



# Primary Focal Hyperhidrosis



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**Definition:** A greater than physiological quantity of sweat localized to specific areas of the body, most likely the palms (50-60%), axillae, soles and face. Present for at least six months without apparent cause.

## Symptoms:

Hyperhidrosis typically begins in childhood or adolescence. It can worsen with age and is sometimes linked to a family history. The excessive sweating affects 1-5% of the population and will often impair daily activities, as well as emotional well-being. These patients experience moist to frankly wet hands, feet, axillae, or face (or a combination of sites) during waking hours, resulting in difficulty handling objects, shaking hands, or even the need to change clothes. Significant embarrassment, anxiety, and distress often result from this.

## Pathogenesis:

Hyperhidrosis is predominantly caused by the eccrine sweat glands, which are innervated by the sympathetic nervous system (cholinergic receptors). Histologically, the sweat glands are normal, but for unclear reasons, they are sympathetically overstimulated. A possible genetic link has been suggested.

## Differential diagnosis:

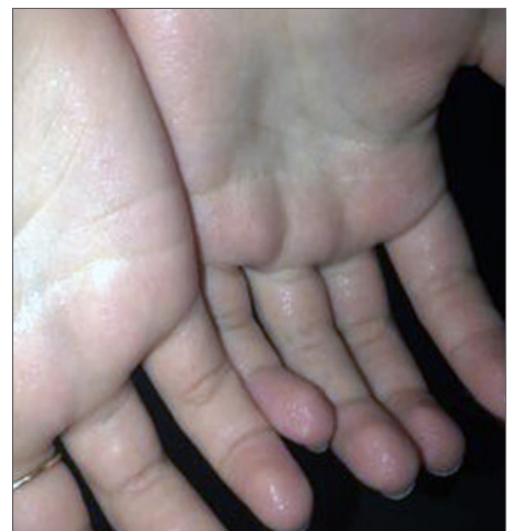
Secondary hyperhidrosis tends to be more generalized in location, presents later in life, and can occur either while awake or sleeping. Systemic causes (e.g., hyperthyroidism, pheochromocytoma, diabetes, "night sweats workup") should be evaluated, as well as a medication review.

## Treatment:

Many options have been proposed with varying success and should generally be used in a stepwise approach, depending on the degree of the individual's severity and impairment.

- Drysol (20% aluminum chloride hexahydrate) is usually the first modality used. It is used nightly. This may be associated with some skin irritation.
- Oral anticholinergic medications may be added if first line treatment does not provide enough relief. This may include oxybutynin, glycopyrrolate (topical and oral available), or others. Patients should be monitored for anticholinergic side effects.

PREOPERATIVE PALMAR HYPERHIDROSIS



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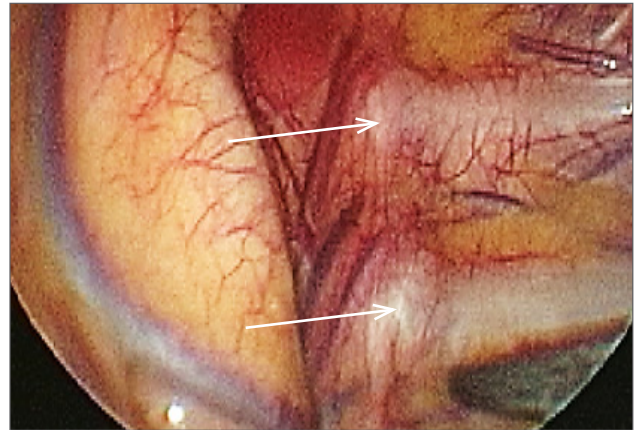


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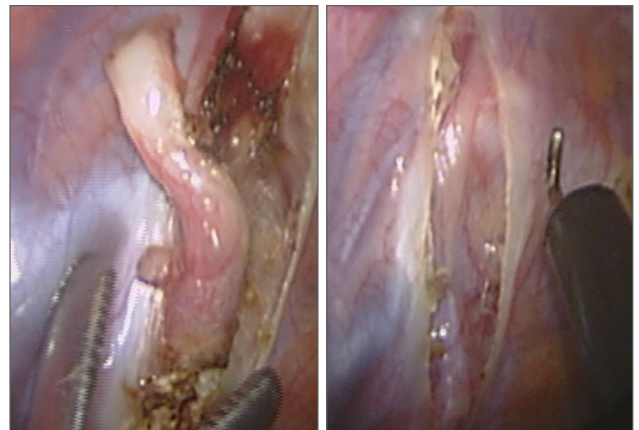
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- Iontophoresis: This is a technique introducing ionic compounds using a local electric current to decrease sweat production in a localized site. This requires daily treatments for two to three weeks, followed by a maintenance regimen. This works best for palmar and plantar sites with up to 95% effectiveness if treatment plan is followed. Families must purchase the machine for continued use.
- Botulinum toxin A injection: The injection blocks acetylcholine release and may be effective for one to six months. The treatment is effective, however, it is painful, costly, and must be repeated.
- Thoracoscopic sympathectomy: This is a minimally invasive technique (3-5 mm access ports), which ablates only the affected sympathetic level (or levels) of the thoracic sympathetic ganglia (T2 = facial/scalp; T3 = palmar, T4 = axillary). It is highly effective and an excellent option for those individuals who remain symptomatic after failing other modalities. Success rates of 95-98% for upper extremity hyperhidrosis are to be expected, with the best results for the palmar site. Recurrence rate is about 2% and may depend on the site of original symptoms and if extraneural pathways exist. Compensatory sweating is the most common side effect, which is significantly reduced by the current technique of limiting the extent of sympathectomy. This may occur in up to 55%, but is only considered bothersome by 2%.

*Testimony: "I wanted to thank Dr. Iglesias for completely changing my life with this surgery. I couldn't be happier with the decision that I made. Before my surgery, I was embarrassed of my sweaty hands and a lot of stuff would be difficult for me. Before, I couldn't shake anyone's hands without being embarrassed, and they would sweat even if I was cold, and all the other kids thought that I was weird. I am super happy and super thankful!" -AV*



T3 AND T4 GANGLIA OF LEFT CHEST, BEFORE DISSECTION



DISSECTION AND REMOVAL OF T3 SYMPATHETIC GANGLION AND NERVE.

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