

**D**ermatology is a medical specialty of deduction based on observation. What you see is not always what you get, but it is a good place to start. Describing what you see is the challenge for the physician and the patient, since so much of figuring out what is going on depends on an accurate description.

From earliest times, especially when the Roman Catholic Church or superstition forbade autopsy, all medical knowledge derived from what could be observed. That meant that the skin, and the diseases that afflicted it, were the primary source of direct medical information.

The essence of medicine, like all science, is classification. There are hundreds of types of roses, but they can all be grouped together best as roses, then as flowers, then even more broadly as plants. So it was with dermatology in the beginning. But classification in this field depended first on description. In dermatology, more than in any other field, words have a special burden because we need them to describe what is essentially a visual problem. Practicing in the second century, Galen was one of the first physicians to classify skin disease, doing so by color, smoothness, and thickness. That was a little bit like flying low over a parking lot and classifying the cars either as

Toyotas, GMs, or Fords—it told us virtually nothing about the individual vehicles, but it was a start.

More information was needed about the nature of skin disease. In the seventeenth century, Marcello Malpighi made good use of the microscope to describe oil glands and other structures in the skin. Eventually there was enough information for Robert Willan at London's Public Dispensary to classify all the diseases he saw. His classification of the different types of eczema, for example, is still in use today. At the beginning of the nineteenth century, a Frenchman by the name of J. L. B. Alibert published a twelve-volume system of dermatology based on his observations at the Hôpital St. Louis, a Paris hospital founded to nurse plague victims.

Because observation is so important in dermatology, a home guide such as this book can be especially valuable. In this chapter, you can learn the language dermatologists and others use to describe and explain different conditions or ailments. If you incorporate this language when you report what you see in your self-exams to your doctor, it will make your care that much simpler and more accurate.

I've included a glossary at the end of this book for easy reference, but this chapter attempts to go one step further. Here you will learn about some key terms that will be used throughout this book and will help you understand your skin. I don't aim to transform you into a skin expert, but by knowing what to call "things" on your skin you will be that much closer to understanding the problem and helping your doctor work with you to get it better.

There are three main layers to the skin—the epidermis, the dermis, and the fatty subcutaneous layer, which is also called the *subcutis*. In addition, we use specific terms to describe texture, color, size, and shape in dermatology, as in art—not that you would want to paint masterpieces of your skin problems. Having said that, there is a famous painting that hangs in the Louvre in Paris by Domenico Ghirlandaio (1449–1494) called *An Old Man and His Grandson*. It depicts an elderly man whose most notable feature is a bulbous fleshy nose. Ghirlandaio skillfully portrays the abnormal features with ruthless accuracy while at the same time conveying compassion and tenderness. No dermatologist can walk by that painting without instantaneously making a diagnosis of rhinophyma.

Based on the natural parallels between art and medicine, Dr. Irwin Braverman and his colleague, Linda Friedlaender, devised an exercise for Yale medical students that involved a visit to the Yale Center for British Art in New Haven. Students would spend an afternoon carefully viewing some

of the paintings; afterward they would describe what they saw, using the tool of precise vocabulary. They soon found out that it was not so easy. Braverman, an internationally renowned expert in skin conditions and internal disease, thus taught his students how to improve their powers of observation, to truly see what they were looking at. This experience was valuable to the future doctors, whose professional success would depend on their ability to observe keenly and describe what they see.

Another episode conveys how important description is for doctors. When my son was three years old, he developed a high fever. I called our pediatrician. When he phoned back, he advised me on how to care for my son but quickly shifted to something dermatologists hear all the time:

“Now that I have you on the phone,” the pediatrician began, “I wonder what you think of this. . . .” He described the condition of a boy he had in his office with him at the time. “He has multiple tiny spots on his whole left arm.”

“What size?” I asked.

“About one millimeter,” he said, using the metric system, which is the way we measure and weigh things in medicine. There are about 25 millimeters to the inch, so the spots he was describing were quite small.

“And the color?” I inquired.

“Red.”

“You’re sure it’s not rust colored?” I asked.

“Well, maybe a bit,” he said.

“Are they raised or flat?”

“I’m not sure. They feel just a bit raised when I run my hand over them.”

I probed further: “Are there any new ones?”

The ability to distinguish new lesions from old is critical in determining how long a condition has been present. In this way, dermatology is often marshaled for forensic purposes. By knowing the stages through which a lesion or a normal skin element progresses, and how long it spends at each stage, it is sometimes possible to deduce facts that are of medical-legal importance. For example, it is possible to detect the presence of certain elements, such as lead or arsenic, in hair; then, by determining the length of the hair and where along the shaft the element is found, one can use the growth rate of the hair to determine the time of actual exposure to the compound.

“I think there might be a couple of new ones,” the pediatrician responded.

I was trying, through my questioning, to determine whether we were dealing with a life-threatening condition or a more benign skin problem, one related perhaps to trauma or a bleeding disorder. Many times, as in this case, the child gets better and we never make a definite diagnosis. By using a common language of description, we can at least narrow the possibilities of what is wrong. In this case the child most likely had a temporary disorder of his blood platelets that was causing the particular rash.

In learning the language of dermatology, probably the most basic term to understand is the word *lesion*. Doctors use this term all the time with each other and with patients and their families. It is a general word and simply refers to a specific physical finding that is abnormal.

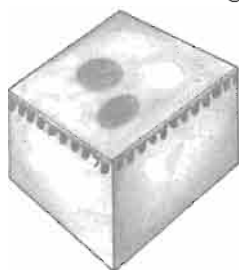
Keep in mind that in dermatology any abnormal skin growth is a lesion, but the term doesn't say anything about how serious the abnormality or the growth itself is.

For example, a lesion can be a tumor. A Latin word that simply means "growth" or "mass," tumor is probably one of the words the public least understands. It can be benign and noncancerous, like a cyst, or it can be malignant, in which case the lesion is referred to more precisely as a cancer. A melanoma, therefore, is a malignant tumor, while acne cysts are benign tumors (even though we rarely refer to them as tumors). Doctors may use the word *tumor* when they are referring to a specific cancerous growth, or when they are talking about a benign mass, such as a fatty tumor (also called a *lipoma*), or a normal mole, more properly called a *nevus*. To avoid confusion and, more important, unnecessary anxiety always ask your doctor what he or she means. Over the years I've learned that most people think of a tumor as something more often benign than cancerous; when I refer to a skin cancer as a tumor, patients often say, "Oh, so you mean it's benign." Unfortunately, of course, this isn't always the case. All of which serves to emphasize the point that so much of good medicine is good communication. It's essential for you to be sure you understand what your doctor is saying, and just as important that your doctor understands you.

The term *cancer* refers to any growth that expands in an uncontrolled fashion and overtakes normal tissue. Because skin cancer is the most common cancer in humans, it is a key part of the practice of dermatology. Fortunately, the majority of skin cancers do not travel in the body, in a process known as *metastasis*. Death from most skin cancers is rare, but any melanoma is quite serious and can pose a real risk of metastasis.

A good way to learn the language of skin is to look at and think about

a patch of normal skin on your own body—say the back of your hand. There are hairs growing out of hair follicles. If you look closely under a

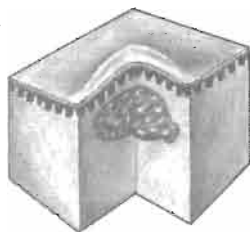


[ Macule ]

magnifying glass, you can even see the markings of the skin that look like interconnecting patio blocks. You might also notice some different colored spots. Any flat lesion that is noticeable because its color is different from its surroundings is a *macule*. A freckle is a good example of a *macule* because it is small, flat, and colored. A “liver spot” is another example of a macule.

If you can see something that is raised above the surface, like a small mound, and it is less than a quarter of an inch high, it is a *papule*. Many benign moles fit this description, one

of the most famous perhaps being the nevus on Cindy Crawford’s face (if you’re older, think of Khrushchev). A *nodule* is a larger version of a papule, where some of the substance of the lesion is felt to be in the second layer of the skin, or dermis, or even the subcutaneous layer.



[ Nodule ]

An *erosion* is a moist, red shiny area in which the top layer of skin has come off. Abrasion or scrape is a common term for erosion. Your kitchen cabinet door can cause an erosion on your forehead if it’s left open and you don’t watch out. When an erosion gets deeper, it’s called an *ulcer*.

A *crust* is what most people know better as a *scab*, a dried covering over a wound that is adherent and rough. It is made up of old white blood cells that were at the wound to help it heal, some skin that is no longer alive, and fluid that was produced by the wound in the process of healing.

*Purpura* are red or purple marks that develop in the top layer of the skin when hemorrhage or bleeding has occurred. Small pin-point lesions of purpura are called *petechiae* and larger areas of the same process are called *ecchymoses*. Mike Tyson has been responsible for causing many cases of ecchymoses in his day, mainly around the eyes of his opponents. Many older people are familiar with ecchymoses on their arms, where the skin, thinned by age, is susceptible to simple trauma. The black-and-blue marks that result can take weeks to resolve and will pass through stages, turning green then yellow

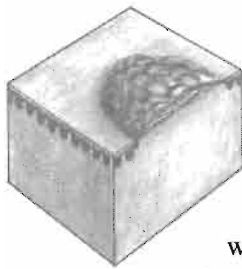


[ Erosion ]

before fading completely. This is because the color of hemoglobin, the iron-carrying molecule in blood, breaks down as it changes.

In dermatology, *scales* are not something you practice but white to brown flakes that can result from the normal shedding of skin. They are best known when they occur on the scalp as dandruff. If you look at your skin after you've been sitting in a dry heated house in the middle of winter, you will see skin flaking—a perfect example of scale and a sign that the skin is regenerating itself on an ongoing basis.

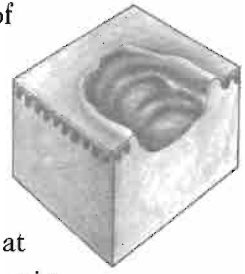
Language and precision are nowhere more important than when talking about skin cancer. Indeed, how often do you hear someone say, "Aunt Millie had breast cancer ten years ago and now she has brain cancer." That's probably not what has happened. Rather, through a complex process we don't yet fully understand, but which will be important to explore when we talk about melanoma, cancer can not only divide and grow where it sits but can travel elsewhere in the body as well. This process is one of the lethal behaviors of cancer.



[ Scab ]

To this end, it is helpful to know the term *in situ*, which refers to cancer cells which exist in the top layer of the skin or epidermis and thus *do not* have access to the blood vessels or lymph channels of the dermis. No access, no entry—and therefore no risk of metastasis or spread. Similarly, *invasion* is a term that we use when we talk about skin cancer; it refers to the fact that the cancerous cells have divided sufficiently so that they now extend into the dermis and can gain entry to blood vessels and lymph channels. At this point, sadly, the rapidly dividing abnormal cells can be whisked away to other organs, where they can set up house, divide, and cause misfortune.

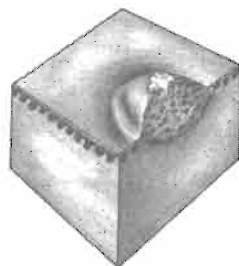
Other words dermatologists employ are simpler to grasp: *erythema* means redness. A reddened patch of skin is helpful because it tells us much about what is going on. Skin turns red if it is inflamed, and inflammation is the process by which the body tries to repair itself after an injury. Think about what happens after you accidentally cut yourself while preparing for that special dinner party. The incision hurts; you run it under cold water and put a Band-Aid on it. When you replace the bandage the next morning, you notice that there is redness on either side of the wound. This results



[ Ulcer ]

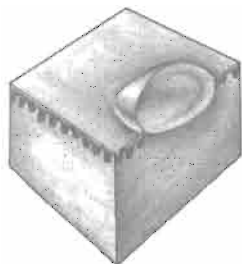
from a whole cascade of chemicals that are released by cells that have marched to the site in response to a signal that something has gone awry. One of the first things these chemicals do is increase blood flow in order to remove debris and bacteria while providing a channel for internal healing compounds to get to the scene of the accident. Erythema also occurs after sunburn, where the blood vessels dilate to help dissipate heat, and it's certainly a classic sign of infection, when the skin is working overtime to get rid of bacteria and reestablish a normal state of affairs. (It is interesting to consider that the language we use today to describe medical problems has changed little since the time of Hippocrates. The cardinal signs of infection continue to be *rubor* or redness, *calor* or warmth, *tumor* or mass, and *dolor*, pain.)

Other colors are important in dermatology: *pigmented* usually means brown, though it can refer to other colors caused by pigment-producing cells in the skin. *Hypopigmented* means lighter than the skin around it. *Hyperpigmented* means darker than the surrounding normal skin. *Depigmented* means there is no color whatsoever. Individuals who lack pigmentation completely are called *albino*; they may be at special risk for skin cancer.



There are also a host of terms to describe lesions in more detail. These single words convey a lot to the dermatologist. A *pustule* is a pus bump, a *comedone* is a black-

[ Pustule ]



[ Vesicle ]

head. A small, fluid-filled bump is a *vesicle* or blister. A *keratosis* is a small collection of benign, non-cancerous cells that have divided over time and heaped up into a small, crusty mound, like a spot of corrosion on old aluminum garden furniture. There are keratoses that are totally benign, such as *seborrheic keratoses*, and there are those that are caused by the sun and are precancerous, actinic keratoses. The former occur with age (or, as I say to my age-sensitive patients, “the passage of time”). I liken them to barnacles on the hull of a ship—in fact, they can be easily scraped off in a simple office procedure.

These words, along with a good eye for color, will help you describe virtually any skin problem. They will also help you get the most out of this book.