PROCEDURE

Endoscopic thoracic sympathectomy

Endoscopic thoracic sympathectomy is keyhole chest surgery that interrupts nerves responsible for severe excessive sweating.

PURPOSE
To reduce severe focal sweating, especially of the hands

PROCEDURE TYPE
Therapeutic, minimally invasive surgical procedure

WHERE IT IS DONE
Operating theatre

ANAESTHESIA
General

HOW LONG IT TAKES
About 1-2 hours

PREPARATION
Fasting and medication review, including blood thinners

RECOVERY
Same day or overnight; no driving until safely recovered

MAIN RISKS
Compensatory sweating, collapsed lung, bleeding, nerve injury

RESULTS
Usually noticeable immediately after surgery

Overview

Endoscopic thoracic sympathectomy, or ETS, is an operation used mainly to treat severe excessive sweating of the hands.

During ETS, a surgeon interrupts part of the sympathetic nerve chain inside the chest. These nerves help control sweating but are not needed for normal feeling or movement. The operation is performed through small cuts between the ribs using a camera called a thoracoscope. Both sides are usually treated during the same operation.

ETS can stop hand sweating quickly. However, it can cause increased sweating elsewhere on the body, known as compensatory sweating. This may be permanent, so understanding this trade-off is essential before choosing surgery.

Why the procedure is performed

ETS is most often considered for severe primary palmar hyperhidrosis: excessive hand sweating that is not caused by another condition or medicine.

Hand sweating may interfere with writing, electronic devices, tools, driving, work, school, or social contact. Surgery is generally considered only when symptoms significantly affect daily life and less invasive treatments have not helped enough.

ETS may also be offered for severe underarm or facial sweating or facial flushing, but results may be less predictable. The procedure is not used to diagnose the cause of sweating.

Who should and should not have it

You may be considered for ETS if you have severe, long-standing focal sweating, especially of the hands, and non-surgical treatments have failed or caused unacceptable side effects. You must be willing to accept possible increased sweating on the back, chest, abdomen, legs, or groin.

ETS is generally unsuitable for mild or widespread sweating. Generalized sweating may be caused by medicines, hormone disorders, infection, menopause, or another medical condition that should be investigated first.

Surgery may be avoided or delayed if you have:

Elective surgery is usually postponed during pregnancy. Your surgical and anaesthesia teams will assess your individual risks.

- An active infection or temporary illness
- Heart or lung disease that makes general anaesthesia unsafe
- An unusually slow heart rhythm
- Previous chest surgery, scarring, or pleural disease that limits access
- Sweating caused by another treatable condition
- Expectations that do not account for compensatory sweating

How to prepare

Follow your facility's instructions because fasting times, medicine changes, and admission arrangements vary.

Tell the team about all medicines, supplements, allergies, and previous reactions to anaesthesia. This is especially important for anticoagulants or antiplatelet medicines, often called blood thinners. Do not stop them yourself; the team will tell you whether and when to pause them.

Stop eating and drinking at the times provided before general anaesthesia. If you smoke or vape, tell the team because this increases chest and wound complications.

Arrange for an adult to take you home and stay with you after same-day surgery. Bring loose clothing that will not rub against the wounds.

What happens during the procedure

You receive general anaesthesia and a breathing tube. The surgeon makes one or more small cuts near each armpit or along the side of the chest, then passes a camera and narrow instruments between the ribs.

The lung on the treated side is allowed to move partly away from the chest wall. The surgeon cuts, seals, or otherwise interrupts the selected part of the sympathetic nerve chain.

The lung is re-expanded before the instruments are removed. A temporary chest drain may be inserted to remove air or fluid. The process is repeated on the other side if both sides are treated. The cuts are closed, and you are moved to recovery as the anaesthetic wears off.

Recovery and what to expect afterward

Chest, upper-back, shoulder, or incision pain is common at first. You may feel tightness when taking a deep breath. Pain medicine should help, and discomfort should gradually improve.

You can usually drink and eat once awake and no longer nauseated. Gentle walking is encouraged. Avoid heavy lifting, strenuous activity, and forceful upper-body exercise until your team says these are safe.

Do not drive home. Resume driving only after the period specified by your facility and when you are not taking sedating pain medicine, can turn comfortably, and could perform an emergency stop safely.

Some people return to desk work within several days; physical work may require longer. Your hands may feel warm and dry immediately. Temporary numbness, tingling, fatigue, or sweating changes can occur during early recovery.

Risks and possible complications

The main long-term risk is compensatory sweating, often affecting the trunk, abdomen, buttocks, groin, or legs. It can be mild or severe, may be more disruptive than the original sweating, and cannot be reliably predicted before surgery.

Other possible complications include:

Injury near the upper sympathetic chain can cause Horner syndrome, with a drooping eyelid, smaller pupil, and reduced facial sweating on one side.

A second operation may be needed for significant bleeding, a persistent air leak, or another chest complication. Removing a nerve clip does not reliably restore the previous sweating pattern.

- Air around the lung, called a pneumothorax
- Bleeding, infection, or fluid in the chest
- Persistent chest wall or nerve pain
- Sweating that continues or returns
- Very dry hands or cracked skin
- Sweating triggered by eating
- A slower heart rate or reduced ability to raise it during exercise
- Injury to nearby nerves

Results and follow up

Hand sweating usually improves immediately, and the hands may feel warmer because small blood vessels open.

Before discharge, the team may check your wounds, breathing, oxygen level, and hand temperature. A chest X-ray may confirm that the lungs are fully expanded.

Follow-up assesses wound healing, breathing, pain, and your new sweating pattern. Tell the team if compensatory sweating affects daily life. Sweating can return if nerve signals regrow or use another pathway; your surgeon can review persistent or recurrent symptoms and discuss non-surgical management.

Alternatives

Alternatives depend on the affected area and previous treatments:

ETS may reduce hand sweating more completely, but it carries the risks of chest surgery and permanent compensatory sweating.

- Strong antiperspirants: Avoid surgery but may irritate the skin or provide incomplete control
- Iontophoresis: Uses a mild electrical current through water for hands or feet but requires repeated sessions
- Botulinum toxin injections: Reduce sweating for several months but require repeat injections and may temporarily weaken hand muscles
- Topical medicines: May help selected areas but can irritate skin or cause dry mouth or blurred vision
- Oral anticholinergic medicines: May reduce widespread sweating but can cause dry mouth, constipation, blurred vision, overheating, or difficulty urinating
- Underarm procedures: Target armpit sweat glands but do not treat hand sweating
- No procedure: Avoids surgical risks, although severe sweating may continue

When to call your healthcare team

Contact your surgical team promptly for increasing wound redness, drainage, fever, worsening pain, repeated vomiting, or sweating changes that are difficult to manage.

Seek urgent medical care for new or worsening shortness of breath, sudden severe chest pain, coughing up blood, fainting, or a very fast or unusually slow heartbeat with dizziness. Heavy bleeding or severe difficulty breathing requires emergency care.

Common questions

Will I be asleep?

Yes. ETS is performed under general anaesthesia.

Can I drive home?

No. Arrange transport home. Drive again only when the anaesthetic has worn off, you are not taking sedating pain medicine, and you can control the vehicle safely.

How painful is it?

Soreness around the cuts and discomfort in the chest, shoulders, or upper back are common.

Pain medicine usually helps.

When will I know if it worked?

The hands are often warm and dry immediately. The longer-term result becomes clearer as your overall sweating pattern settles.

Will the sweating move somewhere else?

It may. Compensatory sweating commonly affects the trunk or lower body and can be heavy and permanent.

Can the operation be reversed?

Cut or sealed nerves cannot be restored. Clips may sometimes be removed, but this does not reliably reverse compensatory sweating.

Sources

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