
Natural Remedies for Promoting Skin Health

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The skin is susceptible to many diseases and disorders. Skin disorders may be external manifestations of systemic illness. One example is the butterfly rash of systemic lupus erythematosus. Other skin conditions reflect topical exposure reactions, arising from localized responses. Skin disorders have a wide range of etiologies, ranging from infection (e.g., scabies, ringworm) to allergy (e.g., to drugs, foods, and cosmetics) to nutritional deficiency (e.g., vitamin A or essential fatty acid [EFA] deficiency may lead to follicular hyperkeratosis). Other causes of skin outbreaks include reactions to bites and stings and reactions to plants such as poison ivy or poison oak. This article examines applications of natural remedies for treating several common skin conditions.

The skin is a mirror of an individual's state of health. A skin condition often reflects a deeper state of imbalance. Because the skin is an organ of elimination, if other organs of elimination (liver, kidneys, or bowels) are compromised, a skin outbreak may reflect the body's attempt to discharge wastes through an alternate route. Intestinal disturbances, such as constipation, may play a role in skin problems by increasing the amount of toxins circulating in the body. To ameliorate skin conditions, it is necessary to improve the health of these organs. For example, supporting liver health may help to improve acne conditions associated with hormonal imbalances.

General Requirements for Promoting Healthy Skin

Lifestyle factors are critical for maintaining healthy skin. Smoking can cause dryness and premature aging of the skin. Sun exposure is associated with an increased risk of skin cancer, premature aging, and hyperpigmentation of the skin, requiring a limit to sun exposure and the use of sunscreen during prolonged exposure. Clinically, exercise has been shown to help promote a radiant, glowing complexion.

Optimal intake and assimilation of nutrients is also essential for promoting healthy skin. A deficiency of EFAs often manifests as dry, flaky skin and a predisposition to inflammatory conditions, such as eczema. Vitamin A is a crucial nutrient for healing tissues and regenerating epithelial tissues including the skin. Vitamin A deficiency can manifest as follicular hyperkeratosis, poor wound healing, and acne. Vitamin E can prevent scarring from blemishes and incisions. Vitamin C is an important nutrient for the skin both internally and topically because the vitamin helps to inhibit free-radical damage and promotes collagen production. The B vitamins promote skin health and offer stress relief, with vitamin B₆ being particularly helpful for preventing premenstrual acne. Zinc deficiency is common in acne and other skin problems.

Probiotics, such as acidophilus and bifidobacterium, contribute to maintaining healthy and balanced gastrointestinal (GI) bacterial flora to enhance nutrient absorption and prevent the overgrowth of toxin-producing yeast and bacteria in the gut. Foods that contain sulfur, such as onions, garlic, and asparagus, provide the skin with this much-needed nutrient and sup-

port the liver's detoxification pathways. Finally, plenty of filtered or spring water also helps the body to remove wastes and keep the skin hydrated and healthy.

Natural Remedies for Treating Skin Conditions

Eczema (Atopic Dermatitis)

Eczema or atopic dermatitis is a common skin condition characterized by a chronic, itchy red rash. Eczema is thought to affect approximately 2–7 percent of the population and is believed to be an allergic, immediate hypersensitivity disease also involving other immune responses. It often occurs as part of the “atopic triad” of asthma, hayfever, and eczema. A positive family history of allergies is found in two thirds of patients who have eczema.

Serum immunoglobulin E (IgE) levels are elevated in 80 percent of patients with eczema and they often test positive on skin, radioallergoabsorbant, or other allergy tests.¹ White blood cells from patients with atopic dermatitis have decreased cyclic adenosine monophosphate (cAMP) levels as a result of increased AMP-phosphodiesterase activity. This lack of cAMP results in increased histamine release and decreased bacteriocidal activity.² Patients with atopic dermatitis appear to have altered EFA and prostaglandin metabolism.³

Food allergies play a major role in producing atopic dermatitis. Identifying and avoiding food allergens may be an essential component of a thorough treatment plan for treating eczema. Breast-feeding infants has been found to offer significant protection from developing atopic dermatitis and allergies in general.¹ In older or formula-fed infants, the most common

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offending food allergens are milk, eggs, peanuts, wheat, fish, and soybeans.⁴ If breast-fed infants develop atopic dermatitis, it is usually the result of allergic antigens in the breast milk being transferred from the mother to the infant. The mother's avoidance of common allergens is helpful for resolving such cases.⁵ Methods for diagnosing food allergy include the elimination diet, challenge, and the enzyme-linked immunoabsorbent assay and IgE and IgG assays. Food allergens in the diet may also contribute to the "leaky gut" syndrome. This increased gut permeability causes an increased antigenic load on the immune system and can increase the likelihood of developing additional allergies.⁶ Clinically, we have noted that replenishing beneficial GI flora with lactobacillus and bifobacterium strains along with fructo-oligosaccharides are helpful, particularly when a patient has a history of antibiotic use. An overgrowth of *Candida albicans* in the GI tract has been identified as a causative factor in allergic conditions, including atopic dermatitis. Therapy to address *Candida* overgrowth may ameliorate atopic dermatitis significantly.⁷

Essential fatty acids may be useful for treating eczema. Borage (*Borago officinalis*) oil, a rich source of the omega-6 fatty acid gamma-linolenic acid, has been found to reduce skin inflammation, dryness, scalliness, and itching.⁸ Omega-3 fatty acids may be even more effective for relieving eczema symptoms. Fish oils appear to be a particularly good source of omega 3 fatty acids for patients with eczema because these oils contain eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).⁹ Consumption of cold-water fish, including salmon, mackerel, and herring, may also be useful. Zinc may also be useful for

managing eczema being that zinc deficiency is common in atopic dermatitis and that zinc is crucial for proper fatty-acid metabolism.¹⁰

Plant-based therapies may also be indicated for managing eczema. Agents that stimulate cAMP production and/or inhibit cAMP phosphodiesterase help to reduce the inflammatory process of atopic dermatitis by reducing shunting to histamine. Coleus (*Coleus forskolii*) is a strong stimulant of cAMP.¹¹ The active ingredient of coleus, forskolin, most often used orally, may be helpful both orally and topically for ameliorating eczema. Flavonoids may help to reduce inflammation because of their ability to reduce mast-cell degranulation and inhibit cAMP phosphodiesterase. Helpful sources of flavonoids include quercetin, grape (*Vitis vinefera*) seed, pine (*Pinus* spp.) bark, green tea (*Camellia sinensis*), and ginkgo (*Ginkgo biloba*).^{10,12} Licorice (*Glycyrrhiza glabra*) root, used either topically or internally, may also help to alleviate eczema symptoms.¹³ Other herbs to consider for topical use are chamomile (*Matricaria chamomilla*), calendula (*Calendula officinalis*), and oak (*Quercus alba*), all of which are known for their anti-inflammatory properties.

Psoriasis

Psoriasis is a common skin disorder that affects between 2 and 4 percent of the United States population. Psoriasis is a hyperproliferative skin disorder characterized by sharply bordered reddened rashes and silvery, scaly plaques on the skin. Eruptions often involve the scalp, the extensor surfaces of the extremities, the back, and the buttocks. Removal of the superficial scales typically causes pinpoint bleeding, or the Auspitz sign.



Matricaria chamomilla. Photo by Brian Hunter, huntergrafx.net

The rate of cellular division in psoriatic lesions is very high, at approximately 1000 times the rate of normal skin. Psoriasis predominately affects Caucasians and a family history of psoriasis is present in 35–50 percent of patients. Genetic factors are likely to be involved. The rate at which cells divide is controlled by a balance of cAMP and cyclic guanine monophosphate (cGMP). Increased levels of cGMP are associated with increased cell proliferation while increased levels of cAMP are associated with cell maturation and decreased cell replication. Increased levels of cGMP and decreased levels of cAMP have been demonstrated in the skin of patients with psoriasis, resulting in excess cell replication.¹⁴ Natural-medicine interventions may help to rebalance the cyclic AMP:GMP ratio and thus improve the skin's condition.

Zinc supplements may help to reduce the severity of acne and assist in skin healing.

General Guidelines for Healthy Skin

What to Tell Your Patients

- Limit sun exposure and use sunscreen.
- Drink plenty of filtered or spring water.
- Exercise regularly.
- Eliminate tobacco and alcohol.
- Avoid fried foods and hydrogenated fats.
- Consume a healthy diet.
- Take B vitamins and antioxidants, including vitamins A, C, and E.
- Include essential fatty acids in diet and supplement regime.
- Support healthy gastrointestinal, liver, and kidney function via diet, nutrients, and herbs.
- Consume foods and supplements that contain probiotics (acidophilus, bifidobacterium).

Optimizing bowel and liver function may be useful for managing psoriasis. Individuals with psoriasis have increased levels of polyamines, which are toxic byproducts of incomplete protein digestion and assimilation. Polyamines inhibit the formation of cAMP and may, therefore contribute, to the excessive rate of skin-cell replication seen in psoriasis.^{15,16} Several natural compounds may inhibit the formation of polyamines. These include vitamin A and the alkaloids from goldenseal (*Hydrastis canadensis*).^{17,18} The best way to prevent polyamine formation is via evaluating digestive function with such tests as Heidelberg analysis or functional medicine assessments and then correcting problems with protein digestion or absorption by way of appropriate therapies. The Heidelberg analysis is a simple test that involves swallowing a radiotelemetry capsule that measures the stomach's pH at baseline and then after a couple of pH-buffered tests to see how the stomach compensates with acid production. Functional medicine tests include a closely monitored clinical trial of betaine. For patients who cannot get ready access to the Heidelberg analysis, the best sec-

ond-line option is the betaine trial provided that there is no overt GI disease, such as ulcers or esophagitis, for example.

Other intestinal toxins are implicated in psoriasis. These include endotoxins from gram-negative bacteria, *C. albicans*, and yeast compounds. These compounds lead to increased cGMP levels within skin cells.^{19,20} Therefore, treating intestinal *Candida* or bacterial overgrowth may ameliorate psoriasis. A low-fiber diet is associated with increased levels of gut-derived toxins.¹⁹ Thus, a fiber-rich diet helps to bind bowel toxins and promote their excretion. Patients with psoriasis need to consume plenty of beans, fruits, and vegetables.

Improving liver function is often helpful for treating psoriasis. Silymarin, the flavonoid component of milk thistle (*Silybum marianum*) has been reported to be useful for treating psoriasis.²¹ Silymarin improves liver function, inhibits inflammation, and reduces excessive cellular proliferation.²² Alcohol consumption worsens psoriasis, presumably because such consumption damages liver function and increases absorption of toxins from the gut,²³ thus, avoidance of alcohol is recommended for patients with psoriasis.

Manipulating dietary fats may also be useful. Several double-blinded clinical studies have demonstrated that fish-oil supplements that are rich in EPA and DHA ameliorate the condition.^{24,25} Yet some studies have shown less improvement, emphasizing the importance of selecting the proper nutraceutical interventions.

Patients with the condition should generally be advised to minimize intake of arachidonic acid because of its proinflammatory effects.

Fumaric acid has been found, in some studies, to be effective. Fumaric acid is an intermediate of the Krebs cycle and is formed in the skin in response to ultraviolet rays. Patients with psoriasis may suffer from a biochemical defect that reduces their production of adequate amounts of fumaric acid. Controlled studies have

demonstrated improvements in patients following the administration of oral dimethylfumaric acid combined with topical fumaric acid. However, side-effects, including nausea, diarrhea, malaise, and liver and kidney disturbances, can occur,²⁶ requiring close medical supervision of such therapy.

Topical applications such as licorice root and chamomile may provide anti-inflammatory and antiallergic activity when used on dry, flaky, irritated skin.^{27,28}

Both topical and oral doses of vitamin D (in the form of calcitriol-1,25-dihydroxy-vitamin D₃) have also been effective as a result of their ability to regulate terminal differentiation of basal cells of epidermal keratinocytes.²⁹

Acne

Acne is the most common of all skin problems and will affect an estimated 85 percent of the population at some point during their lives. Comedones, papules, and pustules characterize *Acne vulgaris*. *Acne conglobata* is a more severe condition, with cyst formation and subsequent scarring. Lesions may occur on the face, shoulders, back, and chest. Teenagers and young adults are most commonly affected, with males being affected more often than females.

Excess androgen stimulation of the skin may play a role in the etiology of acne. Androgens stimulate keratin production. An overproduction of keratin can block skin pores. In addition, testosterone can stimulate the sebaceous glands to enlarge and increase their production of sebum, which also may block pores. This causes the formation of a comedone or a pustule. Bacteria can overgrow and release enzymes to break down sebum, resulting in inflammation. If this process occurs at the skin's surface, redness and pustules are created. Inflammation deeper in the skin can create nodules or cysts, causing greater damage to the skin and possible scarring.

Acne presents a clinical challenge to the practitioner and to the patient. Several nutrients and herbs may be helpful for

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managing acne. Zinc supplements may help to reduce the severity of acne and assist in skin healing. A dose of 30 mg, two to three times per day, is recommended.³⁰ Several months of zinc therapy may be required before improvement is noted. Long-term zinc therapy, in doses over 15 mg per day for more than 3 months, may lead to copper deficiency; thus, supplementation may become necessary and warrants close monitoring.

Large doses of vitamin A—such as 50,000 international units (IU) per day—have been used successfully for treating severe acne.³¹ Although this dose can be used safely in healthy individuals for a treatment period of a few months, it is important to monitor patients for signs and symptoms of vitamin A toxicity. Running routine liver enzyme tests and determining serum vitamin A levels are recommended. Symptoms of vitamin A toxicity include headaches, fatigue, and muscle and joint pain. Women who are or who may become pregnant must avoid therapeutic doses of vitamin A because of its teratogenicity. It is advisable for young women who may become pregnant to avoid all vitamin A supplementation, with the exception of the amount in a prescribed prenatal vitamin. A prenatal supplement should not contain more than 5000 IU to be on the safe side. In fact, prenatal vitamins that use natural beta-carotene instead of actual vitamin A are believed to be safer by nutritionally oriented physicians.

Vitamin B₆ is often helpful for treating acne in affected women.³² This may be the result of pyridoxine's role in metabolizing steroid hormones. Another B vitamin, vitamin B₅, may be valuable in high doses. One study demonstrated that 10 g per day of pantothenic acid, administered in divided doses, helped to reduce existing acne lesions and prevent the frequency of new eruptions.³³

Topical treatment may be also useful. The goal of such applications is to reduce bacterial and inflammation levels. Tea tree (*Melaleuca alternifolia*) oil has antiseptic and antifungal properties. A 5-percent solution

Potential Therapeutic Dosing

- Vitamin A—25,000–50,000 IU^a per day for acne (with very close monitoring)
- Vitamin C—1000 mg per day
- Vitamin B₆—25–50 mg per day
- Vitamin B₅—25–500 mg, up to 10 g, per day for acne
- Zinc—30–90 mg per day
- Vitamin E—400–800 IU per day
- Calcitrol—0.5 mcg orally and/or 0.5 mcg/g of base applied topically per day; calcium levels must be monitored^b
- Borage oil—1000–3000 mg per day
- Fish oil—2000 mg, up to 10 g per day, for psoriasis
- Goldenseal—250–500 mg (with 18–12% alkaloids) 3 times per day for psoriasis
- Coleus—50 mg of extract, standardized to 18% forskolin, 2–3 times per day for eczema
- Milk thistle—70–210 mg, 3 times per day, or standardized extract of 420 mg silymarin per day for psoriasis

^aIU = international units; ^bCalcitrol should be started at lowest dose possible to prescribe and slowly increased after bloodwork is done.

of tea tree oil demonstrated acne-fighting effects that were comparable to those produced by a 5-percent benzoyl peroxide solution.³⁴ Stronger concentrations of tea tree oil may produce even better effects; yet, caution must be used because skin irritation and damage can arise if the preparations are too concentrated.

Rosacea

Rosacea, or *Acne rosacea*, is a chronic skin disorder characterized by redness, papules, and pustules on the cheeks and nose. Rosacea typically occurs in adults between ages 30 and 50, with women being affected more often than men. Several factors have been suspected of causing rosacea. These include alcoholism, GI disorders, B-vitamin deficiencies, and menopausal flushing.

Patients with rosacea have been found to have inadequate levels of gastric hydrochloric acid. Hydrochloric acid supplements have produced dramatic reductions in the rosacea of patients who are achlorhydric and hypochlorhydric.^{35,36} A high incidence of gastric *Helicobacter pylori* infection has been found in patients with rosacea. Treatment of the *H. pylori* infection has been found to reduce rosacea significantly in many patients.³⁷

Possible Causes of Skin Problems

- Infections, including fungal (ringworm), parasite (scabies), viral (warts), bacterial (abscess)
- Allergies (e.g., to foods, chemicals, cosmetics, detergents)
- Drug reactions
- Systemic disease (systemic lupus erythematosus, hypothyroidism)
- Excessive sun exposure
- Precancerous or cancerous lesions
- Hormonal imbalances (onset of puberty, premenstrual acne)
- Insect bites
- Vitamin or nutrient deficiencies

Dietary modification may also be helpful. Individuals with rosacea should be advised to avoid coffee, alcohol, hot beverages, and spicy foods. Eliminating refined sugars, hydrogenated oils, dairy products, and fried foods may also be helpful.

Conclusions

The skin is susceptible to many disorders because of its constant contact with environmental factors and because of its role in mirroring the state of GI and liver health. Creating healthy skin requires a

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multifaceted approach that addresses dietary, lifestyle, and nutritional factors. By working with patients to create optimal wellness, practitioners can help patients to improve skin health and ameliorate or eliminate skin and other underlying disorders. □

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