



STEROIDS (TOPICAL)

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With the skin being the largest and most accessible organ to treat, topical steroid therapy comprises the mainstay treatment of many dermatologic conditions. Treatment with a topical steroid can be a lengthy process and requires patient compliance in order to be effective. However, topical treatments do have the advantage of direct application of the medication to the affected area and carry less risk of systemic side effects than **oral steroids** if used as directed.

Steroids, like cholesterol, estrogen and cortisone are natural occurring hormones made by the body. In response to stress or disease, the body releases these products into the blood stream to control the immune response. Steroids work by penetrating the membrane of a cell and binding to a receptor. In doing so, this can increase the production of anti-inflammatory proteins or inhibit the production of inflammatory ones. Synthetic derivatives of these molecules have been formulated specifically for use on the skin. Thus, topical steroids are best known for their powerful anti-inflammatory properties. The effectiveness of a topical therapy depends first on the inherent potency and second on its ability to penetrate into the skin.

There are 7 different classes of topical steroids in the United States based on their ability to constrict small blood vessels called capillaries. Class I preparations are the most potent, approximately 600-1000 times stronger than the common over-the-counter preparation of hydrocortisone 1% which is a class VII. It is important to remember that the strength of a steroid preparation is not proportional to the % on the label. For example, a 0.01% class I steroid may be hundreds of times more potent than a 3% class VII preparation.

The vehicle refers to the inactive portion of the topical preparation responsible for bringing the drug into contact with the skin. Some available vehicles to deliver the steroid include ointments, creams, lotions, gels and powders.

- **Ointments** are a semi-occlusive petroleum based preparation. They are considered the most potent vehicle for topical steroids. The benefits of ointments include superior lubrication, prevention of water and moisture loss, and increased medication absorption. Compliance with ointments can be difficult due to their greasy texture and limited utility in hairy areas. They are best used on dry and scaly skin like **eczema** and **psoriasis**.
- **Creams** are the most popular topical vehicles and are comprised of a white semi-solid product. Although generally considered weaker than ointments, their cosmetic appeal and high compliance rate offer distinct advantages over other vehicles. Creams are useful for the majority of dermatologic conditions, especially when there is skin-on-skin contact like body folds.
- **Lotions** are more liquefied preparations than creams leaving minimal residue and are therefore considered by many to be the least potent vehicle in topical therapies. Lotions find their utility in cooling and soothing the skin, covering large areas of skin and in thick hair bearing areas. These properties make lotions a good choice for acute inflammatory conditions like **contact dermatitis** and **seborrheic dermatitis**.
- **Gels** are a mixture of propylene glycol and water. They are often clear, have a drying effect on the skin with minimal residue, and are effective in the scalp where other vehicles can cause matting of the hair. Thus gels combine the cosmetic benefits of creams and the restorative advantages of ointments for scalp conditions like **psoriasis** and **seborrheic dermatitis**.
- **Powders** can be used to absorb excess moisture, protect skin against chaffing, and easily cover large areas of the body. They are used in conditions like **diaper rashes** or **fungal infections**.

As with other drugs, there are potential side effects in using topical steroids. The overriding principle for the prevention these unwanted reactions is to always use the lowest potency steroid still effective for the particular skin condition. Furthermore weaker steroids are used on the thinner skinned areas of the face, armpits, groin and genital areas. Following these guidelines will

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decrease the incidence of common side effects like thinning of the skin, formation of stretch marks (striae), changes in skin pigmentation, easy bruising, and the development of prominent blood vessels (telangiectasias). A rare yet serious systemic side effect can occur if a strong steroid is absorbed over a large body surface area for a long time. This may suppress the adrenal gland leading to diabetes, high blood pressure, fluid retention and osteoporosis. Glaucoma may also develop if steroids are used chronically around the eyes. It is imperative that you apply your topical steroid as directed by your dermatologist to minimize the risk of these adverse reactions.

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