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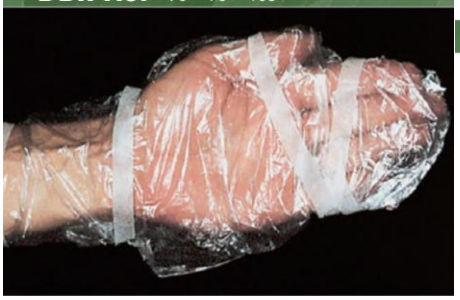
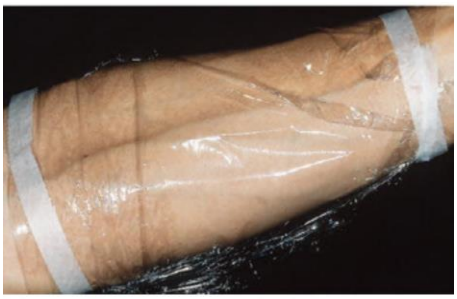
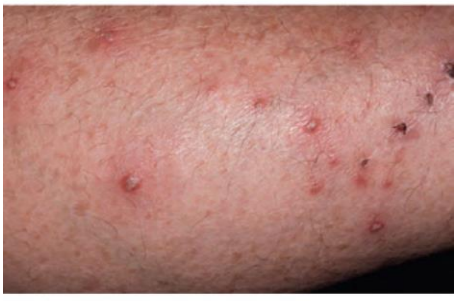


Plastic wrap (e.g., Saran Wrap) with paper tape is an effective method to increase the penetration of topically applied medications.



Ace wrap can be applied on top of this plastic wrap to help keep the wrap in place.

Occlusion of the entire body. A vinyl exercise suit is a convenient way to occlude the entire body.



Occlusion for extended periods of time may result in secondary infection with pustules and *Staphylococcal folliculitis*. Occlusion is stopped and the patient is treated with oral antibiotics.

1 TOPICAL THERAPY
Basic principles of treatment
DDx Ref 70 • 79 • 108

MAINTAINING THE SKIN BARRIER

• **Functions of the skin:** fluid homeostasis; protection from infection, toxin absorption, and ultraviolet radiation; temperature regulation. • **Primary goal of topical or systemic dermatologic therapy:** restore and maintain a normal skin barrier.

SKIN CLEANSING

Use mild soaps and cleansers (Cetaphil, Dove, Keri, or Aveeno). Limit use of exfoliating brushes and fragranced soaps. Wash with tepid, not hot, water.

SKIN MOISTURIZATION

Moisturize immediately after washing. Use thicker, oil-based ointments for excessively dry, damaged skin. Use lotions to maintain healthy skin. Use exfoliating emollients containing glycolic acids (lactic acid, salicylic acid) and urea to gently remove scales. Examples of lubricating creams and lotions: • **Thicker creams and ointments:** Vaseline petroleum jelly, Aquaphor ointment, CeraVe. • **Lighter creams:** Acid Mantle, Cetaphil cream, DML cream, Moisturel cream, Vanicream. • **Lighter lotions:** Cetaphil lotion, DML lotion, Nutraderm lotion, Curél lotion, Aveeno lotion, CeraVe lotion.

TOPICAL FORMULATIONS

Two main factors determine the effectiveness of a topical medication: the drug and the vehicle (base). Vehicles assist in drug delivery and have therapeutic properties.

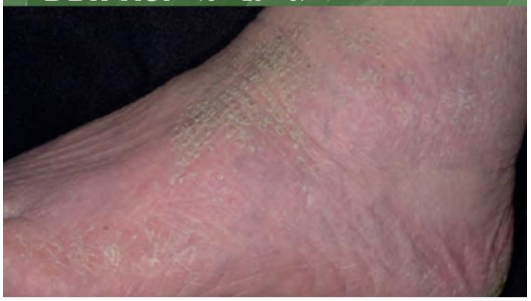
• **Vehicle examples:** powders (drying), ointments (moisturizing, form protective barrier, increase skin penetration of drug), creams (cooling, not occlusive), pastes (drying, less greasy), solutions or lotions (drying, effective for hairy areas), gels or foams (greaseless).

TOPICAL APPLICATION AND DOSING

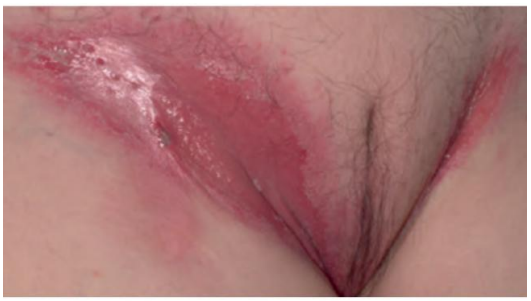
Gently massage medication into skin in one thin layer. No need for thick application: 1 g of cream covers a 10 × 10-cm area. The amount of cream applied to the finger from the distal skin crease to the tip of an adult index finger is 0.5 g. Apply creams once or twice a day. Skin location affects ease of medication penetration. The following anatomic locations are organized in increasing difficulty of medication penetration: mucous membranes (easy penetration) > scrotum > eyelids > face > torso > extremities > palms and soles.

WET DRESSINGS

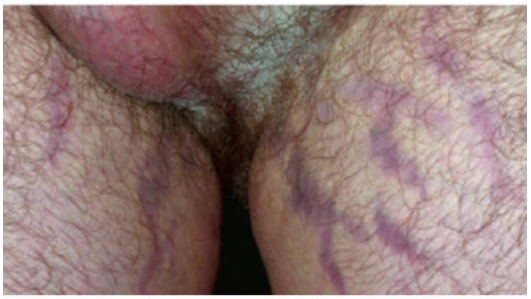
• Useful to dry exudative (wet) skin diseases or debride infected wounds. • Immerse a clean, soft cloth (such as bed sheeting or shirt material slightly larger than the treated area) in cool (antiinflammatory) or tepid solution (e.g., tepid water, Burow's solution). • Gently wring out excess solution and apply wet cloth to skin. • Leave dressing open to air and in place for 30 min. • Repeat 2–4 times a day. • Discontinue when skin becomes dry.



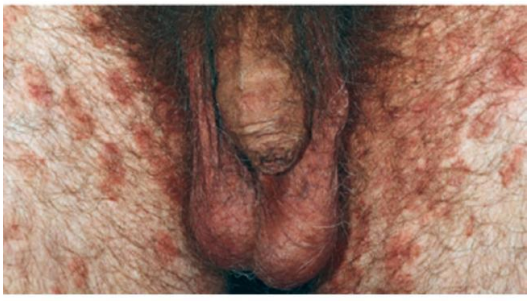
Twice-daily application of a keratolytic cream such as ammonium lactate, urea, or lactic acid removes scale.



Rashes of weepy sores in the skin folds (intertrigo) are soothed by application of medicines formulated in pastes and ointments. Alcohol-based solutions will sting and should be avoided.



Striae of the groin after long-term use of group V topical steroids for pruritus. These changes are irreversible.



Inappropriate application of a topical steroid causes tinea cruris to flare (tinea incognito).

2 TOPICAL THERAPY
Topical corticosteroids
DDx Ref 15 • 20 • 37

DESCRIPTION

• **Topical corticosteroids:** used to treat inflammatory dermatoses; safe and effective with proper use. • **Corticosteroid potency:** organized into seven groups based on their antiinflammatory activity: group I (strongest) to group VII (weakest).

GENERAL FACTS AND GUIDELINES

Important factors to consider when choosing steroid strength are diagnosis, location, age, and patient's financial resources. Two weeks is adequate to see a clinical response. Steroid concentrations reflect relative strength for a particular corticosteroid (triamcinolone 0.025%, 0.05%, 0.1%) and cannot be used to compare strengths between corticosteroids. Fluorinated steroids (containing a fluorine atom) have increased potency and a tendency for side effects.

• **Superpotent topical corticosteroids (group I):** use less than 45–60 g per week; use cyclic dosing (2 weeks of therapy followed by 1 week of rest); prescribe limited amounts; use for plaque psoriasis and hand or foot eczema. • **Group II–VII topical corticosteroids:** avoid undertreatment with weak group VII topical corticosteroids (hydrocortisone) for more difficult rashes; eyelid dermatitis and intertriginous areas respond quickly to group VI or VII steroids.

METHODS OF APPLICATION

Simple Firmly massage a thin layer of topical corticosteroid into the skin without the aid of an occlusive dressing. Washing is not necessary before each application.

Occlusive Occlusive dressings (e.g., Saran Wrap) hydrate the stratum corneum and allow enhanced corticosteroid absorption; allow for the use of lower-strength corticosteroids. Occlusive dressings can be used during the day for periods up to 2 h, or 8 h during sleep. Simple applications can be alternated with applications assisted by an occlusive dressing. Vinyl exercise suits (sauna suits) are effective to occlude large body surface areas. • **Complications of occlusive dressings:** infection, folliculitis, and miliaria.

STEROID–ANTIBIOTIC MIXTURES

Antifungal–corticosteroid combinations (Mycolog, Lotrisone) are expensive and have limited uses. The topical corticosteroid betamethasone dipropionate found in Lotrisone is too strong for intertriginous areas and can cause permanent striae.

POTENTIAL SIDE EFFECTS OF TOPICAL CORTICOSTEROIDS

• Allergic contact dermatitis, burning, itching, irritation, dryness (largely due to the vehicle), hypertrichosis, hypopigmentation, miliaria and folliculitis, skin breakdown, glaucoma, cataracts, rebound phenomenon (i.e., psoriasis becomes worse after treatment is stopped), rosacea, perioral dermatitis, acne, skin atrophy with telangiectasia, stellate pseudoscars (arms), purpura, striae, skin blanching from acute vasoconstriction, systemic absorption, tinea incognito, impetigo incognito, scabies incognito. • Infants are at increased risk for systemic absorption.