

# Hyperhidrosis: Sweating Out the Details

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Hyperhidrosis (HH) remains a relatively unknown disorder to the general public and health-care professionals. According to the literature, 0.5% to 1% of the population is affected by HH. However, a recent survey held in the U.S. places that figure at 2.8%; thus, revealing that the prevalence is underrated. Among those affected, only 38% had discussed the problem with a health professional.<sup>1</sup>

HH may be classified as primary or secondary; either type can be localized or generalized. Table 1 lists the most commonly affected sites.

## Impact on quality of life

HH is known to be a socially embarrassing and occupationally disabling disorder. Many patients suffer in silence. Figure 1 illustrates the impact HH has on quality of life.<sup>2</sup>

Those with axillary HH often have to change clothing several times a day and throw out clothing because of the damage caused to fabric and leather.

Patients who suffer from palmar HH are embarrassed to shake hands. Sweat can stain books and papers, make fingers slippery on computer keyboards, and even prevent the enjoyment of sports. Manual labour becomes difficult and workers are prone to injury due to dropped objects.

Table 1

### Most commonly affected sites

Site	Prevalence
Facial	68.9%
Axillary	50.8%
Plantar	28.7%
Palmar	24.8%

Besides affecting quality of life, HH predisposes its victims to a host of dermatologic disorders (Table 2).<sup>3</sup> The control of HH would also control the associated disease condition, as has been recently reported with the treatment of dyshidrotic hand dermatitis with intradermal botulinum toxin.<sup>4</sup>

## How is HH treated?

### Systemic approach

Minor sedatives, such as amitriptyline and hydroxyzine, produce an anticholinergic, as well as a sedative, effect.

### Anticholinergics

Glycopyrrolate, 1 mg to 2 mg twice or three times daily, produces side-effects (such as tachycardia, dry mouth, and lowered intestinal motility) that can be worse than the HH itself. Glycopyrrolate may also aggravate pre-existing problems, such as glaucoma or convulsions.

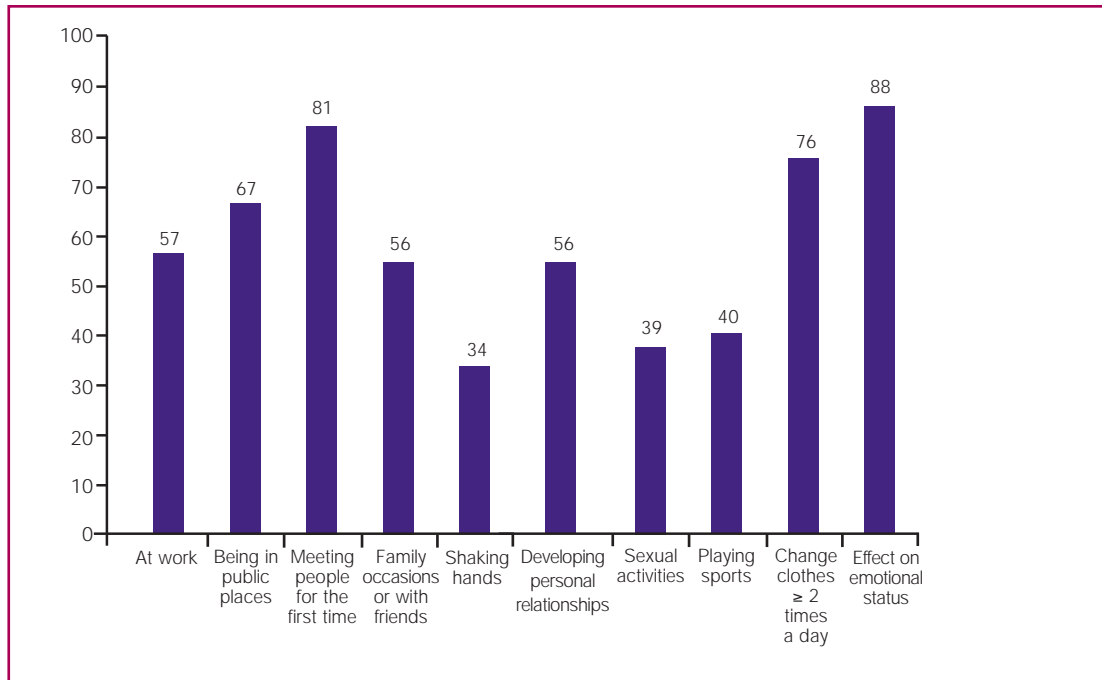


Figure 1. Quality of life measures in patients with excessive axillary sweating.

Table 2

## Comorbidity between hyperhidrosis and dermatologic disorders

- Trichomyces axillaris
- Erythrasma
- Pitted keratolysis
- Intertrigo
- Tinea versicolor
- Candidiasis
- Tinea pedis
- Onychomycosis
- Recurrent bacterial infections
- Aquagenic palmoplantar keratoderma
- Hand dermatitis
- Dyshidrotic eczema (pompholyx)
- Contact dermatitis
- Friction blisters
- Warts
- Frost bite
- Corns and calluses
- Ingrown nails
- Hailey-Hailey
- Erythromelalgia

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### Topical approach

#### *Anticholinergics (topical glycopyrrolate)*

Topical anticholinergics have been used successfully to control craniofacial HH. There are also anecdotal reports of



Table 3

### Therapeutic algorithm proposed for the treatment of localized (focal) HH

Level	Site	Treatments
1	Armpits Groin Forehead	Over-the-counter antiperspirants containing aluminum salts 6.25% $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$ /in absolute ethanol: Drysol mild (Xerac AC) 12.5% $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$ /water based: CertainDri®
2	Armpits Groin Hands Feet	20% $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$ /in absolute ethanol: Drysol® 10%-30% $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$ /in a gel with or without 4% salicylic acid
3	Hands Feet	40%-50% $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$ /in a 4%-6% salicylic acid gel base
4	Armpits Hands Feet	Iontophoresis Drionic Fischer
5	Armpits Hands Feet	Botox® injections
6	Armpits Hands Feet?	Surgical excision of eccrine axillary glands Endoscopic transthoracic sympathectomy

treating HH with indomethacine and diltiazem.

#### Antiperspirants

Antiperspirants decrease sweating by creating a “plug”, consisting of aluminum salts, in the acrosyringium. Aluminum chlorhydrate is the most commonly used ingredient in the majority of over-the-counter antiperspirants because it is relatively less irritating than aluminum chloride, which is the most potent of aluminum salts.

It is important to note that aluminum chloride may damage clothing and irritate the skin, especially when applied immediately after shaving. In such cases, hydrocortisone, 1%, can be used to reduce the irritation.

Aluminum chloride in a 4% salicylic acid gel base has been reported to be more effective and better tolerated than aluminum chloride in the alcoholic solution.

Cont'd on page 80 →

## Take-home message



- HH has been estimated to affect between 0.5% to 2.8% of the general population.
- Besides affecting quality of life, HH predisposes patients to a host of dermatologic disorders, including:
  - Hand dermatitis
  - Friction blisters
  - Trichomycosis axillaris
  - Pitted keratolysis, and
  - Hailey-Hailey
- Antiperspirants, iontophoresis, and botulinum toxin type A are all possible treatment options, depending on the severity of the condition.

### *Iontophoresis*

Iontophoresis is a technique whereby hands or feet are immersed in a tray of tap water through which a galvanic current is passed. The procedure takes 20 to 30 minutes a day, for a duration of at least 20 days, until the sweating stops. While helpful, the treatment is time consuming and some maintenance is required after completion. Glycopyrrolate could be added to enhance the procedure's drying effect (Table 3).

### *Botulinum toxin type A*

Localized intradermal injections of botulinum toxin type A, a neuromuscular paralyzing agent produced by the bacterium *clostridium botulinum*, markedly reduces excessive sweating by blocking the release of acetylcholine from nerve fibres which stimulate eccrine glands.<sup>5</sup>

## Frequently Asked Questions

### 1. Do the use of antiperspirants cause breast cancer?

According to the National Cancer Institute, there is no scientific evidence to support a link between antiperspirants and breast cancer.

### 2. Does aluminum chloride cause Alzheimer's disease (AD)?

Most researchers agree that there is not enough evidence to substantiate a claim that aluminum is either a risk factor for AD or a cause of dementia.

### 3. What's the best time of day to apply an antiperspirant?

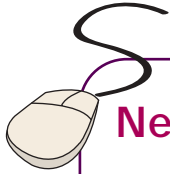
In the evening, because the glands are much less active during that time of day. Otherwise, excessive sweat, which contains mostly water, will form hydrochloric acid, which irritates the skin.

Approved by Health Canada for the treatment of axillary HH, botulinum toxin A has been successfully used to treat facial, palmar, and plantar HH. The first effects are seen within seven days, and usually last four to eight months. It is a safe and generally well-tolerated procedure, although a transient minor weakness of hand grip and finger pinch strength may occasionally occur.

### *Surgical approach*

While resection of the eccrine glands under the arms could control axillary HH, the procedure cannot be performed elsewhere on the body.

Endoscopic transthoracic sympathectomy (ETS) should be used as a last resort because of



## Net Readings

1. Canadian hyperhidrosis treatment centres  
[www.sweatmanagement.ca](http://www.sweatmanagement.ca)
2. International Hyperhidrosis Society  
[www.sweathelp.org](http://www.sweathelp.org)
3. The Society of Thoracic Surgeons  
[www.sts.org/doc/4097](http://www.sts.org/doc/4097)
4. For more information on hyperhidrosis  
[www.hyperhidrosis.ca](http://www.hyperhidrosis.ca)

compensatory HH (*i.e.*, the occurrence of HH in other areas, such as the chest or back, which may become worse than the original site involved).

CME

## References

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4. Swartling C, Naver H, Lindberg M, et al: Treatment of dyshidrotic hand dermatitis with intradermal botulinum toxin. *J Am Acad Dermatol* 2002; 47(5):667-71.
5. Bushara KO, Park DM, Jones JC, et al: Botulinum toxin, a possible new treatment for axillary hyperhidrosis. *Clin Exp Dermatol* 1996; 21(4):276-8.