

Appendix 1

A Guide to Common Dermatologic Procedures

Dermatology is a field that lends itself well to intervention, usually in the office. Aside from rashes and other conditions that are easy to diagnose by looking no further than the surface of the skin or the history that you provide, there are many situations in the care and health of your skin where different procedures may be helpful or required.

I am a firm believer that *an informed person makes the best patient*. I routinely see people relax, their blood pressure drop, and their mood change once they have a better understanding of the procedure they are having or are about to have. So in the interest of preparing you for what to expect, here are some brief descriptions of how we do things in the dermatology field.

▪ BIOPSIES

SHAVE BIOPSY

The most commonly performed type of biopsy for skin lesions is called a shave biopsy. This method is used to diagnose growths that lie in the top surface of skin (the epidermis) and are usually sticking up above the surrounding skin surface. For this procedure, a local

anesthetic, typically lidocaine, is used to numb the area.

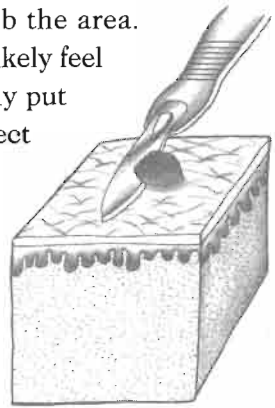
As the tip of the needle is introduced you'll likely feel a sting. After that, the doctor or nurse will slowly put in enough medication to numb the skin. The effect is usually quite rapid, and people are often surprised at how quickly it works. Some people may require a little more waiting or a higher percent of anesthesia than others.

Some patients are sensitive to the epinephrine that is added to the lidocaine to control bleeding and keep the anesthetic in the biopsy site longer. If you get palpitations or otherwise know you have trouble with local anesthetics, be sure to tell your doctor directly.

New topical anesthetic creams (EMLA, ELA-Max, and Topicaine) may help to reduce the pain of injection or avoid the need for a needle if the growth is superficial.

A shave biopsy may be performed by the deft use of a scalpel. However, it is also common to use one side of a sterilized double-edge razor. The razor, honed to approximately one-millionth of an inch at the edge, is of great aid in the hands of an experienced dermatologist.

There will be a small amount of oozing after the biopsy, and the doctor will usually apply a liquid that will stop the bleeding. This usually contains aluminum chloride, the active ingredient in a styptic pen. For approximately one week following biopsy, you need to keep the area moist with a topical antibiotic ointment or petroleum jelly. The area typically heals quite well. Don't let a scab form, since that may delay final healing and result in a worse cosmetic result. Remember that after any biopsy the skin may stay red for some time, even after healing of the surface has finished. This will resolve itself with time, but it may take many months.



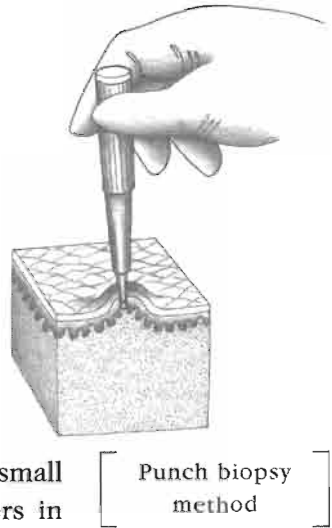
Shave Biopsy

All types of skin growths can be sampled in this easy method, which is performed with local anesthesia.

PUNCH BIOPSY

When a dermatologic condition appears deeper in the skin than just the accessible top layer, such as a rash, the cells that we need to see under the microscope are typically in the dermis, or middle layer of the skin. In this case, a punch biopsy is performed.

A punch is simply a small, round, cookie cutter–like instrument that can core out a small piece of skin. This piece is typically smaller in diameter than a pencil eraser. The area is anesthetized with lidocaine. The skin is stretched around the area so that after inserting the circular punch and removing a small piece of skin, the skin will relax into an oval instead of a circle. This oval is then typically closed with one or two stitches; these are removed one to two weeks later or, if reasonable, allowed to heal on its own. A wound the size of a pencil eraser will heal up into a small white or flesh colored scar about 2 millimeters in diameter.



SNIP BIOPSY

A snip biopsy is often performed on growths that have narrow bases and wide tops. This is commonly seen with skin tags, which hang in the armpits or around the eyes, or some warts. In this instance, it is often possible to take a pair of sharp scissors and snip off the lesion without the need for anesthetic. Do not try this yourself!

EXCISIONAL BIOPSY

In an excisional biopsy, a scalpel is used to cut out a full-thickness piece of skin for examination. This is a specimen that extends from the epidermis down to the fat and is shaped like a small football. This procedure is commonly done when the disease process is presumed to extend or be situated in the deep fat. It may also be done when a growth is highly suspected of being a melanoma.

This biopsy method is performed in the same way as any excision. The area is numbed, the design marked, and the area draped with sterile towels after cleansing. After the specimen is removed and set aside to be sent to pathology, preparation begins to close the wound. In order to make sure no puckers of skin result at either edge of the wound, the excess cone of skin at either end is removed. Very often, people are surprised at how long a suture line is after a small growth is removed. The extra wound length

results from removal of these puckers. In general, a scar will be about three times the diameter of the specimen that was removed.

Once the excision is made, the wound is stitched either with a combination of dissolving deep sutures and superficial sutures, or dissolving sutures alone. If used, the superficial stitches are usually removed five to seven days later.

After that the skin is well on its way to healing. Infection of facial skin is rare, as is bleeding, but if the site should become hot, red, or painful after surgery call your doctor.

▪ SCRAPING AND BURNING

This is an indelicate way to refer to the common procedure of electrodesiccation and curettage, employed to remove superficial benign and malignant tumors of the skin. This effective method is often used for benign lesions, such as warts and seborrheic keratoses, or for certain types of basal cell and squamous cell cancers. In this technique, the skin is anesthetized as for a shave or punch biopsy. Then a sharp, round-ended instrument known as a curette is used to scrape the surface of the lesion. The cells within these benign and malignant tumors do not attach effectively to the normal skin surrounding them; therefore the curette will easily remove the abnormal cells while leaving the normal skin intact. The treated area usually oozes a small amount of blood, and the bleeding is stopped with cauterization by a small electric needle.

After an electric needle is passed over the skin and stops the bleeding, a second or third round of curetting may be done to treat small basal and squamous cell cancers. There are, however, many cases of basal cell and squamous cell cancer for which electrodesiccation and curettage is not appropriate; your dermatologist will know when this procedure should or should not be done. Depending on the depth of curettage, healing will take anywhere from one to four or more weeks. The area is kept moist with an ointment and washed daily in the shower. The resulting appearance will range from near normal skin (if the curettage was superficial) to a smooth white scar (if the curettage went relatively deep into the dermis).

▪ CRYOSURGERY

Cryosurgery refers to the application of cold to destroy certain lesions on the skin. The most common agent used in dermatology is liquid nitro-

gen, which forms at -196.8 degrees Celsius (-320 degrees Fahrenheit). The application of this incredibly cold liquid is very useful in the practice of dermatology. We most commonly use it to eliminate superficial scaly lesions such as warts, seborrheic keratoses, and the precancerous actinic keratoses. Cryosurgery also helps to remove age spots that form as a result of years of exposure to the sun.

The liquid nitrogen may be applied through a spray apparatus under pressure or on the end of a cotton-tipped applicator. No anesthesia is required for this procedure. For example, a small actinic keratosis on the face would merely be sprayed with liquid nitrogen for several seconds. A small “iceball” would form, the area turning bright white. This fades within a matter of seconds, and the area becomes red and slightly swollen. The scaly keratosis typically peels off within one to two weeks, and the underlying area heals smoothly. Possible side effects of liquid nitrogen therapy include scarring, if the physician sprays an area too hard, and a lighter color of pigmentation. The latter is especially notable in patients with very dark skin, because the pigment-producing melanocytes are the cells most sensitive to damage by cold.

In the past, physicians used to perform what were called “cryopeels” in which dry ice (solid carbon dioxide) was dipped into acetone and spread over the face to cause a superficial chemical peel. This was once used for the treatment of acne but is very uncommon today.

▪ ACNE SURGERY

To extract the common lesions of acne in a physician’s office, a special instrument known as a comedone extractor (*comedone* is the medical term for blackheads) is used. One at a time, the contents of the blackheads and whiteheads—a combination of dead skin, skin oils, and bacteria—are extracted. For the whiteheads, we sometimes have to make a small prick in the top of the whitehead, but this should cause no discomfort.

The same procedure is also used to remove *milia*, which are merely very tiny cysts that look like smooth white pearls. They commonly occur under the eyes or in areas where a scar has occurred, as after laser resurfacing. It is a safe procedure and can be done by virtually any dermatologist. Facialists, also called aestheticians, also remove whiteheads and blackheads in some states.

▪ INJECTION OF MEDICATION INTO THE SKIN

It is often helpful to inject corticosteroid medication directly into a skin lesion. The most common form of the medication injected is triamcinolone acetonide. The triamcinolone has many anti-inflammatory properties that are of great benefit in certain skin conditions. It is used to treat keloids (tumors of scar tissue), prurigo nodularis (nodules that can occur in some people from repeated scratching), alopecia areata (a form of hair loss due to immune system overactivity), and other slightly raised scars that are not yet flat.

Intralesional steroid injection is also helpful for some of those acutely inflamed tender cysts that may appear on the face during an acne flare. In this case, I prefer a very low concentration. This low concentration is still enough to get rid of the nodule or cyst, but will help prevent the risk of skin thinning or indentation of the skin that could be permanent.

▪ QUICK TESTS FOR FAST ANSWERS

Occasionally we want to determine whether or not there is blood present in a certain skin lesion. In a procedure called diascopy, we press a glass slide against the growth. If the redness in the area goes away, it means all the redness was within blood vessels. If the redness remains, it means that a small amount of blood has leaked into the skin.

The dermatologist may perform certain microscopic procedures in the office. If a fungal infection is suspected, a KOH preparation can be done. To perform this, a scaly area on the skin is moistened with an alcohol pad, then a scalpel blade or microscope slide is scraped across the skin sideways and the scaly skin is scraped onto a microscope slide. While you wait, the slide is treated with a certain liquid that highlights the fungus under the microscope to confirm the diagnosis.

Viral infections, such as those that cause cold sores or the kind that cause chicken pox or shingles, may be confirmed by poking open one of the blisters and taking some of the skin cells from the base of the blister to study under the microscope. This is called a Tzanck smear.

Appendix 2

Glossary of Dermatologic Terms

ablation The process by which tissue is surgically destroyed, as in removing a wart or other benign skin growth.

abrasion The loss of surface skin tissue (epidermis) due mainly to scrapes.

acne An inflammatory disease involving the hair follicles and sebaceous glands and causing a variety of skin eruptions or pimples, usually on the face, neck, shoulders, and/or upper back; the most common variety is called acne vulgaris.

actinic Related to the sun.

actinic keratosis Pink or red raised and rough papules that arise in groups or alone on sun-damaged skin; pre-cancerous.

acupuncture A traditional form of Chinese medicine or medical therapy and anesthesia, using fine needles to puncture the skin at specific acupressure points along the meridians of the body.

adrenal glands Glands that secrete hormones such as cortisol. There are two adrenal glands. One sits above each kidney.

albinism An inherited genetic condition in which an individual is unable to form melanin, the pigment that gives skin its color, resulting in unpigmented skin, hair, and eyes.

allergic reaction A hypersensitive reaction in which histamine is released from mast cells, causing inflammation, redness, hives, and in severe cases, breathing problems.

alopecia areata A disease characterized by the appearance of well-defined, round, or oval bald patches on the head and on other parts of the body. The condition usually reverses itself but may require treatment.

alopecia totalis A condition that involves the loss of all scalp hair.

anagen The growth phase of the hair growth cycle.

androgenetic or male pattern alopecia A common form of baldness in men, beginning in the forehead area and spreading gradually until a fringe of hair remains at the temples and around the back of the head. A similar hair loss pattern may develop in women after menopause.

arrector pili The muscle attached to the hair follicle, which allows the hair to respond to fluctuations in temperature and other stimuli via contraction or expansion; causes goose bumps.

arteriovenous anastomosis A connection between an artery and a vein, either because of a congenital anomaly or because of a surgically produced link between vessels that allows blood to bypass a capillary bed.

autograft The surgical transplantation of tissue from one part of the body to another part of the body on the same individual, as in hair transplantation.

axillary Of or relating to the armpit, or axilla, the pyramid-shaped space forming the underside of the shoulder where the upper arm joins the chest.

bacillus Any spore-producing, rod-shaped strain of bacteria in the family Bacillaceae.

basal cell cancer A malignant growth of cancerous cells that may erode, crust, or bleed and that can penetrate the deeper layers of the skin (a.k.a. basal cell carcinoma); destructive locally but does not metastasize or travel in the bloodstream.

basal When pertaining to the skin, the deepest layer of the epidermis (a.k.a. the stratum basale).

benzoyl peroxide An agent found in common acne medications.

biopsy A surgical procedure that involves the removal of a small amount of body tissue, which is then examined to determine or establish a medical diagnosis and/or estimate a prognosis.

blanche To make pale by applying pressure.

bubo The origin of the name bubonic plague. A bubo (buboes, plural) is an inflamed and enlarged lymph node that appears in the axilla (armpit) or groin region. In addition to bubonic plague, it may also indicate such diseases as chancroid or syphilis.

bullae A blister filled with fluid. A bulla is a large vesicle.

carcinogen Any substance that causes cancer.

clindamycin hydrochloride An antibiotic frequently used as a topical gel for the treatment of acne.

collagen A vital protein consisting of tiny interwoven fibers. In skin, collagen constitutes most of the dermis and gives this second layer of the skin its strength. Other types of collagen make up tendons, ligaments, and skin.

comedone A hair follicle that has been clogged with dried sebaceous and keratinous material.

condylomata acuminata An infectious wart caused by the human papilloma virus and found in genital areas.

connective tissue The connective tissue supports and binds other body tissue and body parts together. It is composed largely of collagen.

contact dermatitis A skin rash resulting from an allergic compound to which an individual has been exposed. Poison ivy or poison sumac are classic examples of contact dermatitis.

corpuscle Usually refers to a red or white blood cell.

cortex The term is used to refer to the outer layer of any body organ or any other structure. We usually associate it with the brain, but in matters

of skin and hair, it refers to the middle layer of the hair shaft, which is housed between the medulla and the cuticle, the inner and outer layers of the hair shaft.

corticosteroid Any of the natural or synthetic hormones produced in the adrenal cortex, which can be used to control inflammation. Used very commonly as a medication in dermatology.

corynebacterium acnes Bacterium of the skin found in acne lesions.

cosmetics Any product applied to the skin for purposes of beautification.

cosmetic surgery The alteration of skin or underlying tissue for purposes of beautification.

cutaneous Of or pertaining to the skin.

cuticle The thin edge of tissue at the base of a nail; also the sheath of a hair follicle.

cutis The skin.

cystic acne A severe form of acne distinguished by large cysts and eventual scarring.

demodex folliculorum A mite that lives in the hair follicles of the face and nose.

dermabrasion A treatment to remove scars or wrinkles with diamond fraize, revolving wire brushes, or sandpaper; largely supplanted by newer technology such as laser.

dermal Pertaining to the second layer of the skin.

dermatitis An inflammatory skin condition that is manifested by redness, irritation, and even blisters. Dermatitis may result from an allergen, disease, or infection.

dermatoglyphics The ridge patterns on the fingers, palms of the hands, toes, and soles of the feet. The patterns are used for purposes of identification and have some diagnostic value because certain patterns are associated with chromosomal disorders.

dermatologist A medical doctor who specializes in skin disorders.

dermatology The study of the anatomy, physiology, and pathology of the skin, as well as the diagnosis and treatment of skin disorders.

dermis The second layer of the skin, found right beneath the epidermis. It contains blood and lymphatic vessels, hair follicles, nerves, and glands.

eccrine glands Sweat glands that help regulate body temperature by secreting water to the skin's surface which then evaporates.

eschar Crusted dead skin produced at the site of injury to the skin.

eczema A skin inflammation that causes itching, scales, and redness.

epidermis The outer or surface layer of the skin.

erythroderma Abnormal redness of the skin.

erythromycin An antibiotic used frequently when a person is allergic to penicillin.

eumelanin A form of melanin that produces a brown or black color in the skin, hair, and eyes.

fibroblast A flat, elongated cell within the dermis that produces collagen fibers and contributes to the formation of the dermis and scar tissue.

fibroma A benign tumor made of fibrous connective tissue.

flat warts Multiple warts (occurring in groups of up to 100) found on the face, neck, backs of the hands, forearms, and knees. They are flat and flesh colored and are more common in children.

flexural psoriasis Psoriasis occurring over the joints.

frostbite Frozen skin and underlying tissues due to extremely low temperatures. In severe cases, tissue damage can be permanent.

granulomatous A term used to describe inflamed skin tissue (usually red and grainy in appearance) that often accompanies certain infection.

guttate psoriasis A form of psoriasis characterized by small, distinct "teardrop" patches of red, scaly skin.

hair follicle The structure that produces a hair.

herpes simplex infection A skin infection caused by the herpes simplex virus. The type I herpes virus is usually associated with outbreaks of cold sores on the lips and around the mouth area. The type II virus is associated with genital herpes. All outbreaks are characterized by small clusters of blisters.

hyperpigmentation Pigmentation producing darker than usual skin.

hypertrichosis Excessive hair growth.

hypertrophic scarring Scarring caused by the excessive formation of new tissue during wound healing. Hypertrophic scars are hard and raised; different from keloids, which are actual tumors of scar tissue.

impetigo A contagious skin infection caused by staphylococcal bacteria, exhibiting small pustules that can cluster quickly into large blisters.

integument The skin.

keloid A tumor of scar tissue at the site of a wound or a surgical incision.

keratin A protein that is the prominent constituent of the skin, hair, and nails.

Langerhans cell A cell in the epidermis that mediates immune function in the skin, helping to direct the removal or destruction of germs and other foreign substances that penetrate the surface of the skin.

lentigo Flat, tan, or brown spot on the skin that results from stimulation of pigmentation by the sun.

lesion Used in dermatology to refer to a wound, sore, blister, or other form of tissue damage caused by injury or disease.

lunula The small, pale crescent at the root of the nail.

macule A flat spot on the skin; may range from white to dark brown or even black.

medulla When used in dermatology, the central core of a strand of hair.

Meissner's corpuscles The egg-shaped nerve receptors located between the dermis and epidermis that inform the brain precisely where the skin is being touched.

melanin The dark pigment of the hair, skin, and eyes.

melanocyte A cell that synthesizes melanin.

minoxidil A vasodilating drug that was originally developed to treat high blood pressure but also causes hair growth in cases of male pattern baldness. The brand name is Rogaine.

mites Tiny, eight-legged members (including ticks) of the Acarina family that suck blood from animals and humans.

nevus Same as mole; a pigmented lesion that may be smooth or rough, raised or flat, regularly shaped or irregularly shaped, colored or absent of color. Normal moles do not require attention; see your dermatologist promptly if you notice a change in a mole.

PABA Abbreviation for para-aminobenzoic acid, a compound in some sunscreen products which absorbs ultraviolet radiation, preventing damage to the skin. Notable because many people are allergic to this chemical and should avoid it.

pacinian corpuscles Quick-acting, onion-shaped nerve receptors in the dermis that provide instantaneous information about movement.

papillary layer The upper layer of the dermis, where the dermis meets the epidermis and exhibits papillae, the microscopic protrusions that reach into the epidermis.

phaeomelanin A form of melanin responsible for red hair.

pigment A natural or fabricated substance that gives color to the skin.

pilar Having to do with the hair.

pityriasis A common skin condition usually found on the face and characterized by small, flat lesions resembling scaly dandruff.

pityrosporum ovale A yeastlike fungus that normally lives in the skin of the face and scalp.

plantar wart A wart located on the sole of the foot. It is caused by the common wart virus.

prurigo General term for itching skin conditions.

psoriasis A chronic, inheritable skin disorder characterized by red patches covered by thick, dry, silvery scales. These patches usually appear on the scalp, elbows, and knees. Ears and genitalia may also be affected.

purpura Bruising; results from any hemorrhage of skin.

Raynaud's syndrome Intermittent episodes of vasoconstriction in the extremities causing blanching in the fingertips or toes, sometimes followed by blue or red discoloration.

ringworm A skin infection caused by fungi and resulting in circular, itchy, and scaling patches on the skin (a.k.a. tinea).

rubella A short-lived, highly contagious viral infection that causes a skin rash similar to that of measles. It is most dangerous to pregnant women (a.k.a. German measles).

rubeola The medical term for measles, a viral condition causing red eruptions all over the skin. The rash is often accompanied by fever and swelling of the mucous membranes.

scabies A contagious disease caused by *Sarcoptes scabiei*, the itch mite. It is characterized by an itchy, irritating rash caused when the female mites burrow into the outer layers of the skin to lay their eggs. Secondary bacterial infections may also occur after the first infection.

scleroderma Autoimmune disease affecting the connective tissue and the blood vessels that causes the thickening and hardening of the connective tissue of the skin and other organs.

sclerosis Hardening (of the skin).

sebaceous glands Located in the dermis throughout the body, these glands are especially abundant in the scalp, face, mouth, internal ear, and anus. There is a single duct in each gland that opens onto the surface of the skin through which sebum is secreted in the oils of the gland. Sebum can be responsible for clogging pores and resultant outbreaks of acne.

seborrhea Excess sebum (oil) production by the skin.

subcutis The fatty layer of skin beneath the dermis.

systemic Refers to medications taken orally or through injection so that they affect the entire body. The term also applies to illnesses that affect the entire body.

terminal hair Visible pigmented hair, such as the hair that grows from the scalp; also called mature hair.

telangiectasia Small, dilated blood vessels usually seen on the face; also known as broken blood vessels.

topical medication Drugs applied to the skin's surface.

urticaria Hives or raised white or red patches of skin.

varicella A contagious disease of childhood (a.k.a. chicken pox) caused by the varicella-zoster virus resulting in red, itchy, pimple-like eruptions on the skin accompanied by fever. The same virus also causes shingles. Many pediatricians now recommend children receive the chicken pox immunization.

vellus The lightly pigmented, almost invisible hair that covers the fetus (a.k.a. lanugo).

verruca A wart.

vesicle A blister less than 1 centimeter in diameter.

vitiligo White patches on the skin caused by the absence of melanocytes.

xerosis Dry skin.

Yersinia pestis The species of bacteria responsible for bubonic plague.

Zostrix An ointment used to ease the pain of shingles. All blisters must have disappeared before the ointment can be used. The active ingredient in Zostrix is capsaicin, which is derived from the same red peppers used to make chili powder.

Zyderm The brand name for injectable bovine collagen used to improve the appearance of fine lines, wrinkles, lips.

Appendix 3

Skin Emergencies

With all that the environment sends to bombard our skin, it's amazing we aren't bothered more frequently by injuries of one kind or another. With just a little information, you'll be able to determine what is a real emergency and which problem will get better on its own. No one wants to sit in an emergency room for hours on end unless absolutely necessary.

▪ BRUISES AND ABRASIONS

Bruises (or contusions) are caused by blows that do not break the skin. The blow breaks the blood vessels in and beneath the skin, however, which causes the bruising. Most bruises require no medical treatment and disappear within a day or two of the injury, though severe bruises can cause pain and might warrant medical attention.

Frequent or prolonged bruising should alert you to see your doctor. Problems with your blood such as abnormal platelets or clotting factors can be responsible. Many older patients take blood thinners such as Coumadin to prevent stroke or heart attack, and increased bruising can happen in this situation because of the decreased blood clotting.

To alleviate pain and reduce swelling, an ice pack wrapped in a thin, soft cloth may be applied to the area. Ice and ice packs should never be applied directly to the skin. Alternatively, a package of frozen vegetables, such as peas, which is soft and can mold to the bruised site is helpful.

If a blow or blows and the resultant bruise(s) seem particularly severe, internal bleeding may have occurred. If you think there is a possibility of internal bleeding, especially when the bruise is over your flank or abdomen and the trauma is substantial, seek medical attention immediately. If numbness or lack of function result, check it out quickly, because a severe blow may cause a broken bone as well.

Spontaneous bruising with no apparent cause may be indicative of a serious illness. If you notice bruises on your skin and can't remember a bump, bang, or blow causing them, you should contact your doctor. (See chapter 27, "Your Skin is a Window to Your Health.")

Abrasions occur when the skin has been scraped. They may or may not bleed. Often a welt may appear where the skin was scraped, or a burning sensation may accompany the abrasion.

Abrasions should be washed with tepid tap water and gentle soap. Sand, dirt, or any small particles should be removed from the scrape. You should then apply an antibiotic ointment. In general the skin defends itself well against invaders. The advantage of using topical antibiotics is that the ointment base helps stimulate regrowth of the epidermis, which has been sheared off. Finally, bandage the area with a nonstick dressing. This is preferable to a piece of gauze since the fibers may stick to the wound.

If heavy bleeding accompanies a severe scrape, it should be treated as a puncture wound. (See "Cuts and Wounds," p. 379).

▪ BURNS

Regardless of the emotional implications of an old cliché, it's certainly true that no one gets through life without getting literally burned. From that hot pot on the stove to scalding water out of the tap or the chemical we used without remembering to don protective gloves, potential burn sources lurk everywhere in our environment. And of course the sun, which nourishes life, can be a burn danger to our skin.

There are three levels of burns: first degree (confined to the epidermis), second degree (involving the dermis), and third degree, in which the

complete skin layers have been damaged. The latter situation is actually painless because the nerves in the skin have been destroyed. The first two degrees can be quite painful since the nerve endings reside just where the thermal injury has occurred.

Symptoms of burns include swelling, redness, pain, and peeling skin. In the case of second-degree burns, blistering may occur. If third-degree burning has occurred, the skin may turn white. It may also become blackened and charred.

MINOR BURNS

If the skin on a minor burn has not been broken, let cool water run over the area or immerse it in cool water for about five minutes. While doing so remain calm. Next apply a bland emollient cream such as Eucerin or an ointment such as Aquaphor. Aloe vera gel may be soothing but it's best to use a thicker ointment. If the skin is broken, consult your doctor regarding how to avoid infection.

A sterile dressing, one that does not apply pressure, should be applied to the burn. This dressing should be changed frequently, checking the burn for swelling and infection as you do so. An over-the-counter analgesic may be used for pain.

Although you could probably manage small second-degree burns at home, I recommend seeing a doctor if you think you have a burn that is more than first degree.

MAJOR BURNS

If you believe a burn is major (second or third degree), covering a large surface area, check the person's airway and call EMS immediately. Keep the patient as calm as possible while waiting and check breathing and circulation frequently. Remove restrictive clothing and jewelry. If any fabric is stuck to the burned area, cut it away with a scissors to avoid tearing away burned skin. Watch for signs of shock. These include cold, clammy, or bluish skin, dizziness, rapid heartbeat, and a dazed expression. Cover the person with a blanket to avoid chills.

All third-degree burns should be treated by a doctor on an emergency basis.

CHEMICAL BURNS

Chemical burns can be caused by either acidic or alkaline chemicals. Symptoms of chemical burns are similar to those for heat burns and include swelling, redness, and sometimes blistering and peeling.

Thorough washing with clean tap water is the immediate treatment recommended for acidic chemical burns. Alkaline burns should be kept dry initially, as moisture can cause further burning. Instead, brush the area with a cloth (not your hand). Remove all clothing that may contain traces of the chemical. Once the chemical has been brushed away from the area, water may be applied in the same manner as for acidic burns.

In either case the area should be washed with cool tap water for about a half an hour. If a burning sensation still remains in the area, continue to flood the burn with water. EMS should be called if the burn is extensive or if the patient is in shock. If the person has inhaled the chemical, EMS should be called immediately.

ELECTRICAL BURNS

Since the body is mainly water and water conducts electricity, even the smallest amounts of electrical current can cause electric burns. Most of the damage caused by an electrical burn affects tissues beneath the surface of the skin. Don't let an electrical burn that looks insignificant fool you. It could be serious. Electrical burns should be treated in the same way heat burns are treated, but in all cases, consult a doctor since internal injury is always a possibility with an electrical burn. The most severe electrical burn causes electrocution, which can cause cardiac and respiratory arrest. If you suspect someone has been electrocuted and think he or she may still be in contact with the electrical current, *do not touch the person*—call EMS immediately.

▪ CUTS AND WOUNDS

As great a defender as our skin is, there are those sharp objects for which it is no match—from the prick of a thorn to a knife wound, the skin can be punctured. A puncture wound may be either penetrating or perforating.

A puncture wound perforates the skin. These are small perforating wounds from common household objects that barely penetrate the surface

STAUNCHING THE FLOW

Bleeding is an impressive phenomenon. There always appears to be more blood at a skin injury than there is. Fortunately, the healthy body is designed to stop bleeding with a range of strategies: blood vessels constrict, platelets plug up holes, and the clotting cascade just rolls on.

In some cases it helps to slow or stop bleeding until help can be obtained. Because so many people are on aspirin now for its cardiac benefits, we all ooze a little more. Aspirin's effect lasts for ten days while that of non-aspirin painkillers like Advil last only about three hours.

There is little superficial bleeding that cannot be stopped with firm pressure. Follow these steps:

1. After identifying the *exact* source of bleeding, apply pressure to the bleeding area firmly but not so pain is caused.
2. Hold pressure for *ten minutes by the clock*. Most people vastly underestimate what ten minutes is, especially when they are eager to look and see if they've stopped the bleeding. Distract yourself by counting the seconds along with the clock but don't take pressure off before it's time.

of the skin. Then there are bigger puncture wounds, such as those that result from bullets. Those perforating wounds bleed internally as well as externally. Items that cause perforating wounds of the skin include knives, bullets, nails, shattered glass, wood splinters, staples, and straight pins.

When dealing with a puncture wound, first stop the bleeding. You can do this by using a clean pad to apply pressure to the wound. Then secure a bandage with a dressing that's fixed with a strong knot. Do not apply a tourniquet unless you can't control the bleeding by other means. Use tourniquets very cautiously in diabetics.

When the object that caused a penetrating puncture wound remains in the wound, leave it there. In other words, if someone steps on a nail, your efforts to remove the nail may make the situation worse. Instead, take the person to an emergency room and have a medical professional do the job right. In addition, it may be advisable to have a tetanus shot after a penetrating puncture wound. Your doctor will advise you as to whether this precaution is necessary.

Appendix 4

Selective Guide to Skin Care Products

Because of our interest in skin health and looking younger, there are thousands of products on the market worldwide devoted to helping us maintain our skin in the best condition possible. Some of these products are medications that are available only by prescription; others are creams, lotions, cleansers, and oils that assist us in our daily skin care. This list is not a comprehensive review of these products. It is not possible to list here all the products that are of excellent quality which help maintain your skin in good health.

For details about medications mentioned in this book but not listed here, see the *Physicians Desk Reference*. The products listed represent some of the products my colleagues and I use in practice. This does not mean that many other excellent products are not available, only that most dermatologists settle on one or two in each class and become comfortable using them. Note that when it comes to cosmetics, any of the brand-name products are of the highest quality and undergo rigorous testing.

Class	Examples	Comments
Acne	Topical: Neutrogena Oil-Absorbing Acne Mask	Good for maintenance, not for acute acne flare.
	Clearasil Adult Care Cream	Active ingredient is sulfur, resorcinol.
	Adapalene*	Retinoid-type compound.
	Benzoyl peroxide*	Alone as 5% gel or in combination with topical erythromycin, this is an effective anti-acne medication.
	Tretinoin*(Retin-A, Renova, Retin-A Micro)	Available in range of concentrations; effective as topical gel or cream for acne and decreasing facial lines and wrinkles due to sun damage.
Bleaching agents	Lustra* Solaquin Forte*	Hydroquinone 4%; compound can be irritating—do a skin test on your forearm before using on face
Cleansers	Basis Facial Cleanser Eucerin Bar Neutrogena Cleansing Bar	Wash your face once a day.
	Nonsoap cleansers: Liquid Neutrogena Facial Cleansing Formula Aquanil Lotion Cetaphil	Excellent for daily facial cleansing.
Corticosteroids* (These differ in strength as topical medications. One example from each group is given.)	Super-potent: Temovate cream Diprolene ointment Psorcon ointment	Do not use on face; for limited use only.
	Potent: Topicort cream	
	Medium-potent: Cutivate	As directed by your physician.

*denotes prescription item

Class	Examples	Comments
Cosmetics	Mild: Aclovene cream	May be used for prolonged periods and on the face
	Mild, over-the-counter: Hydrocortisone cream 1%	Excellent to have handy for mild irritations of the skin; if no response after a few days of use, call your dermatologist.
	Foundations: <i>Oily skin:</i> Oil-control makeup (Almay) <i>Normal skin:</i> Extra Protection Liquid Makeup (Almay) Active Protection Makeup (Max Factor) <i>Dry skin:</i> All-In-One Makeup (Coty)	Avoid these ingredients that can cause pimples (comedogenic): linseed oil, oleic acid, butyl stearate, isopropyl myristate, cocoa butter, olive oil, sesame oil, peanut oil. Where possible select makeup that has sunscreen in it.
	Foundation for Skin Irregularities: Soft Finish Compact Makeup (Estee Lauder) Workout Makeup (Clinique)	
	Opaque Cover Cosmetics: Dermablend (Dermablend) Covermark (Lydia O'Leary)	To cover irregularities in pigmentation.
Herpes	Topical: Denavir*	Topical must be applied at first sign of cold sore outbreak.
	Oral: Famvir* Valtrex*	Oral medication may be used for prevention in severe, chronic situations.
Moisturizers and Emollients	Neutrogena Rainbath Moisture Rich Shower and Bath Gel Nivea Moisturizing Bath and Body Oil	It is best to moisturize the skin while it is still moist from a shower or bath; this helps lock in the moisture your skin needs that might otherwise evaporate off.

*denotes prescription item

Class	Examples	Comments
Moisturizers and Emollients	Products containing 20% urea or alpha-hydroxy acid—too numerous to list	Many brands available; excellent compounds.
	Acid Mantle Skin Acidifier (Doak)	For slightly irritated skin.
	AmLactin 12% LacHydrin 12%*	Contains lactic acid, a very effective moisturizer; may sting at first.
	Complex 15 Eucerin Cream	Excellent routine moisturizers; as with all creams, do not apply in excess.
Self-Tanning	Clarins products Clinique products Estee Lauder products Melasyn	All of these are patient recommendations.
Sun protection	Choose between sunSCREEN and sunBLOCK	Look for SPF greater than 15; broad spectrum rating—protects against UVA and UVB rays; waterproof. Apply every two hours
	Sunscreen See page 99	Avoid products with para-aminobenzoic acid (PABA)
	Sunblock Neutrogena Chemical Free See also page 99	Usually contains micronized titanium dioxide or similar compounds that reflect the sun's rays off the skin.
	Protective clothing: Sun Precautions 1-800-882-7860 www.sunprecautions.com http://www.sunprotectiveclothing.com/ http://www.solareclipse.com/	1-800-353-8778 1-800-878-9600

*denotes prescription item

Appendix 5

Patient Support and Skin Disease Organizations

This list provides the names, addresses, and contact information for some organizations devoted to common and more specific skin problems. Some organizations are committed to research in particular areas, others represent patient advocacy groups. Still others are, or include, patient and family support groups.

Condition or Disease	Organization	Comments
General information about skin disease; dermatologist referral	American Academy of Dermatology 980 North Meacham Road Schaumburg, IL 60173-4965 847-330-0230; Fax 847-330-0050 www.aad.org	National organization to which most board-certified dermatologists in the country, and many in the world, belong
AIDS	American Foundation—AIDS 120 Wall Street, 13th Floor New York, NY 10005-3902 212-806-1600	Premier private sponsors of AIDS research and support
AIDS in children	Pediatric AIDS Foundation 1311 Colorado Avenue Santa Monica, CA 90404 310-395-9051; Fax 310-314-1469	

Condition or Disease	Organization	Comments
Albinism and Hypopigmentation	National Organization for Albinism and Hypopigmentation 1530 Locust Street, # 29 Philadelphia, PA 19102-4415 215-545-2322 or 800-473-2310 e-mail: noah@albinism.org www.albinism.org	Information and patient support
Alopecia areata	National Alopecia Areata Foundation P.O. Box 150760 San Rafael, CA 94915-0760 415-456-4644 Fax 415-456-4274 e-mail: naaf@compuserve.com www.naaf.org	Excellent literature
Behçet's syndrome	American Behçet's Foundation, Inc. P.O. Box 54063 Minneapolis, MN 55454-0063 800-723-4238 or 800-7BEHCETS	Provides information about this painful chronic condition
Cancer, skin; melanoma	Skin Cancer Foundation 245 Fifth Avenue, Suite 2402 New York, NY 10016 212-725-5176; Fax 212-725-5751	Active patient education program; excellent brochures and newsletters; supports research
	American Skin Association Incorporated 150 East 58th Street, Floor # 33 New York, NY 10155-0002 212-753-8260	Patient education
Cancer	American Cancer Society 1599 Clifton Road, NE Atlanta, GA 30329 800-227-2345 or 404-320-3333;	Committed to public education and funding research on all types of cancer.

