

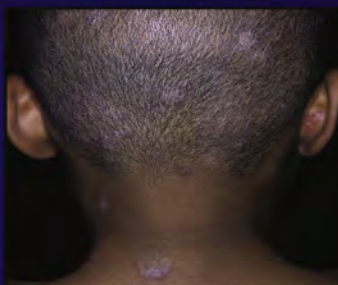
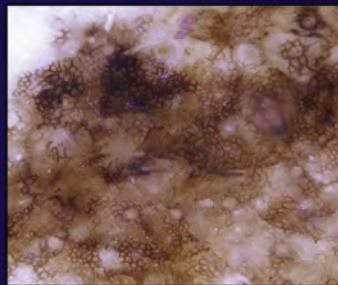
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# CLINICAL DERMATOLOGY

*A Color Guide to Diagnosis and Therapy*

THOMAS P. HABIB



Sixth  
Edition

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# QUICK REFERENCE FORMULARY

(Topical steroids are listed on the inside back cover.)

Acne Medications—Retinoids			
	Base	Concentration	Packaging
Retin-A (tretinoin)	Cream Gel	0.025%, 0.05%, 0.1% 0.01%, 0.025%	20, 45 gm 15, 45 gm
Retin-A Micro (tretinoin)	Gel	0.1%, 0.04%	20, 45, 50 gm pump
Tazorac (tazarotene)	Gel Cream	0.1%, 0.05% 0.1%, 0.5%	30, 100 gm 30, 60 gm
Fabior (tazarotene)	Foam	0.1%	50 gm can, 100 gm can
Differin (adapalene)	Gel Cream Lotion	0.1%, 0.3% 0.1% 0.1%	45 gm. 0.3% also in 45 gm pump 45 gm 59 ml pump
Epiduo	Gel	0.1% adapalene + 2.5% benzoyl peroxide	45 gm
Veltin, Ziana	Gel	1.2% clindamycin phosphate/0.025% tretinoin	30 gm, 60 gm

Acne Medications—Topical Antibiotics		
Product	Antibiotics	Packaging
Aczone	5% dapsone	30, 60 gm; 90 gm gel
Benzaclin	1% clindamycin, 5% benzoyl peroxide	25, 50 gm gel; 35, 50 gm pump
Benzamycin	3% erythromycin, 5% benzoyl peroxide	23.3, 46.6 gm gel
Cleocin T	1% clindamycin	30, 60 ml liquid; 30, 60 gm gel; 60 ml lotion
Duac gel	1% clindamycin, 5% benzoyl peroxide	45 gm gel
Klaron 10%	10% sodium sulfacetamide	4 oz bottle
Clenia	5% sulfur, 10% sodium sulfacetamide	1 oz emollient cream
Sulfacet-R lotion	5% sulfur, 10% sodium sulfacetamide	25 ml, larger in generic
AVAR cleanser	5% sulfur, 10% sodium sulfacetamide	8 oz pump
Ovace wash	10% sodium sulfacetamide	12 oz

Acne Medications—Benzoyl Peroxide Cleansers (Numerous generics, many different concentrations)		
Product	Formulation	Packaging
Brevoxyl Creamy Wash	Liquid 4%	6 oz tube
Brevoxyl Creamy Wash	Liquid 8%	6 oz tube
PanOxyl 5 bar (OTC)	Bar 5%	4 oz bar
PanOxyl 10 bar (OTC)	Bar 10%	4 oz bar

Acne Medications—Benzoyl Peroxide Gels (Numerous generics, many different concentrations: 2.5%, 5%, 10%)		
Acne Medications: Oral Antibiotics		
Generic	Preparation	Adult dosage (mg unless noted)
Doxycycline	50, 75, 100, 150 mg	1 to 2 times per day
Minocycline	50, 75, 100 mg	1 to 2 times per day
Minocycline extended-release tablets (Solodyn)	55, 65, 80, 105, 115 mg	1 tablet every day (1 mg/kg/day)

<b>Antineoplastic Agents— Topical</b>		
	<b>Product</b>	<b>Packaging</b>
Aldara cream	5% imiquimod	Box of 12 packets, 24 packets
Zyclara cream	3.75% imiquimod	Box of 28 packets
Zyclara cream	2.5%, 3.75% imiquimod	7.5 gm pump, 15 gm pump
Picato	Ingenol mebutate gel 0.015%	3 tubes (face)
Picato	Ingenol mebutate gel 0.05%	2 tubes (body)
Carac	0.5% fluorouracil	30 gm tube
Fluoroplex	1% fluorouracil	30 ml solution, 30 gm cream
Efudex	2% or 5% fluorouracil	10 ml liquid
	5% fluorouracil	25 gm cream

<b>Antipruritic Creams and Lotions</b>		
<b>Brand name</b>	<b>Active ingredient</b>	<b>Packaging</b>
Eucerin itch relief	Menthol 0.15%	6.8 oz spray
Neutrogena anti-itch moisturizer	Camphor 0.1%, dimethacone 0.1%	10.1 oz
PrameGel	1% pramoxine, 0.5% menthol	4 oz
Sarna original	0.5% each of camphor, menthol	7.5 oz bottle
Sarna sensitive anti-itch lotion	Pramoxine HCl	7.5 oz
Sarna Ultra anti-itch cream	Menthol 0.5% and pramoxine	2 oz
Zonalon	5% doxepin	45 gm

<b>Skin Bleaches and Depigmenting Agents</b>		
<b>Brand name</b>	<b>Active ingredient</b>	<b>Packaging</b>
Generic	4% hydroquinone	1 oz, 2 oz jar
Tri-Luma	4% hydroquinone, 0.01% fluocinolone acetonide, 0.05% tretinoin	30 gm

<b>Genital Warts</b>		
<b>Brand name</b>	<b>Active ingredient</b>	<b>Packaging</b>
Veregen	Sin catechins 15 ointment	15 gm
Condylox solution	Podofilox	3.5 ml
Condylox gel	Podofilox	3.5 gm
Aldara cream	5% imiquimod	Box of 12 or 24 packets
Zyclara cream	3.75% imiquimod	Box of 28 packets, pump

<b>Psoriasis— Topical Vitamin D<sub>3</sub> Analogs</b>		
<b>Brand name</b>	<b>Active ingredient</b>	<b>Packaging</b>
Dovonex cream	Calcipotriene	30, 60, 100 gm tubes
Sorilux foam	Calcipotriene	60 gm can, 120 gm can
Vectical ointment	Calcitriol	100 gm tubes
Taclonex ointment	0.005% calcipotriene + 0.064% betamethasone	60, 100 gm
Taclonex suspension	0.005% calcipotriene + 0.064% betamethasone	60 gm, 100 gm bottle

<b>Rosacea—Topical Medications</b>		
<b>Brand name</b>	<b>Generic name</b>	<b>Packaging</b>
Avar cleanser	5% sulfur, 10% sodium sulfacetamide	8 oz
Avar Green	5% sulfur, 10% sodium sulfacetamide	45 gm aqueous gel with green color masks redness
Clenia	5% sulfur, 10% sodium sulfacetamide	1 oz cream; 6, 12 oz foaming wash
Azelex	20% azelaic acid	30, 50 gm cream
Finacea	15% azelaic acid	30 gm gel
Klaron 10%	10% sodium sulfacetamide	2 oz
Generic gel, cream, lotion 0.75%	Metronidazole	45 gm, 45 gm, 120 ml
Metrogel 1% gel	Metronidazole	60 gm tube, 55 gm pump
Noritate Cream 1%	Metronidazole	30 gm tube
Sulfacet-R lotion	5% sulfur, 10% sodium sulfacetamide Ivermectin cream 1%	25 gm bottle
Soolantra		30 gm
Mirvaso	0.33% brimonidine tartrate gel	30 gm tube

<b>Empirical Oral Antibiotic Regimens for Selected Patients with Methicillin-Resistant <i>Staphylococcus aureus</i> (MRSA) Infections</b>	
<b>Antibiotic</b>	<b>Dose (adults)</b>
Trimethoprim-sulfamethoxazole	One or two double-strength doses (160 mg of trimethoprim and 800 mg of sulfamethoxazole) twice per day
Clindamycin	300-450 mg three times per day
Doxycycline	100 mg twice per day
Minocycline	200 mg initially, followed by 100 mg every 12 hr

### **Antiinfectives, Topical**

- Bacitracin zinc/polymyxin B sulfate
- Neomycin sulfate/polymyxin B sulfate/bacitracin zinc
- Azelaic acid
- Bacitracin
- Benzoyl peroxide
- Clindamycin
- Erythromycin
- Gentamicin
- Metronidazole
- Mupirocin (Bactroban)
- Retapamulin (Altabax)
- Sulfacetamide sodium

### **Isotretinoin (Branded Generics) Accutane—first brand name medicine**

10 mg, 20 mg, 25 mg, 30 mg, 35 mg, 40 mg



Dosing Isotretinoin by Body Weight			
Body weight		Total mg/day	
Kilograms	Pounds	0.5 mg/kg	1 mg/kg
40	88	20	40
50	110	25	50
60	132	30	60
70	154	35	70
80	176	40	80
90	198	45	90
100	220	50	100

Antiwrinkle Cream		
Product	Active ingredient	Packaging
Renova 0.02% emollient	Tretinoin	40 gm
Retin-A	Tretinoin	Many doses: see Acne Medications
Avage 0.1 cream	Tazarotene	30 gm

#### Antifungal Agents, Topical

- Butenafine hydrochloride
- Ciclopirox
- Clotrimazole
- Econazole nitrate
- Efinaconazole solution (Jublia) for toenails
- Gentian Violet
- Ketoconazole
- Miconazole nitrate
- Naftifine hydrochloride
- Nystatin
- Oxiconazole nitrate
- Sertaconazole nitrate
- Sulconazole nitrate
- Terbinafine
- Tolnaftate
- Undecylenic acid and derivatives

Antifungal Agents (Oral)		
Brand name	Generic name	Packaging
Diflucan	Fluconazole	50, 100, 150, 200 mg
Grifulvin V	Griseofulvin microsize	500 mg; 125 mg/5 ml in 4 oz bottle
Gris-PEG	Griseofulvin ultramicrosize	125, 250 mg
Mycostatin	Nystatin	500,000, 1 million unit capsules 100,000 units/ml suspension
Nizoral	Ketoconazole	200 mg
Lamisil	Terbinafine	250 mg
Sporanox	Itraconazole	100 mg
Mycelex troches for oral <i>Candida</i>		10 mg troche; bottle of 70 or 140; dissolve 5/day in mouth for 14 days

<b>Antihistamines</b>				
<b>Drug</b>	<b>Initial dose (adult)</b>	<b>Maximal dose (adult)</b>	<b>Liquid formulation</b>	<b>Tablet formulation</b>
<b>H<sub>1</sub>-Receptor Antagonists</b>				
<b><i>Nonsedating</i></b>				
Fexofenadine (Allegra)	180 mg daily	180 mg bid	—	30, 60, 180 mg
Desloratadine (Clarinex)	5 mg	10 mg	—	5 mg
Loratadine (Claritin)	10 mg daily	20 mg bid	5 mg/5 ml	10 mg
Cetirizine (Zyrtec)	10 mg daily	10 mg bid	5 mg/5 ml, 1 mg/ml	5, 10 mg
<b><i>Sedating</i></b>				
Hydroxyzine (Atarax)	10 mg qid	50 mg qid	10 mg/5 ml susp, 25 mg/5 ml	10, 25, 50, 100 mg
Diphenhydramine (Benadryl)	25 mg bid	50 mg qid	Elixir 12.5 mg/5 ml; syrup 6.25 mg/5 ml	25, 50 mg; 12.5 mg chew tab
Cyproheptadine (Periactin)	4 mg qid	8 mg qid	2 mg/5 ml	4 mg

<b>Antiperspirants</b>		
<b>Brand name</b>	<b>Active ingredient</b>	<b>Packaging</b>
CertainDri (OTC)	Aluminum chloride (hexahydrate)	1, 2 oz roll-on Pump spray (nonaerosol)
Drysol (Rx)	20% aluminum chloride (hexahydrate) in 93% anhydrous ethyl alcohol	35 ml bottle with Dab-O-Matic applicator; 37.5 ml bottle
Hypercare	20% aluminum chloride (hexahydrate) in 93% anhydrous ethyl alcohol	37.5 ml bottle; 35 and 60 ml bottles with Dab-O-Matic applicator
Lazerformaldehyde solution (Rx)	10% formaldehyde	3 oz roll-on
Formaldehyde-10 spray	10% formaldehyde	2 oz spray bottle
Xerac AC (Rx)	6.25% aluminum chloride (hexahydrate) in 96% anhydrous ethyl alcohol	35, 60 ml bottles with Dab-O-Matic applicator

<b>Antiviral Agents (Herpes Simplex and Zoster)</b>
Abreva (docosanol), 2 gm (OTC)
Denavir (penciclovir), 1.5 gm ointment
Famvir (famciclovir); 125, 250, 500 mg tablets
Valtrex (valacyclovir); 500 mg, 1 gm capsules
Zovirax (acyclovir); 200, 400, 800 mg capsules, 200 mg/5 ml suspension
Zovirax ointment 5%, 3 and 15 gm tubes

<b>Masking Agents (Cosmetic Covering Agents)</b>			
<b>Brand name</b>	<b>Base</b>	<b>Packaging</b>	<b>Shades</b>
Covermark*	Cream	Many products	9-10
Dermablend cover cream*	Cream	Many products	21

\*Waterproof concealing makeup.

Hair Restoration Products		
Brand name	Active ingredient	
Propecia	Finasteride	1 mg
Generic	Finasteride	5 mg (split 5 mg tablet into 4 parts); a great cost saving
Avodart	Dutasteride	0.5 mg (not FDA approved)
Rogaine	Minoxidil solution	Solutions and foam, 2% for women and men, 5% for men

Immunomodulators (Topical)		
Steroid-Free Topical Antiinflammatory Agents		
Elidel cream 1%	Pimecrolimus	15 g, 30 gm, 100 gm
Protopic ointment 0.1%	Tacrolimus	30, 60, 100 gm
Protopic ointment 0.03%	Tacrolimus	30, 60, 100 gm

Antiseborrheic Preparations		
Brand name	Active ingredient	Packaging
Loprox gel	Ciclopirox	45 gm
Nizoral cream	Ketoconazole	15, 30, 60 gm
Ovace wash	10% sulfacetamide sodium	6, 12 oz
Ovace foam	10% sulfacetamide sodium	50 gm, 100 gm can
Carmol scalp treatment lotion	10% sulfacetamide sodium	90 gm
Promiseb cream	Castor oil, disodium EDTA, PEG-30	30 gm

Corticosteroid and Tar Scalp Preparations			
Brand name	Active ingredient	Base	Packaging
Derma-Smoothe/FS (Rx)	Fluocinolone acetonide 0.01%	Peanut oil	120 ml
10% liquor carbonis detergens in Nivea oil*	Liquor carbonis detergens; 8, 16 oz	Nivea oil	Prescribe

\*Pharmacist compounded.

Tar-Containing Bath Oil (or applied directly to lesions)		
Brand name	Size	Packaging
Balnetar	2.5% coal tar	240 ml
Cutar emulsion	7.5% LCD	6 oz, 1 gal
Doak Oil	2% tar distillate	240 ml
Doak Oil Forte	5% tar distillate	120 ml
Polytar Bath	25% polytar	240 ml
Zetar emulsion (Rx)	30% whole coal tar	177 ml (6 oz)

Pediculocides		
Brand name	Generic name	Packaging
NIX cream rinse	Permethrin	2 oz
Ovide	0.5% malathion	2 oz lotion
RID (otc)	0.3% pyrethrins	2, 4 oz; 1 gal liquid
Sklice	0.5% ivermectin	117 gm tube
Spinosad	0.9% spinosad	120 ml

Scabicides		
Brand name	Generic name	Packaging
Elimite	Permethrin	5% cream: 60 gm
Kwell	Lindane	1% cream: 2, 16 oz 1% lotion: 2, 16 oz
5-10% precipitated sulfur	Sulfur	Sulfur in petrolatum
Stromectol	Ivermectin	3 mg tablets



# CLINICAL DERMATOLOGY

A Color Guide to Diagnosis and Therapy  
Sixth Edition

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## RAPID ACCESS TO THE TEXT

1. *Disorders Index*: A list of diseases with page references is located inside the front cover.
2. Chapter 1—*Regional Differential Diagnosis Atlas*: This section with page references helps narrow the differential diagnosis.
3. A list of *topical corticosteroids* can be found on the inside back cover.
4. A *Quick Reference Formulary* to the most commonly used drugs is on pp. ii-vii.
5. A table of antibiotics with dosage by weight is located on the back outside cover.

## ELECTRONIC VERSION

The sixth edition is optimized for electronic delivery. I use the *Disorders Index* to rapidly find specific diseases. The images hold up quite well when enlarged. Access is adequate on big screen Android phones and the Apple iPhone. I still prefer the print version with two full pages of information displayed but I now find myself frequently using the electronic version on my big phone, which I carry in my lab coat. Having a “book in a pocket” plus numerous other resources is pretty nice.

## PMID numbers (PubMed identification numbers)

**PMID** numbers (blue letters and numbers) are used instead of references and are embedded in the text. Go to PubMed’s home page. Type in just the number in the search line and click on Go. You will be taken to the paper and abstract.

## HOW TO USE THIS BOOK

### Students in the classroom

Students should learn the primary and secondary lesions and look at every page in the *Regional Differential Diagnosis Atlas* at the end of Chapter 1.

### Students in the clinic

Study Chapters 20 (Benign Skin Tumors), 21 (Premalignant and Malignant Nonmelanoma Skin Tumors), and 22 (Nevi and Malignant Melanoma). Skin growths are common, and it is important to recognize their features.

House officers are responsible for patient management. Read Chapter 2 carefully, and study all aspects of the use of topical steroids. It is tempting to use these agents as a therapeutic trial and ask for a consultation only if therapy fails. Topical steroids mask some diseases, make some diseases worse, and create other diseases. Do not develop bad habits; if you do not know what a disease is, do not treat it.

The diagnosis of skin disease is deceptively easy. Do not make hasty diagnoses. Take a history, study primary lesions and the distribution, and be deliberate and methodical. Ask for help. With time and experience you will feel comfortable managing many common skin diseases.

### The non-dermatologist provider

Look at the *Regional Differential Diagnosis Atlas* in Chapter 1 as a general guide. The clinical diagnosis of growths and pigmented lesions is complicated; study Chapters 20, 21, and 23.

### The dermatologist

The *Disorders Index* on the inside front cover provides rapid access. Examine the patient and then show the patient a picture of his or her disease. Patients see the similarity and are reassured.

The book is a practical resource; I use it every day. All current information that is practical and relevant is included. There are numerous tables and boxes provided to increase the efficiency of information acquisition. Rare diseases are found in larger textbooks.

## PRODUCTION

Production people are listed on the title page. The layout and design is done the “old fashioned way,” by cutting and pasting images and strips of text by the layout artist. Page layout design is a science and an art. Jeanne Genz (green sweater) has done the page layout for all six editions. Laura McCann (across from Jeanne) organizes the images and prepares them for pasting. I sit next to Jeanne. The hard copy pasted book (Dummy) is sent to Graphic World in St. Louis for conversion to a computer file and typeset in Adobe Indesign software. Several stages of checking and correction then occur. The final product is converted to a PDF file (portable document format) and sent to the printer in China. High-grade glossy paper retains ink at the surface to enhance definition. The slow-speed press allows ink to be laid down precisely so that exceptional sharpness and color balance are achieved. The entire process of writing and production takes about 2 years.

**Thomas P. Habif**



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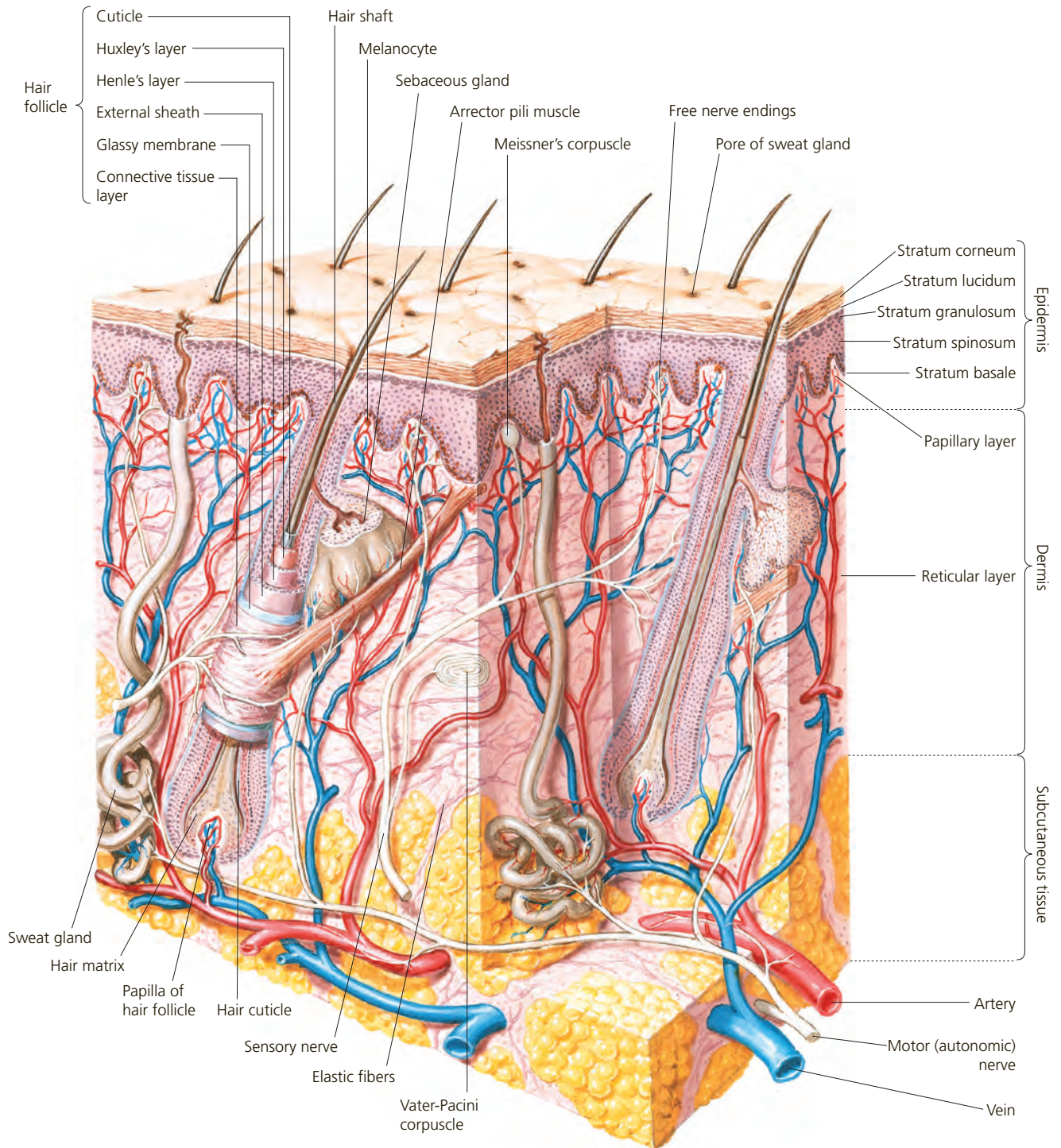
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# Skin Anatomy



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# PRINCIPLES OF DIAGNOSIS AND ANATOMY

## CHAPTER CONTENTS

### SKIN ANATOMY

Epidermis

Dermis

Dermal nerves and vasculature

### DIAGNOSIS OF SKIN DISEASE

Primary skin lesions

Secondary skin lesions

Special skin lesions

### REGIONAL DIFFERENTIAL DIAGNOSIS ATLAS

## SKIN ANATOMY

The skin is divided into three layers: the epidermis, the dermis, and the subcutaneous tissue. The skin is thicker on the dorsal and extensor surfaces than on the ventral and flexor surfaces.

### Epidermis

The epidermis is the outermost part of the skin; it is stratified squamous epithelium. The thickness of the epidermis ranges from 0.05 mm on the eyelids to 1.5 mm on the palms and soles. The microscopic anatomy of the epidermal-dermal junction is complex; it is discussed in detail in Chapter 16. The innermost layer of the epidermis consists of a single row of columnar cells called basal cells. Basal cells divide to form keratinocytes, which comprise the spinous layer. The cells of the spinous layer are connected to each other by intercellular bridges or spines, which appear histologically as lines between cells. The keratinocytes synthesize insoluble protein, which remains in the cell and eventually becomes a major component of the outer layer (the stratum and corneum). The cells continue to flatten, and their cytoplasm appears granular (stratum granulosum); they finally die as they reach the surface to form the stratum corneum. There are three types of branched cells in the epidermis: the melanocyte, which synthesizes pigment (melanin); the Langerhans cell, which serves as a frontline element in immune reactions of the skin; and the Merkel cell, the function of which is not clearly defined.

### Dermis

The dermis varies in thickness from 0.3 mm on the eyelid to 3.0 mm on the back; it is composed of three types of connective tissue: collagen, elastic tissue, and reticular fibers. The dermis is divided into two layers: the thin upper layer, called the papillary layer, is composed of thin, haphazardly arranged collagen fibers; the thicker lower layer, called the reticular layer, extends from the base of the papillary layer to the subcutaneous tissue and is composed of thick collagen fibers that are arranged parallel to the surface of the skin. Histiocytes are wandering macrophages that accumulate hemosiderin, melanin, and debris created by inflammation. Mast cells, located primarily around blood vessels, manufacture and release histamine and heparin.

### Dermal Nerves and Vasculature

The sensations of touch and pressure are received by Meissner's and Vater-Pacini corpuscles. The sensations of pain, itch, and temperature are received by unmyelinated nerve endings in the papillary dermis. A low intensity of stimulation created by inflammation causes itching, whereas a high intensity of stimulation created by inflammation causes pain. Therefore scratching converts the intolerable sensation of itching to the more tolerable sensation of pain and eliminates pruritus.

The autonomic system supplies the motor innervation of the skin. Adrenergic fibers innervate the blood vessels (vasoconstriction), hair erector muscles, and apocrine glands. Autonomic fibers to eccrine sweat glands are

cholinergic. The sebaceous gland is regulated by the endocrine system and is not innervated by autonomic fibers. The anatomy of the hair follicle is described in Chapter 24.

## DIAGNOSIS OF SKIN DISEASE

What could be easier than the diagnosis of skin disease? The pathology is before your eyes! Why then do nondermatologists have such difficulty interpreting what they see?

There are three reasons. First, there are literally hundreds of cutaneous diseases. Second, a single entity can vary in its appearance. A common seborrheic keratosis, for example, may have a smooth, rough, or eroded surface and a border that is either uniform or as irregular as a melanoma. Third, skin diseases are dynamic and change in morphology. Many diseases undergo an evolutionary process: herpes simplex may begin as a red papule, evolve into a blister, and then become an erosion that heals with scarring. If hundreds of entities can individually vary in appearance and evolve through several stages, then it is necessary to recognize thousands of permutations to diagnose cutaneous entities confidently. What at first glance appeared to be simple to diagnose may later appear to be simply impossible.

Dermatology is a morphologically oriented specialty. As in other specialties, the medical history is important; however, the ability to interpret what is observed is even more important. The diagnosis of skin disease must be approached in an orderly and logical manner. The temptation to make rapid judgments after hasty observation must be controlled.

### A Methodical Approach

The recommended approach to the patient with skin disease is as follows:

- **History.** Obtain a brief history, noting duration, rate of onset, location, symptoms, family history, allergies, occupation, and previous treatment.
- **Distribution.** Determine the extent of the eruption by having the patient disrobe completely.
- **Primary lesion.** Determine the primary lesion. Examine the lesions carefully; a hand lens is a valuable aid for studying skin lesions. Determine the nature of any secondary or special lesions.
- **Differential diagnosis.** Formulate a differential diagnosis.
- **Tests.** Obtain a biopsy and perform laboratory tests, such as skin biopsy, potassium hydroxide examination for fungi, skin scrapings for scabies, Gram stain, fungal and bacterial cultures, cytology (Tzanck test), Wood's light examination, patch tests, dark field examination, and blood tests.

### Examination Technique

**Distribution.** The skin should be examined methodically. A visual scan over wide areas is inefficient. It is most productive to mentally divide the skin surface into several

sections and carefully study each section. For example, when studying the face, examine the area around each eye, the nose, the mouth, the cheeks, and the temples.

During an examination, patients may show small areas of their skin, tell the physician that the rest of the eruption looks the same, and expect an immediate diagnosis. The remainder of the eruption may or may not look the same. Patients with rashes should receive a complete skin examination to determine the distribution and confirm the diagnosis. Decisions about quantities of medication to dispense require visualization of the big picture. Many dermatologists now advocate a complete skin examination for all of their patients. Because of an awareness that some patients are uncomfortable undressing completely when they have a specific request such as treatment of a plantar wart, other dermatologists advocate a case-by-case approach.

**Primary Lesions and Surface Characteristics.** Lesions should be examined carefully. Standing back and viewing a disease process provides valuable information about the distribution. Close examination with a magnifying device provides much more information. Often the primary lesion is identified and the diagnosis is confirmed at this step. The physician should learn the surface characteristics of all the common entities and gain experience by examining known entities. A flesh-colored papule might be a wart, sebaceous hyperplasia, or a basal cell carcinoma. The surface characteristics of many lesions are illustrated throughout this book.

### Approach to Treatment

Most skin diseases can be managed successfully with the numerous agents and techniques available. If a diagnosis has not been established, medications should not be prescribed; this applies particularly to prescription of topical steroids. Some physicians are tempted to experiment with various medications and, if the treatment fails, to refer the patient to a specialist. This is not a logical or efficient way to practice medicine.

### Primary Lesions

Most skin diseases begin with a basic lesion that is referred to as a primary lesion. Identification of the primary lesion is the key to accurate interpretation and description of cutaneous disease. Its presence provides the initial orientation and allows the formulation of a differential diagnosis. Definitions of the primary lesions and their differential diagnoses are listed and illustrated on [pp. 3 to 11](#).

### Secondary Lesions

Secondary lesions develop during the evolutionary process of skin disease or are created by scratching or infection. They may be the only type of lesion present, in which case the primary disease process must be inferred. The differential diagnoses of secondary lesions are listed and illustrated on [pp. 12 to 16](#).



## PRIMARY SKIN LESIONS—MACULES

## MACULE

A circumscribed, flat discoloration that may be brown, blue, red, or hypopigmented

**Hypopigmented**

Idiopathic guttate hypomelanosis (p. 776)  
Nevus anemicus (p. 776)  
Piebaldism  
Postinflammatory psoriasis  
Radiation dermatitis  
Tinea versicolor (p. 530)  
Tuberous sclerosis (p. 999)  
Vitiligo (p. 770)

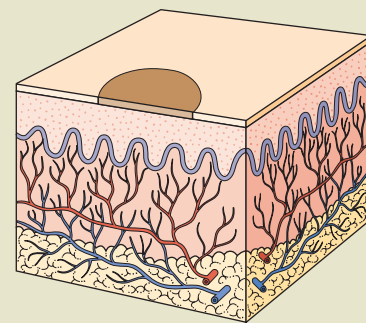
**Brown**

Becker's nevus (p. 862)  
Café-au-lait spot (pp. 782, 995)  
Erythrasma (p. 497)  
Fixed drug eruption (p. 572)  
Freckles (p. 777)

Junction nevus (p. 856)  
Lentigo (p. 778)  
Lentigo maligna (p. 876)  
Melasma (p. 779)  
Photoallergic drug eruption (p. 769)  
Phototoxic drug eruption (p. 766)  
Stasis dermatitis (p. 120)  
Tinea nigra palmaris

**Blue**

Ink (tattoo)  
Maculae ceruleae (lice)  
Mongolian spot  
Ochronosis

**Red**

Drug eruptions (pp. 560, 562)  
Juvenile rheumatoid arthritis (Still's disease)  
Rheumatic fever  
Secondary syphilis (p. 392)  
Viral exanthems (p. 549)



Becker's nevus



Erythrasma



Lentigo



Idiopathic guttate hypomelanosis



Phototoxic drug eruption



Tuberous sclerosis



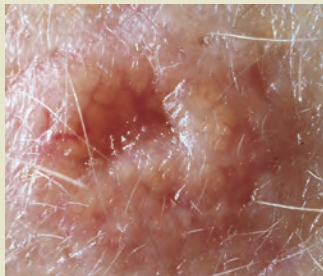
## PRIMARY SKIN LESIONS—PAPULES

## PAPULE

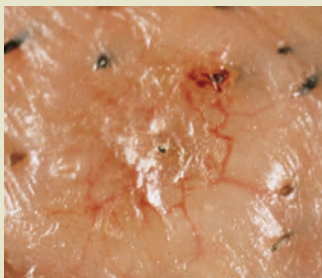
An elevated solid lesion up to 0.5 cm in diameter; color varies; papules may become confluent and form plaques

**Flesh colored, yellow, or white**

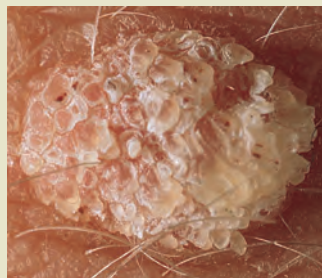
Acrochordon (skin tag) (p. 792)  
Adenoma sebaceum (p. 999)  
Basal cell carcinoma (p. 809)  
Closed comedone (acne) (p. 220)  
Flat warts (p. 452)  
Granuloma annulare (p. 988)  
Lichen nitidus  
Lichen sclerosus (p. 321)  
Milia (p. 252)  
Molluscum contagiosum (pp. 426, 458)  
Neurofibroma (p. 996)  
Nevi (dermal) (p. 855)  
Pearly penile papules (p. 422)  
Pseudoxanthoma elasticum  
Senile sebaceous hyperplasia (p. 807)  
Skin tags (acrochordons) (p. 792)  
Syringoma (p. 808)



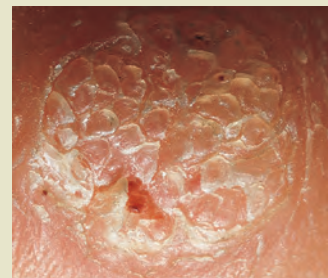
**Sebaceous hyperplasia**



**Basal cell carcinoma**



**Wart (cylindrical projections)**



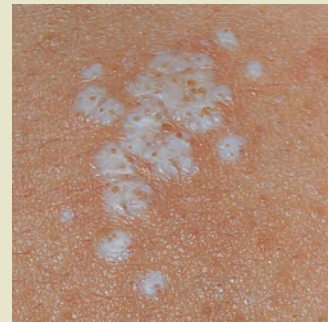
**Wart (mosaic surface)**



**Nevi (dermal)**



**Lichen planus**



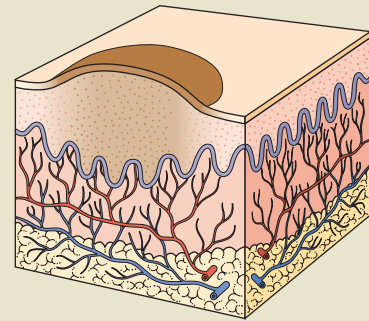
**Lichen sclerosus**

**Brown**

Dermatofibroma (p. 795)  
Melanoma (p. 868)  
Nevi (p. 855)  
Seborrheic keratosis (p. 784)  
Urticaria pigmentosa (p. 209)  
Warts (p. 448)

**Red**

Acne (p. 218)  
Atopic dermatitis (p. 152)  
Cat-scratch disease (p. 612)  
Cherry angioma (p. 914)  
Cholinergic urticaria (p. 193)  
Chondrodermatitis nodularis (p. 803)  
Eczema (p. 90)  
Folliculitis (p. 345)  
Insect bites  
Keratosis pilaris (pp. 163, 347)  
Leukocytoclastic vasculitis (p. 732)  
Miliaria  
Polymorphous light eruption (p. 756)  
Psoriasis (p. 263)

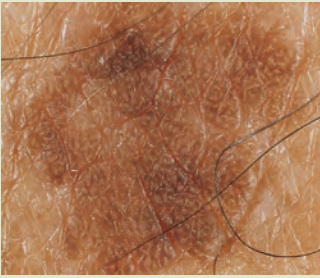


Pyogenic granuloma (pp. 916, 983)  
Scabies (p. 577)  
Urticaria (p. 178)

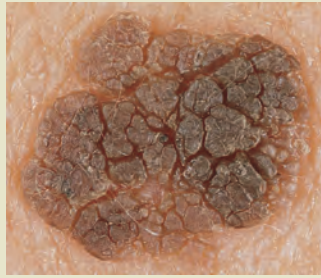
**Blue or Violaceous**

Angiokeratoma (p. 914)  
Blue nevus (p. 864)  
Kaposi's sarcoma (p. 917)  
Lichen planus (p. 310)  
Lymphoma  
Melanoma (p. 868)  
Mycosis fungoides (p. 837)  
Venous lake (p. 915)

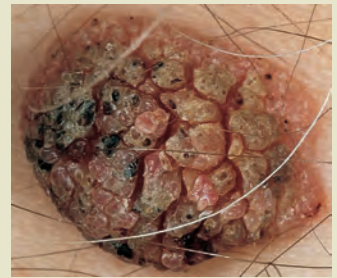
PRIMARY SKIN LESIONS—PAPULES—cont'd



Seborrheic keratosis



Seborrheic keratosis



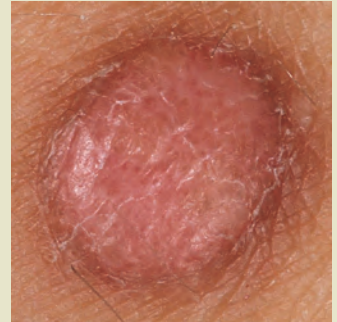
Seborrheic keratosis



Melanoma



Granuloma annulare



Dermatofibroma



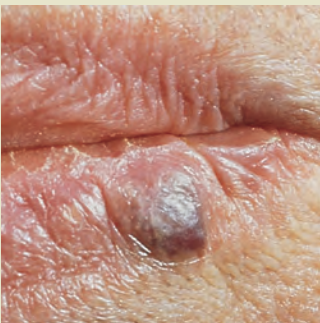
Flat warts



Molluscum contagiosum



Chondrodermatitis nodularis



Venous lake



Cherry angioma



Pyogenic granuloma

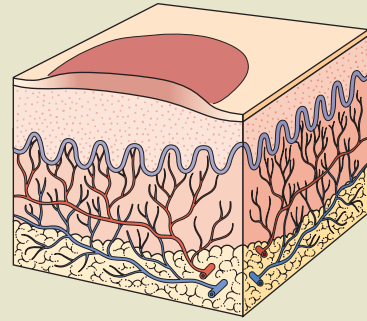


**PRIMARY SKIN LESIONS—PLAQUES**

**PLAQUE**

A circumscribed, elevated, superficial, solid lesion more than 0.5 cm in diameter, often formed by the confluence of papules

- |  |                                |
|--|--------------------------------|
| Chronic cutaneous (discoid) lupus erythematosus (pp. 684, 951) | Pityriasis rosea (p. 307)      |
| Cutaneous T-cell lymphoma (p. 837)                             | Psoriasis (p. 263)             |
| Eczema (p. 90)   | Seborrheic dermatitis (p. 302) |
| Lichen planus (p. 310)   | Sweet's syndrome (p. 739)      |
| Paget's disease (p. 850)                                       | Syphilis (secondary) (p. 394)  |
| Papulosquamous (papular and scaling) lesions (p. 263)          | Tinea corporis (p. 499)        |
|  | Tinea pedis (p. 490)           |
|  | Tinea versicolor (p. 530)      |



**Pityriasis rosea**



**Eczema**



**Seborrheic dermatitis**



**Pityriasis rosea**



**Syphilis (secondary)**



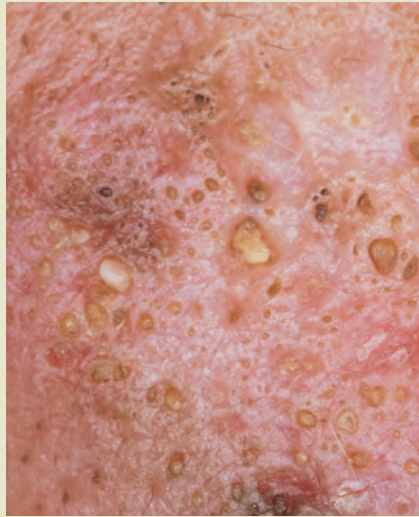
**Psoriasis**



PRIMARY SKIN LESIONS—PLAQUES—cont'd



Lichen planus



Discoid lupus erythematosus



Cutaneous T-cell lymphoma



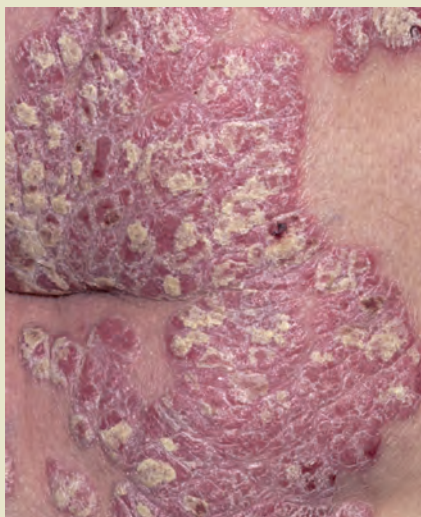
Tinea corporis



Tinea pedis



Tinea versicolor



Psoriasis



Paget's disease



Sweet's syndrome

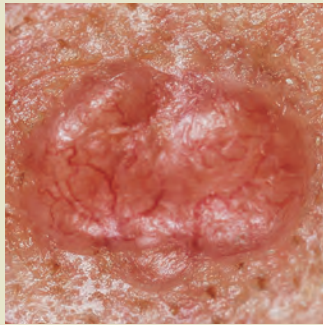
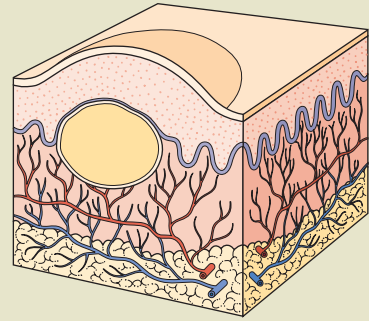


## PRIMARY SKIN LESIONS—NODULES

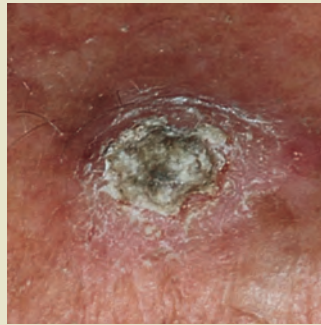
## NODULE

A circumscribed, elevated, solid lesion more than 0.5 cm in diameter; a large nodule is referred to as a tumor

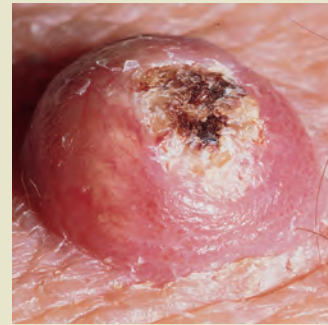
- |                                    |                                  |
|------------------------------------|----------------------------------|
| Basal cell carcinoma (p. 809)      | Melanoma (p. 868)                |
| Cutaneous T-cell lymphoma (p. 837) | Metastatic carcinoma (p. 854)    |
| Erythema nodosum (p. 723)          | Neurofibromatosis (p. 995)       |
| Furuncle (p. 350)                  | Prurigo nodularis (p. 117)       |
| Hemangioma (p. 902)                | Sporotrichosis                   |
| Kaposi's sarcoma (p. 917)          | Squamous cell carcinoma (p. 830) |
| Keratoacanthoma (p. 797)           | Warts (p. 448)                   |
| Lipoma                             | Xanthoma (p. 992)                |
| Lymphoma (p. 837)                  |                                  |



Basal cell carcinoma



Squamous cell carcinoma



Keratoacanthoma



Melanoma



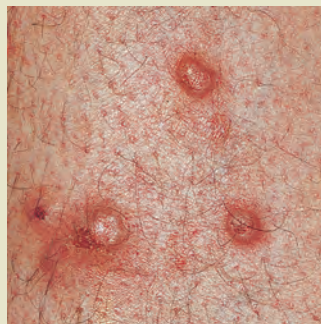
Hemangioma



Kaposi's sarcoma



Cutaneous T-cell lymphoma



Prurigo nodularis



Neurofibromatosis



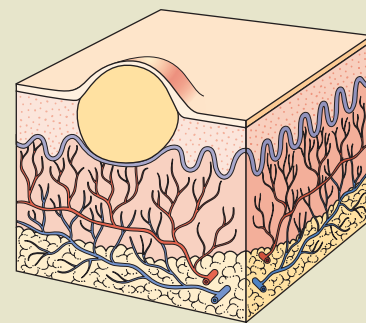
## PRIMARY SKIN LESIONS—PUSTULES

## PUSTULE

A circumscribed collection of leukocytes and free fluid that varies in size

Acne (p. 218)  
 Candidiasis (p. 516)  
 Chickenpox (p. 468)  
 Dermatophyte infection (p. 487)  
 Dyshidrosis (pompholyx) (p. 109)  
 Folliculitis (p. 345)  
 Gonorrhea (disseminated) (p. 415)  
 Herpes simplex (pp. 429, 460)  
 Herpes zoster (p. 473)

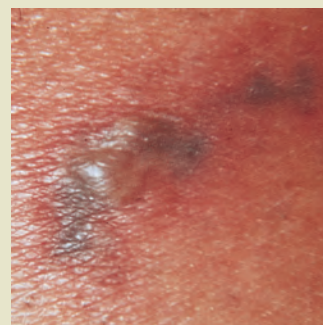
Hidradenitis suppurativa (p. 260)  
 Impetigo (p. 329)  
 Keratosis pilaris (pp. 163, 347)  
*Pseudomonas* folliculitis (p. 358)  
 Psoriasis (p. 263)  
 Pyoderma gangrenosum (p. 743)  
 Rosacea (p. 256)  
 Scabies (p. 577)  
 Varicella (p. 468)



**Chickenpox**



**Folliculitis**



**Gonorrhea (disseminated)**



**Impetigo**



**Keratosis pilaris**



**Herpes simplex**



***Pseudomonas* folliculitis**



**Dyshidrosis (pompholyx)**



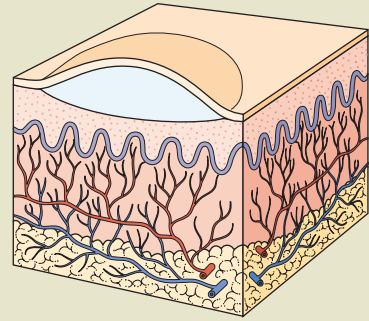
**Acne**

**PRIMARY SKIN LESIONS—VESICLES AND BULLAE**

**VESICLE**

A circumscribed collection of free fluid up to 0.5 cm in diameter

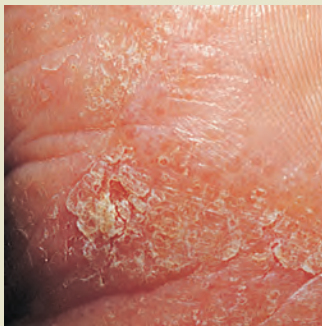
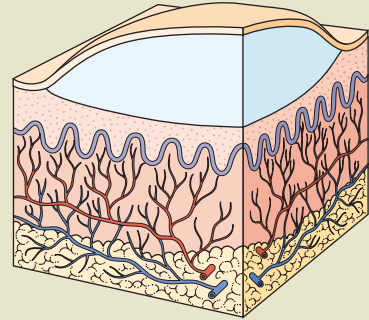
- |  |                                  |
|--|----------------------------------|
| Benign familial chronic pemphigus (p. 664) | Herpes simplex (pp. 429, 460)    |
| Cat-scratch disease (p. 612)               | Herpes zoster (p. 473)           |
| Chickenpox (p. 468)                        | Impetigo (p. 329)                |
| Dermatitis herpetiformis (p. 641)          | Lichen planus (p. 310)           |
| Eczema (acute) (p. 90)                     | Pemphigus foliaceus (p. 647)     |
| Erythema multiforme (pp. 569, 713)         | Porphyria cutanea tarda (p. 760) |
|  | Scabies (p. 577)                 |



**BULLA**

A circumscribed collection of free fluid more than 0.5 cm in diameter

- |  |                              |
|--|------------------------------|
| Bullae in diabetics (p. 646)             | Fixed drug eruption (p. 572) |
| Bullous pemphigoid (p. 655)              | Herpes gestationis (p. 662)  |
| Cicatricial pemphigoid (p. 660)          | Lupus erythematosus (p. 680) |
| Epidermolysis bullosa acquisita (p. 663) | Pemphigus (p. 647)           |



**Eczema (acute)**



**Chickenpox**



**Dermatitis herpetiformis**



**Erythema multiforme**



**Herpes simplex**



**Herpes zoster**



## PRIMARY SKIN LESIONS—WHEELS (HIVES)

### WHEEL (HIVE)

A firm, edematous plaque resulting from infiltration of the dermis with fluid; wheals are transient and may last only a few hours

Angioedema (p. 196)

Bullous pemphigoid (p. 655)

Cholinergic urticaria (p. 193)

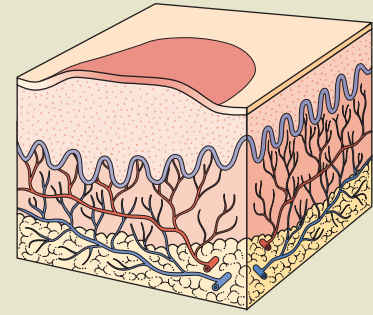
Dermographism (pp. 191, 194)

Hives (p. 178)

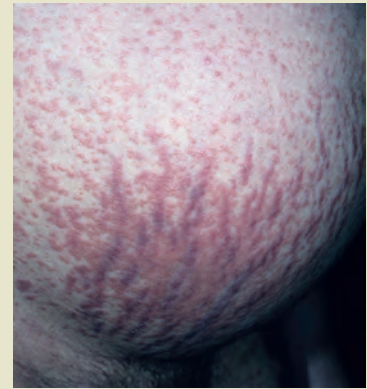
PUPPP (p. 205)

Urticaria pigmentosa (mastocytosis)

(p. 209)



**Bullous pemphigoid**



**PUPPP**



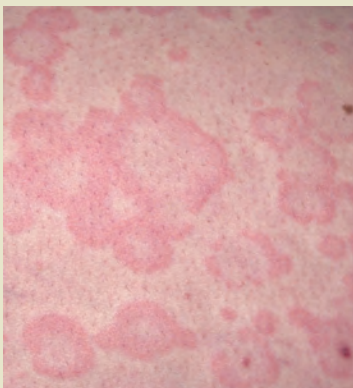
**Angioedema**



**Angioedema**



**Dermatographism**



**Hives**



**Urticaria pigmentosa**



**Cholinergic urticaria**

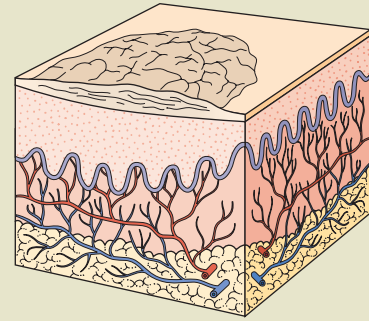
**SECONDARY SKIN LESIONS—SCALES**

**SCALES**

Excess dead epidermal cells that are produced by abnormal keratinization and shedding

*Fine to Stratified*

- Eczema craquelé (p. 110)
- Ichthyosis—dominant (quadrangular) (p. 162)
- Ichthyosis—sex-linked (quadrangular) (p. 162)
- Lupus erythematosus (carpet tack) (p. 684)
- Pityriasis rosea (collarette) (p. 307)
- Psoriasis (silvery) (p. 264)
- Scarlet fever (fine, on trunk) (p. 540)
- Seborrheic dermatitis (p. 302)
- Syphilis (secondary) (p. 394)
- Tinea (dermatophytes) (p. 488)
- Tinea versicolor (p. 530)
- Xerosis (dry skin) (p. 162)



**Erythema craquelé (dense scale)**

*Scaling in Sheets (Desquamation)*

- Kawasaki disease (p. 552)
- Scarlet fever (hands and feet) (p. 540)
- Staphylococcal scalded skin syndrome (p. 355)
- Toxic shock syndrome (p. 558)



**Ichthyosis—sex-linked (quadrangular)**



**Pityriasis rosea (collarette)**



**Psoriasis (silvery)**



**Tinea versicolor (fine)**



**Ichthyosis—dominant (quadrangular)**



**Kawasaki disease (desquamation)**



**Scarlet fever (desquamation)**



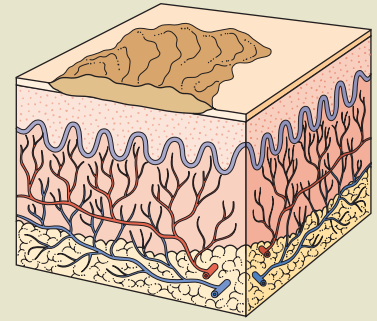
**Staphylococcal scalded skin syndrome (desquamation)**



**SECONDARY SKIN LESIONS—CRUSTS****CRUST**

A collection of dried serum and cellular debris; a scab

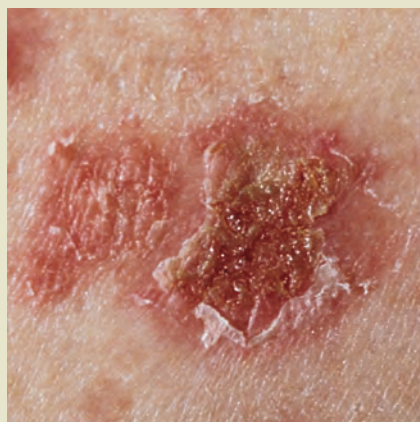
- Acute eczematous inflammation (p. 90)
- Atopic dermatitis (face) (p. 154)
- Impetigo (honey colored) (p. 329)
- Pemphigus foliaceus (p. 650)
- Tinea capitis (p. 505)



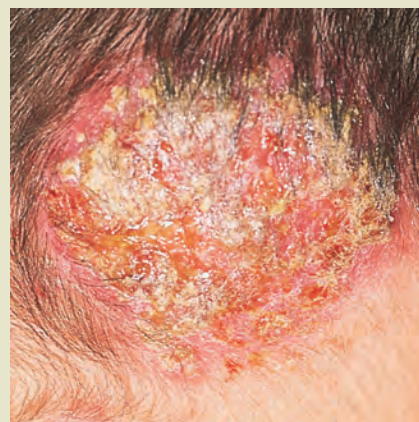
**Atopic dermatitis (lips)**



**Impetigo (honey colored)**



**Pemphigus foliaceus**



**Tinea capitis**

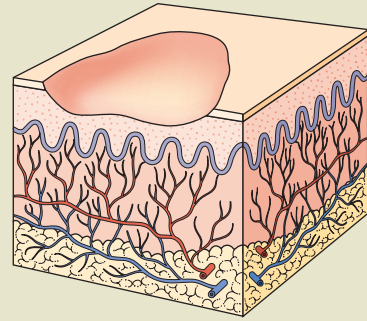


**SECONDARY SKIN LESIONS—EROSIONS AND ULCERS**

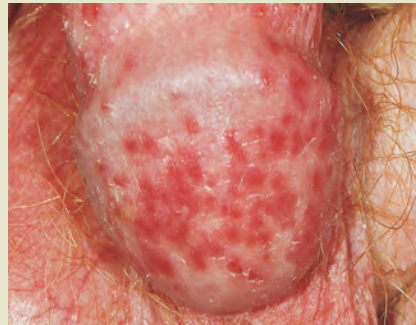
**EROSION**

A focal loss of epidermis; erosions do not penetrate below the dermoepidermal junction and therefore heal without scarring

- |                                 |   |
|---------------------------------|---|
| Candidiasis (p. 516)            | Perlèche (p. 529)                         |
| Dermatophyte infection (p. 487) | Sun-damaged skin (p. 748)                 |
| Eczematous diseases (p. 90)     | Tinea pedis (p. 490)                      |
| Herpes simplex (pp. 429, 460)   | Toxic epidermal necrolysis (pp. 569, 720) |
| Intertrigo (pp. 496, 525)       | Vesiculobullous diseases (p. 635)         |
| Neurotic excoriations (p. 118)  |   |



**Tinea pedis**



**Candidiasis**

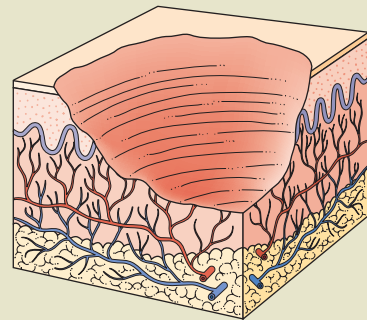


**Neurotic excoriations**

**ULCER**

A focal loss of epidermis and dermis; ulcers heal with scarring

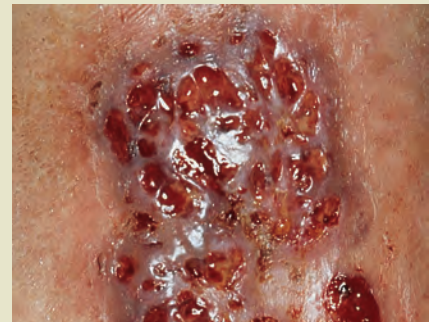
- |                                |                                 |
|--------------------------------|---------------------------------|
| Aphthae                        | Neoplasms (p. 812)              |
| Chancroid (p. 406)             | Pyoderma gangrenosum (p. 743)   |
| Decubitus                      | Radiodermatitis                 |
| Factitial (pp. 118, 251)       | Stasis (venous) ulcers (p. 122) |
| Ischemic                       | Syphilis (chancre) (p. 392)     |
| Necrobiosis lipoidica (p. 986) |                                 |



**Ulcer**



**Chancroid**



**Pyoderma gangrenosum**

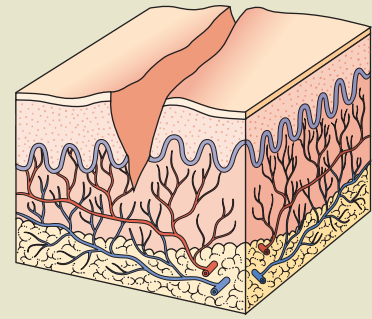
## SECONDARY SKIN LESIONS—FISSURES AND ATROPHY

## FISSURE

A linear loss of epidermis and dermis with sharply defined, nearly vertical walls

Chapping (hands, feet) (p. 113)  
Eczema (fingertip) (p. 106)

Intertrigo (pp. 496, 525)  
Perlèche (p. 529)



Eczema



Intertrigo



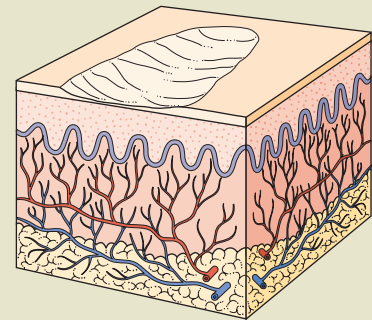
Perlèche

## ATROPHY

A depression in the skin resulting from thinning of the epidermis or dermis

Chronic cutaneous (discoid) lupus erythematosus (pp. 684, 951)  
Dermatomyositis (p. 694)  
Lichen sclerosus (p. 321)  
Morphea (p. 709)  
Necrobiosis lipoidica (p. 986)

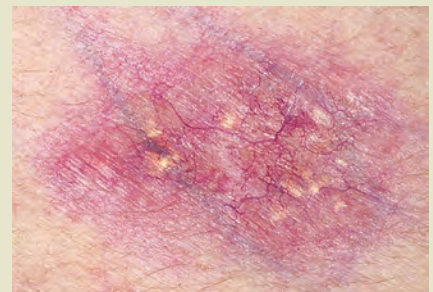
Radiodermatitis  
Striae (p. 87)  
Sun-damaged skin (p. 748)  
Topical and intralesional steroids (pp. 84, 85)



Lichen sclerosus



Morphea



Topical and intralesional steroids



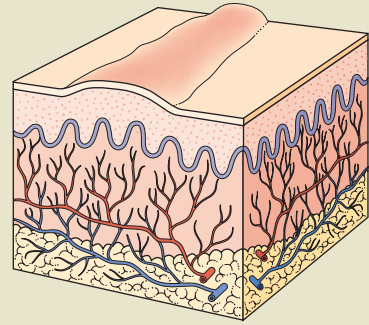
## SECONDARY SKIN LESIONS—SCARS

### SCAR

An abnormal formation of connective tissue implying dermal damage; after injury or surgery scars are initially thick and pink but with time become white and atrophic

- Acne (p. 218)
- Bullous pemphigoid (p. 655)
- Burns
- Cicatricial pemphigoid (p. 660)
- Herpes zoster (p. 473)

- Hidradenitis suppurativa (p. 260)
- Keloid (p. 796)
- Porphyria (p. 760)
- Varicella (p. 468)



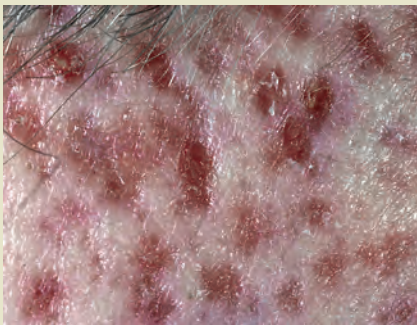
Keloid



Herpes zoster



Porphyria



Cystic acne



Hidradenitis suppurativa

**SPECIAL SKIN LESIONS****EXCORIATION**

An erosion caused by scratching; excoriations are often linear



**Excoriation**

**COMEDONE**

A plug of sebaceous and keratinous material lodged in the opening of a hair follicle; the follicular orifice may be dilated (blackhead) or narrowed (whitehead or closed comedone)



**Comedones**

**MILIA**

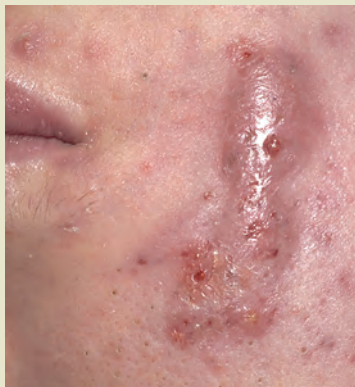
A small, superficial keratin cyst with no visible opening



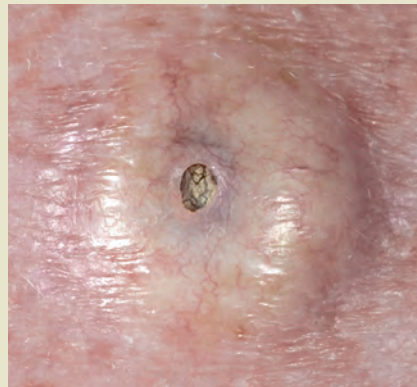
**Milia**

**CYST**

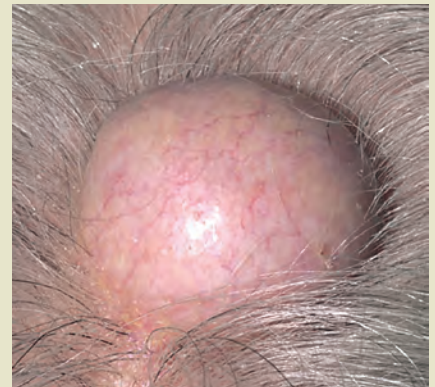
A circumscribed lesion with a wall and a lumen; the lumen may contain fluid or solid matter



**Acne cyst**



**Epidermal cyst**



**Pilar cyst**



**SPECIAL SKIN LESIONS—cont'd**

**PETECHIA**

A circumscribed deposit of blood less than 0.5 cm in diameter



**Henoch-Schönlein purpura**

**PURPURA**

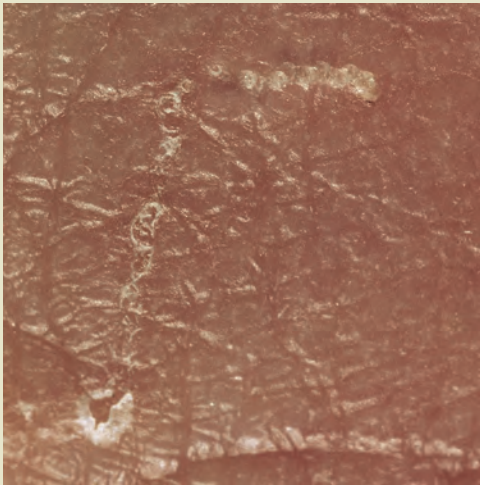
A circumscribed deposit of blood greater than 0.5 cm in diameter



**Sun-damaged skin**

**BURROW**

A narrow, elevated, tortuous channel produced by a parasite



**Scabies burrow**

**LICHENIFICATION**

An area of thickened epidermis induced by scratching; skin lines are accentuated so the surface looks like a washboard



**Lichenification**

**TELANGIECTASIA**

Dilated superficial blood vessels



**Telangiectasia rosacea**



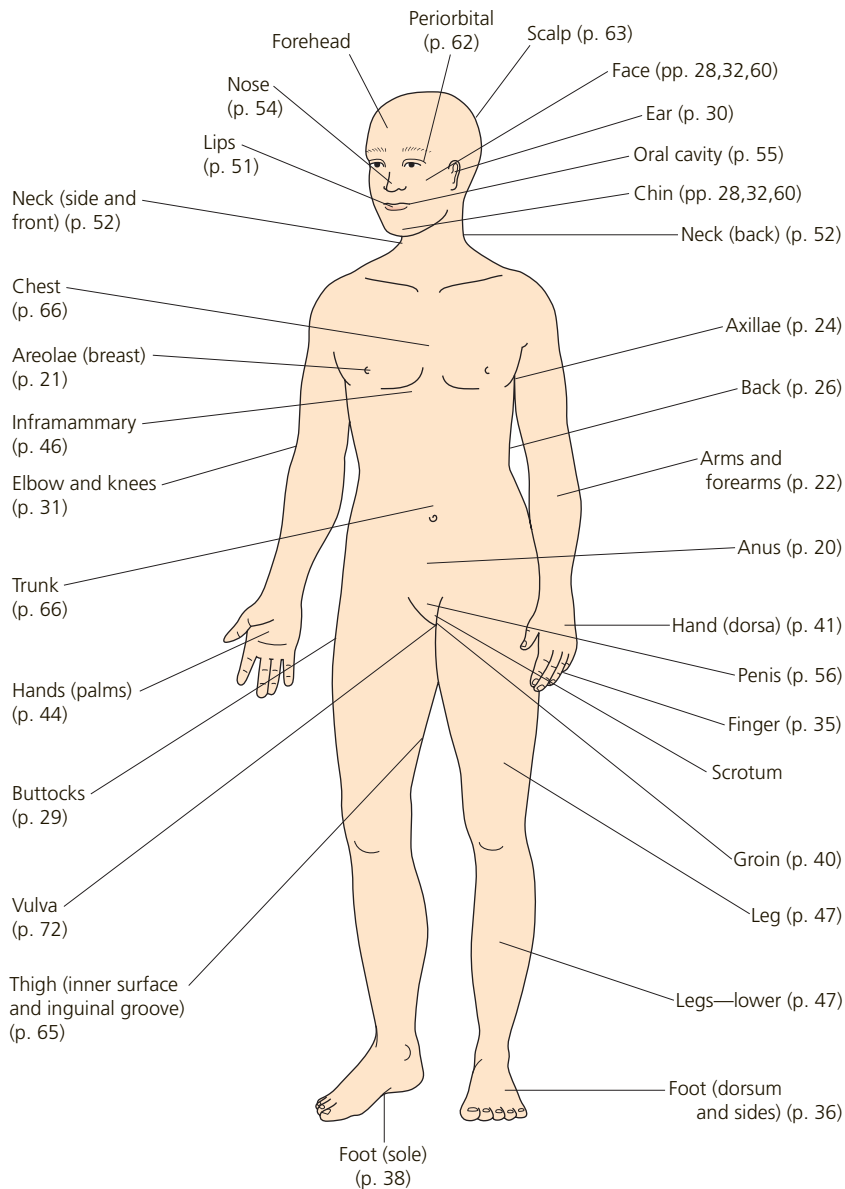
**Spider angioma**



# REGIONAL DIFFERENTIAL DIAGNOSIS ATLAS

Most skin diseases have preferential areas of involvement. Disease locations are illustrated below; diseases are listed alphabetically by location on pp. 20-74. Common diseases that are obvious to most practitioners are not included.

Diseases such as contact dermatitis and herpes zoster that can be found on any skin surface have also been omitted from most of the lists.



**ANUS**

- Allergic contact dermatitis (p. 129)
- Anal excoriation (p. 115)
- Baboon syndrome (p. 140)
- Candidiasis (p. 516)
- Extramammary Paget's disease (p. 851)
- Gonorrhoea (p. 411)
- Herpes simplex/zoster (pp. 429, 460, 473)
- Hidradenitis suppurativa (p. 260)
- Inverse psoriasis (pp. 264, 273)
- Lichen planus (p. 310)
- Lichen sclerosus (p. 321)
- Lichen simplex chronicus (p. 114)
- Streptococcal cellulitis (p. 342)
- Syphilis (primary and secondary) (p. 392)
- Vitiligo (p. 770)
- Warts (p. 448)



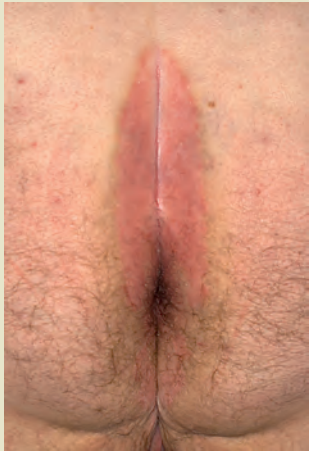
**Warts**



**Eczema**



**Lichen planus**



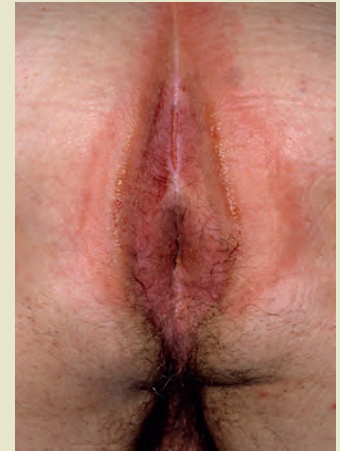
**Inverse psoriasis**



**Streptococcal cellulitis**



**Baboon syndrome**



**Allergic contact dermatitis**



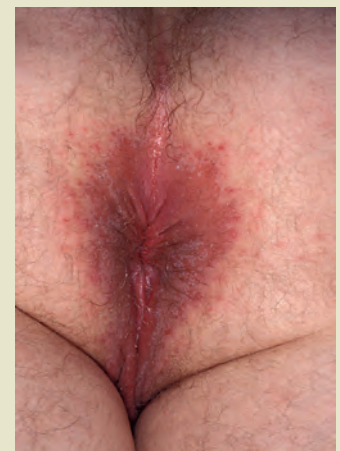
**Herpes simplex**



**Secondary syphilis**



**Anal excoriation**



**Candidiasis**

**AREOLA (BREAST)**

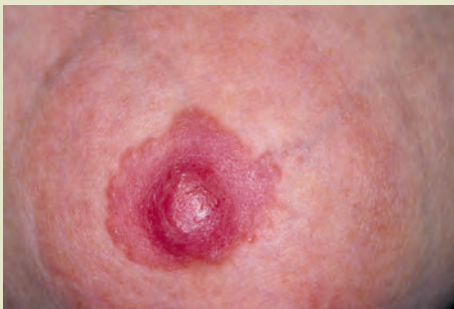
Acanthosis nigricans (p. 990)

Eczema (p. 94)

Fordyce spots

Paget's disease (p. 850)

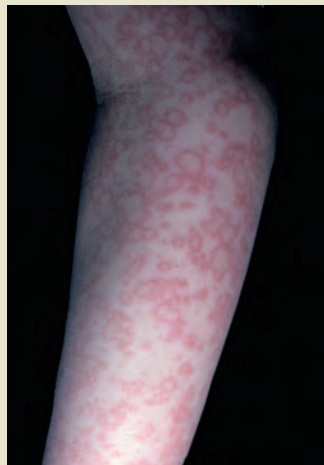
Seborrheic keratosis (p. 784)

**Acanthosis nigricans****Eczema, subacute****Eczema, subacute****Paget's disease, nipple****Paget's disease, areola****Seborrheic keratosis**



**ARMS AND FOREARMS**

Acne (p. 218)  
 Atopic dermatitis (p. 152)  
 Bullous pemphigoid (p. 655)  
 Cat-scratch disease (p. 612)  
 Dermatitis herpetiformis (elbows) (p. 641)  
 Dermatomyositis (p. 694)  
 Eczema (p. 90)  
 Eruptive xanthoma (p. 994)  
 Erythema infectiosum (fifth disease) (p. 544)  
 Erythema multiforme (pp. 569, 713)  
 Granuloma annulare (p. 988)  
 Herpes zoster (p. 473)  
 Keratoacanthoma (p. 797)  
 Keratosis pilaris (pp. 163, 347)  
 Leukocytoclastic vasculitis (p. 732)  
 Lichen planus (p. 310)  
 Lupus erythematosus (p. 680)  
 Neurotic excoriations (p. 118)  
 Nummular eczema (pp. 104, 111)  
 Pigmentary demarcation lines  
 Pityriasis alba (white spots) (p. 165)  
 Polymorphous light eruption (p. 756)  
 Prurigo nodularis (p. 117)  
 Scabies (p. 577)  
 Scleroderma (p. 702)  
 Seborrheic keratosis (flat) (p. 784)  
 Squamous cell carcinoma (p. 830)  
 Stellate pseudoscars (p. 750)  
 Stevens-Johnson syndrome (p. 718)  
 Sun-damaged skin (p. 748)  
 Sweet's syndrome (p. 739)  
 Swimming pool granuloma (mycobacteria) (p. 375)  
 Tinea (p. 498)

**Atopic dermatitis****Bullous pemphigoid****Lupus erythematosus****Pityriasis alba****Eczema, subacute****Erythema infectiosum****Keratosis pilaris**



Nummular eczema



Herpes zoster



Polymorphous light eruption



Neurotic excoriations

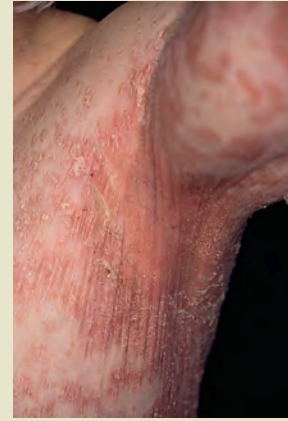


Sun-damaged skin



**AXILLAE**

Acanthosis nigricans (p. 990)  
 Acrochordons (skin tags) (p. 792)  
 Allergic contact dermatitis (p. 129)  
 Benign familial chronic pemphigus (p. 664)  
 Candidiasis (p. 516)  
 Eczema (p. 90)  
 Erythrasma (p. 497)  
 Fordyce spots  
 Furunculosis (p. 350)  
 Granular parakeratosis  
 Hailey-Hailey disease (p. 664)  
 Hidradenitis suppurativa (p. 260)  
 Impetigo (p. 329)  
 Inverse psoriasis (p. 273)  
 Lice (p. 587)  
 Lichen planus (p. 310)  
 Pseudoxanthoma elasticum  
 Pustular psoriasis (p. 268)  
 Scabies (p. 577)  
 Striae (p. 87)  
 Tinea (p. 499)  
 Trichomycosis axillaris (p. 959)  
 von Recklinghausen's disease (neurofibromatosis) (p. 995)

**Neurofibromatosis****Pustular psoriasis****Hidradenitis suppurativa****Hidradenitis suppurativa****Acanthosis nigricans****Candidiasis****Candidiasis**



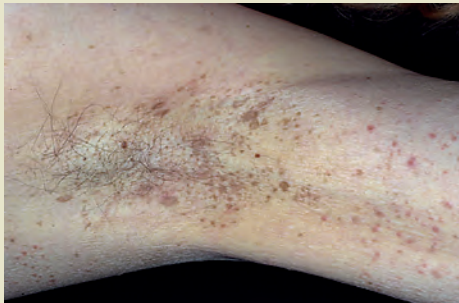
**Allergic contact dermatitis**



**Benign familial chronic pemphigus (Hailey-Hailey disease)**



**Eczema**



**Lichen planus**



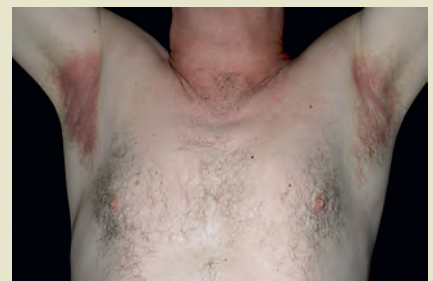
**Inverse psoriasis**



**Granular parakeratosis**



**Granular parakeratosis**



**Allergic contact dermatitis**