



Facing Up to Skin Disorders— Naturally © VR

By Yousry Naguib, PhD

Skin is the largest organ in the body, both by weight and surface area. In adults, the weight of skin accounts for about 10 percent of the total bodyweight. Skin serves numerous functions—the most obvious one is the protective or barrier function. The skin protects the body from physical and chemical injuries, feels the environment through various sensory cells, and helps regulate body temperature through sweat glands. Additionally, the skin is an important part of our appearance.

The skin consists of a thin outer layer called the epidermis, which is responsible for protecting the body from the outside world, and a much thicker inner layer called the dermis. The epidermis consists of several layers, the top one is called Stratum corneum, which is composed of lipids, and keratin (a protein that provides some rigidity to the skin). The dermis contains blood vessels, sensory cells, hair follicles and sweat glands.

Disorders of the skin include a number of conditions: acne, eczema (atopic dermatitis, contact dermatitis), psoriasis, cold sores (herpes simplex 1 outbreaks), warts, dry skin, and athlete's foot. The traditional practice of topically treating dermatological conditions with plant-derived therapeutic preparations predates the cultures of ancient Egypt and remains vital today in our life.

Acne

Acne is a common skin disorder, often occurring at puberty and more common in males. It causes eruptions of pimples and sometimes more severely inflamed, pus-containing cysts on the face, neck, and chest. It affects nearly 17 million people in the United States.

The scalp, face, and forehead contain oil-producing glands, called sebaceous glands, which are embedded in the dermis. These glands begin to function at puberty when the hormonal cascade commences. The oily material called sebum, helps to preserve the flexibility of the hair and moisturizes the skin.

Acne occurs when the sebaceous glands in the skin produce too much oil, which combines with cells that line the walls of these glands thus clogging the skin pores. Pore blockages lead to a dramatic increase in the population of normal bacteria, which starts an infection that appears as pimples. In case of extensive infection, the inflamed areas are characterized by many pimples, papules (inflamed lesions that usually appear as small, pink bumps on the skin and can be tender to the touch), and inflamed cysts (large, painful, fluid-filled pimples that can cause pain and scarring). The lesions are found on the face, neck, chest, and shoulders.

Acne is normally treated by combination of three ingredients: alpha hydroxy acid (such as glycolic acid), retinoids or vitamin A derivatives, and benzoyl peroxide.

Other non-prescription products include salicylic acid, *Melaleuca alternifolia* (tea tree oil), *Galium aparine* (as tincture, three times a day), *Urtica dioica* (as an infusion consumed two or three times a day), *Calendula officinalis* (applied topically as a wash, infusion mixed with distilled witch hazel). A double-blind study compared the topical use of 5% tea tree oil to 5% benzoyl peroxide and found that, although the tree oil was less potent, it had fewer side effects.

Eczema

Eczema is the common term for inflammatory diseases of the skin. There are various types of eczema; the most common ones are atopic dermatitis and contact dermatitis. Contact dermatitis (CD) is an inflammation characterized by redness, itching, and burning where the skin has come into contact with an allergen (a substance that evokes an allergic reaction such as poison ivy or an irritant substance such as soap and detergents).

Atopic eczema (AD), the most common form of eczema, is a chronic (long-lasting) skin disease. AD usually begins in childhood and affects approximately 10 percent of children, and is usually associated with a family history of asthma or hay fever. AD is thought to be the result of inherited genetic disorder that causes the skin to lose large amounts of moisture.

In AD, the skin becomes itchy and inflamed, causing redness, swelling, cracking, "weeping" and scaling. Lesions most often occur on the face, neck, back of the knee, ankles, wrists, palms, and between the fingers, scalp, and elbows.

Control of the AD symptoms involves keeping the skin from

drying out by the application of moisturizers and emollients. Helpful treatments for eczema include:

Supplementing with zinc, fish oil, vitamin E, and evening primrose (*Oenothera biennis*). Researchers have reported that people with eczema do not have the normal ability to process fatty acids, which can result in a deficiency of gamma-linolenic acid (GLA). GLA is found in evening primrose (EPO), borage oil, and black currant seed oil.

Clinical studies have shown that EPO is useful in the treatment of eczema. In the body, GLA is converted to a hormone-like substance called prostaglandin E1, which has anti-inflammatory properties. Anti-inflammatory and/or immune system modulators herbs include calendula, chamomile, chickweed, licorice.

Astringents (herbs that bind fluids and exudates, and help dry up weeping lesions), such as witch hazel, will not help people with dry eczema. A cream prepared with witch hazel and phosphatidylcholine has been reported to be as effective as 1% hydrocortisone in the topical management of eczema, according to one double-blind trial.

Herbs that support the liver (detoxification), such as burdock (*Arctium lappa*), red clover, sarsaparilla, wild oats will help customers with eczema. These herbs are believed to have a cleansing action when taken internally. Many herbal preparations combine burdock root with other alterative herbs, such as yellow dock, red clover, or cleavers.

A Japanese topical ointment called Shiunko has been reported to help improve symptoms of eczema. The ointment contains sesame oil and four herbs (*Lithospermum radix*, *Angelica radix*, *Cera alba* and *Adeps suillus*) and was applied twice daily along with petrolatum and 3.5% salt water for three weeks. Clinical improvement was seen in four of the seven people using Shiunko.

Psoriasis

Psoriasis is a chronic skin condition characterized by patches of silvery scales that cover areas of reddish skin. They often appear on the scalp, knees, elbows, buttocks, genitals, and nails. Psoriasis may be, at least in part, an autoimmune disorder (where the immune system falsely recognizes portions of the body as "foreign").

Fish oil, 10 grams per day, has been shown in a double-blind trial to improve the skin lesions of psoriasis. Purified eicosapentaenoic acid (EPA, one of the fatty acids found in

fish oil) at an oral dosage of 3.6 grams per day was found to reduce the severity of psoriasis after two to three months.

One trial showed that applying a preparation containing 10% fish oil directly to psoriatic lesions twice daily resulted in improvement after seven weeks.

In a double-blind trial, people with chronic plaque-type psoriasis received 4.2 g of EPA and 4.2 g of DHA or placebo intravenously daily for two weeks. Thirty-seven percent of those receiving the essential fatty acid infusions experienced greater than 50% reduction in the severity of their symptoms.

In a clinical study on 49 patients with psoriasis, treatment of the psoriatic skin with Oregon grape (*Mahonia aquifolium*) ointment for four weeks showed a marked reduction in the expression of activation molecules in the skin of patients with psoriasis.

Cayenne contains a resinous and pungent substance known as capsaicin. In a double-blind trial, application of a capsaicin cream to the skin relieved both the itching and the skin lesions in people with psoriasis. The cream should not be applied to areas of broken skin.

A double-blind trial found that topical application of an aloe extract (0.5%) in a cream was more effective than placebo in the treatment of adults with psoriasis. The aloe cream was applied three times per day for four weeks.

An ointment containing 10% Oregon grape extract has been shown in a clinical trial to be mildly effective against moderate psoriasis but not more severe cases.

Herpes Simplex

The lesions produced by the herpes simplex virus are commonly known as the cold sore or fever blister. They are caused by herpes simplex type 1 virus. The virus cannot be eliminated once it is acquired.

The herpes-simplex lesions may appear anywhere on the body. Most often, they are seen on the lips, oral and genital areas. Eruptions may be caused by stress, fever, sun exposure, or common cold. Cold sores are fluid-filled blisters that form on the lips. The blisters, which are contagious, later break, ooze, and crust over before healing.

There is no cure for herpes simplex type I, and treatment is usually directed at symptomatic relief. Herbs that may be helpful include lemon balm, which has antiviral properties. A

cream containing an extract of lemon balm has been shown in double-blind trials to speed the healing of cold sores.

In a double-blind trial, topical application of a cream containing 1% lemon balm leaf extract, four times daily for five days, led to significantly fewer symptoms and fewer blisters than experienced by those using a placebo cream.

Warts

Warts are a common skin disorder caused by Papilloma virus, which infects the outer layer of the skin. They often appear on the fingers, hands, and arms. Conventional treatment of warts includes over-the-counter topical medications, such as salicylic acid and lactic acid. In the dermatologist's office, warts are often removed by freezing them with liquid nitrogen or applying an electrical current.

One company invented an herbal cream from natural plant and fruit extracts, particularly from cashew (*Anacardium occidentale*) nut extracts to remove skin warts and moles.

Athlete's Foot

Athlete's foot is a fungal infection of the feet. Its symptoms include a red itchy rash with flaking or peeling that starts between the toes. The feet often emit a strong smell. Generally, athlete's foot does not cause serious problems and can be treated with non-prescription medications.

Tea tree oil has been traditionally used to treat athlete's foot. One trial reported that application of a 10% tea tree oil cream reduced symptoms of athlete's foot just as effectively as drugs and better than placebo, although it did not eliminate the fungus.

The compound ajoene, found in garlic, is an anti-fungal agent. In a group of 34 people using a 0.4% ajoene cream applied once per day, 79% experienced complete clearing of athlete's foot after one week; the remainder had complete clearing within two weeks. All participants remained cured three months later. One trial found a 1% ajoene cream to be more effective than the standard topical drug terbinafine treating athlete's foot.

Dry Skin

In healthy skin, the lipids and keratin in the Stratum corneum join together to provide a barrier that keeps irritants out and the appropriate amount of moisture in. The lipids in the Stratum corneum play an essential role as a barrier to control trans-epidermal water loss, and hence keep the skin from getting dry.

Symptoms of dry skin include redness, flaking, itching, and cracking. Dry skin can be treated by frequent application of moisturizers containing fats capable of penetrating the stratum corneum to fill spaces where skin fats are missing, and thereby prevent moisture loss. Naturally derived fats, such as Emu oil helps to maintain the proper balance of oil and water in the skin. Emu oil is claimed to have fatty acid composition close to that found in normal skin, and is considered an excellent moisturizer that returns the skin to its natural barrier function.

The lipid composition of stratum corneum comprises mostly fatty acids, cholesterol, and ceramides (up to 40%). Ceramides are members of an elite class of lipids known as sphingolipids, which are fatty acids derivatives of the amino alcohol sphingosine. Ceramides are found in wheat, rice, soybeans, and various fruits and vegetables. The per capita ceramides consumption in the United States is estimated to be 0.3 to 0.4 gram per day.

As part of the skin aging process, the amount of ceramides declines leading to drier skin and wrinkles. In cosmetics, ceramides are used for replenishing moisture. Studies in humans (20 to 30 years of age) have shown that application of a mixture of cholesterol, ceramides, essential and non-essential fatty acids in a precise ratio was necessary to repair and restore the skin's barrier function in chronically aged human skin.

Below the epidermis lies the dermis, which contains the extra cellular matrix (ECM). ECM is composed primarily of type I collagen (natural protein that forms the connective tissues), which is responsible for the strength and structural integrity of the skin. The space between the cells in the ECM is filled with hyaluronic acid (HA), which plays an essential role in cellular hydration, allows for the proper transfer of nutrition, facilitates intracellular communication, and improves elasticity of the skin. The largest amount of HA in our body resides in skin tissue, where it is present in both the dermis and the epidermis.

To help compensate for the decline in HA with aging, HA-containing dietary supplement products were developed from natural sources such as rooster combs and certain bacterial cultures were developed as dietary supplements. These natural HA are comparatively large molecules and are not easily absorbed in our body. Recently, a low molecular weight HA (Injuv) was shown in an experiment to retain moisture in the ECM in the skin.

For years, Japanese women have been drinking skin care elixirs comprised of a porcine collagen derivative, seaweed extract, calcium, HA, and dermatant acid among other nutrients to make their skin youthful and vibrant. This drink is known as Toki, the Japanese expression which means, "You have a smooth, radiant, porcelain-like skin."

As we age the collagen and elastic fibers in the dermis begin to break down, leading to sagging (fine wrinkles). Because Toki is taken internally (in the form of a drink three times daily), it delivers nutrients to the dermis.

In a clinical study, 40 women (aged 35 to 65 years) who consumed Toki for 60 days showed significant improvements in dermatological assessment parameter, including radiance, appearance of fine lines and wrinkles and lightening of patchy discolorations such as age spots.

A study sponsored by Lane Labs, Allendale, NJ, showed that collagen levels increase in the blood by up to 114 percent after 30 days of consuming Toki. The company claimed that after 45 days, skin texture was smoother and tighter and the appearance of fine lines and wrinkles begins to diminish.

The skin serves numerous functions; the most obvious one is the protection against harmful environmental toxins and pollutants, and exposure to sun. In order to keep skin healthy and radiant, it needs both external and internal care. **VR**

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