

8



SKIN DISORDERS & DISEASES

LEARNING OBJECTIVES

After completing this chapter, you will be able to:

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LO 1

Identify and describe common skin lesions, differentiating between primary and secondary lesions.

LO 2

List and describe common disorders of the sebaceous glands.

LO 3

List and describe common changes in skin pigmentation.

LO 4

Identify the forms of skin cancer including symptoms and mortality rates.

LO 5

Identify and describe the major causes of acne and current treatments.

LO 6

List the factors that contribute to the aging of the skin.

LO 7

Explain the effects of exposure to the sun on the skin.

LO 8

Describe contact dermatitis and prevention measures for cosmetologists.

Skin is the largest organ of the body and vital to our very existence! While it is designed to protect us, it is also the most visible organ of the body, and healthy skin is often associated with good health in general. Choosing a career in skin care to help people achieve maximum skin health and overcome or reduce the effects of skin disorders can be very rewarding.

Skin care specialists are in high demand in many salons and spas and earn excellent salaries. Some stylists find caring for the skin less arduous and physically demanding than styling hair and choose to balance their day by scheduling services in both areas. Whatever your reason, skin care is an area of rapid change and growth and a topic on most clients' minds. Knowing the basics of skin care and how the skin functions will allow you to advise clients on their skin care regimens when they seek your professional opinion.

why study SKIN DISORDERS AND DISEASES?

Cosmetologists should study and have a thorough understanding of skin disorders and diseases for the following reasons:

- > Providing even the most basic of skin care services requires an understanding of the underlying structure of the skin and common skin problems.
- > The ability to recognize skin disorders and know when the client should be referred for medical treatment or when they can be treated by the cosmetologist is essential.
- > Being fully qualified to offer skin care treatments adds another dimension of service for your clients.

Identify Disorders and Diseases of the Skin

Like any other organ of the body, the skin is susceptible to a variety of diseases, disorders, and ailments. In your work as a practitioner, you will often see skin and scalp disorders, so you must be prepared to recognize certain common skin conditions and know which you can help to treat and which must be referred to a physician. Occasionally, you may be asked to apply or use on a client a scalp treatment prescribed by a



physician, which must be applied in accordance with a physician's directions.

A dermatologist is a physician who specializes in diseases and disorders of the skin, hair, and nails. Dermatologists attend four years of college, four years of medical school, and then complete specialty training in dermatology. When referring your client for medical evaluation, it may be helpful to explain the role of a dermatologist, although many clients will start first with their family doctor.

It is very important that a salon not serve a client who is suffering from an inflamed skin disorder, infectious or not, without a physician's note permitting the client to receive services. The cosmetologist should be able to recognize these conditions and sensitively suggest that proper measures be taken to prevent more serious consequences. One of the most visible signs of an issue with the skin is inflammation that may present as swelling and redness, often with no known cause. While some inflammation lasts for a very short period, such as a sunburn, and may leave a scar, long-term inflammation is the most concerning as it can cause permanent damage to the tissues. If your client has long-term inflammation of the skin, it is important to refer them to a physician to determine the cause and discuss possible treatments.

Numerous important terms relating to skin, scalp, and hair disorders that you should be familiar with are described in subsequent sections.

After reading the next few sections, you will be able to:

LO 1 Identify and describe common skin lesions, differentiating between primary and secondary lesions.


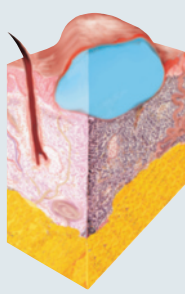
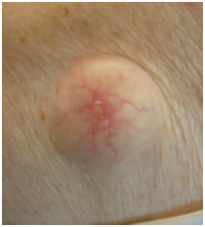
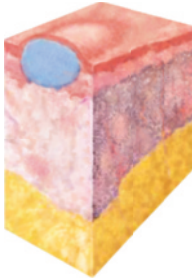
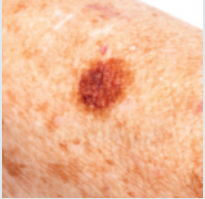


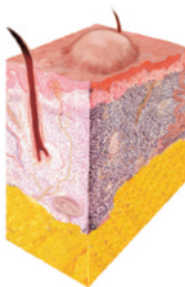

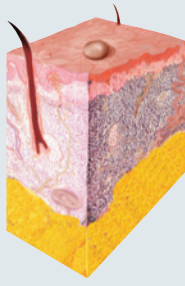
Lesions of the Skin

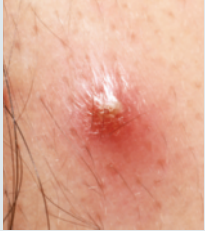
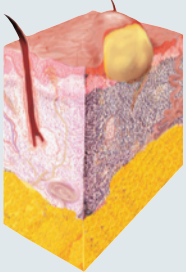

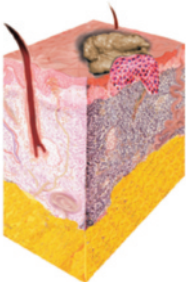

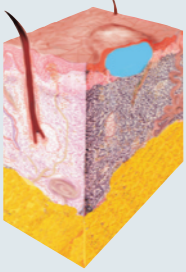

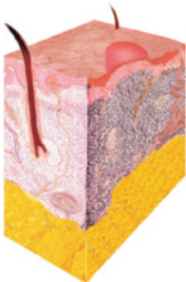
A **lesion** (LEE-zhun) is a mark on the skin that may indicate an injury or damage that changes the structure of tissues or organs. A lesion can be as simple as a freckle or as dangerous as a skin cancer. Lesions can indicate skin disorders or diseases and may be symptomatic of other internal diseases. Being familiar with the principal skin lesions will help you be able to distinguish between conditions that may and may not be treated in a salon or spa.

Primary Lesions of the Skin

Primary lesions (PRY-mayr-ee LEE-zhun) are lesions that are a different color than the color of the skin and/or lesions that are raised above the surface of the skin. They are often differentiated by size and layers of skin affected. These may require medical referral. Refer to [table 8-1](#) for a description of primary lesions and examples of each.

PRIMARY LESIONS


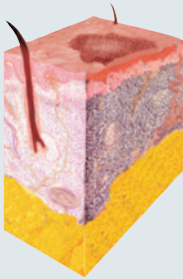

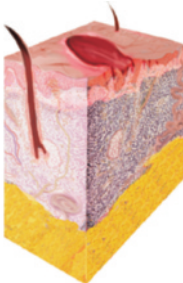

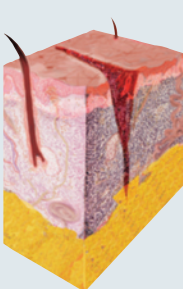



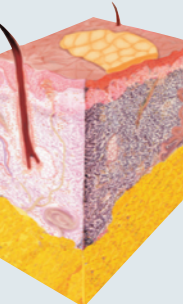
Primary lesions	Pronunciation	Image	Graphic	Description	Examples
Bulla	BULL-uh, (plural: bullae [BULL-ay])			Large blister containing a watery fluid; similar to a vesicle. Requires medical referral.	Contact dermatitis, large second degree burns, bulbous impetigo, perriphigus
Cyst and tubercle	SIST TOO-bur-kul	 © Courtesy DermNet NZ		Closed, abnormally developed sac that contains pus, semifluid, or morbid matter, above or below the skin. A cyst can be drained of fluid and a tubercle cannot. Requires medical referral.	<i>Cyst:</i> Severe acne <i>Tubercle:</i> Lipoma, erythema nodosum
Macule	MAK-yool, (plural: maculae [MAK-yuh-ly])	 © Aneese/Photos.com		Flat spot or discoloration on the skin.	Freckle or “liver” spot
Nodule	NOD-yool	 © Sue McDonald /Shutterstock.com		A solid bump larger than 0.4 inches (1 cm) that can be easily felt. Requires medical referral.	Swollen lymph nodes, rheumatoid nodules
Papule	PAP-yool	 © Ocskay Bence/Shutterstock.com		A small elevation on the skin that contains no fluid, but may develop pus.	Acne, warts, elevated nevi



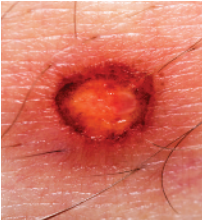
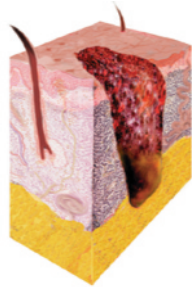
Primary lesions	Pronunciation	Image	Graphic	Description	Examples
Pustule	PUS-chool	 © Faiz Zaki/Shutterstock.com		Raised, inflamed, papule with a white or yellow center containing pus in the top of the lesion.	Acne, impetigo, folliculitis
Tumor	TOO-mur	 © Courtesy DermNet NZ		Abnormal mass varying in size, shape, and color. Any type of abnormal mass, not always cancer. Requires medical referral.	Cancer
Vesicle	VES-ih-kel			Small blister or sac containing clear fluid, lying within or just beneath the epidermis. Requires medical referral if cause is unknown or untreatable with over-the-counter products.	Poison ivy, poison oak
Wheal	WHEEL	 © Margoe Edwards/Shutterstock.com		An itchy, swollen lesion that can be caused by a blow, scratch, bite of an insect, or urticaria (skin allergy), or the sting of a nettle. Typically resolves on its own, but referral to a physician should be considered when the condition lasts more than three days.	Hives, mosquito bites

Secondary Lesions

Secondary skin lesions (SEK-un-deh-ree SKIN LEE-zhun) are characterized by piles of material on the skin surface, such as a crust or scab, or by depressions in the skin surface, such as an ulcer. Refer to [table 8-2](#) for a description of secondary lesions and examples of each.

SECONDARY LESIONS

Secondary lesion	Pronunciation	Image	Graphic	Description	Examples
Crust	kruhst	 © Pan Xumbin/Shutterstock.com		Dead cells that form over a wound or blemish while healing; accumulation of sebum and pus, sometimes mixed with epidermal cells.	Scab, sore
Excoriation	ek-skor-ee-AY-shun	 R. Baran "The Nail in Differential Diagnosis" with permission of Informa (London).		Skin sore or abrasion produced by scratching or scraping.	Nail cuticle damage from nail biting
Fissure	FISH-ur	 © librakv/Shutterstock.com		Crack in the skin that penetrates the dermis.	Severely cracked and/or chapped hands, lips, or feet
Keloid	KEE-loyd			A thick scar resulting from excessive growth of fibrous tissue. Keloids will form along any type of scar for people susceptible to them.	
Scale	skeyl	 © librakv/Shutterstock.com		Thin, dry, or oily plate of epidermal flakes.	Excessive dandruff, psoriasis

Secondary lesion	Pronunciation	Image	Graphic	Description	Examples
Scar or cicatrix	Skahr OR SIK-uh-triks			Slightly raised or depressed area of the skin that forms as a result of the healing process related to an injury or lesion.	Post-operative repair
Ulcer	UL-sur			Open lesion on the skin or mucous membrane of the body; accompanied by loss of skin depth and possibly weeping of fluids or pus. Requires medical referral, particularly in clients with underlying medical conditions such as diabetes.	Chicken pox, herpes

After reading the next few sections, you will be able to:

LO2 List and describe common disorders of the sebaceous glands.

Identify Disorders of the Sebaceous (Oil) Glands

There are several common disorders of the sebaceous (oil) glands that the cosmetologist should be able to understand and identify.

An *open comedo*, also known as *blackhead*, is a hair follicle filled with keratin and sebum. Comedones appear most frequently on the face, especially in the T-zone—the center of the face (**figure 8-1**). When the sebum of the comedo is exposed to the environment, it oxidizes and turns black. When the follicle is closed and not exposed to the environment, the sebum remains a white or cream color and is a *closed comedo*, also known as *whitehead*, and appears as a small bump just under the skin surface.



figure 8-1
Comedones

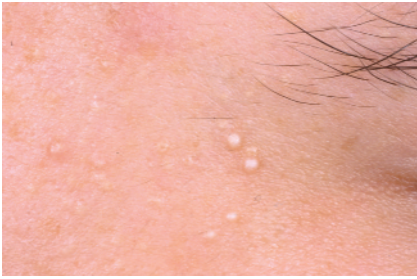


figure 8-2
Milia



figure 8-3
Acne



figure 8-4
Seborrheic dermatitis



figure 8-5
Rosacea

Comedones can be removed by trained beauty professionals as long as proper procedures are employed and the procedure is performed in a clean environment using extraction implements that have been properly cleaned and disinfected.

Milia (MIL-ee-uh) are benign, keratin-filled cysts that appear just under the epidermis and have no visible opening. They resemble small sesame seeds and are almost always perfectly round. They are commonly associated with newborn babies, but can appear on the skin of people of all ages. They are usually found around the eyes, cheeks, and forehead, and they appear as small, firm whitish masses (figure 8-2). Milia is often mistakenly called whiteheads; however, whiteheads are soft in comparison. Depending on the state, milia can be treated in the salon or spa.

Acne, also known as *acne vulgaris*, is a skin disorder characterized by chronic inflammation of the sebaceous glands from retained secretions and bacteria known as propionibacterium acnes (*P. acnes*), the scientific term for acne bacteria. Acne will be discussed in further detail later in this chapter (figure 8-3).

A **sebaceous cyst** (seh-BAY-shus SIST) is a large, protruding pocket-like lesion filled with sebum. Sebaceous cysts are frequently seen on the scalp and the back and may be surgically removed by a dermatologist.

Seborrheic dermatitis (seh-oh-REE-ick derm-ah-TIE-tus) is a skin condition caused by an inflammation of the sebaceous glands, and is often characterized by redness, dry or oily scaling, crusting, and/or itchiness (figure 8-4). The red, flaky skin often appears in the eyebrows and beard, in the scalp and hairline, at the middle of the forehead, and along the sides of the nose. Mild flares of seborrheic dermatitis are sometimes treated with cortisone creams. Seborrheic dermatitis is a medical condition, but it can be helped in the salon with the application of non-fatty skin care products designed for sensitive skin. Severe cases should be referred to a dermatologist, who will often prescribe topical antifungal medications.

Rosacea (roh-ZAY-shuh), formerly called *acne rosacea*, is a chronic condition that appears primarily on the cheeks and nose. It is characterized by flushing (redness), **telangiectasis** (tee-lang-jek-tay-shuhz) distended or dilated surface blood vessels), and, in some cases, the formation of papules and pustules. The cause of rosacea is unknown, but the condition is thought to be genetic. Certain factors are known to aggravate the condition in some individuals. These include exposure to heat, sun, and very cold weather; ingestion of spicy foods, caffeine, and alcohol; and stress. Rosacea can be treated and kept under control by using medication prescribed by a physician, using proper skin care products designed for especially sensitive skin, and avoiding the aggravating flare factors listed above (figure 8-5).

Identify Disorders of the Sudoriferous (Sweat) Glands

Anhidrosis (an-hih-DROH-sis) is a deficiency in perspiration or the inability to sweat, often a result of damage to autonomic nerves. This condition can be life threatening and requires medical attention.

Bromhidrosis (broh-mih-DROH-sis) is foul-smelling perspiration, usually noticeable in the armpits or on the feet, that is generally caused by bacteria. There are several effective treatments that vary from over-the-counter preparations to Botox injections and the use of lasers on the sweat glands. Severe cases require medical referral.

Hyperhidrosis (hy-per-hy-DROH-sis) is excessive sweating, caused by heat or general body weakness. Requires medical referral.

Miliaria rubra (mil-ee-AIR-ee-ah ROOB-rah), also known as *prickly heat*, is an acute inflammatory disorder of the sweat glands, characterized by the eruption of small, red vesicles accompanied by burning, itching skin. It is caused by exposure to excessive heat and usually clears in a short time without treatment.

Recognize Inflammations and Common Infections of the Skin

Conjunctivitis (kuhn-juhngk-tuh-VAHY-tis), also known as *pinkeye*, is an infection of the eye(s) and may be caused by a bacteria or a virus. It is generally extremely contagious, and clients who have conjunctivitis or obviously irritated eyes should be politely rescheduled and referred to a physician immediately. Any product touching infected eyes must be thrown away and all implements properly cleaned and disinfected.

Dermatitis (der-mah-TY-tis) is a term broadly used to describe any inflammatory condition of the skin.

Eczema (EG-zuh-muh) is an inflammatory, uncomfortable, and often chronic disease of the skin. It is characterized by moderate to severe inflammation, scaling, and sometimes severe itching. There are several different types of eczema. The most common type is atopic eczema, which is an inherited genetic disorder. Eczema is not contagious. All cases of eczema should be referred to a physician for treatment, which is often topical cortisone (figure 8-6).

Herpes simplex I (HER-pee-z SIM-pleks) is a recurring viral infection that often presents as a fever blister or cold sore, although many people have no symptoms. It is characterized by the eruption of a single vesicle or group of vesicles on a red swollen base. The blisters usually appear on the lips, nostrils, or other part of the face, and the sores can last up to three weeks. Herpes simplex II is caused by the same virus and is designated as type II because it occurs below the waist. Herpes simplex is contagious (figure 8-7) and requires medical referral. Drugs are now available to control the symptoms, but the virus always remains in the body of infected persons.

Impetigo (im-pet-EYE-go) is a contagious bacterial skin infection characterized by weeping lesions and usually caused by a staphylococcus bacteria. Impetigo normally occurs on the face (especially around the nasal passages) and is most frequently seen in children, although it is possible at



figure 8-6
Eczema



figure 8-7
Herpes simplex I

any age. Clients with any type of weeping, open facial lesions should be politely rescheduled and referred to a physician immediately.

Psoriasis (suh-RY-uh-sis) is a skin disease characterized by red patches covered with silver-white scales and is usually found on the scalp, elbows, knees, chest, and lower back. It is rarely found on the face. Psoriasis is caused by skin cells turning over faster than normal and when the condition is irritated, bleeding points can occur. Psoriasis is not contagious, but it requires medical referral. It is treatable, but it is not curable.

After reading the next few sections, you will be able to:

LO 3 List and describe common changes in skin pigmentation.

Recognize Pigment Disorders of the Skin



figure 8-8
Albinism

Pigment can be affected by internal factors such as heredity or hormonal fluctuations, or by external factors such as prolonged exposure to the sun. Abnormal colorations, known as **dyschromias** (dis-chrome-ee-uhs), accompany skin disorders and are symptoms of many systemic disorders. A change in pigmentation can also be observed when certain medications are being taken, such as photosensitivity related to use of certain antibiotics. The following disorders relate to changes in the pigmentation of the skin.

Hyperpigmentation (hy-pur-pig-men-TAY-shun) means darker than normal pigmentation, appearing as dark splotches. **Hypopigmentation** (hy-poh-pig-men-TAY-shun) is the absence of pigment, resulting in light or white splotches.

Albinism (AL-bi-niz-em) is congenital hypopigmentation, or absence of melanin pigment in the body, including the skin, hair, and eyes. Hair is silky white (figure 8-8). The skin is pinkish white and will not tan. The eyes are pink and the skin is sensitive to light and ages prematurely.

Chloasma (kloh-AZ-mah), also known as the *mask of pregnancy*, is a condition characterized by hyperpigmentation on the skin in spots that are not elevated. They are generally caused by cumulative sun exposure and can be helped by exfoliation or can be treated by a dermatologist.

Lentigines (len-TIJ-e-nee-z) (singular: lentigo [len-TY-goh]) is the technical term for freckles—small yellow-colored to brown-colored spots on skin exposed to sunlight and air. It is also commonly referred to as liver spots in older adults, although there is no relationship to the liver.

Leukoderma (loo-koh-DUR-mah) is a skin disorder characterized by light, abnormal patches (hypopigmentation); it is caused by a burn, scar, inflammation, or congenital disease that destroys the pigment-producing cells. Examples are vitiligo and albinism.

Nevus (NEE-vus), also known as *birthmark*, is a small or large malformation of the skin due to abnormal pigmentation or dilated capillaries.

Stain is an abnormal brown-colored or wine-colored skin discoloration with a circular or irregular shape (figure 8-9). Its permanent color is due to



figure 8-9
Port wine stain

the presence of darker pigment. Stains can be present at birth, or they can appear during aging, after certain diseases, or after the disappearance of moles, freckles, and liver spots. The cause is often unknown.

Tan is the change in pigmentation of skin caused by exposure to the sun or ultraviolet light.

Vitiligo (vi-til-EYE-goh) is a hereditary condition that causes hypopigmented spots and blotches on the skin that often appear milky white. Recent research suggests that this disorder is part of an autoimmune disease (figure 8-10). Skin with vitiligo must be protected from overexposure to the sun.



figure 8-10
Vitiligo

List Hypertrophies of the Skin

A **hypertrophy** (hy-PUR-truh-fee) of the skin is an abnormal growth of the skin. Many hypertrophies are benign, which means they are harmless.

A **keratoma** (kair-uh-TOH-mah) is an acquired, superficial, thickened patch of epidermis. A callus is a keratoma that is caused by continued, repeated pressure or friction on any part of the skin, especially the hands and feet. If the thickening grows inward, it is called a corn.

A **mole** is a small brownish spot or blemish on the skin, ranging in color from pale tan to brown or bluish black. Some moles are small and flat, resembling freckles; others are raised and darker in color. Large dark hairs often occur in moles. Any change in a mole requires medical attention.

A **skin tag** is a small brown-colored or flesh-colored outgrowth of the skin (figure 8-11). Skin tags occur most frequently on the neck and chest and can be easily removed by a dermatologist.



figure 8-11
Skin tags

A **verruca** (vuh-ROO-kuh), also known as *wart*, is a hypertrophy of the papillae and epidermis. It is caused by a virus and is infectious. Verruca can spread from one location to another, particularly along a scratch in the skin. A dermatologist can be helpful in removing and reducing the recurrence of warts.

After reading the next few sections, you will be able to:

LO⁴ Identify the forms of skin cancer including symptoms and mortality rates.

Understand Skin Cancer

Skin cancer has become one of the most common cancers because of the large number of people diagnosed every year. It is also becoming one of the most common causes of cancer-related deaths because of general complacency about prevention and a lack of knowledge about the signs and real risks, particularly in young people. Cosmetologists should recognize the signs of potential skin cancer and always refer clients to see a physician. In this case, “better safe than sorry” is absolutely true! Do not let

someone's young age or general good health stop you from being the one who saves someone's life through early diagnosis and treatment. There are three types of skin cancer (table 8-3).

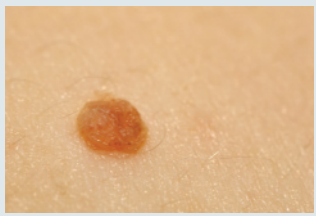



Clients should be advised to regularly see a dermatologist for checkups of the skin, especially if any changes in coloration, size, or shape of a mole are detected, if the skin bleeds unexpectedly, or a lesion or scrape does not heal quickly.

Home self-examinations can also be an effective way to check for signs of potential skin cancer between scheduled doctor visits. When performing a self-care exam, clients should be advised to check for any changes in existing moles and pay attention to any new visible growths on the skin. Clients should also be advised to ask a spouse, friend, or loved one to check areas they cannot adequately see on a routine basis. This would include the back, scalp, and around the ears.

If detected early, anyone with these three forms of skin cancer has a good chance for survival. Cosmetologists serve a unique role by being able

table 8-3

TYPES OF SKIN CANCER

Moles	Description	Image
Normal Mole	Small brownish spot on the skin ranging in color from pale tan to brown or bluish black. <i>Note:</i> This is NOT a type of skin cancer.	
Basal Cell Carcinoma (BAY-zul SEL kar-sin-OH-mah)	Most common and least severe skin cancer; characterized by light or pearly nodules and has a 90 percent survival rate with early diagnosis and treatment.	
Squamous Cell Carcinoma (SKWAY-mus SEL kar-sin-OH-mah)	More serious than basal cell carcinoma; characterized by scaly red papules or nodules. It can spread to other parts of the body and survival rates depend on the stage at diagnosis.	
Malignant Melanoma (muh-LIG-nent mel-uh-NOH-mah)	Least common, but most dangerous, form of skin cancer; characterized by black or dark brown patches on the skin that may appear uneven in texture, jagged, or raised. Malignant melanoma is the least common, but is 100 percent fatal if left untreated—early detection and treatment can result in a 94 percent five-year survival rate, but that drops drastically (62 percent) once it reaches local lymph nodes.	

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figure 8-12a
Normal mole



figure 8-12b
Normal mole



figure 8-12c
Moles with cancerous lesions



figure 8-12d
Moles with cancerous lesions

to recognize the appearance of serious skin disorders and referring the client to a dermatologist for diagnosis and treatment.

According to the American Cancer Society, professionals should use the ABCDE Cancer Checklist to spot signs of change in existing moles (figure 8-12 a–d):

When checking existing moles, look for changes in any of the following:

- A. Asymmetry.** One half of the mole does not match the other half.
- B. Border irregularity.** The edges of the mole are ragged or notched.
- C. Color.** The color of the mole is not the same all over. There may be shades of tan, brown, or black, and sometimes even patches of red, blue, or white.
- D. Diameter.** The mole is wider than about $\frac{1}{4}$ " (although doctors are now finding melanomas that are smaller).
- E. Evolution.** The mole evolves or changes; it may include darkening or variations in color, it may itch or hurt; it may change in shape or growth.

For more information, contact the American Cancer Society at cancer.org or (800) ACS-2345.

After reading the next few sections, you will be able to:

- LO 5** Identify and describe the major causes of acne and current treatments.

Examine Acne and Problem Skin

Common skin problems that affect clients' appearance, such as acne, can become a source of great concern, although most people have acne or another skin issue at some time in their lives. Acne is both a skin



CAUTION

Do not treat moles or remove hair from moles. Removing a hair from a mole could irritate or cause a structural change to it. Only a physician should remove a hair from a mole.

disorder and an esthetic problem, and it is a major concern to anyone who suffers from it. Frequently misunderstood to be a teenage skin disorder, it can affect people at almost any age. Women often do not have acne problems until they reach their 20s, 30s, or beyond. Because acne affects the appearance, it is of interest to cosmetologists and estheticians, who are in a position to help their clients with treatment for minor cases or to provide dermatological referral for more severe acne.

A predisposition to acne is based on heredity and hormones. People with acne inherit the tendency to retain cells that gather on the walls of the follicle, eventually clumping and obstructing the follicle. Hormone levels directly affect the function of the sebaceous glands, increasing or decreasing the amount of sebum on the skin.

Retention hyperkeratosis (ree-TEN-shun HY-per-ker-a-toe-sis) is the hereditary tendency for acne-prone skin to retain dead cells in the follicle, forming an obstruction that clogs follicles and exacerbates inflammatory acne lesions such as papules and pustules.

The oiliness level of the skin is also hereditary. Overproduction of sebum by the sebaceous gland contributes to the development of acne by coating the dead cell buildup in the follicle with sebum, which hardens due to oxidation. This conglomeration of dead cells and solidified sebum obstruct the follicle.

Propionibacterium acne (*P. acnes*) is **anaerobic** (ann-air-ROH-bic), which means that these bacteria cannot survive in the presence of oxygen. When the follicles are obstructed, oxygen is blocked from the bottom of the follicles, allowing acne bacteria to multiply.

The main food source for acne bacteria is fatty acids, which are easily obtained from the abundance of sebum in the follicle. These bacteria flourish in this ideal environment, which has plenty of food (sebum) for the bacteria and is void of oxygen. The bacteria multiply, causing inflammation and swelling in the follicle, and eventually rupture the follicle wall. When the wall of the follicle ruptures, the immune system is alerted, causing blood to rush to the ruptured follicle, carrying white blood cells to fight the bacteria. Blood will surround and engulf the follicle, which is what causes the redness in pimples.

An acne papule is an inflammatory acne lesion resulting from this wall rupture and infusion of blood. A pustule forms from the papule when enough white blood cells accumulate to form pus, which is primarily composed of dead white blood cells.

Acne Treatment

Minor forms of acne can be treated without medical referral. The basics of acne treatment involve:

- Daily use of gentle cleansers formulated for a specific skin type. The use of harsh cleansers can make skin too dry and sebaceous glands will generate more sebum, creating an even bigger problem! These foamy, rinse-off products remove dirt, debris, and excess oil from the skin. Toners may be helpful for clients with excessively oily skin.



DID YOU KNOW?

Skin cancer is preventable and early detection is possible if you know what to look for. Be aware of the following as you service your clients:

- Any unusual lesions on the skin or on the scalp or change in an existing lesion or mole.
- Melanomas. These irregularly shaped, dark spots are sometimes found on the scalp and ears and are often first detected by cosmetologists!
- A new lesion or discoloration on the skin or scalp.
- Client complaints about sores that do not heal or unexpected skin bleeding.
- Recurrent scaly areas that may be rough to the touch, especially in sun-exposed areas such as the face, arms, or hands.

If you become aware of any of these conditions, suggest that your client consult a physician. Always discuss prevention with every client.

- Follicle exfoliants are leave-on products that help to remove cell buildup from the follicles, allowing oxygen to penetrate the follicles, killing bacteria. Commonly used ingredients in these products are alpha hydroxy acid, salicylic acid, and benzoyl peroxide. Benzoyl peroxide can be especially effective since it helps to shed cellular debris and also kill the acne bacteria. These are generally not used all over because of their drying properties, and are only used as a spot treatment.
- Avoidance of fatty skin care and cosmetic products is important because products that contain large amounts of fatty materials and oils can cause follicles to clog from the outside. Make sure all makeup and skin care products used on acne-prone skin are **noncomedogenic** (non-com-EE-doh-JENN-ic), which means the product has been designed and proven not to clog the follicles.
- Use of a light moisturizer to keep skin balanced and reduce the risk of excess sebum production can be helpful.
- Mild and moderate cases of acne are often treated by trained salon and spa professionals who have received specialized education in acne treatment.



After reading the next few sections, you will be able to:

LO6 List the factors that contribute to the aging of the skin.

Analyze Aging Skin Issues

Aging of the skin is a concern of almost every client over 30 years of age, and has become a major area for new services and retail revenue within the salon and spa environment. There are two types of factors that influence aging of the skin: intrinsic factors and extrinsic factors.

Intrinsic Factors

Intrinsic factors (in-TRIN-zic FAK-torz) are skin-aging factors over which we have little control:

- Genetics and ethnicity play a significant role in how our skin will age. Our predisposition to skin disorders and our ability to tolerate sun exposure also play a role.
- Gravitational pull is the constant pulling downward on our skin and bodies and is a consistent factor for everyone.
- Facial expressions are the repeated movements of the face and result in the formation of expression lines, such as crow's-foot lines that form around the eyes; nasolabial folds that form from the corners of the nose to the corners of the mouth; and scowl lines that form between the eyes.

Extrinsic Factors

Extrinsic factors (ex-TRIN-zic FAK-torz) are primarily environmental factors that contribute to aging and the appearance of aging. Many scientists and dermatologists believe that these extrinsic factors are responsible for up to 85 percent of skin aging. Extrinsic factors include:

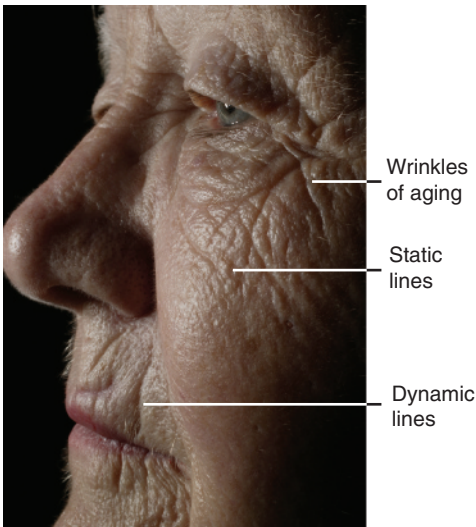


figure 8-13
Effects of aging and sun damage

- Exposure to the sun. Tanning and sun bathing are significant offenders in the prevention of both aging and cancers of the skin and should always be discouraged by skin care professionals. However, the cumulative sun that we get in little doses every day also causes significant damage to the skin of most people and is the number one cause of the appearance of premature aging (**figure 8-13**). The key to preventing this prominent skin-aging factor is to use a broad-spectrum sunscreen every single day, and the easiest way to do this is to find a daily-use moisturizer with built-in sunscreen. As a cosmetologist, you can help your clients find the best sunscreen and moisturizer to use every day.
- Smoking is bad for more than just your lungs! It is bad for your body as a whole and does significant damage to the skin. Smoking produces tremendous numbers of **free radicals** (FREE RAD-ih-culs), unstable molecules that cause biochemical aging. These molecules, over time, can have a devastating effect on the body, causing wrinkling and sagging of the skin, particularly on the face and neck. Smoking also causes oxygen deprivation of the skin and body, which ultimately affects blood flow so the skin does not get adequate blood nutrients. This lack of blood flow causes the accumulation of cellular waste, often called toxins.
- Overuse of alcoholic beverages also has an overall effect on the body and the skin. Alcohol use inhibits the body from repairing itself and interferes with proper nutrition distribution to the skin and body tissues. Alcohol also dehydrates the skin by drawing essential water out of the tissues, which causes the skin to appear dull and dry.
- Individually, smoking and overuse of alcoholic beverages contribute to the aging process, but the combination of the two can be devastating to the tissues. The constant dilation and contraction that occur on the tiny capillaries and blood vessels, as well as the constant deprivation of oxygen and water to the tissues, quickly make the skin appear lifeless and dull. In these circumstances, it is very difficult for the skin to adjust and repair itself and the damage done by these lifestyle habits can be impossible to repair or diminish—often leaving people looking much older than they are.
- Stress plays a significant role in our overall health and contributes to premature aging of all organs, including the skin. Research now confirms that stress causes biochemical changes at the cellular level that can lead to the tissue damage that we call aging. Exercise, relaxation techniques, and a healthy state of mind can reduce stress levels, as can relaxing treatments like facials, aromatherapy, and massage.

- Poor nutrition deprives the skin of the proteins, fats, carbohydrates, vitamins, and minerals that are required to maintain, protect, and repair the skin, keeping it looking young and beautiful. Eating a well-balanced diet allows for all body systems to function at maximum performance and nourish the fragile tissues of the skin. One of the first signs of eating disorders is the dull complexion associated with repeated deprivation of needed nutrients.
- Exposure to pollution produces free radicals, interferes with proper oxygen consumption, and affects the lungs and other internal organs as well as the skin. The best defense against pollutants is the simplest one: Follow a good daily skin care routine. Routine washing and mild exfoliating (removing dead surface skin cells) help to remove the buildup of pollutants that have settled on the skin's surface throughout the day. The application of daily moisturizers, protective lotions, and even foundation products all help to protect the skin from airborne pollutants.

The appearance of aging skin can be greatly improved by practicing a good skin care program, especially at home. A professionally designed program for aging skin based on the client's needs, skin type, and condition severity involves a good hydrating sunscreen, an alpha or beta hydroxy acid exfoliating product, and products using state-of-the-art ingredients such as peptides and topical antioxidants designed specifically for aging skin.



After reading the next few sections, you will be able to:

LO7 Explain the effects of exposure to the sun on the skin.

Understand the Sun and Its Effects

The sun and its ultraviolet (UV) light have the greatest impact of all extrinsic factors on how skin ages. Approximately 80 to 85 percent of the symptoms of aging skin are caused by the accumulation of damaging rays from the sun. As we age, the collagen and elastin fibers of the skin naturally weaken, and this weakening happens at a much faster rate when the skin is frequently exposed to UV light without proper protection. When we call UV light a “UV ray” that is just a shorter way of saying that it is a form of radiation, and as such it can be damaging!

UVA rays, also known as *aging rays*, are deep-penetrating rays that can even go through a glass window. These rays weaken the collagen and elastin fibers, causing wrinkling and sagging of the tissues.

UVB rays, also known as *burning rays*, cause sunburns, tanning of the skin, and the majority of skin cancers. These are shorter rays that stop penetration at the base of the epidermis.



DID YOU KNOW?

People used to believe light traveled in straight rays, but we now know that it oscillates in wave formations, called wavelengths. The word *ray* still remains, as UV rays, UVA and UVB rays or light rays, but it represents the term *radiation*.



DID YOU KNOW?

You can actually get second-degree burns from sunburn (figure 8-14).

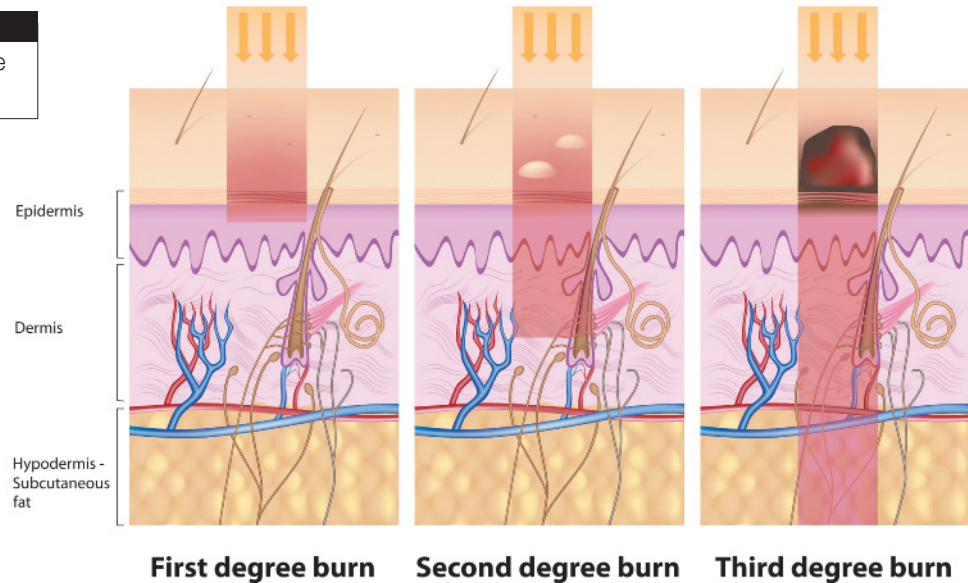


figure 8-14
Degrees of burns

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Protection from the Sun

The most common form of protection from the sun that most people think of is sunscreen, which is commonly applied to the face and body in anticipation of time in the sun. SPF stands for Sun Protection Factor and this number roughly designates the amount of time a person can be in the sun without burning when applied correctly. However, the actual amount of time that any specific SPF can offer protection is based on the time of day, altitude, skin type, and amount of sunscreen applied. The SPF only truly works when sunscreen is applied correctly. Clothing actually offers some barrier SPF, but it is minimal with hats offering an SPF of 5 and most cotton shirts an SPF of 6.

Two types of rays, UVA and UVB, are responsible for tanning and burning of the skin, so it is important to look for a sunscreen that is labeled as “broad spectrum,” indicating it protects against UVA and UVB (FDA). Although some older sunscreen labels may read “waterproof” or “sweat proof,” those claims are no longer allowed by the FDA. A sunscreen may only be labeled as “water resistant” and must indicate whether it is water resistant for 40 or 80 minutes. It is important that you talk with your clients about how to protect their skin from the damaging rays of the sun and the risks of skin cancer, offering them useful advice. It is also important that as a professional you stay up to date on the latest information and rules surrounding sun protection by reading current articles and visiting websites like FDA.gov.

- The number one way to prevent premature skin aging is to avoid deliberate sun exposure and to use a broad-spectrum sunscreen, which is one that filters both UVA and UVB rays and has an SPF (Sun Protection Factor) of at least 15, on a daily basis. Look for products that contain zinc oxide or titanium dioxide.
- Avoid prolonged exposure to the sun during peak hours, when UV exposure is highest. This is usually between 10 AM and 3 PM, and this time can be extended when at high altitudes or areas closer to the equator.



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- Sunscreen should be applied at least 30 minutes before sun exposure to allow time for absorption. Many people make the mistake of applying sunscreen after they have been exposed to the heat and sun for 30 minutes or more. The already inflamed skin is more likely to react to the sunscreen chemicals when the sunscreen is applied after sun exposure.
- Apply sunscreen liberally after swimming and after activities that result in heavy perspiration. If the skin is exposed to hours of sun, such as during a boat trip or day at the beach, sunscreen should be applied periodically throughout the day as a precaution.
- Avoid exposing children younger than six months of age to the sun.
- People who are prone to burning frequently and easily should wear a hat and protective clothing when participating in outdoor activities, in addition to using sunscreen. Redheads and blue-eyed blonds are particularly susceptible to sun damage.

After reading the next few sections, you will be able to:

LO 8 Describe contact dermatitis and prevention measures for cosmetologists.

Recognize Contact Dermatitis

Contact dermatitis is the most common work-related skin disorder for all cosmetology professionals. **Contact dermatitis** (KAHN-takt dur-mah-TYT-is) is an inflammation of the skin caused by having contact with certain chemicals or substances. Many of these substances are commonly used in cosmetology. There are two types of contact dermatitis: allergic contact dermatitis and irritant contact dermatitis.

Allergic Contact Dermatitis

Allergic contact dermatitis (AL-urg-jic KAHN-takt der-mah-TIT-tis), abbreviated ACD, occurs when a person (cosmetologist or client) develops an allergy to an ingredient or a chemical, usually caused by repeated skin contact with the chemical. **Sensitization** (sen-sih-TIZ-aye-shun) is an allergic reaction created by repeated exposure to a chemical or a substance. Monomer liquids, haircolor, and chemical texture solutions are all common causes of allergic reactions with repeated exposures.

Once an allergy to a product has been established, all services being done with the product must be discontinued until the allergic symptoms clear. The person affected by the allergy (cosmetologist or client) must stop using that particular product. In severe or chronic cases, affected people should see a dermatologist for allergy testing.

Common places for allergic contact dermatitis are listed below and include:

- On the fingers, palms, or on the back of the hand.
- On the face, especially the cheeks.
- On the scalp, hairline, forehead, or neckline.

If you examine the area where the problem occurs, you can usually determine the cause. For example, stylists often strand test haircolor with their bare fingers and hands, so it is no surprise when they find contact dermatitis on their fingers and hands.

Irritant Contact Dermatitis

Irritant contact dermatitis (IRH-ih-tent KAHN-takt der-mah-TIH-tus), abbreviated ICD, occurs when irritating substances temporarily damage the epidermis. Unlike allergic contact dermatitis, irritant contact dermatitis is not usually chronic if precautions are taken.

Corrosive substances or exfoliating agents are examples of products with irritant potential. Contact with irritant chemicals can cause damage to the epidermis because the irritant can enter the skin surface and cause possible inflammation, redness, swelling, itching, and burning and repeated exposure can worsen the condition.

The best way to prevent both types of occupational contact dermatitis is to use gloves or utensils when working with irritating chemicals. Cosmetologists should use gloves or utensils when applying chemicals such as haircolor, straighteners, or permanent wave solutions. Nail technicians should use gloves or utensils when applying nail products such as monomer liquids and polymer powders. Estheticians should use gloves or utensils when applying exfoliants such as peeling products and drying agents. All of these chemicals can irritate the skin of the hands and arms if precautions are not taken to avoid contact.

Frequent hand washing can result in dry hands, with cracks in the skin that can cause more irritation and that can allow penetration of irritant chemicals. Hand washing is important to prevent the spread of disease, but it should be followed by the frequent use of protective hand creams to keep the hands in good condition.

Protect Yourself

Taking the time to keep your implements, tools, equipment, and surfaces clean and disinfected is an important step in protecting yourself and avoiding a skin problem. Practice these suggestions with great diligence:

- Take extreme care to keep brush handles, containers, and table tops clean and free from product, dust, and residue. Repeatedly handling these items will cause overexposure if the items are not kept clean.
- Wear protective gloves whenever using products known to cause irritant or allergic contact dermatitis.
- Keep your hands clean and moisturized. Keeping the skin of the hands in excellent condition will help prevent irritant reactions.



REVIEW QUESTIONS

- 1 Define a primary skin lesion and list three types.
- 2 Define a secondary skin lesion and list three types.
- 3 Name and describe at least five disorders of the sebaceous glands.
- 4 Name and describe at least five changes in skin pigmentation.
- 5 Name and describe the three forms of skin cancer.
- 6 What are the two major causes of acne and how should they be effectively treated?
- 7 What is the most significant factor in aging of the skin and increasing risk of all types of skin cancer?
- 8 Explain the effect of overexposure to the sun on the skin.
- 9 What is contact dermatitis and how it can be prevented?

STUDY TOOLS

- **Reinforce what you just learned:** Complete the activities and exercises in your Theory or Practical Workbook, or your Study Guide.
- **Expand your knowledge:** Search for websites about the topics in this chapter and make a list of additional resources.
- **Study and prepare for your quiz:** Take the chapter test in your Exam Review or your Milady U: Online Licensing Prep.
- **Re-Test your knowledge:** Take the Chapter 8 Quizzes!
- **Learn even more:** Look up in a dictionary or search the internet for the definitions of any additional terms you want to learn about.

CHAPTER GLOSSARY

acne	p. 178	A skin disorder characterized by chronic inflammation of the sebaceous glands from retained secretions and bacteria known as propionibacterium acnes (<i>P. acnes</i>), the scientific term for acne bacteria.
albinism AL-bi-niz-em	p. 180	Congenital hypopigmentation, or absence of melanin pigment of the body, including the skin, hair, and eyes.
allergic contact dermatitis AL-urg-jic KAHN-takt der-mah-TIT-tis	p. 189	Abbreviated ACD; an allergy to an ingredient or a chemical, usually caused by repeated skin contact with the chemical.
anaerobic ann-air-ROH-bic	p. 184	Cannot survive in the presence of oxygen.
anhidrosis an-hih-DROH-sis	p. 178	Deficiency in perspiration or the inability to sweat, often a result of damage to autonomic nerves.
basal cell carcinoma BAY-zul SEL kar-sin-OH-mah	p. 182	Most common and least severe type of skin cancer; often characterized by light or pearly nodules.

bromhidrosis broh-mih-DROH-sis	p. 179	Foul-smelling perspiration, usually noticeable in the armpits or on the feet, which is generally caused by bacteria.
bullae BULL-uh, (plural: BULL-ay)	p. 174	Plural: bullae. A large blister containing a watery fluid; similar to a vesicle, but larger.
chloasma kloh-AZ-mah	p. 180	Also known as <i>mask of pregnancy</i> ; condition characterized by typically brown hyperpigmentation, generally on the face, which is not elevated.
cicatrix SIK-uh-triks	p. 177	Lightly raised mark on the skin formed after an injury or lesion of the skin has healed.
conjunctivitis kuhn-juhngk-tuh-VAHY-tis	p. 179	Also known as <i>pinkeye</i> ; infection of the eye(s) that may be caused by a bacteria or a virus; generally extremely contagious.
contact dermatitis KAHN-takt der-mah-TYT-is	p. 189	An inflammation of the skin caused by having contact with certain chemicals or substances; many of these substances are used in cosmetology.
crust kruhst	p. 176	Dead cells that form over a wound or blemish while it is healing; an accumulation of sebum and pus, sometimes mixed with epidermal material.
cyst SIST	p. 174	Closed, abnormally developed sac that contains fluid, pus, semifluid, or morbid matter above or below the skin.
dermatitis der-mah-TY-tis	p. 179	Inflammatory condition of the skin.
dyschromias dis-chrome-ee-uhs	p. 180	Abnormal colorations of the skin that accompany skin disorders and are symptoms of many systemic disorders.
eczema EG-zuh-muh	p. 179	An inflammatory, uncomfortable, and often chronic disease of the skin; characterized by moderate to severe inflammation, scaling, and sometimes severe itching.
excoriation ek-skor-ee-AY-shun	p. 176	Skin sore or abrasion produced by scratching or scraping.
extrinsic factors ex-TRIN-zic FAK-torz	p. 186	Primarily environmental factors that contribute to aging and the appearance of aging.
fissure FISH-ur	p. 176	A crack in the skin that penetrates the dermis. Examples are severely cracked and/or chapped hands or lips.
free radicals FREE RAD-ih-culs	p. 186	Unstable molecules that cause biochemical aging, especially wrinkling and sagging of the skin.
herpes simplex I HER-pee-z SIM-pleks	p. 179	Recurring viral infection that often presents as a fever blister or cold sore.
hyperhidrosis hy-per-hy-DROH-sis	p. 179	Excessive sweating, caused by heat or general body weakness.
hyperpigmentation hy-pur-pig-men-TAY-shun	p. 180	Darker than normal pigmentation, appearing as dark splotches.
hypertrophy hy-PUR-truh-fee	p. 181	Abnormal growth of the skin.

hypopigmentation hy-poh-pig-men-TAY-shun	p. 180	Absence of pigment, resulting in light or white splotches.
impetigo im-pet-EYE-go	p. 179	Contagious bacterial skin infection characterized by weeping lesions; usually caused by a staphylococcus bacteria.
intrinsic factors in-TRIN-zic FAK-torz	p. 185	Skin-aging factors over which we have little control.
irritant contact dermatitis IRH-ih-tent KAHN-takt der-mah-TIH-tus	p. 190	Abbreviated ICD. Occurs when irritating substances temporarily damage the epidermis.
keloid KEE-loyd	p. 176	Thick scar resulting from excessive growth of fibrous tissue.
keratoma kair-uh-TOH-mah	p. 181	Acquired, superficial, thickened patch of epidermis. A callus is a keratoma caused by continued, repeated pressure or friction on any part of the skin, especially the hands and feet.
lentigines len-TIJ-e-neeZ (singular: len-TY-goh)	p. 180	Singular: lentigo. Technical term for freckles—small yellow-colored to brown-colored spots on skin exposed to sunlight and air.
lesion LEE-zhun	p. 173	A mark on the skin; may indicate an injury or damage that changes the structure of tissues or organs.
leukoderma loo-koh-DUR-mah	p. 180	Skin disorder characterized by light, abnormal patches (hypopigmentation); caused by a burn, scar, inflammation, or congenital disease that destroys the pigment-producing cells.
macule MAK-yool	p. 174	Plural: maculae (MAK-yuh-ly). Flat spot or discoloration on the skin, such as a freckle or a red spot left after a pimple has healed.
malignant melanoma muh-LIG-nent mel-uh-NOH-mah	p. 182	Most serious form of skin cancer; often characterized by black or dark brown patches on the skin that may appear uneven in texture, jagged, or raised.
milia MIL-ee-uh	p. 178	Benign, keratin-filled cysts that can appear just under the epidermis and have no visible opening.
miliaria rubra mil-ee-AIR-ee-ah ROOB-rah	p. 179	Also known as <i>prickly heat</i> ; an acute inflammatory disorder of the sweat glands, characterized by the eruption of small, red vesicles and accompanied by burning, itching skin.
mole	p. 181	Small brownish spot or blemish on the skin, ranging in color from pale tan to brown or bluish black.
nevus NEE-vus	p. 180	Also known as <i>birthmark</i> ; a small or large malformation of the skin due to abnormal pigmentation or dilated capillaries.
nodule NOD-yool	p. 174	A solid bump larger than 0.4 inches (1 centimeter) that can be easily felt.
noncomedogenic non-com-EE-doh-JENN-ic	p. 185	Product that has been designed and proven not to clog the follicles.
primary lesions PRY-mayr-ee LEE-zhuns	p. 173	Lesions that are a different color than the color of the skin, and/or lesions that are raised above the surface of the skin.

psoriasis suh-RY-uh-sis	p. 180	Skin disease characterized by red patches covered with silver-white scales; usually found on the scalp, elbows, knees, chest, and lower back. It is rarely found on the face.
retention hyperkeratosis ree-TEN-shun HY-per-kera-toe-sis	p. 184	The hereditary tendency for acne-prone skin to retain dead cells in the follicle, forming an obstruction that clogs follicles and exacerbates inflammatory acne lesions such as papules and pustules.
rosacea roh-ZAY-shuh	p. 178	Chronic condition that appears primarily on the cheeks and nose, and is characterized by flushing (redness), telangiectasis (distended or dilated surface blood vessels), and, in some cases, the formation of papules and pustules.
scale skeyl	p. 176	Any thin, dry, or oily plate of epidermal flakes. An example is abnormal or excessive dandruff.
scar Skahr	p. 177	Also known as <i>cicatrix</i> ; a lightly raised mark on the skin formed after an injury or lesion of the skin has healed.
sebaceous cyst sih-BAY-shus SIST	p. 178	A large, protruding pocket-like lesion filled with sebum. Sebaceous cysts are frequently seen on the scalp and the back and may be surgically removed by a dermatologist.
seborrheic dermatitis seb-oh-REE-ick der-mah-TIE-tus	p. 178	Skin condition caused by an inflammation of the sebaceous glands. It is often characterized by redness, dry or oily scaling, crusting, and/or itchiness.
secondary skin lesions SEK-un-deh-ree SKIN LEE-uhns	p. 175	Characterized by piles of material on the skin surface, such as a crust or scab, or depressions in the skin surface, such as an ulcer.
sensitization sen-sih-TIZ-aye-shun	p. 189	Allergic reaction created by repeated exposure to a chemical or a substance.
skin tag	p. 181	A small brown-colored or flesh-colored outgrowth of the skin.
squamous cell carcinoma SKWAY-mus SEL kar-sin-OH-mah	p. 182	Type of skin cancer more serious than basal cell carcinoma; often characterized by scaly red papules or nodules.
stain	p. 180	Abnormal brown-colored or wine-colored skin discoloration with a circular and/or irregular shape.
tan	p. 181	Change in pigmentation of skin caused by exposure to the sun or ultraviolet light.
telangiectasis tee-lang-jek-tay-shuhz	p. 178	Distended or dilated surface blood vessels.
tubercle TOO-bur-kul	p. 174	Abnormal, rounded, solid lump above, within, or under the skin; larger than a papule.
tumor TOO-mur	p. 175	An abnormal mass varying in size, shape, and color.
ulcer UL-sur	p. 177	Open lesion on the skin or mucous membrane of the body; accompanied by pus and loss of skin depth and possibly weeping fluids or pus.

verruca vuh-ROO-kuh	p. 181	Also known as <i>wart</i> ; hypertrophy of the papillae and epidermis.
vesicle VES-ih-kel	p. 175	Small blister or sac containing clear fluid, lying within or just beneath the epidermis.
vitiligo vi-til-EYE-goh	p. 181	Hereditary condition that causes hypopigmented spots and splotches on the skin that often appear milky white.
wheal WHEEL	p. 175	Itchy, swollen lesion that lasts only a few hours; caused by a blow or scratch, the bite of an insect, urticaria (skin allergy), or the sting of a nettle. Examples include hives and mosquito bites.