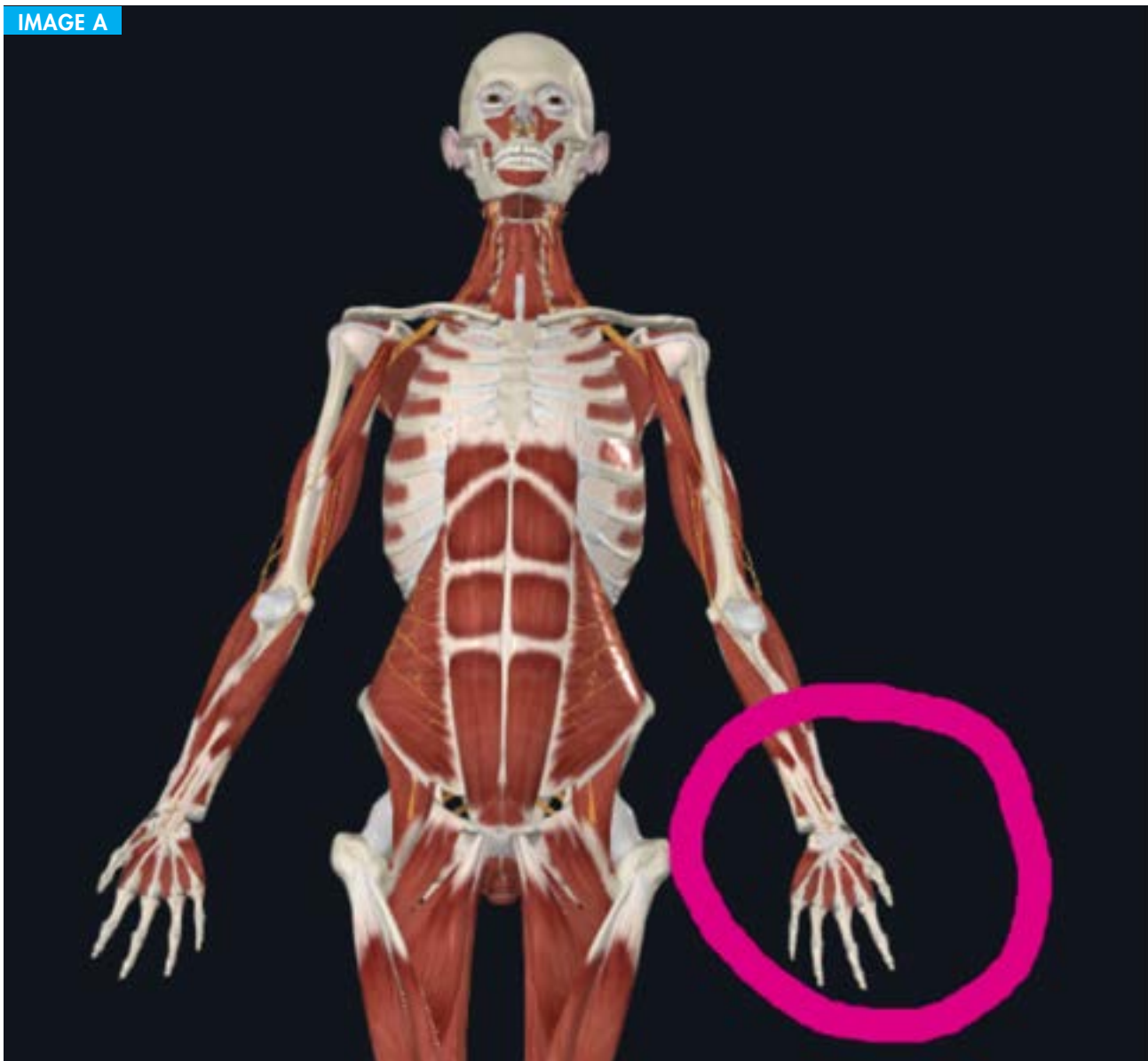


Image A shows us the location of the carpal tunnel

IMAGE B



In **Image B** we zoom in to see the large number of tissues that pass through the tunnel. Note that we are looking at the anterior surface of the forearm and wrist.

Symptoms

When the median nerve is compressed, it can lead to various symptoms such as pain, numbness, tingling, or weakness in the hand and fingers. These symptoms typically affect the thumb, index finger, middle finger, and half of the ring finger. The symptoms may worsen over time and can interfere with daily activities.

How does stretching help?

Stretching does not directly create space in the carpal tunnel itself. The space within the carpal tunnel is relatively fixed anatomically.

Stretching can alleviate tension and pressure on the tendons and other structures passing through the carpal tunnel, potentially reducing the compression on the median nerve. When the muscles in the forearm and wrist are tight or overworked, they can create increased tension on the tendons passing through the carpal tunnel. It is this pressure that can further reduce the available space within the carpal tunnel and can lead to increased pressure within the carpal tunnel and compression of the median nerve.

Stretching exercises can also increase blood circulation to the hand and wrist area, which can promote healing, reduce inflammation, and improve overall tissue health. This may contribute to reducing symptoms associated with carpal tunnel syndrome.

Note that addressing inflammation typically requires additional interventions such as rest, icing, anti-inflammatory medications, or other treatments as determined by a healthcare professional.

It's important to remember that carpal tunnel syndrome is a complex condition, and its causes and contributing factors can vary. Consultation with a healthcare professional are crucial to determine the most appropriate treatment plan for your specific situation.

Stretching exercises

To stretch the muscles that become tendinous and pass through the tunnel, a stretch for the anterior compartment of the forearm is most useful.

Explore leaning above each finger and moving around from side to side also. If you locate a tight spot, pause and apply some gentle force through it.

While stretching the posterior forearm and upper arm may not directly alleviate carpal tunnel syndrome symptoms, it is still a valuable part of maintaining good upper body mobility and posture. Combining upper arm stretches with wrist and forearm stretches can provide a comprehensive approach to promoting hand and wrist health.



[Scroll down to watch a video of this stretch](#)

Stretches

The wrist flexors



[Click to play](#)

Stretches

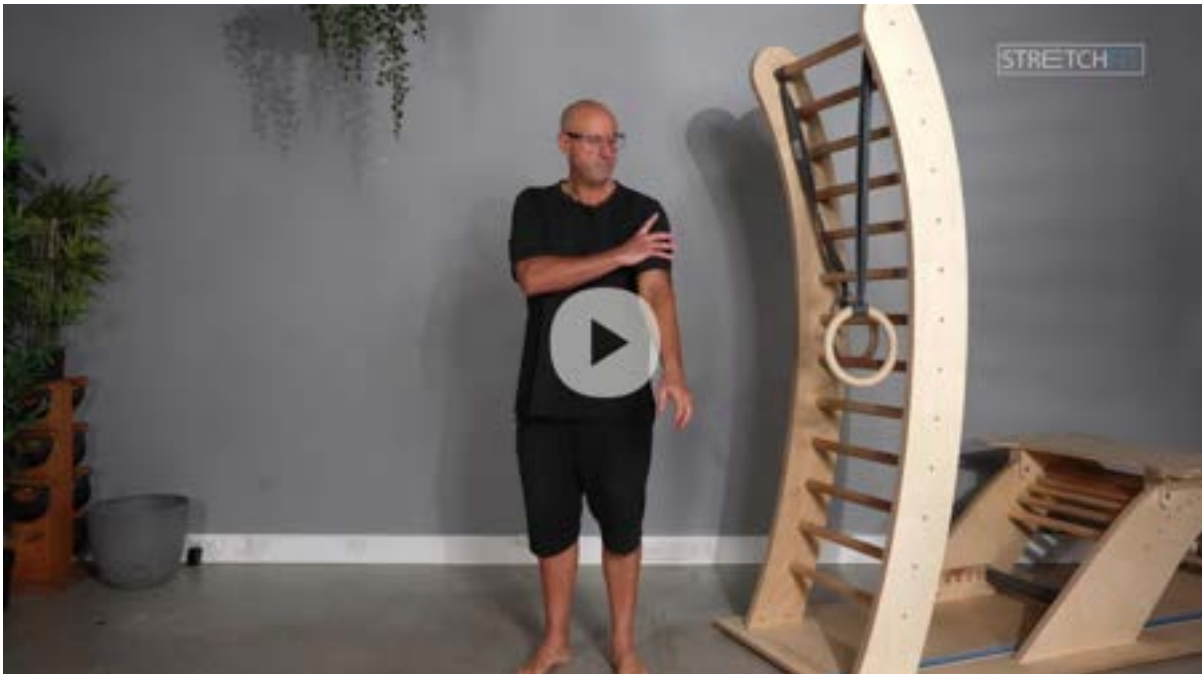
We recommend the following stretches in addition to the forearm flexors above.

The wrist extensors



[Click to play](#)

The anterior arm



[Click to play](#)

Part Two

Overlapping Symptoms

Thoracic outlet compression syndrome or TOCS

Thoracic outlet syndrome can sometimes be mistaken for carpal tunnel syndrome, as they can have overlapping symptoms in the hand and arm.

Carpal tunnel syndrome, as we read above, is caused by compression of the median nerve at the wrist within the carpal tunnel, resulting in symptoms such as pain, numbness, tingling, and weakness in the hand and fingers.

On the other hand, thoracic outlet syndrome involves compression or irritation of the nerves of the brachial plexus, which can cause similar symptoms in the arm and hand, including pain, numbness, tingling, and weakness.

The key difference is the **location** of nerve compression: carpal tunnel syndrome occurs at the wrist, while thoracic outlet syndrome occurs in the neck and shoulder region. **However, due to the similarity of symptoms, it is possible for these conditions to be mistaken for each other.**

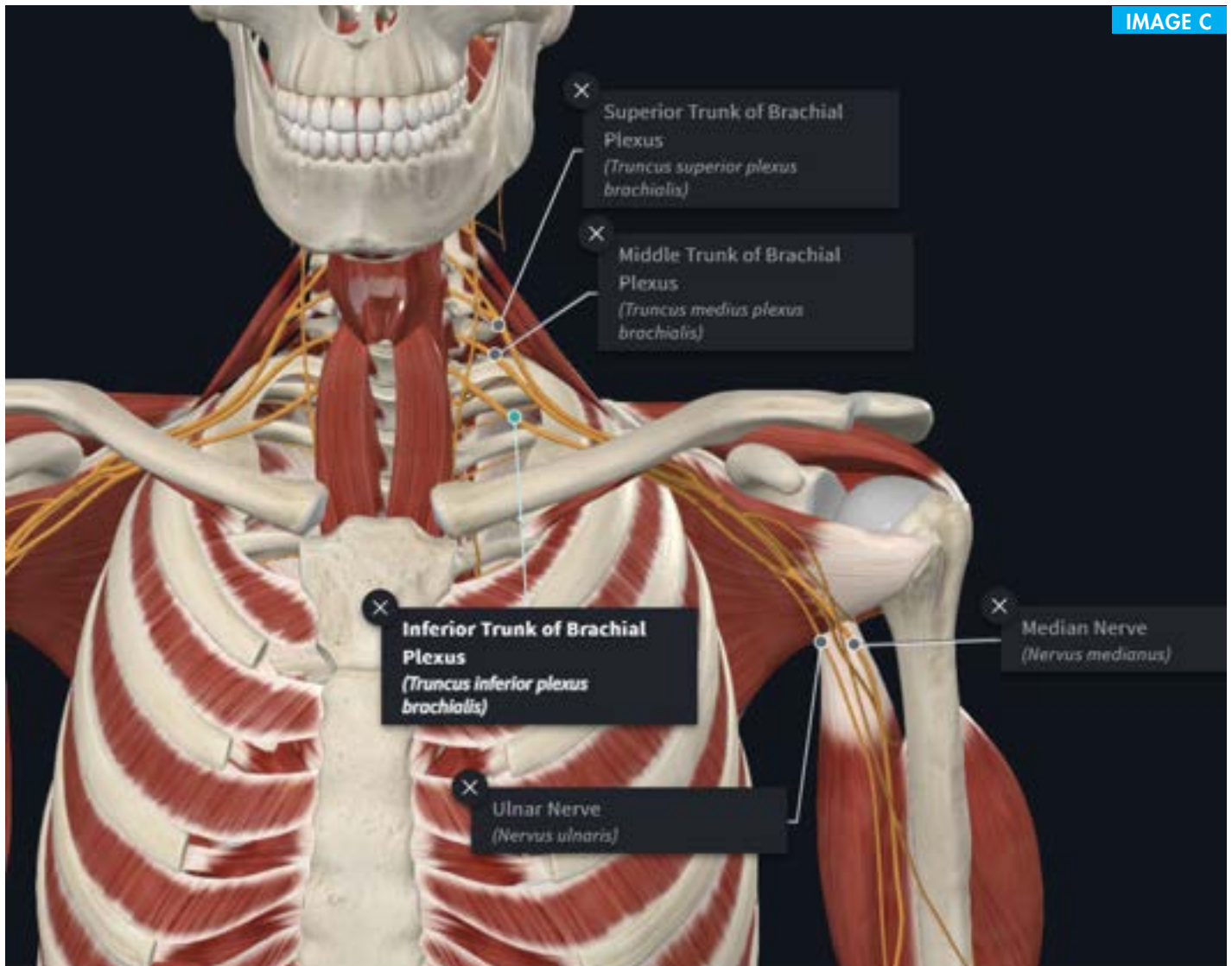
A healthcare professional, such as a neurologist, can conduct a thorough evaluation, which may include physical examination, nerve conduction studies, and imaging, to help distinguish between the two conditions and determine the correct diagnosis. Proper diagnosis is crucial as the treatment and management of these conditions can vary significantly.

The brachial plexus

The brachial plexus is a network of nerves that originates from the lower cervical (neck) and upper thoracic (chest) spinal nerves. These nerves come together and pass through a narrow space called the interscalene triangle, which is formed by the anterior and middle scalene muscles in the neck.

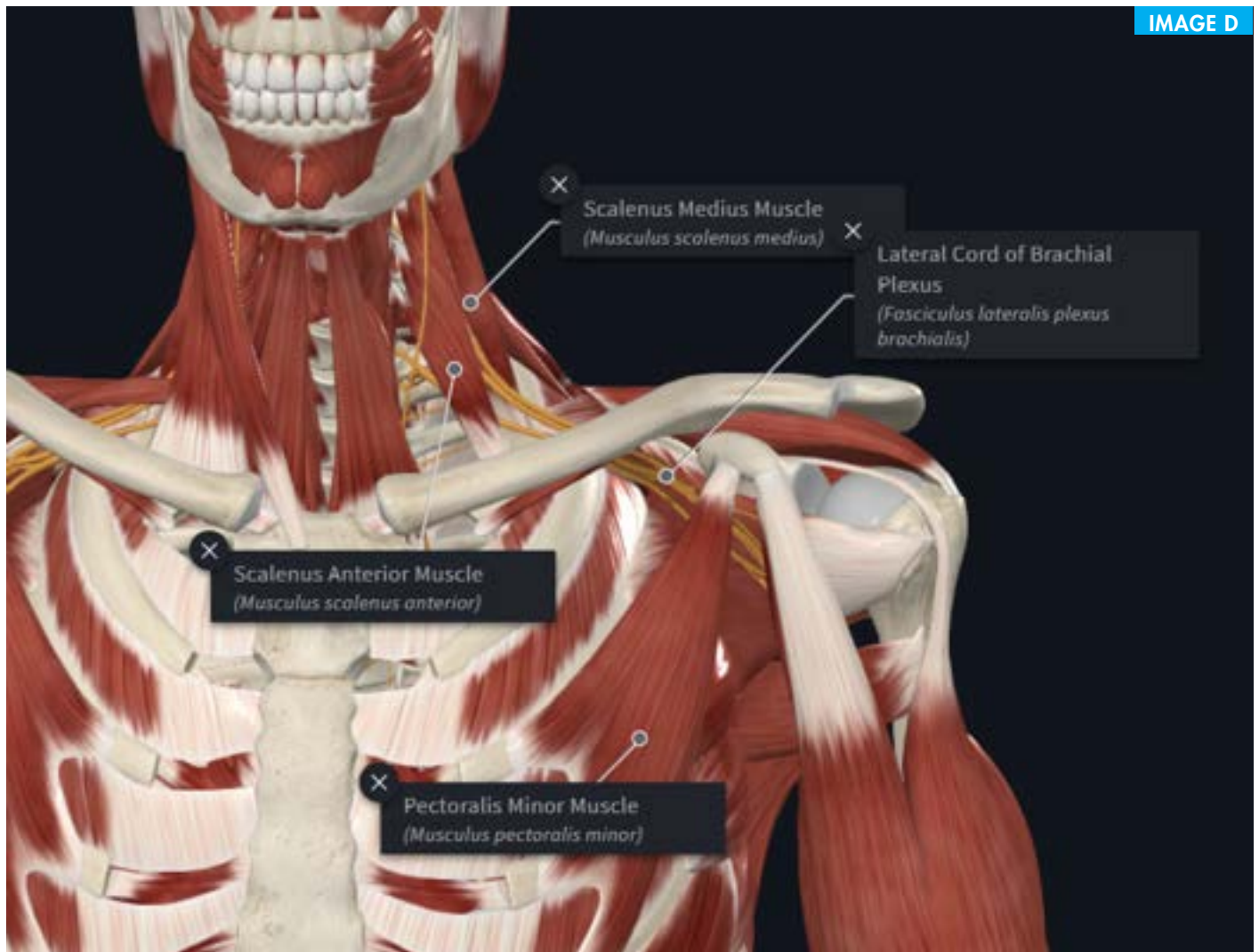
When the scalene muscles become tight or hypertonic, they can narrow this space and put pressure on the brachial plexus as it passes between them. This compression can occur when the muscles are overworked, strained, or if there is poor posture and muscle imbalances in the neck and shoulder region.

The nerves of the brachial plexus, including the median nerve, ulnar nerve, and radial nerve, exit the neck region and continue down the arm, providing innervation to various muscles and skin of the upper limb, including the wrist and hand.



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Compression or irritation of the brachial plexus, such as between the scalene muscles, can lead to a thoracic outlet syndrome, which may cause symptoms in the arm and hand including pain, numbness, tingling, or weakness in the affected arm.



The pectoralis minor muscle can also affect the brachial nerves, specifically the nerves of the brachial plexus. Compression of the brachial plexus by the pectoralis minor muscle can also result in thoracic outlet syndrome (TOS) with similar symptoms including pain, numbness, tingling, and weakness in the arm, especially in the distribution of the affected nerves.

The pectoralis minor muscle is located in the front of the chest (see above) and attaches to the coracoid process of the scapula. When the pectoralis minor muscle becomes tight or overactive, it can contribute to rounding of the shoulders and forward positioning of the shoulder girdle. This can lead to compression or impingement of the brachial plexus, which runs through the area between the clavicle (collarbone) and the first rib, known as the thoracic outlet.

Stretching and releasing tension in the pectoralis minor muscle can be beneficial for reducing compression on the brachial plexus and relieving symptoms of thoracic outlet syndrome. Stretching the chest and shoulder muscles can help improve posture and reduce strain on the nerves.

Stretches

Please try the following stretches in addition to the stretches recommended for Carpal Tunnel syndrome

The pec major stretch



[Click to play](#)

The pec minor stretch



[Click to play](#)

Surgery

Carpel tunnel can also be treated surgically in what is described as a ‘release’ or “decompression” surgical procedure. Watch the video below for a good explanation and representation of two different procedures.



[Click to play](#)

Summary

It's important to consult with a healthcare professional to diagnose the condition as accurately as possible and develop a comprehensive treatment plan that addresses individual needs. Treatment success often involves a combination of approaches tailored to the specific condition and its underlying causes.

Keep in mind that clarity in terms of the causes and effects of pain, particularly in “syndromes” is not possible. Uncertainty is an overwhelming reality in physical medicine.

A comprehensive treatment plan therefore should make use of all the stretches above, to “keep all bases” covered.