

## Dyshidrotic Eczema

Background: Dyshidrotic eczema is a recurrent or chronic relapsing form of vesicular palmoplantar dermatitis of unknown etiology. Dyshidrotic eczema also is termed pompholyx, which derives from cheiropompholyx, which means "hand and bubble" in Greek.

The etiology of dyshidrotic eczema is unresolved and believed to be multifactorial. It is considered a reaction pattern caused by various endogenous conditions and exogenous factors.

Pathophysiology: Several hypotheses exist for the pathophysiology of dyshidrotic eczema. The original hypothesis of sweat gland dysfunction is not valid, since vesicular lesions are not associated with sweat ducts. Patients usually do not have hyperhidrosis.

Dyshidrotic eczema may be associated with atopy. Of patients with dyshidrosis, one half have atopic dermatitis.

Exogenous factors (eg, contact dermatitis to nickel, balsam, cobalt; sensitivity to ingested metals; dermatophyte infection; bacterial infection) may trigger episodes. These antigens may act as haptens with a specific affinity for palmoplantar proteins of the stratum lucidum of the epidermis. The binding of these haptens to tissue receptor sites may initiate pompholyx.

Emotional stress and environmental factors (eg, seasonal changes, hot or cold temperatures, humidity) reportedly exacerbate dyshidrosis.

Controversy exists concerning whether a distant fungal infection can cause palmar pompholyx as an "id reaction." The finding that one third of pompholyx occurrences on the palms resolve after treatment for tinea pedis supports this hypothesis.

Frequency:

In the US: Dyshidrotic eczema occurs in as many as 5-20% of patients with hand eczema and more commonly occurs in warmer climates and during spring and summer months. Internationally: Dyshidrotic eczema comprised 1% of initial consultations in a 1-year Swedish study.

Mortality/Morbidity: Dyshidrotic eczema can be severe, resulting in occupational disability and time away from work; however, disability compensation usually is not provided for this condition.

Sex: Male-to-female ratio is 1:1.

Age:

Dyshidrotic eczema affects individuals aged 4-76 years; mean age is 38 years.  
After middle age, the frequency of episodes tends to decrease.

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History: Patients complain of pruritus of hands and feet with sudden onset of blisters.  
Burning pain or pruritus occasionally may be experienced before blisters appear.  
Episodes vary in frequency from once per month to once per year. Patients may report a variety of factors that possibly are related to eruptions.

Emotional stress

Personal or familial atopic diathesis (eg, asthma, hay fever, sinusitis)

Certain work exposures (eg, cobalt) and/or recreational exposures

Recent exposure to contact allergens (eg, nickel, balsams, paraphenylenediamine, chromate, sesquiterpene lactones) before condition flares

Exposure to contact irritants before condition flares

Recent exposure to costume jewelry (patients with palmar pompholyx and allergic to nickel)

Recent treatment with intravenous immunoglobulin therapy

Physical: Symmetric crops of clear vesicles and/or bullae on the palms and lateral aspects of fingers characterize dyshidrotic eczema (Picture 1, Picture 2, Picture 5, Picture 6, Picture 7, Picture 9). Feet, soles, and the lateral aspects of toes also may be affected.

In mildly affected patients, vesicles are present only on the lateral aspects of fingers and, occasionally, involve feet and toes (Picture 9).

Vesicles are deep seated with a tapiocalike appearance, without surrounding erythema (Picture 2).

May become large, form bullae, and become confluent (Picture 8)

Typically resolve without rupturing, followed by desquamation

Hands are involved solely in 80% of patients, feet solely in 10% (Picture 3), and both hands and feet are involved in 10% of patients (Picture 8).

With long-standing disease, patients' fingernails may reveal dystrophic changes (eg, irregular transverse ridging, pitting, thickening, discoloration).

Interdigital maceration and desquamation of the interdigital spaces often are present, despite the possible absence of a dermatophyte infection.

Vesicles and/or bullae may become infected secondarily, and pustular lesions may be present. Cellulitis and lymphangitis may develop.

The Dyshidrotic Eczema Area and Severity Index recently was developed based on severity grades for the number of vesicles per cm<sup>2</sup>, erythema, desquamation, itch, and the extent of affected areas. The index was found to be a simple standardized method for assessing the condition and was used to assess disease severity and treatment effectiveness in 2 clinical studies. Further evaluation with larger patient groups is needed.

**Causes:** The cause of dyshidrotic eczema is unknown. The condition often appears related to other skin diseases (eg, atopic dermatitis, contact dermatitis, allergy to ingested metals, dermatophyte infection, bacterial infection, environmental or emotional stress). Several factors may participate in causing dyshidrotic eczema and pompholyx.

**Genetic factors:** Monozygotic twins have been affected simultaneously by dyshidrotic eczema.

**Atopy:** As many as 50% of patients with dyshidrotic eczema have reportedly had personal or familial atopic diathesis (eczema, asthma, hayfever, allergic sinusitis). Serum immunoglobulin E (IgE) level frequently is increased, even in patients who do not report a personal or familial history of atopy.

Occasionally, dyshidrotic eczema is the first manifestation of an atopic diathesis.

**Nickel sensitivity:** This may be a significant factor in dyshidrotic eczema.

Nickel sensitivity was reportedly low in some studies of dyshidrosis patients but significantly elevated in other studies.

Increased nickel excretion in the urine has been reported during exacerbations of pompholyx.

Ingested metals have been found to provoke exacerbations of pompholyx in some patients.

**Low-nickel diets:** These have reportedly decreased the frequency and severity of pompholyx flares.

A high palmoplantar perspiration rate has been suggested to result in a local concentration of metal salts that may provoke the vesicular reaction.

Contact allergy has been documented in 30% of patients with dyshidrotic eczema.

**Id reaction:** Dyshidrotic eczema outbreaks are not always associated with exposure to sensitizing chemicals or metals (eg, chromium, cobalt, carba mix, fragrance mix, diaminodiphenylmethane, dichromates, benzoisothiazolones, paraphenylenediamine, perfumes, fragrances, balsam of Peru, primula plant). Controversy surrounds the possible existence of an id reaction, which is a distant dermatophyte infection (tinea pedis, kerion of scalp) triggering a palmar pompholyx reaction (also termed pompholyx dermatophytide).

**Fungal infection:** Pompholyx occasionally resolves when a tinea pedis infection is treated, then relapses when the fungal infection recurs, supporting the existence of this reaction pattern. Of patients who have a vesicular reaction to intradermal trichophytin testing, fewer than one third have experienced a resolution of pompholyx after treatment with antifungal agents.

**Emotional stress:** This is a possible factor in dyshidrotic eczema. Many patients report recurrences of pompholyx during stressful periods. Improvement of dyshidrotic eczema using biofeedback techniques for stress reduction supports this hypothesis.

**Other factors:** Isolated reports of other possible causative factors exist, such as aspirin ingestion, oral contraceptives, cigarette smoking, and implanted metals.

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Contact Dermatitis, Allergic  
Contact Dermatitis, Irritant

Other Problems to be Considered:

Inflammatory tinea pedis or tinea manus  
Allergic contact dermatitis  
Irritant contact dermatitis  
Contact urticaria  
Pustular bacterid  
Palmoplantar pustular psoriasis

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Lab Studies:

Diagnosis usually is made clinically.  
Bacterial culture and sensitivity exclude secondary infection.  
Blood tests usually are not ordered; however, IgE commonly is elevated.  
Other Tests:

Use patch testing to exclude allergic contact dermatitis.  
Procedures:

Perform potassium hydroxide wet mount preparation to exclude dermatophyte infection.  
Punch biopsy for hematoxylin and eosin staining usually is not necessary.  
Punch biopsy for periodic acid-Schiff staining may help exclude dermatophytosis in patients with unresponsive disease.  
Use punch biopsy for direct immunofluorescence to exclude bullous pemphigoid.  
Histologic Findings: Spongiosis with an epidermal lymphocytic infiltrate and intraepidermal vesicles or bullae are not associated with sweat glands.

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Medical Care: Some mildly affected patients experience spontaneous resolution within 2-3 weeks. Biofeedback therapy for stress reduction has succeeded in some patients.  
Outpatient care is multifaceted.

The following treatment is appropriate if bullae are present.

Use compresses with Burow solution (10% aluminum acetate).

Apply in a 1:40 dilution bid/tid until bullae resolve (usually, within a few days).

Drain large bullae with a sterile syringe, and leave the roof intact.

Prescribe systemic antibiotics that cover *Staphylococcus aureus* and group A streptococci.

Topical corticosteroids are the mainstay of treatment.

Prescribe class I steroids bid/tid for up to 2 weeks, then class II or III steroids.

Ointments penetrate skin better than creams; patients may prefer creams during the day.

Topical antipruritics with pramoxine are useful.

Prescribe systemic corticosteroids.

Prescribe either oral prednisone or intramuscular (IM) betamethasone sodium phosphate and betamethasone acetate suspension for severe episodes.

Tapering of prednisone can follow IM treatment.

IM triamcinolone acetonide (Kenalog) may be administered; its anti-inflammatory activity lasts 4-6 weeks.

For severe refractory pompholyx, prescribe azathioprine.

Azathioprine has been used in refractory disease.

Consider measuring thiopurine methyltransferase levels, which may help guide azathioprine therapy.

Methotrexate at low doses and cyclosporine also have been successful in case reports.

Hand and/or foot UV-A therapy (alone or with oral or topical psoralen) improves the eruption and pruritus when administered 2-3 times per week. The dose typically starts at 0.5 J per treatment and is increased by 0.5 J at every other or every third treatment.

Nickel chelators, such as disulfiram (Antabuse), occasionally are used in nickel-sensitive patients who demonstrate a positive oral provocation test.

Consultations:

Psychologist - For stress reduction using biofeedback therapy and other techniques

Allergist - For oral provocation test for nickel, cobalt, or chromium salts

Oral challenges occasionally are positive in patients who demonstrate negative patch tests to these metals.

The test is considered positive if a patient's pompholyx flares after metal is ingested.

Diet:

For nickel-sensitive patients, consider a low-nickel diet for 3-4 weeks.

The diet regimen only rarely is successful and is difficult for patients to follow.

The diet requires avoiding foods rich in nickel, such as canned foods, foods cooked in nickel-plated utensils, herring, oysters, asparagus, beans, mushrooms, onions, corn, spinach, tomatoes, peas, whole grain flour, pears, rhubarb, tea, cocoa, chocolate, and baking powder.

For cobalt-sensitive patients, consider a low-cobalt diet that avoids apricots, beans, beer, beets, cabbage, cloves, cocoa, chocolate, coffee, liver, nuts, scallops, tea, and whole grain flour.

Activity:

Bedrest may be necessary if bullae develop on the feet.

If palmar bullae develop, patients may not be able to work or perform the activities of daily living.

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The goals of pharmacotherapy are to reduce morbidity and prevent complications.

Drug Category: Corticosteroids -- Have anti-inflammatory properties and cause profound and varied metabolic effects. Modify the body's immune response to diverse stimuli.

Topical ointments are more potent but greasier than creams. Drug Name

Clobetasol (Temovate) -- For severe episodes. Class I superpotent topical steroid; suppresses mitosis and increases synthesis of proteins that decrease inflammation and cause vasoconstriction.

Adult Dose Apply cream or ointment bid to severely affected areas up to 2 wk; not to exceed 50 g/wk

Pediatric Dose Not established

Contraindications Documented hypersensitivity; viral or fungal skin infections

Interactions None reported

Pregnancy C - Safety for use during pregnancy has not been established.

Precautions May suppress adrenal function and result in thinning of skin in prolonged therapy

Drug Name

Fluocinolone (Fluonid, Synalar) -- Ointment is a class II, cream is a class III steroid.

High-potency; like all topical steroids, has anti-inflammatory, antipruritic, and vasoconstrictive properties.

Adult Dose Apply cream or ointment sparingly bid as severity warrants

Pediatric Dose Administer as in adults

Contraindications Documented hypersensitivity; herpes simplex infection, fungal, viral, or tubercular skin lesions

Interactions None reported

Pregnancy C - Safety for use during pregnancy has not been established.

Precautions May cause adverse systemic effects if used over large areas, denuded areas, on occlusive dressings, or during prolonged treatment periods; prolonged use may result in thinning of skin

#### Drug Name

Prednisone (Deltasone, Meticorten, Orasone) -- Immunosuppressant for treatment of autoimmune disorders; may decrease inflammation

by reversing increased capillary permeability and suppressing PMN activity.

Adult Dose 0.5-1 mg/kg/d PO qam pc; taper over 10-14 d

Pediatric Dose Administer as in adults

Contraindications Documented hypersensitivity; peptic ulcer disease, hepatic dysfunction, connective tissue infections, GI disease, and viral, fungal, or tubercular skin infections

Interactions Coadministration with estrogens may decrease prednisone clearance; concurrent use with digoxin may cause digitalis toxicity secondary to hypokalemia; phenobarbital, phenytoin, and rifampin may increase metabolism of glucocorticoids (consider increasing maintenance dose); monitor for hypokalemia with coadministration of diuretics

Pregnancy B - Usually safe but benefits must outweigh the risks.

Precautions Abrupt discontinuation may cause adrenal crisis; hyperglycemia, edema, osteonecrosis, myopathy, peptic ulcer disease, hypokalemia, osteoporosis, euphoria, psychosis, myasthenia gravis, growth suppression, and infections may occur

#### Drug Name

Betamethasone (Celestone, Soluspan, Luxiq) -- For severe acute episodes. Rapid onset (within 1 h) with 72-h duration. For inflammatory dermatosis responsive to steroids.

Decreases inflammation by suppressing migration of PMN leukocytes and reversing capillary permeability.

Adult Dose Injection: 5-9 mg IM single dose

Foam: Apply topically bid

Pediatric Dose Not advised

Contraindications Documented hypersensitivity; uncontrolled diabetes mellitus, hypertension, tuberculosis, peptic ulcer disease, paronychia, cellulitis, impetigo, angular cheilitis, erythrasma, erysipelas, rosacea, perioral dermatitis, and acne

Interactions Effects decrease with coadministration of barbiturates, phenytoin, and rifampin; dexamethasone decreases effect of salicylates and vaccines used for immunization

Pregnancy C - Safety for use during pregnancy has not been established.

Precautions Increases risk of multiple complications, including severe infections; monitor adrenal insufficiency when tapering; abrupt discontinuation may cause adrenal crisis; hyperglycemia, edema, osteonecrosis, myopathy, peptic ulcer disease, hypokalemia, osteoporosis, euphoria, psychosis, myasthenia gravis, growth suppression, and infections are possible complications

#### Drug Name

Triamcinolone (Aristocort) -- For inflammatory dermatosis responsive to steroids; decreases inflammation by suppressing migration of PMN leukocytes and reversing capillary permeability. Long duration, 4-6 wk.

Adult Dose 40-60 mg IM single dose



Pediatric Dose 2.5-15 mg (10 mg/mL or 40 mg/mL solutions) IM single dose; repeat prn  
Contraindications Documented hypersensitivity; fungal, viral, and bacterial skin infections; uncontrolled diabetes mellitus, hypertension, tuberculosis, peptic ulcer disease  
Interactions Coadministration with barbiturates, phenytoin, and rifampin decreases effects of triamcinolone

Pregnancy C - Safety for use during pregnancy has not been established.

Precautions Multiple complications may occur, eg, severe infections, hyperglycemia, edema, osteonecrosis, myopathy, peptic ulcer disease, hypokalemia, osteoporosis, euphoria, psychosis, myasthenia gravis, growth suppression; abrupt discontinuation may cause adrenal crisis

Drug Category: Immunosuppressives -- For severe acute episodes. Drug Name

Methotrexate (Rheumatrex, Folex) -- Unknown mechanism of action in treatment of inflammatory reactions; may affect immune function. Ameliorates symptoms of inflammation (eg, pain, swelling, stiffness). Antimetabolite that inhibits DNA synthesis and cell reproduction in malignant cells; may suppress immune system. Satisfactory response seen within 3-6 wk following administration. Adjust dose gradually to attain satisfactory response.

Adult Dose 7.5 mg PO test dose; recheck CBC and LFTs in 1 wk; if all labs results are normal, may proceed with 12.5-22.5 mg PO qwk

Pediatric Dose Not recommended

Contraindications Documented hypersensitivity; pregnancy or potential pregnancy while undergoing treatment, alcoholism, hepatic insufficiency, immunodeficiency syndromes, preexisting blood dyscrasias (eg, bone marrow hypoplasia, leukopenia, thrombocytopenia, significant anemia), lactation; liver or renal disease, active infections, active hepatitis

Interactions Oral aminoglycosides may decrease absorption and blood levels of concurrent oral MTX; charcoal lowers MTX levels; coadministration with etretinate may increase hepatotoxicity of MTX; folic acid or derivatives in some vitamins may decrease response to MTX; coadministration with NSAIDs may be fatal; indomethacin and phenylbutazone can increase MTX plasma levels; may decrease phenytoin serum levels; probenecid, salicylates, procarbazine, and sulfonamides (including TMP-SMZ) may increase effects and toxicity of MTX; may increase plasma levels of thiopurines

Pregnancy D - Unsafe in pregnancy

Precautions Monitor CBCs, differentials, renal panel, U/A, LFTs monthly; creatinine clearance baseline recommended for patients >50 y; monitor more frequently during initial dosing, dose adjustments, or if risk of elevated MTX levels (eg, dehydration); has toxic effects on hematologic, renal, GI, pulmonary, and neurologic systems; discontinue if significant drop in blood counts occurs; aspirin, NSAIDs, or low-dose steroids may be administered concomitantly with MTX (possibility of increased toxicity with NSAIDs including salicylates not tested yet)

Drug Name

Azathioprine (Imuran) -- Antagonizes purine metabolism and inhibits synthesis of DNA, RNA, and proteins. May decrease proliferation of immune cells, which results in lower autoimmune activity.

Adult Dose 100-150 mg PO qd initial; then 50-100 mg PO qd maintenance after improvement occurs

Pediatric Dose Not established

Contraindications Documented hypersensitivity; previous treatment with alkylating agents increases risk of neoplasia

Interactions Toxicity increases with allopurinol; concurrent use with ACE inhibitors may induce severe leukopenia; may increase levels of MTX metabolites and decrease effects of anticoagulants, neuromuscular blockers, and cyclosporine

Pregnancy D - Unsafe in pregnancy

Precautions Increases risk of neoplasia; caution with liver disease and renal impairment; hematologic toxicity may occur

Drug Name

Cyclosporine (Neoral) -- Cyclic polypeptide that suppresses some humoral immunity and, to a greater extent, cell-mediated immune reactions such as delayed hypersensitivity, allograft rejection, experimental allergic encephalomyelitis, and graft-vs-host disease for a variety of organs. For children and adults, base dosing on ideal body weight.

Adult Dose 3-5 mg/kg/d PO

Pediatric Dose Not established

Contraindications Documented hypersensitivity; renal disease, hypertension, liver disease, hyperlipidemia, malignancy, radiation or other immunosuppressants, do not administer concomitantly with PUVA or UV-B radiation in psoriasis, since may increase risk of cancer

Interactions Carbamazepine, phenytoin, isoniazid, rifampin, and phenobarbital may decrease cyclosporine concentrations; azithromycin, itraconazole, nifedipine, ketoconazole, fluconazole, erythromycin, verapamil, grapefruit juice, diltiazem, aminoglycosides, acyclovir, amphotericin B, and clarithromycin may increase cyclosporine toxicity; acute renal failure, rhabdomyolysis, myositis, and myalgias increase when taken concurrently with lovastatin

Pregnancy C - Safety for use during pregnancy has not been established.

Precautions Evaluate renal and liver functions often by measuring BUN, serum creatinine, serum bilirubin, and liver enzymes; may increase risk of infection and lymphoma; reserve IV use only for those who cannot take PO

Drug Category: Antibiotics -- For dyshidrosis with secondary impetiginization. Drug Name

Dicloxacillin (Dynapen, Dycill) -- Binds to one or more penicillin binding protein, which in turn inhibits synthesis of bacterial cell walls. For treatment of infections caused by penicillinase-producing staphylococci. May use to initiate therapy when staphylococcal infection is suspected

Adult Dose 250-500 mg PO qid for 7-10 d

Pediatric Dose 25-50 mg/kg/d PO divided qid for 7-10 d or 62.5 mg/5 mL PO

Contraindications Documented hypersensitivity

Interactions Decreases efficacy of oral contraceptives; may decrease effects of anticoagulants; probenecid and disulfiram may increase penicillin levels; tetracyclines may decrease effect of penicillins with concurrent use

Pregnancy B - Usually safe but benefits must outweigh the risks.

Precautions Monitor PT in patients taking anticoagulant medications; toxicity may increase in patients renally impaired

Drug Name

Cephalexin (Keflex) -- First-generation cephalosporin arrests bacterial growth by inhibiting bacterial cell wall synthesis. Bactericidal activity against rapidly growing organisms. Primary activity against skin flora; used for skin infections or prophylaxis in minor procedures.

Adult Dose 250-500 mg PO qid for 7-10 d

Pediatric Dose 25-50 mg/kg/d PO divided bid for 7-10 d (125 and 250 mg/5 mL)

Contraindications Documented hypersensitivity

Interactions Coadministration with aminoglycosides increases nephrotoxic potential

Pregnancy B - Usually safe but benefits must outweigh the risks.

Precautions Adjust dose in severe renal insufficiency (high doses may cause CNS toxicity); superinfections, and promotion of nonsusceptible organisms may occur with prolonged use or repeated therapy

Drug Name

Erythromycin (EES, E-Mycin, Ery-Tab) -- Inhibits bacterial growth, possibly by blocking dissociation of peptidyl tRNA from ribosomes, causing RNA-dependent protein synthesis to arrest. For treatment of staphylococcal and streptococcal infections.

Age, weight, and severity of infection determine proper dosage in children. When bid dosing is desired, one half of total daily dose may be taken q12h. Double the dose for more severe infections.

Adult Dose 250-500 mg PO qid for 7-10 d

Pediatric Dose 25-50 mg/kg/d PO divided qid

Contraindications Documented hypersensitivity; hepatic impairment

Interactions Coadministration may increase toxicity of theophylline, digoxin, carbamazepine, and cyclosporine; may potentiate anticoagulant effects of warfarin; coadministration with lovastatin and simvastatin increases risk of rhabdomyolysis

Pregnancy B - Usually safe but benefits must outweigh the risks.

Precautions Caution in liver disease; estolate formulation may cause cholestatic jaundice; GI side effects are common (administer pc); discontinue use if nausea, vomiting, malaise, abdominal colic, or fever occur

Drug Category: Antihistamines -- To treat pruritus associated with dyshidrosis.

Desloratadine (Clarinet) is a newly approved long-acting tricyclic histamine antagonist selective for H1 receptor. Is a major metabolite of loratadine, which, after ingestion, is metabolized extensively to active metabolite 3-hydroxydesloratadine. The dose for adults and children >12 y is 5 mg PO qd. Decrease dose in hepatic impairment. Limited data exist regarding drug interactions; however, erythromycin and ketoconazole increase desloratadine and 3-hydroxydesloratadine plasma concentrations, but no increase in clinically relevant adverse effects, including QTc, was observed. Adverse effects were similar to placebo, and it rarely causes pharyngitis or dry mouth.

Drug Name  
Loratadine (Claritin) -- Nonsedating; selectively inhibits peripheral histamine H1 receptors.

Adult Dose 10 mg PO qd, usually in am

Pediatric Dose <6 years: Not established

6-11 years: 10 mg Redi-Tab or 10 mL syrup qd (1 mg/mL)

Contraindications Documented hypersensitivity

Interactions Ketoconazole, erythromycin, procabazine, and alcohol may increase loratadine levels

Pregnancy B - Usually safe but benefits must outweigh the risks.

Precautions Initiate therapy at lower dose in liver impairment

Drug Name

Hydroxyzine (Atarax) -- Antagonizes H1 receptors in periphery. Sedating; may suppress histamine activity in subcortical region of CNS.

Adult Dose 10-50 mg PO q4-6h, often qhs

Pediatric Dose 0.5 mg/kg PO q4-6h or 10 mg/5 cm<sup>3</sup>

Contraindications Documented hypersensitivity

Interactions CNS depression may increase with alcohol or other CNS depressants when coadministered

Pregnancy C - Safety for use during pregnancy has not been established.

Precautions Associated with clinical exacerbations of porphyria (may not be safe for porphyric patients); ECG abnormalities (alterations in T waves) may occur; may cause drowsiness

Drug Name

Pramoxine (Pramosone) -- Topical antihistamine and mild anti-inflammatory. Blocks nerve conduction and impulses by inhibiting depolarization of neurons. Available alone or as 1% or 2.5% cream or ointment. Available OTC as Prax.

Adult Dose Topically apply cream or ointment bid/tid to affected area

Pediatric Dose Administer as in adults

Contraindications Documented hypersensitivity; do not apply over large areas and avoid contact with eyes and nose

Interactions None reported

Pregnancy C - Safety for use during pregnancy has not been established.

Precautions Caution in patients with trauma in area to be treated

Drug Category: Nickel-chelating agents -- Minimize effects of nickel in eczema.

Drug Name

Disulfiram (Antabuse) -- Thiuram derivative that interferes with aldehyde dehydrogenase. For patients highly allergic to nickel with severe vesicular hand dermatitis. Chelating effect of disulfiram helps reduce the body's nickel burden in individuals allergic to nickel. Do not administer if patient has ingested alcohol within last 12 h. Supplied as a 250-mg tab.

Adult Dose 250-500 mg/d PO (range 125-500 mg); not to exceed 500 mg/d

Pediatric Dose Not established

Contraindications Documented hypersensitivity; severe myocardial disease and coronary occlusion

Interactions Increases effects of diazepam and chlorthalidone; metronidazole, isoniazid, and phenytoin may increase toxicity of disulfiram; coadministration with warfarin may increase PT; coadministration with alcohol may cause disulfiram reaction

Pregnancy C - Safety for use during pregnancy has not been established.

Precautions Caution in hypothyroidism, hepatic cirrhosis, hepatic disease or insufficiency, seizure disorders, diabetes mellitus, cerebral damage, and nephritis

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### Further Outpatient Care:

Schedule follow-up and check blood pressure 1 week after initiating prednisone.

### Deterrence/Prevention:

Advise patients to avoid known contact irritants or allergens.

Advise patients to reduce stress (may help some patients).

Advise patients to follow a hand care regimen.

Advise regular prophylactic use of emollients.

### Complications:

Secondary bacterial infection of vesicles or bullae can result in cellulitis, lymphangitis, and septicemia (rare).

Dystrophic nail changes may develop with transverse ridging, thickening, discoloration, and pitting of nails.

### Prognosis:

Dyshidrotic eczema follows a chronic intermittent course. Fewer episodes occur after middle age.

### Patient Education:

Instruct patients to avoid contact with certain allergens or irritants (eg, nickel).

Instruct patients to follow a hand care routine that avoids irritants.

Instruct patients to use emollients regularly.

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### Medical/Legal Pitfalls:

Failure to guard against or inform patients of the potential development of systemic corticosteroid side effects with prolonged use of systemic steroids (eg, hypertension, diabetes mellitus, weight gain, cataracts, osteoporosis)

Failure to acquire an adequate history of exposure to potential allergic and irritant contactants (contactants at patient's work may be a contributing factor or cause recurrent episodes)

Failure to consider other possible diagnoses

Special Concerns:

Substances used to systemically challenge patients with possible ingested allergens may trigger exacerbations. Vasculitis or erythema multiforme may develop during this testing.

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Caption: Picture 1. Tense vesicles and bullae on the palm (Courtesy of Dr Norman Minars, University of Miami, Department of Dermatology & Cutaneous Surgery, Miami, Florida)

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[eMedicine Zoom View \(Interactive!\)](#)

Picture Type: Photo

Caption: Picture 2. Close-up view of tense vesicles and bullae of the palm (Courtesy of Dr Norman Minars, University of Miami, Department of Dermatology & Cutaneous Surgery, Miami, Florida)

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[eMedicine Zoom View \(Interactive!\)](#)

Picture Type: Photo

Caption: Picture 3. Discrete yellow pustules on the sole of the foot (Courtesy of Dr Norman Minars, University of Miami, Department of Dermatology & Cutaneous Surgery, Miami, Florida)

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[eMedicine Zoom View \(Interactive!\)](#)

Picture Type: Photo

Caption: Picture 4. Multiple tense vesicles on the palm

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[eMedicine Zoom View \(Interactive!\)](#)

Picture Type: Photo

Caption: Picture 5. Small tense vesicles on the fingers

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Picture Type: Photo

Caption: Picture 6. Small, discrete, coalesced vesicles on the dorsal hand

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Picture Type: Photo

Caption: Picture 7. Small, discrete, coalesced vesicles on the fingers

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Picture Type: Photo

Caption: Picture 8. Palms and soles of a patient with a dyshidrosis flare. The patient unroofed a large bulla on the right sole.

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[eMedicine Zoom View \(Interactive!\)](#)

Picture Type: Photo

Caption: Picture 9. Small discrete vesicles of the lateral fingers

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[eMedicine Zoom View \(Interactive!\)](#)

Picture Type: Photo

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