

- Serves as a source of vitamin D when exposed to sunlight or other sources of UV light. Skin contains a precursor for vitamin D.
- Serves as an excretory organ. Water, sodium, chloride, lactate, and urea are excreted in sweat.
- Inhibits growth of many microorganisms by its acidic pH (4.5 to 6.5)

Mucous membranes are composed of a surface layer of epithelial cells, a basement membrane, and a layer of connective tissue. They line body cavities that communicate with the external environment (ie, mouth, vagina, anus). They receive an abundant blood supply because capillaries lie just beneath the epithelial cells.

Dermatologic disorders may be primary (ie, originate in the skin or mucous membranes) or secondary (ie, result from a systemic condition, such as measles or adverse drug reactions). This chapter emphasizes selected primary skin disorders and the topical medications used to prevent or treat them.

DISORDERS OF THE SKIN

Because the skin is constantly exposed to the external environment, it is susceptible to numerous disorders, including those described in the following sections.

Inflammatory Disorders

Dermatitis

Dermatitis is a general term denoting an inflammatory response of the skin to injuries from irritants, allergens, or trauma. *Eczema* is often used as a synonym for dermatitis. Whatever the cause, dermatitis is usually characterized by erythema, pruritus, and skin lesions. It may be acute or chronic.

- **Atopic dermatitis** is a common disorder characterized mainly by pruritus and lesions that vary according to the extent of inflammation, stages of healing, and scratching. Scratching damages the skin and increases the risks of secondary infection. Acute lesions are reddened skin areas containing papules and vesicles; chronic lesions are often thick, fibrotic, and nodular.

The cause is uncertain but may involve allergic, hereditary, or psychological elements. Approximately 50% to 80% of clients have asthma or allergic rhinitis; some have a family history of these disorders. Thus, exposure to possible causes or exacerbating factors such as allergens, irritating chemicals, foods, and emotional stress should be considered. The condition may occur in all age groups but is more common in children.

- **Contact dermatitis** results from direct contact with irritants (eg, soaps, detergents) or allergens (eg, clothing materials or dyes, jewelry, cosmetics) that stimulate inflammation. Irritants cause tissue damage and dermatitis in anyone with sufficient contact or exposure. Allergens

cause dermatitis only in sensitized or hypersensitive people. The location of the dermatitis may indicate the cause (eg, facial dermatitis may indicate an allergy to cosmetics).

- **Seborrheic dermatitis** is a disease of the sebaceous glands characterized by excessive production of sebum. It may occur on the scalp, face, or trunk. A simple form involving the scalp is dandruff, which is characterized by flaking and itching of the skin. More severe forms are characterized by greasy, yellow scales or crusts with variable amounts of erythema and itching.
- **Urticaria** (“hives”) is an inflammatory response characterized by a skin lesion called a wheal, a raised edematous area with a pale center and red border, which itches intensely. Histamine is the most common mediator of urticaria and it causes vasodilation, increased vascular permeability, and pruritus.

Histamine is released from mast cells and basophils by both allergic (eg, insect bites, foods, drugs) and nonallergic (eg, radiocontrast media, opiates, and some antibiotics as well as heat, cold, pressure, UV light) stimuli. An important difference between allergic and nonallergic reactions is that many allergic reactions require prior exposure to the stimulus, whereas nonallergic reactions can occur with the first exposure.

- **Drug-induced skin reactions** can occur with virtually any drug and can resemble the signs and symptoms of virtually any skin disorder. Topical drugs usually cause a localized, contact dermatitis type of reaction and systemic drugs cause generalized skin lesions. Skin manifestations of serious drug reactions include erythema, facial edema, pain, blisters, necrosis, and urticaria. Systemic manifestations may include fever, enlarged lymph nodes, joint pain or inflammation, shortness of breath, hypotension, and leukocytosis. Drug-related reactions usually occur within the first or second week of drug administration and subside when the drug is discontinued.

Psoriasis

Psoriasis is a chronic skin disorder characterized by erythematous, dry, scaling lesions. The lesions may occur anywhere on the body but commonly involve the skin covering bony prominences, such as the elbows and knees. The disease is characterized by remissions and exacerbations. Exacerbating factors include infections, winter weather, some drugs (eg, beta blockers, lithium) and possibly stress, obesity, and alcoholism.

The cause of psoriasis is thought to be an inflammatory process. The pathophysiology involves excessively rapid turnover of epidermal cells. Instead of 30 days from formation to elimination of normal epidermal cells, epidermal cells involved in psoriasis are abnormal in structure and have a lifespan of about 4 days.

Skin lesions may be tender, but they do not usually cause severe pain or itching. However, the lesions are unsightly and usually cause embarrassment and mental distress.