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Antiseptics

Antiseptics are chemical agents that slow or stop the growth of micro-organisms (germs) on external surfaces of the body and help prevent infections. Antiseptics should be distinguished from antibiotics that destroy micro-organisms inside the body, and from disinfectants, which destroy micro-organisms found on inanimate (non-living) objects. However, antiseptics are often referred to as skin disinfectants.

Most chemical agents can be used as both an antiseptic and a disinfectant. The purpose for which it is used is determined by its concentration. For example hydrogen peroxide 6% solution is used for cleansing wounds, while stronger solutions (>30%) are used in industry as a bleach and oxidising agent.

Antiseptics



Types of antiseptics

Antiseptics can be classified according to their chemical structure. Commonly used antiseptic groups include alcohols, quaternary ammonium compounds, chlorhexidine and other diguanides, antibacterial dyes, chlorine and hypochlorites, inorganic iodine compounds, metals, peroxides and permanganates, halogenated phenol derivatives and quinolone derivatives. The following table lists some of the agents within these groups.

Group	Agent	Uses
Alcohols	Ethyl alcohol 70% Isopropyl alcohol 70%	Skin disinfectant
Quaternary ammonium compounds	Benzalkonium chloride Cetrimide Methylbenzethonium chloride Benzethonium chloride Cetalkonium chloride Cetylpyridinium chloride Dofanium chloride Domiphen bromide	Skin disinfectant Irrigations Eye drop preservative
Chlorhexidine and other diguanides	Chlorhexidine gluconate Chlorhexidine acetate	Pre-op skin disinfectant Treat wounds Bladder irrigations

Antibacterial dyes	Proflavine hemisulphate Triphenylmethane Brilliant green Crystal violet	Skin disinfectant Treat wounds and burns
Peroxides and permanganates	Hydrogen peroxide solution Potassium permanganate solution Benzoyl peroxide	Wound cleanser Gargles and mouthwashes Irrigations Skin disinfectant
Halogenated phenol derivatives	Chlorocresol Chloroxylenol Chlorophene Hexachlorophane/hexachlorophene Triclosan	Skin disinfectant Medicated soaps and solutions
Quinolone derivatives	Hydroxyquinoline sulphate Potassium hydroxyquinoline sulphate Chlorquinaldol Dequalinium chloride Di-iodohydroxyquinoline	Treat wounds Throat lozenges Skin disinfectant

Uses of antiseptics

Antiseptics are mainly used to reduce levels of microorganisms on the skin and mucous membranes. The skin and mucous membranes of the mouth, nose, and vagina are home to a large number of what are usually harmless micro-organisms. However, when the skin or mucous membranes are damaged or breached in surgery, antiseptics can be used to disinfect the area and reduce the chances of infection. It is also important that people whom are treating patients with wounds or burns adequately wash their hands with antiseptic solutions to minimize the risk of cross infection.

Antiseptics are used for:

- Handwashing – chlorhexidine gluconate and povidone iodine solutions are often used in hand scrubs.
- Pre-operative skin disinfection – antiseptics applied to the operation site to reduce the resident skin flora.
- Mucous membrane disinfection – antiseptic irrigations may be instilled into the bladder, urethra or vagina to treat infections or cleanse the cavity prior to catheterization.
- Preventing and treating infected wounds and burns – antiseptic preparations are available over-the-counter from your pharmacist to treat minor cuts, abrasions and burns.
- Treating mouth and throat infections – dequalinium chloride has both antibacterial and antifungal properties and is the active ingredient in antiseptic throat lozenges.

Precautions

Antiseptics bought from the pharmacy should not be used for more than one week. If the affected area has not healed or improved in that time you should stop using the antiseptic and see your doctor. Large wounds, deep cuts, burns larger than a small red spot, scrapes imbedded with particles that won't wash away, animal bites and eye injuries should be treated by your doctor. Do not use antiseptics to treat sunburn or existing skin infections. Remember that antiseptics only reduce microorganisms on the surface of the tissue and that antibiotics will be needed to treat infection within the tissues.

People with allergies of any kind should check with a doctor or pharmacist before using an over-the-counter antiseptic product. Some antiseptics can irritate the skin and cause [allergic contact dermatitis](#).

Related information

References:

- Book: Pharmaceutical Handbook. Ed Wade A. Nineteenth edition. The Pharmaceutical Press.
- [Antiseptics](#): Dr Joseph F. Smith Medical Library

On DermNet NZ:

- [Treatment of fungal infections](#)

Other websites:

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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