

Thoracic Outlet Syndrome

What you're feeling

Thoracic outlet syndrome usually shows up as an arm that just isn't quite right. You might notice an **ache through the shoulder, the side of the neck and down the arm**, along with **numbness, pins-and-needles or tingling** – often in the ring and little fingers. The arm can feel **heavy, weak or clumsy**, so you fumble things or your grip tires quickly. A very typical clue is that the symptoms get **worse when your arm is up or overhead** – hanging out washing, reaching to a high shelf, driving, or carrying a bag on your shoulder – and ease again when you rest the arm down. Some people get headaches at the back of the head as well.

Less commonly, the problem is with the blood vessels rather than the nerves. If a **vein** is squeezed, the whole arm can suddenly **swell, feel heavy and take on a bluish tinge**. If an **artery** is squeezed – which is rare – the hand may go **pale, cold and painful**. These vascular patterns matter, because they need to be looked at quickly (see the last section).

What's actually happening

To get from your neck to your arm, the **nerves and blood vessels have to pass through a narrow gap** at the base of the neck – between your **collarbone, your first rib, and the scalene muscles** of the neck. This gap is the “thoracic outlet”. When it becomes too tight, those structures get **compressed**, and that pressure is what produces the symptoms.

There are three types, depending on what is being squeezed. **Neurogenic TOS** – pressure on the **nerves** (the brachial plexus) – is by far the commonest, making up the great majority of cases; this is the aching, numbness, tingling and weakness pattern. **Venous TOS** involves the main **vein** and causes the swollen, heavy, bluish arm – sometimes with a clot. **Arterial TOS** is rare and involves the **artery**, causing the pale, cold hand.

A few things make the space tighter. Some people are born with an **extra rib in the neck (a cervical rib)** or a tight fibrous band. **Posture** matters – rounded, drooping shoulders close the space down – as do **bulky or tight neck and chest muscles**, which is why it's more common in people who do **repetitive overhead work or sport**. A **previous neck or collarbone injury** can also be the trigger.

What we can do about it

The good news is that for the common, neurogenic type, **the first-line treatment isn't surgery – it's physiotherapy**. A targeted programme to **open up the thoracic outlet** does the heavy lifting: correcting posture, strengthening the muscles that hold the shoulder blade back and down, releasing tight neck and chest muscles, and learning to **avoid the arm positions that pinch**. This settles symptoms for most people, and it's worth giving it a genuine, several-month effort.

Surgery is reserved for two situations. The first is the **vascular types (venous or arterial)**, where decompression is usually needed and is the main treatment. The second is **neurogenic TOS that hasn't settled** despite a proper trial of physiotherapy and is genuinely interfering with life. The operation **decompresses the outlet** – typically by **removing the first rib (and any extra cervical rib) and releasing the scalene muscles** – to give the nerves and vessels room. It can be done through the armpit, above the collarbone, or with keyhole assistance. For selected patients it works well.

What to expect

It's worth being honest that **TOS can be a tricky diagnosis**. There's no single test that proves it. The diagnosis is mostly **clinical** – your story plus examination tests that put the arm in provoking positions – and scans and nerve studies are often used as much to **rule out commoner causes** (like carpal tunnel at the wrist, cubital tunnel at the elbow, or a neck/disc problem) as to confirm TOS itself. So part of the process is patiently sorting out where your symptoms are really coming from, and the answer isn't always clear-cut.

For the **neurogenic** type, most people improve with posture and physiotherapy and never need an operation, though it can take months and needs you to keep the habits going. When the **vascular** types or stubborn neurogenic cases do come to surgery, decompression relieves symptoms for most carefully selected patients, with recovery over several weeks. Because TOS sits at the **most proximal point** of the nerve pathway – higher up than carpal tunnel at the wrist or cubital tunnel at the elbow – it's sometimes just one piece of the puzzle, and the plan is tailored to you.

When to see someone

- A **sudden, swollen, heavy or bluish arm** – this can mean a vein is blocked or clotted and needs **urgent** assessment, the same day.
- A **pale, cold, painful hand**, or fingers that change colour – a possible arterial problem and a reason to seek **urgent** care.
- **Numbness, tingling, weakness or clumsiness** in the arm or hand that is persisting, worsening, or interfering with work, sleep or daily tasks.
- **Wasting (loss of muscle bulk) in the hand**, or symptoms that keep coming back despite a good trial of physiotherapy – worth a specialist opinion.
- If you've been told you have a **cervical rib** and are getting arm symptoms – worth having it assessed.