100 Questions & Answers

What happens as we age?

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What are the layers of the skin, and what are their functions?

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What can I do for skin rejuvenation?

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What role does diet play in skin health?

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What are ways to improve sun protection and prevent skin cancer?

About

Aging Skin

by

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100 Questions & Answers About Aging Skin

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Many people throughout the world are living well into their old age. A person's physical, as well as psychological, well being is directly affected by his or her general health and the health of his or her skin. Most of us have at least one, if not three or four, skin conditions that can be treated or at least improved with good advice and action.

The skin is a magnificent organ. If you could look quite closely at each square inch of skin, you would find about 19 million cells, 90 oil glands, 600 sweat glands, 65 hairs, and tens of millions of microscopic bacteria, and each square inch is nourished and kept active by 19,000 nerve cells and 19 feet of miniscule blood vessels. All of this amazing collection helps to eliminate one third of the body's waste products and toxins, regulates and maintains water balance and body temperature, uses touch receptors to help us sense pain and avoid harm, and forms a barrier to protect us from outside damage. Clearly, you need to keep this marvelous organ at its best.

More today than ever before, the aesthetic function of our skin has taken the forefront in modern media and our own perceptions. The multibillion-dollar cosmetic industry has brought in wave after wave of new techniques and products and has filled our offices, magazines, and televisions with the promise of a forever youthful glow. This is an uphill battle, however, unless you have the right advice that can cut through the avalanche of information, keep up with the advancements, and capture and use what is important to you and your skin type. Although the constant turnover of skin cells allows for renewal and repair, the skin also keeps its own diary, and the cumulative changes show as we age.

I see many different skin conditions in the older person, whether they're in a nursing home or in my office, and I believe that not enough attention is given to skin problems as we age. A delay in recognition leads to a delay in care of those problems. Also, in many areas, there is little access to specialists.

Albert M. Kligman, MD, PhD (inventor of Retin-A®), wrote, "This traditional neglect of the skin is well-nigh unforgivable and has cruel consequences for the well being of the elderly. These diseases do not kill but they are persistent pestilences which spoil the quality of life. . . . It is the skin more than any other organ which most clearly reveals the cumulative losses which time prints on the visage of the high and low alike."

Dr. Kligman also wrote, "The object of life is to die young, as late as possible," and we now spend billions of dollars to try to reverse the effects of "TMB"—too many birthdays. Because there is an increasing number of options available to maintain your youth, it is important to know what medications, procedures, and daily activities will help.

The goal of this book is to provide a greater understanding of what happens in aging skin and to emphasize that you have enormous opportunities to improve your general and skin health by following what I have included. For more help with your own skin care and comprehensive prevention and treatment, it is important to consult with your local dermatologist and to check the online sites that have been included here.

Robert A. Norman, DO, MPH

dEdiCaTiON

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Dedicated to David Daitch, DO, my friend and fellow physician who left this world way too soon and will be greatly missed.

Carpe diem,

Rob Norman

Par T ONE

The Basics

What are the layers of the skin, and what are their functions?

Why are geriatric dermatology and aging skin receiving particular attention?

What happens as we age?

More . . .

Epidermis
The outmost layer of the skin. It is visible to the naked eye and is comprised of stratified squamous epithelium.

Dermis
The layer of skin found between the epidermis and the subcutaneous tissue.

Subcutaneous layer
The tissue that separates the dermis from the underlying connective tissue.

Keratinocytes
The cell type that comprises a majority of the epidermis.

1. What are the layers of the skin, and what are their functions?

The skin is composed of the **epidermis**, **dermis**, and **subcutaneous layers** (**Plate 1**). The top part of the epidermis is the stratum corneum. The stratum corneum and its surrounding lipid bilayer are composed primarily of ceramides, fatty acids, and cholesterol. When these constituents are present in the proper proportion, they form the "skin barrier," which functions like a brick wall (**keratinocytes**) covered by mortar (the lipid bilayer). This barrier protects the skin and keeps it watertight. Special cells in the epidermis called **melanocytes** produce brown pigment that helps to protect you from ultraviolet light.

The dermis, or middle layer, provides a tough, yet flexible, foundation for the epidermis. Sweat glands and blood vessels help to regulate body temperature, and nerve endings send the sensations of pain, itching, touch, and temperature to the brain. **Sebum** helps to moisturize the skin. Hair has a primarily decorative function in humans. Under the dermis, the fat provides insulation and helps to store calories.

2. Why are geriatric dermatology and aging skin receiving particular attention?

According to current U.S. Census statistics, the population that is over 65 years old is increasing, and this trend is expected to continue well into the 21st century.

According to current U.S. Census statistics, the population that is over 65 years old is increasing, and this trend is expected to continue well into the 21st century. Additionally, the population of those aged 80 years or older is rapidly increasing. As baby-boomers begin to enter senior citizenship and the older get older, an increased emphasis in geriatric medicine is inevitable. Because the human population is living longer, chronic diseases, including skin diseases, will become more prevalent.

As people age, they may increasingly develop skin-related disorders. Two types of skin aging exist: (1) intrinsic aging, which

includes those changes that are due to normal maturity and thus occur in all individuals, and (2) extrinsic aging, which is produced by extrinsic factors such as ultraviolet light exposure, smoking, and environmental pollutants. Decreased mobility, drug-induced disorders, and increased incidences of many chronic diseases are among the reasons that older persons are at heightened risk for skin diseases.

Melanocytes

Cells in the basal layer of epidermis that are involved in the production of dark colored pigment known as melanin.

Sebum

The oily substance produced by glands in the skin.

Photoaging

The damaging of skin due to sunlight exposure.

Langerhans' cells

A type of dendritic immune cell found in high concentrations in the epidermis.

3. What happens as we age?

Many histological changes occur with aging and **photoaging** (see **Tables 1** and **2**). Variation in cell size, shape, and staining results in epidermal dyscrasia of photoaged skin. Melanocytes decline, and **Langerhans' cells** (intradermal macrophages) decrease in density.

The dermis becomes relatively acellular, avascular, and less dense, and the loss of functional elastic tissue results in wrinkles. The nerves, microcirculation, and sweat glands undergo a gradual decline, predisposing them to decreased thermoregulation and sensitivity to burning. Nails undergo a slow decline in growth, with thinning of the nail plate, longitudinal ridging, and splitting. The subcutaneous fat layer atrophies on the cheeks and distal extremities but hypertrophies on the waist of men and thighs of women.

Table 1 aging Skin

Epidermal Changes
• Melanocytes Approximately 15% decline per decade Density doubles on sun-exposed skin Increased lentigines
• Langerhans cells Decreased density Decreased responsiveness
dermal Changes
Decreased collagen—1% annual decline, altered fibers Decreased density Progressive loss of elastic tissue in the papillary dermis

Table 2 Skin Changes in aging

Loss of Elasticity and Thinning of the Skin
Clinical results—xerosis, laxity, wrinkling, uneven pigmentation, easy tearing, traumatic pupura, neoplasia
Photoaging
Clinical results—actinic keratoses, fine and coarse wrinkling, telangiectasia, blotchiness and pigmentary changes, elastotic skin with giant comedones

Many skin changes occur during the aging process, including decreased elasticity, decreased skin surface lipids and hydration, and decreased skin density and responsiveness. These skin changes can be divided into intrinsic skin changes and extrinsic changes, as explained previously.

Although intrinsic changes usually begin in our 20s, the signs are typically not visible for decades. These include the following:

- Fine wrinkles
- Thin and transparent skin
- A loss of underlying fat, leading to hollowed cheeks and eye sockets, as well as noticeable loss of firmness on the hands and neck
- An inability to sweat sufficiently to cool the skin
- Bones that shrink away from the skin because of bone loss, which causes sagging skin
- Dry skin that may itch
- Graying hair that eventually turns white
- Hair loss
- Unwanted hair
- A nail plate that thins, the half moons that disappear, and ridges that develop

4. Many changes on the cellular level occur with aging. Can you explain these further?

The dermis (middle layer of the skin) suffers a loss of elastic tissue, becomes less vascular, and decreases its ability to

withstand minor trauma. The result is easier bruising (purpura), less ability to "rebound," and more wrinkles. The nerves, microcirculation, and sweat glands undergo a gradual decline, predisposing to decreased temperature regulation. Nails undergo a slow decline in growth, with thinning of the nail plate, ridging, and splitting.

5. What are some examples of chronic disease that affect the skin?

Atherosclerosis, diabetes mellitus, obesity, HIV, nicotine abuse, and congestive heart failure are examples of disease processes that can be detrimental to skin. They are known to impede vascular efficiency and decrease immune responses, thereby reducing the body's ability to heal.

Atherosclerosis, diabetes mellitus, obesity, HIV, nicotine abuse, and congestive heart failure are examples of disease processes that can be detrimental to skin.

6. What is photoaging?

Photoaging refers to the damage that is done to the skin from prolonged exposure (over a person's lifetime) to ultraviolet radiation. Most of the skin changes that occur as we get older are accelerated by sun exposure. Examples include hyperpigmentation, wrinkles, poor elasticity, broken blood vessels, leathery skin, and skin cancers.

The visible effects of photoaging are changes that are usually associated with chronologic aging (calendar years); however, photoaging is not a good indicator of chronologic age because it may make a person look older than his or her chronologic age.

The three approaches to counter photoaging are as follows:

1. Avoid the midday sun.
2. Practice prevention by using photoprotective agents such as sunscreen and clothing.
3. Use skin rejuvenation treatments.

Immune system

Comprised of multiple organs and tissues working together to provide chemical and physical barriers to prevent disease. These barriers include the skin, saliva, and white blood cells.

Lupus

An autoimmune disease in which the body attacks is own tissues.

7. What is the immune system, and how does it work?

Cutaneous sensation

The sensory ability of the skin. This is more commonly referred to as the sense of touch.

Adiposis dolorosa

A condition also known as Dercum's disease that is characterized by the formation of tumors in the fatty tissue of the body.

Lymphedema

Swelling of the extremities due to an obstruction in the lymph system that prevents the return of the lymph fluid to the body's core.

Chronic venous insufficiency

A condition in which the valves of the veins do not function properly, causing the pooling of blood in the lower extremities.

Hidradenitis suppurativa

This condition occurs in areas with a high density of apocrine sweat glands and around hair follicles in the groin and armpit.

The **immune system** helps to monitor and fight infection and prevent cancer. It includes specialized white blood cells—T cells, B cells, and neutrophils—that are always on call to help. Your body's immune system is like an army with millions of soldiers, ready to fight foreign substances such as germs and viruses in the body.

As we age, certain parts of the system diminish in vitality, and we have to be more alert to help boost the system to work at full capacity. In autoimmune diseases, such as **lupus**, the immune system is out of control and attacks healthy tissues.

8. Someone told me that gravity is one of the biggest problems for our skin. Is that true?

Yes, gravity is a law of nature and of facial skin. By the time we reach our 50s, our skin's elasticity declines, and gravity's effects show: the eyelids fall, jowls form, the tip of the nose droops, the ears elongate, the upper lip decreases, and the lower lip becomes more prominent. Later we discuss ways to help with this.

9. I am overweight. How does this affect my skin?

Many skin diseases are shown to be worse with obesity, including psoriasis and stasis dermatitis. Losing weight is one of the more important ways to improve your health and help your skin.

Obesity is another extremely preventable disorder that if untreated can lead to medical complications, including orthopedic problems, metabolic disorders, disrupted sleep, a poorly functioning immune system, impaired mobility, increased blood pressure, hypertension, and psychosocial consequences from low self-esteem to depression. Long-term consequences

include cardiovascular disease, insulin resistance, type 2 diabetes, hyperlipidemia, gall bladder disease, osteoarthritis, and certain cancers.

Skin complications related to obesity include:

- a decrease in **cutaneous sensation**
- acanthosis nigricans
- acrochordons
- **adiposis dolorosa** and fat redistribution
- **lymphedema**
- candidiasis
- cellulitis
- **chronic venous insufficiency**
- erythrasma
- folliculitis
- gas gangrene
- **hidradenitis suppurativa**
- hyperandrogenism and hirsutism
- insulin-resistance syndrome
- intertrigo
- leg ulcerations
- necrotizing fasciitis
- **pilaris**
- **plantar hyperkeratosis**
- psoriasis skin infections
- **striae distensae**
- **tophaceous gout**

Pilaris

A condition in which the skin of the arms and legs have small, hard, reddish pimples.

Plantar hyperkeratosis

The thickening of the bottom or sides of the feet.

Striae distensae

The condition commonly known as stretch marks occurs when the connective tissue of the skin cannot grow as rapidly as the underlying tissues.

Tophaceous gout

A chronic condition in which there are uric acid deposits throughout the body.

Dryness, Itches, and Allergies

What causes dry skin?

What about dry skin and itch?

What can you do about dry skin?

More . . .

10. What causes dry skin?

Xerotic eczema
A skin condition in which the skin is extremely dry and cracked.

Xerosis (dry skin) is a common dermatological skin condition. Dry skin, or **xerotic eczema**, can be labeled as xerosis, eczema craquele (like a pattern of cracked porcelain), or asteatotic eczema (**Plate 2**). The incidence increases with age and is common in older individuals.

The reduced production of sebum also may play a role in dry skin. Sebum contains wax esters, triglycerides, and squalene, all of which protect the skin from the environment. Certain individuals receiving cholesterol-reducing drugs exhibit dry skin.

Natural moisturizing factor, a substance that retains water inside keratinocytes and renders them plump, also plays an important role in the pathophysiology of dry skin.

Stratum corneum
The outermost layer of the epidermis that acts as a barrier to prevent the exchange of chemicals between the body and its surroundings.

Defects in the **stratum corneum** or barrier can result in transepidermal water loss, which dehydrates the skin and imparts a dry appearance. An impaired barrier may also make skin more susceptible to damage from exogenous sources such as plants, chemicals, and even water.

11. What about dry skin and itch?

One of the most common complaints in my patients over 65 years old is itchy, dry skin.

Does your skin sometimes get dry and itchy? Ever have a persistent itch? Do you ever wonder what you can do about it? Here are some clues. One of the most common complaints in my patients over 65 years old is itchy, dry skin. Because each adult is covered by about 20 square feet (2 square meters) of skin and is constantly exposed to possible irritants, you'll get an itch now and then.

Senile pruritus
The itching of skin that occurs due to the breakdown and aging of skin of the elderly.

Senile pruritus refers to the dry skin of aging. This term dates back to a time when the term *senile* had a more benign connotation, perhaps like misplacing your keys instead of feeling your mind slip into the shadows. Dry skin occurs most often on the legs of older patients but may also be present on the hands and trunk.

12. What can you do about dry skin?

Mild itch may respond to nonpharmacologic measures, which include avoiding hot water and irritants, maintaining proper humidity, using cool water compresses, frequently applying moisturizers, trimming the nails, and applying behavior therapy.

Treatment of moderate dry skin and itch includes ammonium lactate 12% lotion, moisturizers, and topical corticosteroids, as well as certain behavioral-management tactics. The keratolytic (topical agents that remove the dead, flaky portions of skin) effect of ammonium lactate 12% lotion is effective in reducing the severity of dry skin.

Creams that contain keratolytic agents such as urea are not as hydrolyzing but can rid the skin of the abnormally thickened layer. In individuals with sensitive skin, sensitive-skin variant formulation should be substituted for alpha-hydroxy acids; the latter can cause stinging and irritation. Liberal use of moisturizers reduces scaling and enhances the desquamation process. In moderate to severe cases, treatment with application of prescription topical steroids and oral medications may be added.

Secondary treatment consists of increasing hydration and moisturizing the skin. It may be helpful to apply nonscented emollients, such as white petrolatum, liberally and frequently on the skin immediately after bathing and frequently throughout the day. Emollients are creams or lotions that can be applied to the affected area to prevent water from evaporating from the skin's surface. They also smooth over the scaly edges that can flake off and cause intense itching.

Management suggestions include the following:

- Reduce the frequency of bathing with lukewarm (not hot) water

- Use a nonirritant soap such as Cetaphil®, Olay®, Aveeno®, or Dove®
- Avoid harsh skin cleansers
- Apply moisturizer directly on unsightly skin
- Limit friction from washcloths, rough clothing, and abrasives
- Use air humidification in dry environments

With dry skin and itching, you have now learned some important ways to make you and your skin more satisfied.

13. I feel like I need to scratch my skin all of the time and that I may have bugs. What do I do?

It is estimated that at least one third of individuals presenting to a dermatologist have a skin condition primarily due to a psychologic factor. Authors use many different names to refer to skin conditions that are psychologically related, including **neurodermatitis**, psychocutaneous diseases, psychodermatologic disorders, psychosomatic dermatology, and psychocutaneous medicine. Neurodermatitis includes delusions of parasitosis, dermatitis artefacta, lichen simplex chronicus, neurotic excoriations, prurigo nodularis, and trichotillomania.

Neurodermatitis

The cycle of chronic itching and scratching that can cause the affected skin to become thick and leathery. It is also known as lichen simplex chronicus or scratch dermatitis.

Signs and symptoms include often intense itching and perception of bugs in the skin. You may show multiple excoriations at all different stages of healing. Often you will have clear areas on the central back that cannot be reached by scratching.

Certain other diseases, such as scabies, eczema, generalized pruritus, **bullous** disorders, and systemic disease, must be eliminated from consideration first. Treatment may include topical antipruritic creams and ointments, oral psychiatric medicines, and counseling.

Bullous

A large blister (a thin-walled sac filled with clear fluid).

Lichen simplex chronicus (**Plate 3**) is a Latin term that means "skin that thickens and scales due to long-term scratching."

It may start as a minor itching place; however, scratching the spot damages the skin, thus making it heal slightly thicker than before. The skin tries to protect itself by thickening. As the healing progresses, the itch fibers in the skin are activated by slight scar contraction in the damaged area, and the new itching causes more scratching. What is the result? More damage, thickening, healing, and itching—the *itch–scratch cycle*—and it can continue incessantly unless interrupted. A cortisone ointment or cream may help end the vicious itch–scratch cycle, but you also must keep the nails short to eliminate the scratching tools at hand. By rubbing the topical medicine into the itchy area with the flat of your finger pad, you avoid triggering the nasty cycle again.

14. What about an itch that persists?

"Scratching is one of the sweetest gratifications of nature, and as ready at hand as any," Montaigne wrote. "But repentance follows too annoyingly close at its heels."

> *There was a young belle of old Natchez*
> *Whose garments were always in patchez.*
> *When comment arose*
> *On the state of her clothes,*
> *She replied, "When Ah itchez, Ah scratchez."*
>
> —Ogden Nash

Every time I have a patient with an itch, I do a "mind google" search and think of my patient's differential diagnosis. The real Google has over 12,200,000 links to itch.

Not all itches are benign. Itch is a common condition that may be associated with a plethora of various medical conditions, and therefore, examination of the skin may be misleading. Without proper diagnosis and treatment of the underlying disorder, itch may become severe enough to affect your sleeping habits and overall quality of life. Underlying metabolic conditions that produce itch might include renal failure, HIV, diabetes mellitus, thyroid disease, iron-deficiency anemia,

neuropathy, hepatic disease, malignancy, and drugs. If you have a persistent itch, work with your health practitioner to find out what can help you. If you do not have an obvious explanation for the itch, you should undergo a physical examination to look for evidence of a systemic disease.

Itch starts with an external stimuli—dust, touch, a mosquito landing on your arm—and is a built-in defense mechanism that alerts your body to the potential of being harmed. Dermal skin receptors will send an immediate signal through fibers in the skin to your spinal cord and then up to the cerebral cortex in your brain that tells you to scratch. You may feel some relief when this itch response is temporarily interrupted, but a persistent itch may result in chronic itch–scratch. Scratching can cause excoriations, which then may progress to secondary eczema or may become infected.

The itch–scratch cycle is the dermatologic equivalent of chronic pain syndrome and should be treated as such.

The itch–scratch cycle is the dermatologic equivalent of chronic pain syndrome and should be treated as such. Just as with chronic pain, there is a reduced threshold phenomenon that occurs in patients with chronic itch. Chronicity not only lowers the threshold for the sensation of itch, but it also increases the intensity of itch. Also, as with chronic pain, short bursts of spontaneous itch may occur, even when the skin is clear.

The term *itch* has evolved into many connotations in our society. Researchers have found that songs get stuck in our heads because they create a "brain itch" or "cognitive itch," analogous to histamines that make our brain itch, and can only be scratched by repeating the tune over and over.

15. What about allergic reactions in the skin?

Allergic skin disorders in older individuals, which may arise from contact with or ingestion of offending allergens, must be distinguished from other causes, such as dry skin.

Discontinue the use of products, such as topical alcohol and strongly scented soaps, that may further dry the skin. It is also

helpful to limit bathing to every other day, up to a maximum of once a day (because too much water can actually cause the skin to dry out), using tepid or cool water; therefore, showering or bathing more than once a day should be avoided to prevent dry skin. Control of the environment is also important. Dry skin is often a problem in cooler climates, especially during winter months, when home heating systems are regularly used. This dry heat draws moisture from the skin. Outdoors, cold winter air causes the body to protect itself by drawing blood away from the skin. When this occurs, the skin is not well nourished, and dry skin and itching can result. Consequently, the indoor environment should be cool and vapor humidified, and your exposure to cold temperatures and wind should be limited.

Temperature regulation is a major concern. People need to sense hot and cold and other changes in order to take appropriate preventive measures to maintain homeostasis. Being able to detect when you are cold is essential for survival! Nails undergo a slow decline in growth, with thinning of the nail plate and ridging and splitting.

16. What about allergic reactions to the sun?

Sometimes even after only a short time of sun exposure, allergies to the sun can develop and may present in several different ways. Some people have problems with rashes, bumps, hives, blisters, or red splotchy areas. This is more common in people who are more sensitive to allergies in general, but it may happen to anyone. Certain beauty products and soaps may also make you more sensitive to the sun, including perfumes, cosmetics, and hair dyes.

Chemicals, including those found in certain plants, vegetables, and fruits, can make the skin much more vulnerable to the sun in a process called **photosensitization**.

Photosensitization
A condition in which the skin becomes susceptible to damage from the sun.

Many drugs may make you more prone to sun sensitivity; some of the more common ones include birth control pills,

antibiotics such as tetracyclines, thiazide diuretics, sulfonamides, chlorpromazine, depression medications, arthritis medications, and blood pressure medications. You should always check with your doctor and pharmacist when you receive any new medication to see how it may interact with what you're already taking and whether you should be extra careful when in the sun or if you should avoid it completely.

17. What is contact dermatitis?

Allergic contact dermatitis (**Plate 4**) is an itchy skin condition that is caused by an allergic reaction to material in contact with the skin. The dermatitis is generally confined to the site of contact with the allergen, although severe cases may extend outside the contact area or may become generalized. It occurs hours after contact with the responsible material and will dissipate when the skin is no longer in contact with it. An example is a localized irritation underlying a watch strap because of contact allergy to nickel.

Other common allergens include formalin in cosmetics and insecticides, paraben in cosmetics, rubber, fragrances in hair and clothing dyes, cosmetics, and household chemicals. Plants encountered during gardening or hiking may result in irritations.

Patch testing involves placing patches of various substances on the skin to identify whether a substance that comes into contact with the skin causes inflammation. Patch test reactions tend to increase with age because of the accumulation of allergens acquired over a lifetime. Often an occupational sensitization may occur only after decades of contact.

The most common reason for allergic contact dermatitis in older persons is topical medications applied to venous stasis ulcers or wounds, including lanolin, neomycin, paraben preservatives, and vitamin E creams.

18. I'm itching at night and can't seem to stop. What can I do?

Helen said this:

I visited a friend in a nursing home and now I have an awful itch that is worse at night. I've tried a bunch of medications, and nothing seems to help. What do I do?

Human scabies is almost always caught from another person as a result of close contact. It is not uncommon to treat a whole family that has been infected, along with their friends. The parasite *Sarcoptes scabiei* is a tiny skin mite that brings on a nasty, itchy rash and can spread to others by contact. The disease is very common—more than 300 million cases of scabies occur worldwide every year—and can strike anyone of any race, age, or socioeconomic status.

The microscopic mite burrows, and the body develops an intense reaction that results in severe itching that can lead to a skin infection. An infected person may not notice the itching or swelling until 4 to 6 weeks after the initial infestation.

Scabies may appear as little hive-like red bumps, tiny bites, or pimples and may be crusty or scaly in more severe cases. It usually begins in skin folds and crevices—between the fingers and on the wrists in younger people and around the nipples for women and on the penis for men. The head and face are usually free of infestation, except in those that are immunocompromised.

Treatment must be complete and prompt once the diagnosis is made. Topical treatment with Elimite® Cream on the entire skin from the neck to the soles of the feet should be thorough and left on overnight. Clip your nails short to clear any scabies mites hiding under the fingernails and to decrease the likelihood of further irritation when scratching. Clean your sheets

and clothes that were used within the previous 3 days. Do not use pesticides or fumigate the affected areas—the scabies mite requires human skin contact to survive. An alternative treatment is with Ivermectin®, a pill taken twice and then repeated in a week. Medications for itch may also be prescribed, including antihistamines and oral or topical steroids.

19. What are hives?

Urticaria

The condition, commonly referred to as hives, is caused by the body's natural reaction to an allergen.

Angioedema

Characterized by the rapid swelling of skin.

Urticaria is the medical name for hives, which are welts (pink swellings) that usually last a few hours and then fade away. New hives appear as old areas fade. Hives can be quite small or cover broad areas of the body. The itch of hives can be intense and sometimes burn or sting. If hives occur in deeper tissues of the eyes, mouth, hands, or genitals, the swelling is called **angioedema**.

Hives can be due to a variety of underlying problems, including infections. Repeated and chronic episodes often occur as an allergic reaction to foods (most commonly nuts), chocolate, milk, insect stings, or medications and usually break out within a few hours of the exposure. Hives that come out as a result of sunlight, cold, pressure, or exercise are called the physical urticarias. Pressure urticaria is manifested as a deep welt in an area of prolonged pressure.

Chronic urticaria is defined as hives lasting longer than six weeks. In the overwhelming majority of cases, the hives are *idiopathic*, a term meaning there is no discernible cause. But it is certainly worth finding out if you are in the 5% of cases with a cause. Thyroid or liver problems, herpes, skin diseases, dental infections, sinusitis, or allergic causes can be discovered with a thorough history and physical, along with blood and urine tests and sometimes a skin biopsy. In chronic idiopathic hives, many researchers feel that the body's overactive immune system is the culprit.

Hives are treated mainly with antihistamines, including nonsedating antihistamines such as Claritin® or Zyrtec®. If needed, a sedating type of antihistamine (hydroxyzine, cyproheptadine, or doxepin) is added at night. If the hives continue, a short course of cortisone (steroids) may clear the hives completely.

20. I itch around my anus. It drives me crazy. Can you help?

Perianal itching can be very uncomfortable and can interfere with daily activities and sleep. Keep the anal area clean and dry, and avoid injury to the skin from excessive wiping or abrasion. Eliminate items in the diet such as citrus fruits and juices, coffee and tea (including decaf in excess of 2 cups a day), beer and alcoholic beverages, colas, nuts and popcorn, milk, chocolate, and spices (especially peppers) that produce gas, indigestion, or loose bowel. Foods that produce mucus or aggravate drainage will result in irritation of the bowel and possible anal itching.

If your itch (and scratching) is severe, wear cotton gloves during the night and consider taking antihistamine pills. Avoid the use of perfumed soap and vigorous rubbing with a washcloth. Most soap is highly alkaline, and the residues may collect in the folds of the skin and alter the normal acidity of the skin. Use Cetaphil or other mild cleansers for the shower to avoid irritation.

After bowel movements, wash the anal area with water or a wet cotton or tissue. Hypoallergenic unscented baby wipes can be used for cleaning. Use nonscented toilet paper to pat dry, and avoid rubbing with the toilet tissue. Wear a thin cotton strip directly on the anus during the day. Use one that is so thin that you are not conscious of its presence. Change

the cotton strip frequently, and wear cotton underwear. Each morning and/or night, take a bath in lukewarm water. Apply a mild prescribed or over-the-counter lotion, cream, or ointment after your cleaning and drying routine.

See a dermatologist if the itching continues, and consult a proctologist to rule out rectal disease.

Skin and Pathogens

Can I get HIV now that I am older?

What is shingles?

What can I do to prevent shingles?

More . . .

21. Can I get HIV now that I am older?

Over 10% of all new AIDS cases in the United States occur in people over the age of 50 years. New AIDS cases in the past several years rose faster in middle age and older people than in people less than 40 years old. Although many of these AIDS cases are the result of HIV infection at a younger age, many are due to becoming infected after age 50. Because very few persons over the age of 50 at risk for HIV routinely get tested, it is difficult to determine rates of HIV infection among older adults. Older adults are often first diagnosed with HIV at a late stage of infection when they seek treatment for an HIV-related illness.

HIV cases among older people may be underreported because HIV symptoms and infections may coincide with other age-related diseases and are therefore overlooked. Fatigue, weight loss, and other early HIV symptoms may be dismissed as a normal part of aging. AIDS-related dementia is often misdiagnosed as Alzheimer's disease.

Many characteristics of HIV are specific for older persons. Older individuals with AIDS get sick and die sooner than younger persons because of a late diagnosis as well as co-infection with other diseases that may speed the progression of AIDS. In addition, new drugs for HIV treatment may interact with medications the older person is taking to treat preexisting chronic conditions.

A common stereotype exists in the United States: Older people don't have sex or use drugs. Few HIV-prevention efforts are aimed at people older than 50 years, and most educational ad campaigns rarely show older adults, making them an invisible at-risk population. Older people, therefore, are generally less knowledgeable about HIV/AIDS than younger people and are less aware of how to protect themselves against infection. This lack of awareness is especially true for older injecting drug users, who comprise over 16% of AIDS cases in persons older than 50 years.

Men who have sex with men form the largest group of AIDS cases among adults older than 50 years. Older gay men tend to be "invisible" and ignored both in the gay community and in prevention efforts. The HIV risk factors for older gay men include internalized homophobia, denial of risk, alcohol and other substance use, and anonymous sexual encounters.

Skin **lesions** occur in virtually all patients during the unfolding evolution of their HIV infection—usually a succession of conditions reflecting the gradual decline of immunity. A transient rash may accompany the initial HIV seroconversion illness but may go unnoticed. During the following weeks or years, the gradually declining immunity may be documented only by decreasing numbers of CD4-positive lymphocytes with the emergence of inflammatory skin conditions (e.g., seborrheic dermatitis or psoriasis), as well as autoimmune conditions (e.g., thrombocytopenia, morphea, or alopecia areata). As immunity itself declines, skin infections emerge. **Shingles** affects over 25% of HIV-positive patients and may be followed by postherpetic neuralgia. Molluscum contagiosum, warts, and dry skin may appear. In severe cases, the person may develop purplish nodules on the face and extremities and other locations, which are Kaposi's sarcomas, a form of skin cancer.

Lesion

A vague term meaning "the thing that is wrong with the patient." A lesion may be a tumor or an area of inflammation.

Shingles

An extremely painful rash that is caused by a viral infection known as herpes zoster.

Practice safe sex and use precautions!

22. What is shingles?

Herpes zoster, also known as shingles, is chickenpox the second time around. It is a varicella virus, not herpes—the term herpes is used to describe the herpetic (small blisters) pattern of the infection. Zoster is a viral infection dormant in a dorsal root ganglion and is reactivated in an immunocompromised person.

Herpes zoster, also known as shingles, is chickenpox the second time around.

Symptoms include pain and/or paresthesias followed by eruption of red plaques that become vesicles, usually along a single dermatome or area of the skin (**Plate 5**). The vesicles later

become covered by crusts. The pain may be felt before, during, and after (postherpetic neuralgia) the vesicular eruption.

Although unlikely, it is possible for a person who has never been exposed to the virus to catch chickenpox from someone who has an outbreak of shingles. In severe cases, you should be suspicious of an underlying lymphoma, leukemia, or AIDS.

Cellulitis

An infection of the deeper layers of the skin characterized by redness, swelling, and pain.

Zoster can mimic herpes simplex, poison ivy, or **cellulitis**, and thus, it is important to get a biopsy or blood test if in doubt. Treatment includes oral and topical prednisone, oral antivirals, nerve blocks, topical lidocaine patch, or lidocaine cream.

23. What can I do to prevent shingles?

A vaccine that is now available for shingles has been shown to prevent shingles in approximately half of people 60 years of age and older and also reduce the pain associated with shingles.

Certain people should not get the shingles vaccine, including those who have ever had a life-threatening allergic reaction to gelatin, the antibiotic neomycin, or any other component of shingles vaccine; have a weakened immune system because of HIV/AIDS or another disease that affects the immune system; are on treatment with drugs that affect the immune system, such as steroids; are using cancer treatment such as radiation or chemotherapy; have a history of cancer affecting the bone marrow or lymphatic system, such as leukemia or lymphoma; or have active, untreated tuberculosis. Otherwise, a single dose of shingles vaccine is indicated for adults 60 years of age and older.

24. I still get eczema. What can I do?

Flare-ups and hard-to-control chronic eczema are often due to a coexisting bacterial, fungus, or viral infection. If your eczema is weeping or oozing or crusted, your doctor will probably take a swab and treat for bacterial infection. We are greatly concerned with MRSA infections (see Question 25).

Many patients with eczema have staph bacteria on their skin, which may require systemic antibiotics to limit the infection. If you develop infections repeatedly, long-term antibiotics may be used in maintenance doses.

25. What is MRSA, and what do I need to watch for?

Ron said this:

I've got these abscesses on my left jaw line and left upper thigh. I've had them for over a month. A few weeks back I tried to clear them up. I used some penicillin that I had from an infection last year, and I put on some topical antibiotics; however, these keep coming and I can't get them to stop, and they hurt.

Abscesses
Closed pockets containing pus.

The pus-filled **abscesses** were lanced, cleaned, and packed to prevent another reinfection of the wound area. Cultures of the areas were then sent to a reference laboratory for identification and sensitivity.

The culture of the abscess revealed colonies of methicillin-resistant *Staphylococcus aureus* (MRSA), and Ron was put on the appropriate antibiotic. He was instructed to return at a later date to determine the efficiency of the antibiotics and to monitor the healing process. An infection with MRSA is a very serious matter, and prompt treatment saved him the potentially harsh physical discomfort and disfigurement.

S. aureus, discovered in pus from surgical abscesses by the surgeon Sir Alexander Ogston in Aberdeen, Scotland in 1880, is the most virulent of all 33 staphylococcal species. *Staphylococcus aureus* literally translates to "golden cluster seed." When *S. aureus* is grown on blood agar, it takes on a yellow-gold appearance. *S. aureus* produces an enzyme called penicillinase (a beta-lactamase) that is secreted from the bacteria and hydrolyzes the beta-lactam ring on the penicillin, thus inactivating penicillin.

Methicillin is used to treat bacteria that produce penicillinase. This drug is a penicillinase-resistant drug that is used to treat bacteria (such as *S. aureus*) that produce the penicillinase enzyme. An increasing number of strains of *S. aureus* are resistant to methicillin.

MRSA is resistant to many antibiotics, and intravenous vancomycin is one of the few that is useful in treatment. Because Ron came to our clinical office and not to a hospital, intravenous medications would not be practical. Trimethoprim-sulfamethoxazole (TMP-SMX) was found to be effective against Ron's particular MRSA strain. Ron returned in 2 weeks, and his healing reflected that the antibiotic and his immune system had worked effectively.

26. I was told that I have a fungus infection. What can I do?

Fungal skin infection includes tinea pedis (athlete's foot), the most common type of fungal infection. It is spread by direct contact and may infect the sole and sides of the feet. It may result in peeling, scaling, itching, and sometimes blistering. Onychomycosis (tinea unguium, nail fungus) is a toenail infection that is usually associated with tinea pedis; it can be very difficult to eradicate. Tinea cruris (jock itch) is a rash in the groin. It has an itchy spreading red border that is quite common, especially in men who sweat a lot. Tinea corporis (ringworm) may occur on the trunk or other areas. Tinea capitis (scalp ringworm) can result in scaling and patchy, moth-eaten-appearing hair loss and is epidemic in many Black communities. With the correct treatment, the hair will grow back normally and not result in permanent hair loss. Tinea infections can be effectively treated by a variety of over-the-counter prescription creams, shampoos, and oral medications.

27. How can I prevent recurrence of fungal infections?

Fungal infections often recur in many people even after effective clearing with medication. Fungus likes warmth and moisture, making certain parts of the skin more vulnerable. A fungus sheds spores, like tiny seeds, which wait for the right moment to grow into new fungus, and chooses places such as in our shoes. After effective treatment, here are some rules for prevention:

- Finish your medicine completely and as recommended. The fungus may still be present long after it is no longer visible as a rash.
- Keep feet clean, cool, and dry, and change socks frequently. Make sure that your shoes fit correctly and are not too tight. Discard old shoes, boots, slippers, and sneakers, and do not share footwear with others.
- Apply an antifungal cream twice a week to the bottom of the feet and on the nails.
- Apply an antifungal powder such as Zeasorb-AF® inside the shoes every day to keep spores from growing.
- Avoid walking barefoot in bathrooms, locker rooms, gyms, and public areas and on carpeting.
- Keep toenails short, and cut straight across. Avoid ingrown nails. Make sure that you do not use the same clippers on abnormal nails and normal nails. If you go to a salon to get your nails done, consider bringing in your own set of clippers.
- Consider using an antidandruff shampoo, such as Selsun Blue®, twice a month if you have had a body fungus. The most effective way to get the best results is to lather up and leave it on the skin for about 5 minutes (two songs long) and then wash off completely.

Rashes and Bumps

I have a lot of small, warty growths on my back and other places. Should I be worried that these are cancerous?

I get little yellow bumps on my face. Are these cancerous?

It looks like I have acne on my upper cheeks. What is that?

More . . .

Those rough, dark colored plaques that have a "stuck-on," mole-like appearance are called seborrheic keratoses. My patients often call them barnacles.

28. I have a lot of small, warty growths on my back and other places. Should I be worried that these are cancer?

Those rough, dark colored plaques that have a "stuck-on," mole-like appearance are called seborrheic keratoses. My patients often call them barnacles. They are generally symptom free but occasionally can itch and be bothersome. If they are irritated or cause discomfort, they can be frozen off with liquid nitrogen or removed by a shave procedure.

29. I get little yellow bumps on my face. Are these cancerous?

Sebaceous hyperplasia

A condition that affects the sebaceous glands that produce the oily fluid known as sebum.

Basal cell cancer

The most common type of skin cancer. The lesions appear as a flesh-colored papule with blood vessels and a shiny border.

Favre-Racouchot

A condition in which the skin turns yellow and thickens. The skin appears to have cysts or nodules.

These are probably **sebaceous hyperplasia**. Clinically, hyperplastic glands look like yellow nodules that may have a central pore. The number of sebaceous glands remains constant as a person ages, but the glands increase in size and become more visible, particularly in chronically sun-exposed skin. Paradoxically, sebum production decreases over time, contributing to the dry skin seen in normally aged as well as photo-aged skin. It is important to distinguish sebaceous hyperplasia from nodular **basal cell cancer** (**Plate 6**). In contrast to nodular basal cell cancer, the sebaceous gland is not translucent and does not have telangiectatic blood vessels. Nevertheless, when in doubt, it is always best to perform a biopsy.

30. It looks like I have acne on my upper cheeks. What is that?

Favre-Racouchot disease includes a variety of primarily sun-induced skin changes and is common on the face, neck, and back. It is technically called nodular elastosis with cysts, comedones, and sebaceous hyperplasia, and shows yellowish thickening of the skin and nodules acne (comedones) and follicular cysts (**Plate 7**), especially around the orbits. It can usually be seen in the 4th or 5th decade in those chronically exposed to sun. The skin becomes less firm because of degeneration of elastic tissue and fills in with cystic material. Superficial vascular changes result in irregular pigmentation and redness.

31. What are those little tags that I get on my neck and other places?

Acrochordons
Commonly known as skin tags.

They are called **acrochordons**. These are the fleshy or dark-colored benign pedunculated papules or nodules—skin tags—on the neck, axillae, groin, chest, and abdomen. Usually, the only time they get painful is when they get tangled in necklaces or clothing. The treatment is snip (scissors) excision, cryotherapy, or cautery.

32. I've got yellow growths on my eyelids. What should I do?

Jane said this:

I was told I had cholesterol deposits on the inside corners of my eyelids. Once I had them removed surgically, but they returned. I changed to a low-cholesterol diet years ago. What can I do to get rid of them?

These represent minor collections of oil below the surface of the eyelid skin. This is called xanthelasma, which is derived from a Greek word meaning "yellow plates." In certain individuals, this reflects high levels of fats in the blood (cholesterol and/or triglycerides). If you have these, you should have your laboratory tests done to detect your lipid levels. If you have high blood fat levels, this can be treated and lower your susceptibility to heart attacks in the future. If you want these removed, there are many alternatives, including the application of dilute trichloroacetic acid or electrosurgery.

33. What are actinic keratoses? My doctor said I that had them and prescribed a cream to get rid of them.

These are also called solar keratoses and are the dry, rough, and scaly lesions in sun-exposed areas. They usually are not too bothersome, although some may become irritated and cause some discomfort. A certain percentage of the crop may evolve

Squamous cell carcinoma

Squamous cell carcinoma is the second most common cancer of the skin and occurs most commonly in middle-aged and elderly people with fair complexions and frequent sun exposure.

into **squamous cell carcinoma**, and that is why it is important to treat them. Treatment includes cryotherapy, retinoids, laser, chemical peels, and fluorouracil (5-FU, a cancer-treating drug). The 5-FU in products such as Efudex® has been the mainstay of treatment for many years.

34. A friend of mine said he got spots "frozen." What does that mean?

Cryosurgery

Used frequently by dermatologists to treat many skin problems. Liquid nitrogen is sprayed on to an area of skin, thus freezing it.

Cryosurgery or cryotherapy (liquid nitrogen spray) is used frequently by dermatologists to treat many skin problems, including scars, growths, **keloids**, precancers, and some skin cancers. The light freezing causes a peeling, while moderate freezing may result in a blister.

We use it most commonly to treat actinic keratoses (precancers), and it is often combined with other modalities such as 5-fluorouracil (Efudex) to rid the skin of these lesions.

35. I am Black, and I get razor bumps. I'm tired of them but can't seem to get rid of them. Do you have any suggestions?

Keloids

The increase in collagen growth under normal scar tissue.

Pseudofolliculitis barbae (razor bumps) occurs in up to 60% of Black men and other people with curly hair. In this condition, highly curved hairs grow back into the skin and cause **inflammation** and a foreign body reaction. Keloidal scarring and hard bumps can occur on the beard area and neck. Shaving may sharpen the ends of the hairs like spears and aggravate the skin.

Inflammation

The result of the immune system reacting to unwanted stimulation.

The only 100% effective treatment is to let the beard grow. After growing to a certain length, the hairs will not grow back into the skin. Avoid shaving for 3 to 4 weeks, and apply a mild prescription cortisone cream to decrease the inflammation. If you need to shave, do it every other day to improve pseudofolliculitis barbae. Before shaving with a blade, water soften the beard first with a hot, wet washcloth for 5 minutes.

Preshave solutions can help soften the hairs and lubricating shaving gel (Edge®, Aveeno), or prescription-medicated shaving foam (BenzaShave® by Dermik) will often help. Use only one stroke over each area of the beard. Shave with the grain of the beard, and do not stretch the skin. Switching to an electric shaver may also help because it does not cut as close as blades do. Prepare the beard with electric razor preshave, and use the high setting to avoid close shaving.

Consider electrolysis and laser hair removal when all else fails. This can be expensive and take repeated visits, and there is a small risk of scarring. A few insurance companies will cover some or all of the cost. Medications are also prescribed to speed healing of the skin, including glycolic acid lotion, prescription antibiotic gels (Benzamycin®, Cleocin T®), oral antibiotics, and nightly Retin-A.

36. I've got ulcers on my legs. What can I do?

First you have to find out what kind of wound you have—vascular, diabetic, or traumatic—and then take the correct path to healing. Hundreds of different remedies are available for ulcers and wounds. If you have not had a culture (swab) of the wound or biopsy, I would advise it to help make sure you have the proper diagnosis. I have seen many patients treated for a routine wound who actually have lupus or a skin cancer or other problem. Adhesive films can be applied to the surface of the ulcer with a so-called semipermeable membrane that allows oxygen to pass into the healing area. Moisture is held inside to promote faster healing. Wound gels, debridement, irrigation, and other treatment modalities may also be used depending on the stage and depth of the wound.

Chronic ulcers are a very expensive and bothersome problem. Smoking, poor nutrition, and a lack of exercise also contribute to poor wound healing.

Chronic ulcers are a very expensive and bothersome problem. Smoking, poor nutrition, and a lack of exercise also contribute to poor wound healing. I recommend lifestyle changes as needed and referral to a dermatologist or wound care center if you have one available.

37. I have spots on my penis. Is it syphilis?

You may have red spots on your penis that are not sexually transmitted. Psoriasis is not uncommon in this area. Certain skin cancers such as squamous cell carcinoma, as well as other noncontagious skin diseases, may also be seen.

If a penile lesion persists, get it checked. Syphilis is a sexually transmitted infection caused by a spirochete *Treponema pallidum*. Syphilis is known as the great imitator because of its varying clinical signs and symptoms. Infection is characterized by episodes of active disease (primary, secondary, and tertiary) with intervening latent periods. Tertiary syphilis can develop 5 to 20 years after the first exposure and may affect other body systems, such as the brain, blood vessels, and eyes.

If you are concerned that you may have been infected or have symptoms, a blood test that uses antigens can be performed. A doctor may also choose to perform a biopsy of an ulcer or irritated area to distinguish syphilis from other diseases. Penicillin G is the treatment of choice for a patient with syphilis. If you have a penicillin allergy, tetracycline, erythromycin, or ceftriaxone can be used as alternative treatments. While being tested, you also need to be examined for other sexually transmitted infections, including HIV, hepatitis, and chlamydia. Prevention requires safe sex practices.

38. I've had a raised area where I had acne on my chest. It has been there for 20 years. Is there anything I can do?

Keloids are the raised and often reddish nodules that develop at the site of an injury when skin cells and connective tissue cells (fibroblasts) begin multiplying to repair the damage. The fibroblasts continue to multiply even after the wound is filled and project above the surface of the skin—keloids. The upper chest, shoulders, and upper back are especially prone to keloid formation. Although there may be no symptoms,

itchiness, redness, unusual sensations, and pain may occur. Keloids occur in about 10% of people. Men and women are equally affected, but darkly pigmented people seem to be more prone to forming keloids. A hypertrophic scar looks like a keloid. Hypertrophic scars are more common and don't get as big as keloids; they may fade with time.

Although keloids are considered a benign tumor, they can be a significant cosmetic nuisance. Although there is not a single cure for keloids, treatments include cryosurgery (freezing), excision, laser, x-rays, and steroid injections.

Injection of a long-acting cortisone (steroid) into the keloid once a month is usually the first choice, even if the keloid has been on the skin for many years. After several injections, the keloid may become less prominent in 3 to 6 months of time. If they are surgically removed, recurrences are common.

Systemic Diseases

What is psoriasis?

I have several small, scaly red patches on my face and arms. What are these, and what can I do?

What is rosacea?

More . . .

39. What is psoriasis?

Psoriasis
A condition in which the skin of an individual appears to be scaly and inflamed, particularly near the joints.

Psoriasis is a chronic, noncontagious skin condition that causes raised red patches topped with silvery, scaling skin, usually on the knees, elbows, scalp, and back (**Plate 8**). The fingernails, palms, and soles of the feet may also be affected. The patches, called plaques, are made up of dead skin cells that accumulate in thick layers. Normal skin cells are replaced every 30 days. In psoriasis, skin cells are replaced every 3 to 4 days.

Small patches of psoriasis can often be treated with regular use of hydrocortisone cream. Limited exposure to the sun may also help (protect unaffected skin with sunscreen). If psoriasis affects the scalp, mild tar shampoos may help.

Stress may flare your psoriasis, and stress reduction generally helps. If your psoriasis covers much of your body or is very red and itchy, seek a dermatologist's care. We now have biologic therapies for moderate to severe psoriasis; these include injections and infusions with proteins that modify the immune response.

40. I have several small, scaly red patches on my face and arms. What are these, and what can I do?

Seborrheic dermatitis
A disorder of the skin located on the scalp resulting in itchy skin and dandruff.

Impetigo
An infection of the skin caused by bacteria like *Staphylococcus aureus*.

Seborrheic dermatitis can show raised plaques and/or yellow greasy-looking scales found in the hairline, on the face, behind the ears, in the beard, and on the trunk and genitalia (**Plate 9**).

Symptoms can include itch, redness, and scaling and may mimic psoriasis, **impetigo**, fungus, and other irritating problems. When people have neurological problems such as stroke, there is an increased incidence of seborrheic dermatitis. Treatment includes topical steroids, topical and shampoo antifungal agents, and other prescriptions.

41. What is rosacea?

Rosacea (pronounced roh-ZAY-sha) is a common but little-known disorder of the facial skin that affects an estimated 14 million Americans.

Rosacea
An inflammatory condition that manifests itself in the face as redness and small lesions.

Rosacea (pronounced roh-ZAY-sha) is a common but little-known disorder of the facial skin that affects an estimated 14 million Americans. The disease can present with redness on the cheeks, nose, chin, or forehead; small, visible blood vessels on the face; bumps or pimples on the face; and watery or irritated eyes. Rosacea is becoming increasingly widespread as the baby boom generation enters the most susceptible ages. A Gallup survey found that 78% of Americans have no knowledge of this condition, including how to recognize it and what to do about it.

Because of its redness and acne-like effects on personal appearance, rosacea can cause significant psychological, social, and occupational problems if left untreated. In recent surveys by the National Rosacea Society, more than 76% of rosacea patients said their condition had lowered their self-confidence and self-esteem, and 52% reported that it had caused them to avoid public contact or cancel social engagements. Among rosacea patients with severe symptoms, nearly 70% said that the disorder had adversely affected their professional interactions, and nearly 30% said they had even missed work because of their condition. Some people mistakenly consider those with rosacea as alcohol abusers because of their skin ruddiness.

Although the cause of rosacea is unknown and there is no cure, help is available that can control the signs and symptoms of this disorder. Treatment includes oral antibiotics; the newest is an anti-inflammatory dosage of doxycycline such as Oracea®. Topical metronidazole gel such as MetroGel® 1% can also be used.

42. I have diabetes. What can I do to protect my skin?

Diabetes is a disease that has a huge impact on our culture. It is estimated to account for 15% of all healthcare costs in

the United States. It has been implicated as the chief cause of nontraumatic lower-extremity amputations, 35% of new cases of end-stage renal disease, and a significant amount of cardiovascular disease. It has been said that 100% of all diabetic patients have their skin affected in one way or another. When you consider the older population, this effect is even greater.

Diabetic bullae

A condition in which large blisters are found on the extremities of individuals who are diabetics.

Diabetic dermopathy

A condition that occurs on the legs of an individual who has diabetes. The skin has spots of hyperpigmentation caused by blood vessel leakage.

Acanthosis nigricans

A condition in which the skin becomes dark and thick, usually present in the areas of the body where skin folds.

Microangiopathy

A disease of the small blood vessels, more specifically the capillaries, that leak protein and other chemicals.

As many as 11 to 16 million people are affected with diabetes; the tremendous impact of the cutaneous manifestations of diabetes is obvious. The pathogenesis of these skin diseases is becoming clearer as more research is conducted. Even without that knowledge, some disorders are characteristically associated with diabetes. For example, **diabetic bullae**, the syndrome of waxy skin and limited joint mobility, and **diabetic dermopathy** are virtually pathognomonic for diabetes. Other diseases include fungal infections and **acanthosis nigricans**. The feet are often affected, and oftentimes, because of the reduction in arterial supply and reduced sensation and pain awareness with diabetes, a person may get puncture wounds or imbedded foreign objects without noticing it. This can lead to ulceration and infection.

Disorders of the diabetic skin that contribute to its pathology include **microangiopathy**, infection, and metabolic disturbances of the tissue. These problems cause disease in other parts of the body as well. Consequently, it is important to understand the dermal manifestations of diabetes so that one can effectively manage these common comorbidities. Treatment includes proper maintenance of blood sugar, diet, and exercise and carefully watching for signs of skin problems and infections.

Cancer

What is skin cancer?

What about melanoma?

How do you prevent these cancers from growing and killing?

More . . .

43. What is skin cancer?

Three basic types of skin cancer exist. The most common but least likely to spread is basal cell cancer. One third of all basal cells occur around the nose. Other common areas are on and around the ears, upper back, neck, and cheeks. Squamous cell cancers (**Plate 10**) are more likely to spread, and like basal cells, they are generally a result of chronic sun exposure. **Melanomas** (**Plate 11**) are the deadliest cancer. When it has grown to the size of a dime, it already has a 50% chance of having spread. The rate of melanoma in the 1930s was 1 in 1,500, and the rate is now as high as 1 in 75 persons. The four classic warning signs are moles with asymmetrical shape, irregular border, color variation, and a diameter greater than that of a pencil eraser (**Plate 12**).

Melanomas

A type of malignant tumor that arises from the uncontrolled growth of melanocytes found in the epidermis.

44. What about melanoma?

Melanoma is a form of skin cancer that begins in melanocytes (the cells that make the pigment melanin). Although most people have between 10 and 40 benign moles, the melanoma is a different entity.

I remember a patient named Ted, a stock trader, who had a biopsy on his back. When he returned for removal of the sutures, I told him, "You have a melanoma."

"I figured it was something bad because a few people told me to have it seen. Just didn't have time for it," he told me. "You know, I'm on the phone from early morning on, and in the evening, I have to get out and socialize to get more clients. It's endless."

"How long has it been on your back?" I asked.

"As far as I know, about 2 years," Ted said. "Lately it's been itching a lot. Am I gonna die?" he asked, a trace of worry in his voice.

"This is serious," I told him. "You have a chance of survival if you get this taken care of right away."

Even before I sent the sample to the laboratory for diagnosis, I was fairly certain that he had melanoma. In melanoma, there are four basic warning signs, which can be recalled as ABCD: asymmetry (if a line was drawn through the middle, the two sides would not match), border (irregular in shape, with scalloped or notched edges), color (typically brown or black, and sometimes mixes of red, white, and blue), and diameter (larger than a quarter of an inch, the size of a pencil eraser). Ted's tumor was asymmetrical with many areas of pigmentation, ranging from slightly pink to dark blue.

Melanoma arises because of accumulated DNA damage in a skin cell. The damage so deranges the cell's ability to control its growth that it multiplies repeatedly. The early stages are classified by the tumor's thickness and by how many layers of skin the tumor has invaded. The deeper the melanoma has advanced through the layers of skin, a measure known as Clark's level of invasion, the more likely it is to be fatal. Ted had a Clark's level stage III melanoma. That meant the melanoma had grown into the middle layer of the dermis but had not yet reached the deep dermis or subcutaneous fat.

In the past few years, great advances have been made so that the surgery for a safe and thorough melanoma removal requires removing much less tissue. With thin melanomas, outpatient procedures under local anesthesia are sufficient. Healing generally occurs in 1 to 2 weeks, and scars are minimal; however, when the melanoma has progressed beyond stage II, as in Ted's case, the key question becomes this: Has the tumor shed cells and spread beyond the original site? If it has spread, the lymph nodes closest to the tumor are the most likely site of metastases.

I hadn't detected swelling of nodes in Ted's armpits or neck, but that didn't mean the tumor hadn't spread. A new method, called **lymphoscintigraphy**, can precisely map the lymph system using a small amount of a radioactive substance injected at the site of the melanoma. With the help of a scanner, the path of lymphatic fluid draining from the melanoma to the

Lymphoscintigraphy
A diagnostic method used to identify lymphedema, the spread of cutaneous melanoma, and other diseases.

nodes can be traced. The surgeon can examine the results and biopsy only the lymph nodes that are in line to receive lymph fluid from the melanoma. If the cancer is suspected to have spread widely, however, the physician may order more extensive scans, such as computed tomography scans or magnetic resonance imaging scans.

In Ted's case, a preoperative evaluation included a complete blood count, a chest x-ray, and liver function studies to help rule out extensive metastases. A preoperative lymphoscintigraphy showed the presence of a tumor in the nodes in his armpits. Surgery was done to remove the melanoma and the affected nodes.

In stages III and IV disease, additional therapy may follow surgery. Several cancer drugs are used to treat melanoma. In addition, experimental melanoma vaccines are being studied. These vaccines are designed to boost the body's defenses against an existing melanoma, and many are in clinical trials for patients with stages III and IV disease. Another experimental strategy is to treat patients with naturally occurring immune-system factors that discourage the tumor's growth and spread.

I saw Ted 3 months later, and he expressed his appreciation and stated, "I didn't realize what a mess I was in."

"You're getting another chance," I said.

"Do I have a higher chance of another melanoma?"

"Yes, the chances of having another melanoma are greater with a history of melanoma. You need regular checkups every 3 months for 3 years and then yearly for life," I said. "With careful watching, most second melanomas are caught at an early stage and are treated by surgical excision."

"Is there a special melanoma diet?"

"No, but you'll do better keeping a well-balanced diet with folic acid, vitamins B_6, B_{12}, C, and A, and iron and zinc."

"Is it safe to donate blood?"

"In most cases, blood centers will not accept blood from someone who has had cancer," I said.

"Should I avoid the sun?"

I explained that the Skin Cancer Foundation recommends that all people avoid the sun as much as possible, especially during the hours of 10 a.m. to 4 p.m. I told him to use a sunscreen with a sun protection factor of 15 or greater and to always wear a hat and sunglasses outdoors. People with a fair complexion, blue eyes, and blond hair are the most susceptible to melanomas, as are people with a history of blistering sunburns during childhood.

"I have a sister who has some dark moles on her skin. Who should she see?"

"A dermatologist." The studies show that general physicians don't typically have enough experience to diagnose melanoma skin lesions with the same accuracy as dermatologists. Family members of a melanoma victim have a greater chance of getting melanoma and therefore should be checked also on a regular basis.

I have seen Ted now for more than 10 years since his melanoma surgery, and he continues to be melanoma free.

45. How do you prevent these cancers from growing and killing?

Children must be protected from harmful exposure to ultraviolet rays. Studies have shown that the risk of developing skin cancer increases if children have three blistering sunburns

Studies have shown that the risk of developing skin cancer increases if children have three blistering sunburns before the age of 18 years.

before the age of 18 years. The younger a child is when the burns occur, the greater the risk.

Stay out of the sun. Use sunscreens with a sun protection factor of 15 or greater every day, and use mild antibacterial soaps and cleansers. You should wear sunglasses with ultraviolet protective coating and hats with brims wide enough to protect the head, ears, and neck. Special clothing that protects the skin from ultraviolet damage can be purchased. Remember that the ultraviolet light from tanning beds is equally dangerous. There is no such thing as a safe and glowing tan. Self-tanning creams provide an alternative if one feels a need for a tan. Remember that many medicines taken internally, such as tetracycline and estrogens, can increase your sensitivity to ultraviolet light and the chance of you burning your skin.

Many techniques are available for treatment of cancerous and precancerous lesions. Cryosurgery, the use of liquid nitrogen for treatment of abnormal skin lesions, has been used since the early 1900s. Whitehouse had an article published in the *Journal of the American Medical Association* in 1907 entitled "Liquid Air in Dermatology: Its Indications and Limitations." A doctor named Torre came along in the 1960s and developed a practical apparatus to use liquid air in a spray form. It rapidly developed into the preferred method of cryosurgery for treating benign and malignant lesions. When I ask my nurse whether my guns are loaded, she knows that I refer to the canisters that I use to administer my liquid nitrogen therapy. Like many dermatologists, I shoot them all day long.

Liquid nitrogen is truly remarkable—using liquid at subzero temperatures to destroy tissue in a relatively easy manner. Destruction of malignant cells requires a temperature at least as cold as –50° centigrade. Not only does it seem magical to me that the liquid stays liquid at these temperatures, but the results can be amazing. How does it work? Cryosurgery targets the dermal–epidermal junction, providing separation

and removal of epidermal lesions. In simple terms, the nasty, unwanted growths usually blister and fall off. Some of the benefits compared with other surgery include very little, if any, bleeding, no additional anesthesia, low rate of wound infection, no sutures, a biopsy that can be done while the lesion is frozen, rapid healing, easiness, and quickness. Not bad.

The skin is an amazing, versatile organ. We have good treatments for your skin ills. My advice, however, is to protect your skin and prevent skin cancers and other problems.

46. How often should I have an exam?

Every year on your birthday you should get your birthday suit checked. In addition to yearly skin exams by a dermatologist, the American Academy of Dermatology recommends self-exams every month as the best way to catch potentially cancerous skin conditions in the early stages.

47. How do I perform the self-exam?

When you examine your skin, look for any changes in moles or freckles, as well as any new spots that are asymmetrical, more than one color, the size of a pencil eraser or larger, or have uneven borders.

To conduct the exam you'll need these items:

- A full-length mirror
- A hand mirror
- A bright light
- Two chairs
- A blow dryer

Start by looking at your face and scalp in the mirror. Use the blow dryer to get a good look at your scalp. Next, focus on your hands, fingernails, elbows, arms, and underarms. Now examine your neck, chest, torso, and under your breasts, and then use the hand mirror to look at your back, shoulders,

back of your neck, buttocks, and legs in the full-length mirror. Finally, sit down and closely look at your legs and feet, especially the soles, heels, and toenails. Use the hand mirror to examine your genitals.

If you find *any* abnormalities, see your doctor as soon as possible.

48. What if I think I have a skin cancer but the doctor does not appear concerned?

It is very important that you explain to your dermatologist what you want. The ability to negotiate is a good skill, and if you feel that you want a lesion removed, make your point clear. Many times a patient felt that he or she had a problem and the doctor refused to biopsy it; later it was discovered to be cancer. Almost every week I see someone with a skin cancer who was told by a previous physician to "not worry about it." Your intuition about your own body can be a very powerful tool.

It is impossible to know 100% of the time what a lesion is without a biopsy diagnosis. I have seen many lesions that look like a melanoma but later turn out to be a pigmented basal cell carcinoma or other less severe problems and not the more harmful melanoma. Providing reassurance and a clear diagnosis is one of the most rewarding parts of my job.

You can be a prevention advocate for your family. Because we know that the bulk of sun damage occurs during childhood, this period of life is a vital time for parents to be good role models and to teach their children effective sun-protection habits.

More than 80% of skin damage happens before the age of 18 years. Skin cancer lags behind about 10 to 20 years later, after the major damage has already been done; therefore, it is especially important to protect children and infants from the sun. Even if you are over 18 years old, you are not out of

the danger zone. Sun damage is cumulative. Each time your skin is burnt it keeps a diary and adds it to all the old damage that you've accumulated. With each sunburn, your risk for melanoma doubles.

49. What is Mohs surgery?

Mohs micrographic surgery uses histologically prepared frozen tissue sections to evaluate the surgical margins of excisions performed to remove skin cancers. The use of microscopic control and horizontal excisions and sectioning of cutaneous **neoplasms** should maximally conserve the greatest amount of normal tissue and also provide the highest cure rate possible. Mohs surgery is also very good for recurrent tumors that have failed to respond to previous treatment and for certain types of basal cell carcinomas.

Mohs micrographic surgery

A surgical method that removes skin cancers while simultaneously analyzing the cancerous tissue.

Neoplasm

A new growth of the body's own cells no longer under normal physiologic control.

Discoloration

Why does my skin seem to bruise easily?

Are liver spots a sign of liver disease?

I have brown patches on my face where it looks like my skin is stained. What are these?

More . . .

50. Why does my skin seem to bruise easily?

As you age, your skin gets thinner, and the underlying blood vessels are less protected from injury.

As you age, your skin gets thinner, and the underlying blood vessels are less protected from injury. The resultant extravasation of blood into the surrounding tissue, commonly seen on the dorsal forearm and hands, is referred to as purpura or ecchymosis. An injury from even a mild trauma may result in a sizable bruise.

Bruising may be an indication of an underlying condition. If bruises consistently appear for no apparent reason, it is important to check for a bleeding disorder. A common reason for bruising is the use of anticlotting medications. Protect your skin against trauma and friction. Long-sleeved shirts reduce shear and friction.

51. Are liver spots a sign of liver disease?

Lentigines

Commonly called liver spots. They occur when portions of the skin become sun damaged. They present with darkening of the skin in a specific region, commonly on the back of the hands, face, and neck.

Liver spots have nothing to do with the liver, nor are they an indication of liver disease. They are more correctly called age spots or photoaging spots and are not cancerous or precancerous. In medical terminology, they are called **lentigines**, lentigos, or solar lentigines. They are usually light to dark brown (nearly black) flat patches on the hands, face, legs, or feet (**Plate 13**). The edges of the spots are rounded, giving them a resemblance to a large freckle. One may appear by itself, or several may cluster together. The causes of these spots are (1) an inherited tendency to form them and (2) chronic sun exposure.

You can help prevent more solar lentigines by avoiding excessive sun exposure and using effective sunscreen. Pigmented lesions that may be similar in appearance but have uneven rather than rounded edges could be melanoma and should be evaluated by a dermatologist.

52. I have brown patches on my face where it looks like my skin is stained. What are these?

The signs of **melasma** are dark, irregular patches commonly found on the upper cheek, nose, lips, upper lip, and forehead that often develop gradually over time. Melasma often occurs after giving birth or after stopping oral contraceptives or hormone replacement therapy.

Melasma

A condition that usually occurs from various effects of hormones present during times of pregnancy. The manifestation is the presence of a darkened color of the face due to increased melanin production.

Melasma is thought to be the stimulation of melanocytes or pigment-producing cells by the female sex hormones estrogen and progesterone to produce more melanin pigments when the skin is exposed to sun. Women with a light brown skin type who are living in regions with intense sun exposure are particularly susceptible to developing this condition.

Genetic predisposition is also a major factor in determining whether someone will develop melasma. The incidence of melasma also increases in patients with thyroid disease. Uncommon causes of melasma include allergic reaction to medications and cosmetics and as a symptom of Addison's disease. Melasma does not cause any other conditions beyond the cosmetic discoloration.

Treatments to help fade the discolored patches include the following:

- Tretinoin, which is an acid that increases skin cell (keratinocyte) turnover. This treatment cannot be used during pregnancy.
- Topical depigmenting agents, such as hydroquinone, which are either in over-the-counter (2%) or prescription (4%) strength. Hydroquinone is a chemical that inhibits tyrosinase, an enzyme involved in the production of melanin. Combination products such as Tri-Luma® can also be used.

- Azelaic acid (20%), which is thought to decrease the activity of melanocytes.
- Facial peel with alpha hydroxy acids or chemical peels with glycolic acid.
- Laser or red light treatment.

All of these treatments and effects are gradual. A strict avoidance of sunlight is required, along with the use of broad-spectrum sunscreens with physical blockers because ultraviolet A, ultraviolet B, and visible lights are all capable of stimulating pigment production. Cosmetic coverups can also be used to lighten the appearance of melasma. More information about these treatments is discussed later in this book.

53. I have this reddish brown patch on my neck. What is this, and can I do anything about it?

Poikiloderma of Civatte

Often occurs in middle-aged women on the sides of their neck resulting in appearance of tangled or leaky blood vessels and pigmentation. The condition is not serious, but its onset is believed to be due to hormonal changes.

You may have **poikiloderma of Civatte**. Poikiloderma refers to a change in the skin where there is thinning, increased pigmentation, and dilation of the fine blood vessels (telangiectasia). Civatte, a French dermatologist, first described this pattern that affects the skin of the sides and front of the neck. Poikiloderma of Civatte characteristically spares the shaded area under the chin.

Most people with poikiloderma of Civatte are usually asymptomatic, although occasionally patients report mild burning and itching and increased sensitivity of the affected skin. Many contributing factors have been identified, including chronic exposure to ultraviolet light, photosensitizing chemicals in perfumes and cosmetics, and a genetic predisposition.

Diagnosis is made on biopsy, laboratory tests, and clinical findings. Treatments include topical retinoids, hydroquinone, and alpha-hydroxy acids, as well as protecting the skin from the sun to prevent further damage. By reducing pigmentation changes, intense pulse light has been beneficial in the treatment of poikiloderma of Civatte.

Skin and the Circulatory System

My leg veins stick out, and I don't like them.
What can I do?

I get little cherry-colored bumps on my skin.
What are they?

If I get a dark blue bump on my lip, is it skin cancer?

More . . .

54. My leg veins stick out, and I don't like them. What can I do?

Join the crowd—about 80 million adults in the United States have varicose veins and their smaller cousins known as spider veins.

Varicose veins usually occur in the legs, where their knotted bluish appearance can be a substantial problem. Complications can develop such as venous stasis ulcers, inflammation of veins (phlebitis), or, in severe cases, blood clots that come loose and become emboli to distant organs such as the lungs.

Spider veins are formed by the dilation of small blood vessels and become visible because they live near the surface of the skin. Although not a threat to health, they can be disfiguring. Spider veins are commonly found on the face and legs and appear as a "sunburst" pattern of reddish to purplish small veins.

The incidence of both varicose veins and spider veins increases with age and may be an inherited trait. Pregnancy and hormonal changes may contribute to the development of enlarged veins. Although there is no sure method of preventing varicose veins and spider veins, protection against forming varicose veins may be provided by wearing support hose and maintaining a normal weight.

Treatment for varicose veins and spider veins include:

- Sclerotherapy: a chemical solution is injected into veins to cause them to collapse and close up. It may require multiple treatments to clear all affected veins and more treatments may be needed from time to time as new enlarged veins appear. Side effects can include slight bruising and swelling at injection sites.
- Phlebectomy: an enlarged vein is removed through tiny incisions along its course. The procedure is done in an outpatient setting and is particularly useful for large varicose veins.

- Electrodessication: an electrical current is used to seal off enlarged veins.
- Laser surgery: pulses from a laser selectively destroy enlarged veins and spider veins.
- Surgical ligation and stripping: a procedure usually reserved for larger varicose veins, often done by a vascular surgeon in a hospital. The varicose vein is tied off (ligated) or completely removed.

55. I get little cherry-colored bumps on my skin. What are they?

These are **angiomas**, benign growths that consist of small blood vessels that can be located anywhere on the body. Different types include spider angiomas, cherry angiomas, and angiokeratomas. Although the cause of most types of angiomas is not known, cherry angiomas are due to aging and do not have any known significance. Spider angiomas are more common in childhood and during pregnancy, but when present in large numbers, they may warn of liver damage. Angiokeratomas are an overgrowth of blood vessels and skin cells.

Angiomas

These are benign tumors that are comprised of lymph tissue and blood vessels. These tumors are red in color and not usually life-threatening.

Treatment of angiomas is not necessary unless they bleed or are bothersome. If treatment is required, the dermatologist will recommend the most appropriate method. **Electrodesiccation**, which is touching the skin with an electric needle to destroy the blood vessels, is one of the treatments. We also occasionally use this treatment to eliminate the unwanted facial veins of rosacea. Liquid nitrogen is a cold gas that is sprayed on the skin with a spray gun to destroy the angiomas and is also used in treatment of lesions such as seborrheic keratoses and warts. Laser uses a beam of concentrated light to destroy the lesion and is also used at times to destroy unwanted leg veins or the facial veins of rosacea. All of these common treatment modalities usually give a good cosmetic result, although angiomas sometimes recur after treatment.

Electrodesiccation

Scraping or burning off skin growths (also known as electrodesiccation and curettage). It can be used for less serious skin cancers, precancers, and benign growths.

56. If I get a dark blue bump on my lip, is it skin cancer?

Venous lake

A lesion that appears purple and raised. It is generally located on the lip, and is caused by the leakage of capillaries or due to the inability of blood to flow out freely.

This is most likely a **venous lake**—an asymptomatic, solitary, soft, compressible, dark blue to violaceous, 0.2- to 1-cm papule commonly found on sun-exposed surfaces of the vermilion border of the lip (**Plate 14**), face, and ears. Lesions generally occur among older individuals. If it persists, itches, bleeds, or gets larger and more irregular, get a biopsy.

57. What can I do about dark circles under my eyes?

Do you look into the mirror and seeing a raccoon staring back at you? What causes dark circles under the eyes? Working late, allergies, too little sleep, increasing age, and poor nutrition all can contribute. These are not the physiological reason for the dark circles, however.

The same kind of chemical reaction that produces bruises hits around your eyes. This area is the thinnest and most delicate skin of your face and is populated by with tiny capillaries. Blood sometimes leaks from these capillaries, and your body tries to mop up the loose blood by breaking it down in an oxidization process known as hemoglobin degradation. As the hemoglobin degrades, it turns a dark bluish red. Guess what? You get dark circles under the eyes, but you don't have to get hit in the face!

Certain eye circle creams speed up the rate of the hemoglobin degradation and strengthen the capillaries in your skin to help fade the dark pigmentation and prevent more damage.

What can you do to get rid of the circles? Certain eye circle creams speed up the rate of the hemoglobin degradation and strengthen the capillaries in your skin to help fade the dark pigmentation and prevent more damage. Some of the bleaching creams containing hydroquinone also help the darkness diminish but should be used with caution near the eyes. Tanning can make dark under-eye circles even worse by bringing the melanin to the surface of the skin, making it darker.

What else?

Allergies can contribute to dark under-eye circles. The allergic reaction can elicit allergic shiners that can reflect under the eye. If the allergies cause you to rub or scratch your eyes, the fragility of the skin can break down the capillaries and darken the skin. Fatigue or inadequate rest can make your skin paler, and this makes dark circles look darker. During pregnancy and/or menstruation, skin becomes pale, and thus, the dark circles look darker. Too much sun can make the circles appear darker. As you get older, the skin around your eyes becomes thinner, and the dark under-eye circles can become more pronounced. Eating a balanced and healthy diet allows you to take in essential nutrients that inhibit dark under-eye circles.

A patient of mine named Lisa had tried everything.

Lisa said this:

I put drops of lemon juice under my eyes, but it got in my eyes. So in addition to my dark circles, I also had bloodshot eyes. I used creams, slices of cucumber, slices of potato, tea bags, and everything else.

Then I found what worked for me. I took a vitamin E capsule and pierced it with a pin. Then I dabbed a bit of it on the skin under my eyes. It helped cut down my dark eye circles and puffiness as well. Then I swallowed the rest of the capsule. In the evening before going to sleep I put on a small amount of a prescription bleaching cream, and that also helped my skin. Until I got better, I used a concealer.

Cold washcloth compresses can help constrict the blood vessels and decrease the under-eye darkness. Drinking more water (at least 8 to 10 glasses per day) can help to cleanse your body of impurities that can contribute to dark eye circles. Don't get discouraged, as there are many ways to improve your looks.

58. What about my tiny bruises?

Susan said this:

I am 62 years old, and for many years, I have had tiny bruises about the size of a pinpoint all over my body. I keep getting more all the time, and some have gotten a little bigger. Should I be concerned?

Petechiae

Small red spots under the top layer of skin due to the leaking of nearby blood vessels.

The spots may represent **petechiae**, tiny blood hemorrhages in the uppermost layer of the skin. Petechiae can erupt from variety of causes—from just being normal to having leukemia or lymphoma. Your doctor needs to rule out serious medical diseases and may choose to take a skin biopsy to check your skin on a microscopic level. Other conditions include vasculitis and Shamberg's disease. The cause for petechiae should be explored.

59. What about stasis dermatitis?

Sam, age 71, said this:

I have a scaly, dark colored spots on my ankle. I have been told it is poor circulation and to keep moisturizers on it. What else do you suggest?

Stasis dermatitis

A condition of the skin due to the pooling of blood in the lower legs; leaky valves in the veins prevent the proper return of the blood to the trunk of the body.

Most likely you have **stasis dermatitis**, an extremely common rash that is caused by slowing circulation. Stasis dermatitis occurs from slowed blood flow to the legs caused by atherosclerosis (hardening of the arteries), vein disease, or chronic heart failure.

Leg elevation while at rest is a crucial part of treatment. If you have stasis dermatitis, elevate your heels to a point slightly higher than your hips without bending your knees.

60. What if I wear support hose?

A support-hose prescription such as T.E.D.® or Jobst® brands will help the blood flow in your legs. Heredity, age, surgery, occupation, and other issues are important factors in leg health.

You can improve your circulation through exercise, good posture, choosing proper fitting clothing and footwear, and wearing gradient compression hosiery that does the job for you. These types of hose are particularly important if you are recovering from surgery and need to prevent an embolism.

61. Will the dark color from stasis dermatitis ever disappear?

The brownish tan stain in the skin of your legs is caused by the deposition of iron in the skin from blood that has leaked out previously and by melanin. Although this dark skin color can lighten over time, it usually takes a long time.

Cosmetic Procedures

What can I do for skin rejuvenation?

What is a chemical peel?

What about laser resurfacing?

More . . .

62. What can I do for skin rejuvenation?

Botox, chemical peels, fillers, facial reconstruction, and prevention are all choices that you can make to help freshen your skin and lessen the accumulated effects of aging.

Botox®, chemical peels, fillers, facial reconstruction, and prevention are all choices that you can make to help freshen your skin and lessen the accumulated effects of aging. Products to treat mildly damaged skin include alpha-hydroxy acids, derived from fruit and dairy products, alone or in combination with tretinoin. Over-the-counter products containing retinols (of the vitamin A family), antioxidants (especially vitamins C and E), and hyaluronic acids may improve the appearance of fine lines and wrinkles. Daily use of moisturizers and sunscreens is a key to overall success.

63. What is a chemical peel?

As the name implies, this process peels the skin and may include one or more chemicals such as alpha-hydroxy acids, trichloroacetic acid, or carbolic acid. Other terms include chemexfoliation or dermapeeling. The treatment is used to repair the skin damage of superficial to moderate photoaging and to reduce acne scars. Discuss the objectives of your treatment with your dermatologist. Based on your decision, the strength of the chemical solution and the depth of the peel will be modified.

A chemical solution causes the skin to blister mildly and to peel off over a period of hours and days. The new skin that forms to take its place is usually smoother and less wrinkled than the old skin. Often a series of mild, light peels in combination with a skin care program, including retinoids and a sunscreen protection program, is used to treat fine lines and wrinkles. If you have moderate skin damage, a medium-depth peel is often more effective to help eliminate solar elastoses, lentignines, and actinic keratoses.

What about after-effects? The redness that follows a chemical peel is similar to a sunburn and may last 3 to 5 days. If a medium-depth or deep peeling is done, the redness, swelling, blistering, and peeling may last for 7 to 14 days. Medications

are generally prescribed to alleviate discomfort. Avoid overexposure to the sun.

64. What about laser resurfacing?

The laser is a light "pump" that narrowly segregates light of selected wavelength and "pumps" the light radiation to high intensity and varied durations depending on the required task.

"Resurfacing" the skin with laser allows for a reduction or removal of wrinkles, lines, and other effects of aging and photoaging. Other treatments with the laser include removal of superficial brown pigmented lesions and deep pigmented lesions such as port wine stains and birthmarks and removal or improvement of scars, some skin cancers, vascular moles, tattoos, warts, and unwanted hair.

Included in the benefits of laser skin resurfacing are bloodlessness, precise effects, and 1-day outpatient treatment. A medium-depth chemical peel may be combined with laser resurfacing to achieve maximum effectiveness.

65. What about soft-tissue augmentation and fillers?

To achieve soft-tissue augmentation, a substance that is compatible with your body tissues is injected under the skin to eliminate irregularities such as wrinkles, pits, and scars. Collagen is a fibrous protein substance in all human and animal tissue. Injections are usually given in a series of treatments to fill out a wrinkle or depression. The effects of collagen injection may last for 3 to 12 months.

In microlipoinjection, self-donated body fat is harvested from your own body and prepared for this fat-transfer procedure. The fat is used to replace fat lost from under the skin in the aging process. The newest products, including Restylane®, Juvederm®, Radiesse®, and others, show persistent effects for up to 2 years and have replaced many of the former products.

66. What is Botox, and is it right for me?

Purified botulinum toxin in very tiny amounts is injected into a targeted facial muscle, and the resulting nerve blockade of that muscle causes a local immobilization of muscle movement that prevents crinkling and wrinkle lines from forming when you frown or squint. The potent biological effects of botulinum toxin can be used to diminish temporarily frown lines, crow's-feet, and facial wrinkles. Although botulinum toxin is the powerful agent of botulism food poisoning, you cannot contract botulism from the cosmetic use of botulinum toxin.

Although cosmetic procedures have become less invasive and require less downtime, you should know what to expect after the procedure. What are the risks and side effects of the procedure? Although the risks involved in most cosmetic procedures are minimal, any potential complication should be discussed before the cosmetic procedure is performed. Botox rejuvenation can result in temporary swelling, redness, or bruising.

How long will the results last? Most cosmetic results are not permanent, and if you smoke or have other complications when healing, it may take more time to see results. Botox rejuvenation usually lasts about 3 to 4 months. For maximum effectiveness, treatment with botulinum toxin is repeated over several sessions.

Dermabrasion

A surgical procedure used for cosmetic reasons to improve the appearance of the skin.

67. I have heard that dermabrasion might be great for me. What can I expect from it?

Dermabrasion is very useful for removal or reduction of acne and chickenpox scars and for facial skin rejuvenation.

Dermabrasion is very useful for removal or reduction of acne and chickenpox scars and for facial skin rejuvenation. The procedure planes off the surface layer of skin with a rapidly rotating brush and removes the skin surface. A new layer of skin grows to replace the removed skin. Redness of the skin similar to a severe sunburn may occur afterward, and healing usually is complete in about 10 days. Sunlight restriction for several months after treatment is recommended.

Dermabrasion may be combined with other procedures such as soft-tissue augmentation to maximize effectiveness.

At our office, we use a technique that removes less surface skin and is called microdermabrasion. It is quite useful for superficial skin defects and is repeated at intervals.

68. I have bumps on my nose from rosacea. What surgical alternative methods are available?

The electrosurgical resurfacing technique may be used to treat various raised surface areas. I have had several patients with the large bulbous bumps of rosacea, called rhinophymas (think of W.C. Fields' nose), that responded well to a sculpting process using an electrosurgical technique. I smooth out the rough terrain, and the patients generally recover with few side effects. Treating the underlying rosacea also helps to prevent recurrence.

69. What is liposuction?

Unwanted fat deposits are one of the visible signs of aging. Despite diet and exercise to keep looking young and trim, you may still have unwanted fatty deposits. Common areas of concern are on the face, chin, neck, breast, abdomen, hips, thighs, buttocks, knees, and ankles.

Tumescent liposuction is a procedure that removes these localized fat deposits and is performed only after a full medical evaluation. It is important to be in good health and have realistic expectations of liposuction before having the procedure.

An incision is made in the skin, and the fat is removed with a vacuum tube into a collection system. This procedure is performed in an outpatient setting with local anesthesia and antibleeding medication. Fat cells that are removed by liposuction do not grow back. The postoperative pain and need for medication vary in each person. Because of the slow resolution

of postsurgical swelling, the final results after liposuction are not seen for 12 to 16 weeks, although most people see improvements within 4 weeks. Liposuction is not a substitute for diet, exercise, or weight reduction but can be used as an adjunct method of improving your looks.

70. What is Retin-A, and should I use it?

Retin-A (tretinoin) is used to reduce fine wrinkles, blotchy pigmentation, and rough skin associated with chronic sun exposure. This is a topical vitamin A derivative and has been used quite effectively for many years to help reverse sun damage. Retin-A is one of the products that we include for the majority of patients who want to maintain more youthful skin and reverse sun damage.

71. What about exfoliators for my face?

The skin constantly renews itself by sloughing its top (horny) layer. At times, because of either overproduction or inadequate removal, these cells build up. This makes the skin appear scaly and can be rough to the touch. Removing this excess scale with exfoliators makes the skin feel better and might make other agents such as moisturizers work better.

72. How can my skin be like Cleopatra's?

Alpha-hydroxy acids (AHA) are compounds that can now be found in over 200 skin treatment products. Mild exfoliation, wrinkle effacement, nail rejuvenation, and overall improved skin and hair comes in the form of shampoos, moisturizers, cleansers, toners, and cosmetics that contain alpha-hydroxy acids. In higher concentration, physicians and others use alpha-hydroxy acids as superficial or mid-depth peeling agents.

To maintain her beauty, Cleopatra used red wine, which contains alpha-hydroxy acid, on her face. This may have been the secret of success for one of antiquity's most attractive women. Alpha-hydroxy acids comprise a group of organic compounds

derived from sources such as fruit juices (thus the name *fruit acids*), sugar cane, milk, and grapes. How do they work? Although still not completely understood, they may weaken the bonds between cells and facilitate sloughing and may also be mild irritants that stimulate the skin to renew itself faster by losing its horny layer more efficiently.

Alpha-hydroxy acid is primarily used as a mild exfoliant. A few of the currently available brands include these:

- Eucerin® Plus (5% AHA)
- Lac-Hydrin® Five (5% AHA)
- Alpha Hydrox® (8% AHA)
- Dermalogica® Skin Smoothing Cream (8% AHA)
- Aqua Glycolic® Face Cream (12% AHA)
- MD Formulations® Facial Lotion (12% AHA)

Alpha-hydroxy acids are easy to use after cleansing and drying your skin. Apply a thin layer of the product as you would a moisturizer. You might have a few seconds of mild burning, but if this is too intense or if it lasts for a long time, use a lower concentration of the alpha-hydroxy acid.

Do not use other potential irritants, such as alcohol or harsh soaps. Your skin may seem flakier than usual for the first few weeks of use, and that is okay, as the alpha-hydroxy acid is doing its job.

Blepharoplasty
A procedure in which the extra skin of either the upper or lower eyelids are surgically removed.

Rhytidectomy
A plastic surgery procedure more commonly called a face lift.

73. What else works to improve my face?

Blepharoplasty (eyelid surgery) can be used to correct droopy eyelids by removing excess fat pads and skin. A brow lift may reduce lines in the forehead and raise the eyebrows. **Rhytidectomy** (face lift) tightens and trims excess skin on the cheeks, chin, and neck and around the mouth. This procedure works quite well for those with Favre-Racouchot.

Blepharoplasty (eyelid surgery) can be used to correct droopy eyelids by removing excess fat pads and skin.

Hair and Nails

My nails are getting yellow and brittle.
What can I do?

My hair is gray and feels thinner. What should I do?

Why do some older people grow excess body hair
in places they don't want, especially the ears, nose,
and eyebrows?

More . . .

74. My nails are getting yellow and brittle. What can I do?

Over 90% of older people have nail dystrophies; nails that have been compromised by trauma are more prone to fungal infection. If you suspect that you have a fungal infection, a biopsy (nail clipping) will identify a fungus such as *Trychophyton rubrum*. The treatment is not always benign, and oral medications can be costly and interfere with other drugs you may be taking. Toenails decrease their growth rate over time, and if also thickened, the effectiveness of antifungal drugs is reduced. Many topical treatments have shown limited results. You have to decide how much the discoloration bothers you and whether you are willing to take the risks associated with therapy.

As we age, our nail plates thin, the half moons disappear, and ridges develops. When you moisturize your skin, be sure to include your nails. Biotin in oral supplementation has shown to be effective in some studies.

75. My hair is gray and feels thinner. What should I do?

Gray hair is a characteristic of normal aging—we tend to develop gray hair because the pigment in the hair is lost and the hair becomes colorless. In men, graying takes place earlier and more often than in women—hereditary factors and hormonal situations as well as age are of importance.

The average human head has about 100,000 hair follicles. Growth hormone levels peak at puberty and decrease thereafter—skin thickness and skin total collagen are reduced with aging. Advancing age brings on a gradual decrease in the number of hair follicles over the entire body. Androgenetic alopecia (balding) results primarily from the androgen-dependent conversion of relatively dark thick scalp hairs to lightly pigmented short, fine, villous hairs (like that of the ventral forearm).

76. Why do some older people grow excess body hair in places they don't want, especially the ears, nose, and eyebrows?

Men in old age will develop increased hair growth on the tip of the nose, vibrissae of the nasal entrance, eyebrow area, and hypertrichosis of the pinnae (ears). These conditions may have a genetic basis.

In women, hair on the chin, over the upper lip, or on arms and legs can create an appearance of older age or masculinization and can be quite bothersome. **Hirsutism** is the medical term for excess hair on a woman in the places only adult men should grow hair. For most women, the tendency toward hirsutism is inherited, although excess hair growth may be present in both the female and male family members. Although hirsutism usually begins around puberty, mild hirsutism can start at any age. As women age, they gradually develop more facial or body hair. Hypertrichosis (as opposed to hirsutism) is an excessive quantity of hair in a normal location such as the calf of the leg.

Hirsutism

This condition usually affects women. The condition presents itself with large amounts of dark hair growth in the areas on the body where hair is usually not present.

Hirsutism is usually caused by an increased sensitivity or production of the skin to a group of hormones called androgens (testosterone and androstenedione). Androgen disorders (**hyperandrogenism**—increased levels of male hormone production in women) affect between 5% and 10% of all women and most commonly bring on irregular menstrual cycles.

Hyperandrogenism

This condition occurs with the overexpression of male hormones in either females or males.

Tests to see whether this is caused by a treatable condition usually include testosterone (T) levels, dehydroepiandrosterone sulfate (DHEAS), 17-hydroxyprogesterone, prolactin, T4, and TSH. A breast exam and an endometrial biopsy may be indicated.

77. What can I do to get rid of excess hair?

Traditional methods of removal of superfluous hair include these:

1. Shaving
2. Bleaching
3. Waxing
4. Plucking
5. Chemical depilatory
6. Electrolysis or electrothermolysis

An available prescription cream that stops facial hair growth, Vaniqa® (pronounced Van-ih-KA), helps many women and has no major side effects.

In recent years, laser hair removal has been proven effective in removal of unwanted hair, with hair loss for 2 or more years.

In recent years, laser hair removal has been proven effective in removal of unwanted hair, with hair loss for 2 or more years. This is accomplished by photothermolysis—using a laser to generate heat in hair follicles and render them incapable of growing new hair. Many factors, including skin and hair color, are considered in determining the type of laser to use, duration of treatment, and number of treatments.

Be careful about who and where you choose to do your treatments. With medi-spas popping up everywhere, make sure that you find out the treating person's qualifications and experience in the use of lasers.

78. What are the effects of laser hair removal?

All medical treatments have potential side effects, and laser hair removal is no exception. Side effects are considered either temporary or permanent. Local anesthetic may be used during the procedure to decrease pain.

Hyperpigmentation
The darkening of the epidermis due to an increase in the presence of melanin.

Posttreatment pain, swelling, and redness can last for a few hours to a few days. Blistering may be the most painful and noticeable side effect. **Hyperpigmentation** (temporary

darkening of the skin) can occur. Medicine to alleviate these side effects should be offered.

Permanent side effects can include skin discoloration, most often permanent lightening of the skin on the treated area. The laser is designed to decrease the pigmentation in darker colored hair and can sometimes affect darker colored skin as well. Scarring and burns are uncommon.

Laser hair removal may or may not be the right decision for you, but the risk of possible side effects must be considered. To minimize risks:

1. Choose a qualified practitioner with a good track record doing laser therapy.
2. Tell your practitioner whether you have any family medical or hormonal conditions.
3. Let your practitioner know whether you have any form of the herpes virus in the intended treatment area. Take any antibiotic or antiviral medications that may be prescribed.
4. Avoid unprotected sun exposure or tanning for several weeks before your procedure. Your lightest skin tone for the treatment will maximize results and minimize side effects.
5. Avoid waxing or plucking the treatment area for several weeks before the procedure. Clean the treatment area on the day of the procedure. Do not wear makeup if your face is being treated.
6. Follow any preprocedure or postprocedure instructions given.

79. What can I do about hair loss?

Hair loss in men or women can contribute to the appearance of looking older than chronologic age. One of the hair-restoration procedures may be used alone or in combination with a procedure for facial skin rejuvenation to take years off

your apparent age. Any person who feels that hair loss is a problem should consult a dermatologist. The first step in treating hair loss is diagnosing its causes. These can include heredity, various acute and chronic diseases, nutritional deficiency, medications, radiation, and improper hair treatments.

The most common cause of hair loss in men is male-pattern baldness, a condition with a hereditary basis. In women, the most common conditions are androgenetic alopecia baldness and **telogen effluvium**, which causes thinning of scalp hair but not bald patches (**Plate 15**). A condition of unknown causes called alopecia areata occurs in both men and women, causing hair loss in small circular patches.

Telogen effluvium
A common condition in which the body undergoes alopecia, otherwise known as hair shedding or balding.

Based on medical evaluation, a dermatologist will recommend the procedure that is right for the individual patient. Male-pattern baldness may be medically treated with topical minoxidil or oral finasteride, drugs that can restart hair growth or at least maintain the hair they have in some patients.

80. Is a hair transplant painful?

Most patients report only a small amount of discomfort associated with a hair transplant procedure. All patients are given a relaxing medication before the procedure, and local anesthetic is used. The hair transplant takes place in the doctor's office and is safe and simple in the hands of an experienced staff.

Will you need more than one procedure? The number of procedures will depend on the extent of your hair loss and the number of implants per surgery. It may take 4 months to see the new growth. Further evaluation will help to determine whether more transplant sessions are indicated.

81. What does the healing process involve?

Redness and swelling may go on for a few days after your procedure and are usually mild. If your existing hair is long

enough, it may be combed over the grafted area to hide the grafts while they are healing. With the newest techniques, your new hair should look and feel natural.

82. What is the cost of a hair transplant?

Save those pennies. Most physicians charge between $1,500 and $3,000. Compare this, however, with months and years of paying for medicines to stimulate hair growth that may not work well.

83. Is it appropriate for a woman to have a hair restoration procedure? Isn't this something usually done for men only?

Hair loss is a problem that affects about 35 million men and also about 22 million women in the United States. Women have increasingly turned to dermatologists for help in restoring a full-head-of-hair look. Hair loss in women, just as in men, is often the result of the genetic lottery. Along with inheritance, hormonal changes of pregnancy as well as stress and nutritional deficiencies can lead to hair loss.

Hair loss is a problem that affects about 35 million men and also about 22 million women in the United States.

Changes in the hair can be tricky. Thus, the age and condition of the patient are important. For example, when a woman is pregnant, more of her hairs will be growing. After a woman delivers her baby, many hairs enter the resting phase of the hair cycle. Within 2 to 3 months, some women will notice large amounts of hair coming out in their brushes and combs. This common problem is called telogen effluvium, which can also occur after major stress such as trauma or surgery. Do not jump the gun and go wild with surgeries or other techniques, however, because telogen effluvium may last only 1 to 6 months and resolves completely in most cases. Before you consider a hair restoration program, see a dermatologist to evaluate the reason for your hair loss and recommend the most effective hair restoration plan.

Feet

How can I maintain healthy skin on my feet?

I have ugly heels. What can I do?

84. How can I maintain healthy skin on my feet?

By the time you get to old age, you will have clocked over 10,000 miles. The foot is out on a limb—at the end of a neurological and vascular tree—and can be the recipient of trauma and repetitive injuries. The feet may need frequent servicing as we age. Anytime there is a reduction in blood supply and decreased sensation, as with diabetes, the feet can be prone to infection and ulceration. Skin problems such as fungus, stasis dermatitis, and nail dysfunction also increase over time. Range of motion limitations from osteoarthritis and other conditions add to changes in foot pressure and pain. Proper footwear, good nutrition, exercise, and visits to your dermatologist and podiatrist will help prevent problems.

85. I have ugly heels. What can I do?

Alyson said this:

I have really awful, ugly heels. They are always cracked and scaly. I usually soak my feet at night and that helps. What else can I do for them?

This is called tylosis and can be a real annoyance, especially for women. With this problem, the heels can crack, bleed, and even run hosiery for those who wear them. A fungus or an allergic contact dermatitis must also be ruled out, but it's usually the result of severe dryness on the feet and thick heels areas. In rare cases, there are inherited cases. Moisturizers, soaks of various kinds, and over-the-counter skin softeners help, but over the years, I've found that if you practice the following advice three times a week, you should get relief.

Soak your feet in warm, clear tap water for about 20 minutes at night. Pat your feet dry, and apply a good layer of Keralyt® gel or Salex™ (or a similar salicylic acid) over the affected areas. A topical salicylate works by causing the skin to swell, soften, and then slough or peel in areas where it is applied.

Cover each of your feet with a plastic bag, followed by a sock over the bag. Do not tape the bag down. Leave this occlusive bandage on all night but don't walk around on them!

In the morning, take off the bags. Wipe the dead skin cells and remaining medicine off your feet, and apply a good layer of Lac-Hydrin or AmLactin® lotion (or a similar salicylic acid). Ammonium lactate is a combination of lactic acid and ammonium hydroxide. It is a moisturizer that is used to treat dry, scaly, itchy skin and acts as a boost to the overnight occlusion.

Prevention

What role does diet play in skin health?

How does sun protection do me any good now?

What are ways to improve sun protection and prevent skin cancer?

More . . .

86. What role does diet play in skin health?

Replenishing the three key components of the stratum corneum—ceramides, fatty acids, and cholesterol—is the aim of some skin care formulations. Diet also plays an important role in maintaining a healthy skin barrier; fatty acids and cholesterol are derived from the diet.

87. How does sun protection do me any good now?

Nothing contributes to how a person sees him- or herself more than how his or her skin looks in the mirror. Protecting one's skin from damage early in life can vastly improve how one looks and feels during later years. The three preventable high-risk behaviors that can damage the skin in the later years are smoking, being overweight, and having high exposure to ultraviolet rays.

88. What are ways to improve sun protection and prevent skin cancer?

If you play tennis or participate in any outdoor sports, one of your most important strokes may be a backhand across your arms with a dollop of sunscreen. Spread it all over your arms and then proceed to put it on all the parts of your body that you'll be exposing to the sun. Wear a wide-brimmed hat. Drink lots of water, and reapply your sunscreen as needed. Now get out and play!

An overwhelming majority of patients fail to take the topic of sun protection seriously.

An overwhelming majority of patients fail to take the topic of sun protection seriously. Some continue to admire the glowing tan of youth and yet want to be free of wrinkles and blemishes; however, the two can rarely coexist. Others would rather spend bundles of dollars on expensive treatments to reverse sun damage rather than prevent it in the first place. Those with skin cancers wish that they could reverse their poor fortune. Many victims of skin cancer must go through

complicated surgery with skin grafts and disfigurements, and others even die. Although the sun brings us life and light, we must respect it and be aware of its power to harm.

Now that you know you are at risk, it's time to learn how to protect yourself from the sun. One in five Americans will develop skin cancer during his or her lifetime. Of all newly diagnosed cancers, skin cancers comprise 40%. That works out to more than 1,000,000 new cases annually and more than 10,000 deaths. Epidemic increases are being seen in all types of skin cancer. In the majority of cases, the cause is exposure to the sun. As the ozone layer continues to thin, we are exposed to higher doses of ultraviolet radiation, increasing the amount of damage and risk for skin cancer. It's time to protect yourself from the sun. The sun is to skin cancers as cigarettes are to lung cancer.

Although skin cancer is a serious threat on its own, it's not the only unpleasant consequence the sun's ultraviolet rays have to offer. Did you know the sun is harmful to your eyes and immune system as well as to your skin? It is also detrimental to those with allergies.

89. There are so many sunscreens on the market. How do I choose?

A broad-spectrum product provides protection against both the A and B wavelengths of ultraviolet (UV), both of which can cause skin damage. UVB wavelengths are the principal cause of sunburn, and UVA can penetrate to deeper layers of the skin. A mixture of UVA- and UVB-absorbing chemicals, including oxybenzone, cinnamates (octylmethyl cinnamate and cinoxate), sulisobenzone, salicylates, titanium oxide, zinc oxide, and avobenzone (Parsol 1789) is important. Using sunscreens can prevent photoaging, actinic keratoses, basal cell carcinomas, and the development of melanoma, the most deadly skin cancer.

For maximum sunscreen effectiveness, do the following:

- Use a broad-spectrum, nonirritating sunscreen with an SPF of 15 or higher and both UVA and UVB protection.
- Apply sunscreen 20 minutes before you go outdoors.
- Use about 1 ounce (enough to fill a shot glass) to cover the entire body. Cover all exposed areas liberally. Pay special attention to face, ears, nose, arms and legs. Remember that lips can burn, too; thus, cover lips with a lip balm sunscreen of SPF 15 or higher.
- Reapply every 2 hours or after swimming or heavy sweating to keep the SPF at its maximum level.
- Use a product that does not worsen an existing skin condition.
- Use clothing for photoprotection.

90. I can't seem to find a sunscreen that doesn't bother me. What can I do?

If side effects occur, they are usually a contact irritant reaction to a chemical in the sunscreen, and thus, it should be avoided. Other possible side effects include phototoxicity or photoallergy caused by interactions of chemicals in the sunscreen with sunlight. If you have an existing skin condition such as acne, eczema or other dermatitis, actinic keratoses, or rosacea, you should consult a dermatologist regarding selection of an appropriate sunscreen. With careful consideration and selection, you should be able to find and use an excellent sunblock.

By adding clothing with a high SPF, you can block nearly 98% of UVA and UVB radiation. This is particularly important if you burn easily and are at high risk for photoaging, skin cancer, and other sun-induced skin conditions. If you spend a lot of time in the sun while hiking, fishing, gardening, and working outdoors, you must use extra precautions.

91. I have always gone to tanning beds. Should I continue?

Remember that there is no such thing as a safe tan. Tanning booths with high-energy UVA bulbs are a major promoter of skin cancer and contribute to premature skin aging. You do not need to live in a sunny climate to wreck your skin—just go in a tanning booth! It's your choice—look withered like a raisin or stay clear! For a safe alternative, try sunless tanning with self-tanners, which are lotions that give you the tan without the risk of UVA and UVB exposure.

92. What about smoking and the skin?

The dangers of smoking cigarettes have become well known, although the damage to the skin is less studied. The smoke released from burning cigarettes at temperatures of 830°C to 900°C contains some 5,000 chemicals, many of which are hydrophobic agents that can diffuse through many cell membranes, reaching to the far ends of the body's precious organs, including the skin. Many of the dangerous chemicals are in the form of free radicals and oxidants, which can cause the malfunction of many biological processes, creating cell damage. Smoking has been shown to increase many symptoms associated with aging, altered hormone production, reduced fertility, cancer, cardiovascular and respiratory disease, and lung, esophagus, pharynx, larynx, stomach, pancreas, bladder, uterine, cervix, and skin disease.

The smoke released from burning cigarettes at temperatures of 830°C to 900°C contains some 5,000 chemicals, many of which are hydrophobic agents that can diffuse through many cell membranes, reaching to the far ends of the body's precious organs, including the skin.

Today there are around 1.25 billion smokers who will die an average of 7 years earlier than their nonsmoking counterparts. Quit today.

93. What about hormones? Should I take these to improve my skin?

Growth hormone injections and other supplements are a matter of controversy. Studies published in the *New England Journal of Medicine* and other journals that analyzed older

persons who were given growth hormone confirmed that there was no change in muscle strength or maximal oxygen uptake during exercise. Other studies involved those who underwent progressive strength training for 14 weeks, followed by an additional 10 weeks of strength training plus either growth hormone or placebo. Resistance exercise training was shown to increase muscle strength significantly, and the addition of growth hormone did not result in any further improvement. In other words, hitting the gym helps and is less expensive than growth hormone.

It is not known whether the long-term effect of administration of growth hormone is harmful. Because older age is associated with an increased incidence of cancer, it may be wise to look at the research. In one study of 152 healthy men, prostate cancer was increased among men who had serum concentrations of insulin-like growth factor I in the highest quartile compared with those whose concentrations were in the lowest quartile. Growth hormone increases serum concentrations of insulin-like growth factor, and although this does not demonstrate causality, it certainly raises concern about growth hormone use in older men. Studies have shown that it can lead certain susceptible people down the path to diabetes.

Although it is not known precisely how much growth hormone is prescribed for off-label uses, estimates suggest that one third of prescriptions for growth hormone in the United States are for indications that are not approved by the Food and Drug Administration. Problems include potential misuse of healthcare funds and general high costs of the drug without evidence of benefit. Acceptable use of growth hormone is to replace deficiencies in certain disease states.

94. What about facial exercises to improve my skin?

You want to maintain a youthful look; however, facial exercises are repetitive facial movements and can actually lead to fine lines and wrinkles. A groove forms just beneath the surface

of the skin each time we use a facial muscle. Facial expression equals lines. As we age, the bounce in our skin (elasticity) diminishes. The skin stops returning to its line-free state, and the wrinkles and grooves stay. Thus, cut out the facial exercises and look for better alternatives.

95. How does my sleeping position affect my face?

Sleeping on your pillow the same way every night for years can lead to wrinkles. These wrinkles are called sleep lines and can eventually become etched on the surface of the skin. Men often notice these lines on the forehead because they often sleep with their face pressed face down on the pillow. Women tend to sleep on their sides and are most likely to see these lines appear on their chin and cheeks. What should you do? Sleep on your back so that you do not develop these wrinkles. Whatever you do, however, get enough sleep so that you are rested and feel good.

96. Can I use topical steroids safely?

You may need prescription-strength corticosteroids to control your skin disease. Keep in mind not to overuse it, and choose the right product for the area of skin being treated. The generic preparation, called triamcinolone, is very effective and economical (about ten bucks for a big tube), but I do not recommend any steroid use for prolonged periods, especially on the face. I recommend 2 weeks of use, and then use moisturizers or other alternatives such as Protopic®. Overuse of topical steroids can lead to striae (stretch marks), atrophy (irreversible thinning of the skin), rash, tearing, bruising, and telangiectasia (enlarged blood vessels in the skin).

97. What if I cannot afford my medications?

Ask your physician about samples and discount plans and coupons. Try Partnership for Prescription Assistance at 888-477-2669, or go to www.pparx.org. The Consumers Union has many downloadable savings guides. Many pharmacies

are offering major discounts, especially for antibiotics and generic drugs. For cosmetic procedures, payment plans are often available.

98. What about exercise?

Be heart and skin smart—exercise regularly. Good circulation is one of the keys to good skin health. There are three basic types of exercise: stretching, strengthening, and aerobic. Stretching exercises lengthen muscles and improve flexibility. Strengthening exercises tone muscles and improve strength. Aerobic exercises strengthen the heart muscle specifically, making it the most beneficial type of exercise for preventing heart disease and improving your skin health.

Doing aerobic exercises, such as walking, jogging, or low-impact aerobics will improve your circulation and breathing and lower blood pressure and help your body use oxygen more efficiently. You can also combine aerobic exercises with stretching and strengthening exercises to create a well-rounded workout routine. Following a regular exercise routine will make you feel healthier and more energetic, while combating the factors that put your health and skin at risk. Check with your doctor before doing a vigorous exercise program.

Exercising will help you to look and feel better!

The memory of your skin is cumulative. Every time you expose yourself to high levels of ultraviolet radiation without the necessary and available protection from clothing and sunscreens, you can add on more sun damage.

99. What can I do now?

Charlie said this:

I'm 67. I've already had lots of sun damage. I used baby oil out in the sun when I was a kid. My skin is a mess. I've had three skin cancers taken off. I don't think it makes much difference what I do now.

The memory of your skin is cumulative. Every time you expose yourself to high levels of ultraviolet radiation without the necessary and available protection from clothing and

sunscreens, you can add on more sun damage. Each person varies in the amount of sun that he or she can safely receive yearly, depending on factors such as ozone levels, cloud cover, latitude, season, and atmospheric pollution. Sun-protecting behaviors will help counter tendencies toward genetic skin pigmentation changes and damage based on your inherent skin type. Ultraviolet radiation damage can suppress cell-mediated immunity in the body and have an adverse affect on the eyes and skin and increase the risk of cancer. Why add to your troubles?

100. How can I maintain what I have gained from reading this book?

PPP—practice persistent prevention. Prevention is still the best medicine. Use these suggestions to prevent illness:

Prevention programs must promote exercise, good nutrition, and protect against obesity, smoking, alcohol, and sun abuse. The most effective prevention plans must be effective, sustainable, and not harm the participants. A crucial way to protect your skin health is to detect an illness early, while it is still easy to treat. You can do this in two ways: by getting periodic medical exams from dermatologists and by becoming a good observer of your own body and health. If you have one of the problems included in this book or any other health problem, get it treated as soon as possible.

Appendix

American Osteopathic Association (AOA)
The AOA urges men and women to contact them for information on preserving good health and coping with chronic conditions.
1-800-621-1773
www.osteopathic.org

American Osteopathic College of Dermatology (AOCD)
www.aocd.org

American Cancer Society (ACS)
1-800-227-2345
www.cancer.org

AAD Free Public Newsletter
www.aad.org/forms/NewsletterPublicSignUp

National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
1 AMS Circle
Bethesda, MD 20892-3675
1-301-495-4484 or 1-877-22-NIAMS (226-4267) (free of charge)
TTY: 1-301-565-2966
Fax: 1-301-718-6366
www.niams.nih.gov

National Psoriasis Foundation
www.psoriasis.org

American Society of Dermatologic Surgery (ASDS)
www.asds.net

Glossary

A

Abscesses: Closed pockets containing pus. Some abscesses are easily diagnosed clinically, as they are painful. Some may come to a head such that the pus becomes visible. Deep and chronic abscesses may look like a tumor clinically and require biopsy to distinguish them from a neoplasm.

Acanthosis nigricans: A condition in which the skin becomes dark and thick, usually present in the areas of the body where skin folds. Areas commonly affected are the back of the neck and groin.

Acne surgery: The removing of acne lesions, usually by opening up comedones (blackheads) and pimples by using a needle or small pointed blade and expressing the lesions with an extractor.

Acrochordons: Commonly known as skin tags. They are small, benign tumors protruding from the skin via a small stalk with a large, round-shaped end. Oftentimes these growths are removed for cosmetic reasons.

Adiposis dolorosa: A condition also known as Dercum's disease that is characterized by the formation of tumors in the fatty tissue of the body. The tumors cause large amounts of pain due to the pressure they can place on nearby nerve fibers. The tumors themselves are not life-threatening, unless the proper functioning of the nearby organs is affected.

Angioedema: Characterized by the rapid swelling of skin. This condition is usually a result of vascular leakage and the buildup of fluid from the blood. Such a condition can be fatal if swelling occurs in the pulmonary air passageways.

Angiomas: These are benign tumors that are comprised of lymph tissue and blood vessels. These tumors are red in color and not usually life-threatening.

Atypical: The simple, straightforward definition would be *unusual*, but *atypical* means much more than that. In a diagnosis, the use of the term *atypical* is a vague warning to the physician that the pathologist is worried about something, but not worried enough to say that the patient has cancer.

B

Basal cell cancer: The most common type of skin cancer. The lesions appear as a flesh-colored papule with blood vessels and a shiny border. These lesions often appear on the head and neck and can at times bleed if irritated. Treatment involves basic removal via surgical methods.

Blepharoplasty: A procedure in which the extra skin of either the upper or lower eyelids are surgically removed. It is often times used for cosmetic reasons to treat droopy or baggy eyes. The procedure is also used to improve peripheral vision if excess skin blocks external light from reaching the cornea.

Bullous: A large blister (a thin-walled sac filled with clear fluid).

C

Carcinoma: A malignant neoplasm in which cells appear to be derived from epithelium. This word can be used by itself or as a suffix. Cancers composed of columnar epithelial cells are often called *adenocarcinomas*. Those of squamous cells are called squamous cell carcinomas and those of basal cells are called basal cell carcinomas.

Cellulitis: An infection of the deeper layers of the skin characterized by redness, swelling, and pain. It is usually caused by a group A *streptococcus* or *Staphylococcus aureus*.

Chronic venous insufficiency: A condition in which the valves of the veins do not function properly, causing the pooling of blood in the lower extremities. Properly functioning valves prevent the backflow of blood through the veins; without this function the blood cannot efficiently return to the heart due to the opposing effect of gravity. This condition is the underlying reason for varicose veins.

Cryosurgery (cryotherapy): Used frequently by dermatologists to treat many skin problems. Liquid nitrogen is sprayed on to an area of skin, thus freezing it. Light freezing causes peeling, moderate freezing blistering, and hard freezing scabbing. It is used for acne, scars, warts, keratoses, some skin cancers, and other growths.

Cutaneous sensation: The sensory ability of the skin. This is more commonly referred to as the sense of touch.

D

Dermabrasion: A surgical procedure used for cosmetic reasons to improve the appearance of the skin. A small spinning diamond wheel or similar device is used to remove the uppermost layers of the dermis resulting in a refinished or smoothed appearance.

Dermatographism: An allergic reaction that causes the skin to be raised or inflamed when an image is drawn using a writing instrument like a pen. This can be used to determine the severity of various allergic responses on an individual.

Dermis: The layer of skin found between the epidermis and the subcutaneous tissue. This region contains blood vessels, nerves, hair follicles, and exocrine glands.

Diabetic bullae: A condition in which large blisters are found on the extremities of individuals who are diabetics. The blisters spontaneously form, but are usually treatable and nonscarring.

Diabetic dermopathy: A condition that occurs on the legs of an individual

who has diabetes. The skin has spots of hyperpigmentation caused by blood vessel leakage. The color is believed to occur due to the presence of the protein hemoglobin found in the blood. Hemoglobin is brownish red in color due to its iron content.

Dysplasia: An atypical proliferation of cells. This may be loosely thought of as an intermediate category between hyperplasia and neoplasia. It occurs when the epithelium proliferates and develops the microscopic appearance of cancerous tissue, but otherwise tends to behave itself and stays on the body surface without actually invading it. Not all doctors accept dysplasia as a concept or as a precancerous growth, but generally lesions diagnosed as dysplastic should be considered for removal.

E

Electrodesiccation: Scraping or burning off skin growths (also known as electrodesiccation and curettage). It can be used for less serious skin cancers, precancers, and benign growths. A local anesthetic is injected, and then the abnormal tissue is scraped off with a curette. The area is then cauterized until bleeding stops. This may be repeated if the growth is cancerous. The wound will need to be dressed until it heals, and it usually leaves a small white mark.

Epidermis: The outmost layer of the skin. It is visible to the naked eye and is comprised of stratified squamous epithelium. This outermost layer is constantly shedding and regenerated by the lower layers of the skin. The epidermis provides protection from microbes and the environment.

Epithelium A specialized type of tissue that normally lines the surfaces and cavities of the body.

F

Favre-Racouchot: A condition in which the skin turns yellow and thickens. The skin appears to have cysts or nodules. The condition is usually present on the head, neck, and face.

G

Granuloma: A special type of inflammation characterized by accumulations of macrophages, some of which coalesce into "giant" cells. Granulomatous inflammation is especially characteristic of tuberculosis, some deep fungal infections, sarcoidosis, reaction to foreign bodies, and several skin diseases of unknown cause.

H

Hidradenitis suppurativa: This condition occurs in areas with a high density of apocrine sweat glands and around hair follicles in the groin and armpit. Painful boils or lesions can occur and become very large if not treated. These lesions can burst and leak pus.

Hirsutism: This condition usually affects women. The condition presents itself with large amounts of dark hair growth in the areas on the body where hair is usually not present. The growth is found in the places where hair is

normally only found on men. The condition is not life-threatening and is usually treated for cosmetic reasons.

Hyperandrogenism: This condition occurs with the overexpression of male hormones in either females or males. This overexpression results in the appearance of male features such as deep voice, facial hair, and acne.

Hyperpigmentation: The darkening of the epidermis due to an increase in the presence of melanin. This condition can be caused by acne, inflammation, overexposure to the sun, and following pregnancy or hormone use such as birth control pills. Examples of hyperpigmentation include melasma and postinflammatory changes.

Hyperplasia: A proliferation of cells that is reactive and not neoplastic. In some cases, this may be a result of the body's normal reaction to an imbalance or other stimulus, whereas in other cases, the physiologic cause of the proliferation is not apparent. An example of the former process is the enlargement of lymph nodes in the neck as a result of reaction to a bacterial throat infection.

I

Immune system: Comprised of multiple organs and tissues working together to provide chemical and physical barriers to prevent disease. These barriers include the skin, saliva, and white blood cells. The body relies on these mechanisms and pathways to repair damage or infected cells. Improper regulation of these mechanisms can cause autoimmune diseases.

Impetigo: An infection of the skin caused by bacteria like *Staphylococcus aureus*. Impetigo presents itself with the formation of light-colored blisters or irritated areas on the skin. Many older individuals are affected due to lack of proper hygiene.

Inflammation: The result of the immune system reacting to unwanted stimulation. It shows as swelling, pain, tenderness, redness, and/or heat. Immune system cells are seen in the specimen being examined. These inflammatory cells include: (1) neutrophils, which are the white blood cells that make up pus and are seen in acute or early inflammations; (2) lymphocytes, which are typically seen in more chronic or longstanding inflammations; and (3) macrophages (histiocytes), which are also seen in chronic inflammation. Some types of inflammation are readily diagnosable, such as infected skin wounds; others require a biopsy to show the cause and prove that they are not neoplasms. The suffix *-itis* is appended to a root word to indicate *inflammation of*.

Intralesional injections: The direct placement of a medication into a problem skin area through a very fine needle. Most often, a dilute solution of triamcinolone is used. Acne cysts, psoriasis, keloids, and areas of alopecia are treated this way. If too much medication is used, a white spot or dent develops but eventually goes away.

K

Keloids: The increase in collagen growth under normal scar tissue. These growths expand over the boundaries of the scar and begin to cover normal healthy tissue. Individuals may have symptoms of pain and intense itchiness. If not treated, these growths can hinder movement and cause discomfort during everyday activity.

Keratinocytes: The cell type that comprises a majority of the epidermis. The cells provide a tough outer layer when dead and replace themselves by dividing from the lower layers of the skin and moving up to the visible layer.

L

Langerhans' cells: A type of dendritic immune cell found in high concentrations in the epidermis. When a microbe or antigen is present, the cell signals the rest of the body to prepare the immune system mechanisms to fight off the microbe and prevent the microbe from causing an infection.

Lentigines: Commonly called liver spots. They occur when portions of the skin become sun damaged. They present with darkening of the skin in a specific region, commonly on the back of the hands, face, and neck. Changes in such spots should be monitored to prevent cancerous growth.

Lesion: A vague term meaning "the thing that is wrong with the patient." A lesion may be a tumor or an area of inflammation.

Lupus: An autoimmune disease in which the body attacks its own tissues. The skin of an individual with lupus can show signs of sun damage, hair loss, decreased circulation, and a rash that may cover the mid-face in a butterfly pattern.

Lymphedema: Swelling of the extremities due to an obstruction in the lymph system that prevents the return of the lymph fluid to the body's core. Individuals with this condition may suffer from decreased mobility and hardening of the arm and leg. There are often underlying causes such as injuries or tumors that have placed pressure on the lymph vessels.

Lymphoscintigraphy: A diagnostic method used to identify lymphedema, the spread of cutaneous melanoma, and other diseases. A radioactive fluid is injected into the lymph vessels. The radiation given off is then monitored to see if the radioactive fluid remains in the original location via a blockage or if it returns to the core body via normal lymph flow.

M

Melanocytes: Cells in the basal layer of epidermis that are involved in the production of dark colored pigment known as melanin. The level of activity in melanocytes determines the difference in skin color between fair-skinned people and dark-skinned people, not the number (quantity) of melanocytes in their skin.

Melanomas: A type of malignant tumor that arises from the uncontrolled

growth of melanocytes found in the epidermis. Risk factors include exposure to mutagens such as ultraviolet rays found in sunlight. Melanoma is the most dangerous type of skin cancer, causing the majority of skin illness deaths due to the cancer's ability to metastasize through the bloodstream or lymph system. Early detection along with a biopsy and surgical removal increase survival rate dramatically.

Melasma: A condition that usually occurs from various effects of hormones present during times of pregnancy. The manifestation is the presence of a darkened color of the face due to increased melanin production.

Metastatic: When cells that can travel through the lymph vessels or blood vessels lodge in some distant organ and grow into tumors. There are two major routes of metastasis: (1) hematogenous, in which the cells travel through the blood vessels, and (2) lymphogenous, in which the lymphatic vessels conduct the cancer cells. In the case of lymphogenous metastasis, the metastatic tumors can grow from cancer cells entrapped in the lymph nodes that collect the lymph draining from the organ where the original cancer has developed. Most malignant tumors spread both ways but prefer to spread one way more often.

Microangiopathy: A disease of the small blood vessels, more specifically the capillaries, that leak protein and other chemicals. This condition is oftentimes present in individuals who suffer from diabetes.

Mohs micrographic surgery: A surgical method that removes skin cancers while simultaneously analyzing the cancerous tissue. This allows for a reduction in the amount of noncancerous tissue removed and also reduces the chance of cancerous cells being left in the body. Before the surgery begins, the tumor is marked in regions so that each piece of the tissue removed can be cataloged and analyzed under a microscope. With this method, more cancerous tissue and less noncancerous tissue can be removed for improved tissue recovery.

N

Necrosis: Death of tissue. Necrosis may be seen in inflammation, as well as in neoplasms.

Neoplasm: A new growth of the body's own cells no longer under normal physiologic control. These may be benign or malignant. Benign neoplasms are typically tumors (lumps or masses) that, if removed, never bother the patient again. Even if they are not removed, they are not capable of destroying adjacent organs or seeding out to other parts of the body. Malignant neoplasms, or cancers, are those in which the natural history (i.e., behavior if untreated) is to cause the death of the patient. Malignancy is expressed by (1) local invasion, in which the neoplasm extends into vital organs and interferes with their function, and/or (2) metastasis, in which

cells from the tumor seed out to other parts of the body and then grow into tumors themselves.

Neurodermatitis: The cycle of chronic itching and scratching that can cause the affected skin to become thick and leathery. It is also known as lichen simplex chronicus or scratch dermatitis. Continued scratching leads to greater irritation and prevents healing. Stress and anxiety tend to worsen the condition. Application of soothing agents and psychological intervention can help reduce the urge to scratch.

P

Petechiae: Small red spots under the top layer of skin due to the leaking of nearby blood vessels. The presence of such spots are strong indicators of other health issues that are related to the cardiovascular system, such as diabetes.

Photoaging: The damaging of skin due to sunlight exposure. Such damage appears visually as discoloration or browning of the skin and formation of wrinkles. Thickening of the skin is another result of photoaging; severe photoaging is a risk factor for skin cancer.

Photosensitization: A condition in which the skin becomes susceptible to damage from the sun.

Pilaris: A condition in which the skin of the arms and legs have small, hard, reddish pimples. For many the skin may appear to be dry and inflamed, but there is no pain associated with the condition. The skin has a rough feeling, but there are no severe detrimental effects.

Plantar hyperkeratosis: The thickening of the bottom or sides of the feet. The skin condition is caused by an abnormality of the protein keratin located in the epidermis. The presence of the thicker skin is for protection as a result of friction and irritation of the feet.

Poikiloderma of Civatte: Often occurs in middle-aged women on the sides of their neck resulting in appearance of tangled or leaky blood vessels and pigmentation. The condition is not serious, but its onset is believed to be due to hormonal changes.

Polyp: A structure consisting of a rounded head attached to a surface by a mushroom-like stalk. The typical skin polyps that develop (skin tags) are benign.

Psoriasis: A condition in which the skin of an individual appears to be scaly and inflamed, particularly near the joints. The cause is not completely known, but the relationship between the skin and the immune system is critical. For individuals with this condition, the body produces skin cells faster than they can be removed; as a result, there is a buildup that leads to its characteristic appearance. The underlying cause is believed to coincide with inflammatory chemicals, which trigger the accelerated division of skin keratinocytes.

Punch biopsy: Typically used by dermatologists to sample certain

pigmented growths to rule out melanoma. Other times an entire lesion can be easily removed with a punch biopsy, which is the tool of choice. The punch biopsy is also used to drain some cysts and eliminate the need for a wide excision. After a local anesthetic is injected, a biopsy punch, which is basically a small (1 to 4 mm in diameter) version of a cookie cutter, is used to cut out a cylindrical piece of skin. The hole may be closed with a suture and heals with minimal scarring.

PUVA: A combination of psoralen (P) and long-wave ultraviolet radiation (UVA) that is used to treat several severe skin conditions. Psoralen is a drug that makes the skin disease more sensitive to ultraviolet light. This allows the deeply penetrating UVA band of light to work on the skin.

R

Rhytidectomy: A plastic surgery procedure more commonly called a face lift. The procedure gives individuals a more youthful appearance. The procedure involves making an incision near the ear and hairline. Then excess skin is removed while the remaining skin is tightened to reduce the appearance of wrinkles and other imperfections.

Rosacea: An inflammatory condition that manifests itself in the face as redness and small lesions. Often times the condition begins during adulthood and continues to worsen with age. Individuals should try to avoid activities that increase blood flow to the face and increase its red appearance. Such activities include hot showers, saunas, and sunlight.

S

Sebaceous hyperplasia: A condition that affects the sebaceous glands that produce the oily fluid known as sebum. These glands increase in size and shape to give an abnormal appearance. The condition generally affects older individuals of both genders. The location of the condition is usually on the forehead, and manifestation is the appearance of white raised bumps that are unusually shaped.

Seborrheic dermatitis: A disorder of the skin located on the scalp resulting in itchy skin and dandruff. The condition can be extremely uncomfortable and embarrassing for many individuals. Severity increases during times of stress and colder months. The condition is treatable in a mild state with over-the-counter medications; prescription medications are also available.

Sebum: The oily substance produced by glands in the skin. It contains not only oil, but also proteins and lipids. It helps keeps skin moist and keeps hair waterproof. Overproduction of this fluid can lead to diseases such as acne.

Senile pruritus: The itching of skin that occurs due to the breakdown and aging of skin of the elderly. It appears to be related to the drying of skin and can be treated by using soothing creams.

Shave biopsy (tangential excision): Slices off a surface growth using a blade. A curette does a similar

task with a special scraping tool. These are often done to remove a small growth and confirm its nature at the same time.

Shingles: An extremely painful rash that is caused by a viral infection known as herpes zoster. Rash often extends from the back to the chest in individuals over the age of 60. Infection is due to the dormant chickenpox virus that can be reactivated during an immune compromised state.

Squamous cell carcinoma: Squamous cell carcinoma is the second most common cancer of the skin and occurs most commonly in middle-aged and elderly people with fair complexions and frequent sun exposure. The cancer develops in the outer layer of the skin (the epithelium), sometimes from small sandpaper-like lesions called solar (sun) or actinic keratoses. Although it is possible for squamous cell carcinoma to spread to other areas of the body, early treatment generally prevents it.

Stasis dermatitis: A condition of the skin due to the pooling of blood in the lower legs; leaky valves in the veins prevent the proper return of the blood to the trunk of the body. The skin appears to be discolored due to the leaking of blood and the breakdown of the molecules in the blood such as iron.

Stratum corneum: The outermost layer of the epidermis that acts as a barrier to prevent the exchange of chemicals between the body and its surroundings. This layer is comprised completely of dead cells with large concentrations of keratin. The layer is continually replaced; about every 2 weeks, the cells are shed and replaced from the lower layers of the skin.

Striae distensae: The condition commonly known as stretch marks occurs when the connective tissue of the skin cannot grow as rapidly as the underlying tissues. Due to the constant tension of the increased volume of tissue, the skin appears to have tears or scars. The condition is often found on the abdomen of pregnant individuals and the arms or chest of bodybuilders.

Subcutaneous layer: The tissue that separates the dermis from the underlying connective tissue. This layer is important in anchoring the skin; it contains fatty tissue that helps to provide insulation and energy storage. All of the blood vessels and nerves that supply the superficial layers of the skin run though this layer of tissue.

Suppuration, suppurative inflammation: A type of acute inflammation characterized by infiltration of neutrophils at the microscopic level and formation of pus at the gross level. An abscess is a special type of suppurative inflammation.

T

Telogen effluvium: A common condition in which the body undergoes alopecia, otherwise known as hair shedding or balding. This condition occurs during times of stress; the hair of the body sheds and does not begin growing again in a normal cycle. The condition can last for months or years, but normal growth can begin again.

Tophaceous gout: A chronic condition in which there are uric acid deposits throughout the body. The enzyme that breaks down the uric acid causes intense pain and discomfort. Uric acid is a byproduct produced naturally from many of the foods we eat, such as meats. Areas that are commonly affected are the joints, fingers, and toes.

Tumor: A mass or lump that can be felt with the hand or seen with the naked eye. This may be a neoplasm, hyperplasia, distention, swelling, or anything that causes a local increase in volume. Not all tumors are cancers, and not all cancers are tumors.

U

Urticaria: A condition, commonly referred to as hives, that is caused by the body's natural reaction to an allergen. The body releases cytokines and histamines that cause the blood vessels to leak. This leakage results in the formation of red spots and swelling. The formation of hives is an important sign that an allergic response has occurred; other areas of the body may be experiencing the same effects, such as the airway and throat.

UVB phototherapy: A treatment for skin eruptions using artificial ultraviolet light. The initials UVB stand for the type B ultraviolet, the part of sunlight that causes sunburn. Carefully controlled, it is an extremely effective therapy tool for significant skin diseases such as severe psoriasis.

V

Venous lake: A lesion that appears purple and raised. It is generally located on the lip and is caused by the leakage of capillaries or due to the inability of blood to flow out freely. The elderly often suffer from these lesions, which are usually about half a millimeter in size; these lesions are not usually deleterious.

X

Xerotic eczema: A skin condition in which the skin is extremely dry and cracked. Symptoms include itchiness and general discomfort.

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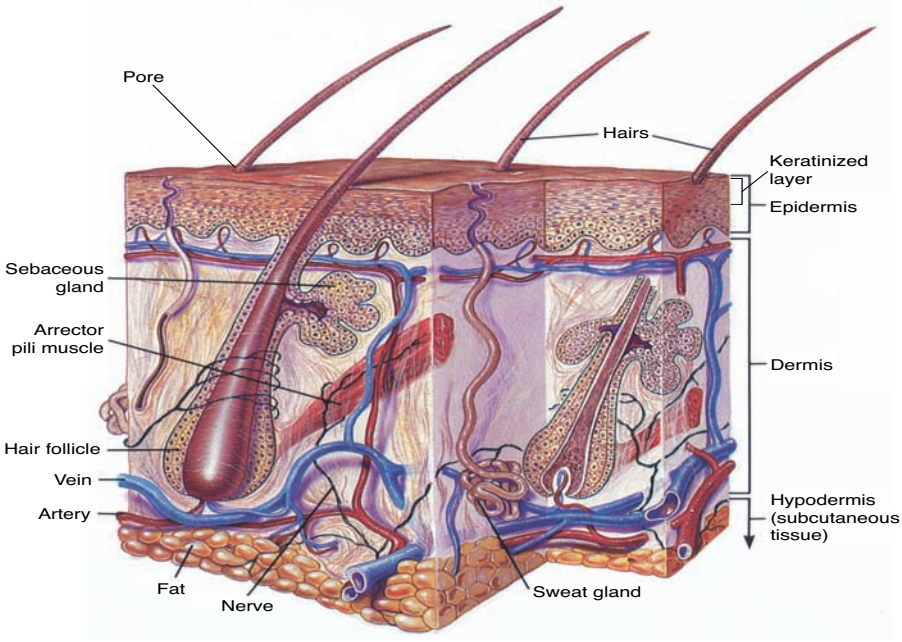

Plate 1 The structure of human skin

Source: Reproduced from Alters S, Biology: Understanding Life. © 2000 by Jones and Bartlett Publishers, Inc., Sudbury, MA.

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Plate 5 Herpes zoster (shingles)
Source: © Stephen VanHorn/ShutterStock, Inc.

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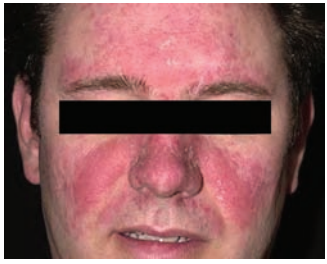


Plate 9 Seborrheic dermatitis

Plate 10 Squamous cell cancer
Source: Courtesy of National Cancer Institute

Plate 11 Malignant melanoma
Source: Courtesy of National Cancer Institute

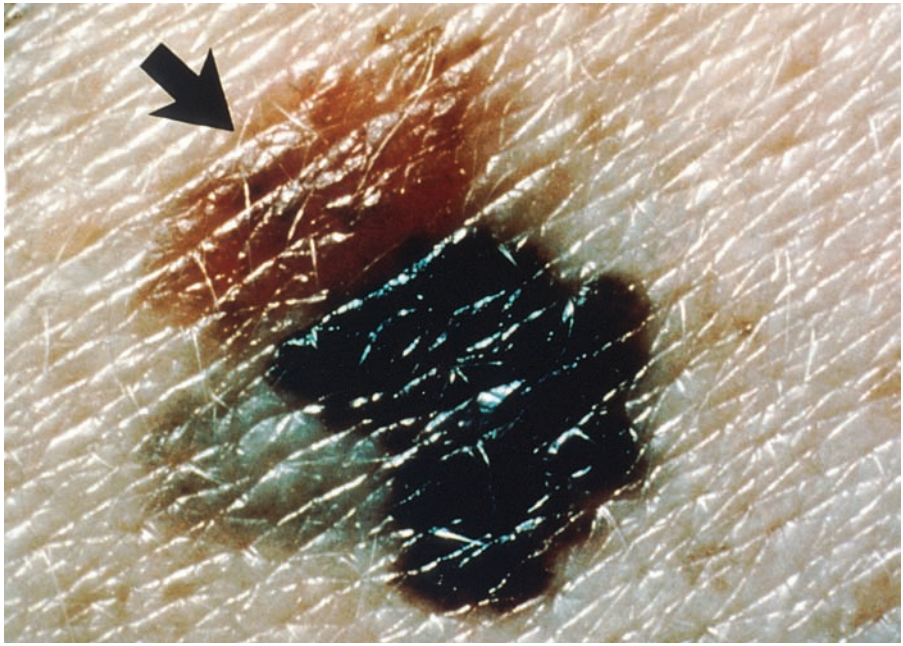
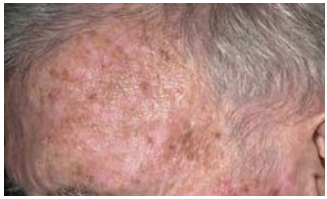


Plate 12 Distinct color variation: warning sign of melanoma
Source: Courtesy of National Cancer Institute



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