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[Home](#) | [Treatments](#)

Antiperspirants

Antiperspirants are chemical agents that reduce perspiration or sweating. The active ingredients of roll-on and spray formulations are traditionally the metallic salts aluminium chloride and aluminium chlorohydrate. These are formulated into preparations of varying strengths. More concentrated solutions are used to control excessive sweating ([hyperhidrosis](#)).

Newer generation antiperspirants contain aluminium zirconium compounds. These are much better tolerated by the skin and are less likely to cause irritation or aggravation to razor burn.

Diphemanil methylsulfate (Prantal®) powder may also be used to reduce perspiration. It is particularly useful on an amputation stump to reduce irritation by a prosthesis.

Deodorants are not antiperspirants. Deodorants do not prevent sweating. Their aim is to mask the smell produced by sweat-eating bacteria. Some antiperspirant preparations may contain a deodorant.

How do antiperspirants work?

Aluminium-based antiperspirants work by blocking the sweat ducts, thereby reducing the amount of sweat that reaches the skin's surface. Aluminium salts are soluble as long as the formulation is acidic (low pH). When they are applied to skin and come in contact with sweat, the pH rises causing the aluminium salts to precipitate out and form a plug over the sweat glands. Sweat continues to be produced by the sweat gland but it just isn't able to reach the surface of the skin.

Diphemanil methylsulfate is a drug that opposes the action of the parasympathetic nerves that control sweat production.

How do you use antiperspirants?

Higher concentration antiperspirants are usually much more effective than low concentration or aluminium-free preparations. However, increasing the strength can also increase the potential for side effects. A couple of simple rules apply to their use.

- Apply to dry skin, after a cool shower at bedtime. During sleep sweating is limited and the active ingredients have a better chance of being absorbed into the sweat glands. Wash off in the morning.
- Apply on a regular basis as directed by your doctor. Initially this may be 7–10 nights in a row, then reducing to every other night for one week. When improvements are seen, patients can move to a maintenance schedule of using it once every 7–12 days. Over time reapplication may be needed even less frequently.

Where can you use antiperspirants?

Antiperspirants are often the first-line of treatment for underarm hyperhidrosis as they are readily available from the pharmacy or supermarket. Antiperspirants may also be used in other sites of the body that tend to sweat excessively. If standard preparations fail, stronger strength preparations are available at your pharmacy.

Sweat is a dilute salt solution produced by eccrine sweat glands spontaneously or in response to heat, exercise and stressful events. Eccrine sweat is initially odourless but can start to smell if bacteria get a chance to break down the stale sweat. The eccrine glands are distributed over the entire body but are most numerous under the

arms and on the palms and soles.

Apocrine sweat glands are located under the arms, around the breasts and in the groin. After puberty, they produce a thick secretion that contains pheromones, the “personal scent” that most people find unpleasant. In addition, bacteria that normally live on the skin break down apocrine sweat and this produces offensive body odour. Body odour is worse if there are more bacteria present or the level of apocrine sweat production is high. Antiperspirants also help to reduce apocrine sweat production.

Precautions

Avoid applying antiperspirants to mucous membranes (mouth, nose, eyelids, genitals, anus).

Antiperspirants may cause [irritant](#) or [allergic contact dermatitis](#). This may be from the active ingredient or diluents in the preparation. The skin around the underarm area is particularly prone to develop these reactions because it is thin, delicate, moist and occluded.

People at risk of developing a reaction to an antiperspirant include those with:

- eczema
- sensitive skin
- contact allergy to [fragrance](#), preservative or dye
- susceptibility to razor burn

To reduce the possibility of reactions less concentrated preparations should be used in susceptible groups.

In rare cases, where a hair follicle is blocked over a long period of time, a [cyst](#) may develop. Infected cysts damage the ducts and form painful hard lumps that may need to be surgically removed.

There have been reports linking antiperspirants applied under the arms to breast cancer but to date there is no medical evidence of any connection.

Use of diphemanil methylsulfate on the face may lead to dry mouth and other “muscarinic” side effects. It should not be used in young babies as it has been reported to cause toxicity.

Related information

On DermNet NZ:

- [Hyperhidrosis](#)

Other websites:

- International Hyperhidrosis Society: [Help for excessive sweating](#)
- Dermadoctor: [Antiperspirants](#)

Books about skin diseases:

See the [DermNet NZ bookstore](#)

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DermNet does not provide an on-line consultation service.

If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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