

FITZPATRICK'S
COLOR ATLAS AND SYNOPSIS OF
**CLINICAL
DERMATOLOGY**

EIGHTH EDITION



Klaus Wolff
Richard Allen Johnson
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Ellen K. Roh

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COLOR ATLAS AND SYNOPSIS OF
CLINICAL DERMATOLOGY**

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FITZPATRICK'S COLOR ATLAS AND SYNOPSIS OF CLINICAL DERMATOLOGY

EIGHTH EDITION

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This eighth edition of
Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology
is dedicated to dermatology residents worldwide.

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CONTENTS

Preface	xxiii
Acknowledgment	xxv
How to Use This Book	xxvii
Approach to Dermatologic Diagnosis	xxviii
Outline of Dermatologic Diagnosis	xxviii
 Special Clinical and Laboratory Aids to Dermatologic Diagnosis	xxxvii

PART I DISORDERS PRESENTING IN THE SKIN AND MUCOUS MEMBRANES

1



SECTION 1

DISORDERS OF SEBACEOUS, ECCRINE AND APOCRINE GLANDS

2

Acne Vulgaris (Common Acne) and Cystic Acne	2
Rosacea	8
Periorificial Dermatitis	12
Miliaria	14
Hyperhidrosis	14
Chromhidrosis and Bromhidrosis	15
Hidradenitis Suppurativa	15
Fox Fordyce Disease	19



SECTION 2

ECZEMA/DERMATITIS

20

Contact Dermatitis	20
Irritant Contact Dermatitis (ICD)	20
Acute Irritant Contact Dermatitis	21
Chronic Irritant Contact Dermatitis	23
Special Forms of ICD	25
Allergic Contact Dermatitis (ACD)	25
Special Forms of ACD	29
Allergic Contact Dermatitis Caused by Plants	29
Other Special Forms of ACD	32
Systemic ACD	32
Airborne ACD	32
Atopic Dermatitis	34
Suggested Algorithm of AD Management	40
Lichen Simplex Chronicus (LSC)	40
Prurigo Nodularis (PN)	42
Dyshidrotic Eczematous Dermatitis	43
Nummular Eczema	44
Autosensitization Dermatitis	45
Seborrheic Dermatitis	46
Asteatotic Dermatitis	49



SECTION 3

PSORIASIS, PSORIASIFORM, AND PITYRIASIFORM DERMATOSES 50

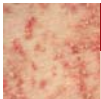
Psoriasis	50
Psoriasis Vulgaris	50
Pustular Psoriasis	57
Palmoplantar Pustulosis	57
Generalized Acute Pustular Psoriasis (Von Zumbusch)	57
Psoriatic Erythroderma	59
Psoriatic Arthritis	59
Management of Psoriasis	59
Pityriasis Rubra Pilaris (PRP)	62
Pityriasis Rosea	65
Parapsoriasis en Plaques (PP)	67
Pityriasis Lichenoides (Acute and Chronic) (PL)	70



SECTION 4

ICHTHYOSES 72

Dominant Ichthyosis Vulgaris (DIV)	72
X-Linked Recessive Ichthyosis (XLRI)	75
Lamellar Ichthyosis (LI)	77
Epidermolytic Hyperkeratosis (EH)	79
Ichthyosis in the Newborn	80
Collodion Baby	80
Harlequin Fetus	81
Syndromic Ichthyoses	82
Acquired Ichthyoses	84
Inherited Keratodermas of Palms and Soles	84



SECTION 5

MISCELLANEOUS EPIDERMAL DISORDERS 87

Acanthosis Nigricans (AN)	87
Darier Disease (DD)	89
Grover Disease (GD)	91
Hailey–Hailey Disease (Familial Benign Pemphigus)	92
Disseminated Superficial Actinic Porokeratosis (DSAP)	93
Other Porokeratoses	93



SECTION 6

GENETIC AND ACQUIRED BULLOUS DISEASES 94

Hereditary Epidermolysis Bullosa (EB)	94
Pemphigus	100
Bullous Pemphigoid (BP)	106
Cicatricial Pemphigoid	108
Pemphigoid Gestationis (PG)	109
Dermatitis Herpetiformis (DH)	110
Linear IgA Dermatosis (LAD)	112
Epidermolysis Bullosa Acquisita (EBA)	114

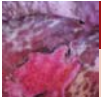


SECTION 7

NEUTROPHIL-MEDIATED DISEASES

115

Pyoderma Gangrenosum (PG)	115
Bowel Bypass Syndrome (Bowel-Associated Dermatitis-Arthritis Syndrome)	118
Sweet Syndrome (SS)	119
Granuloma Faciale (GF)	121
Erythema Nodosum (EN) Syndrome	122
Other Panniculitides	124
Perniosis (Chilblains)	126



SECTION 8

THE ACUTELY ILL AND HOSPITALIZED PATIENT

127

Exfoliative Erythroderma Syndrome (EES)	127
Rashes in the Acutely Ill Febrile Patient	132
Stevens–Johnson Syndrome (SJS) and Toxic Epidermal Necrolysis (TEN)	136



SECTION 9

BENIGN NEOPLASMS AND HYPERPLASIAS

141

Disorders of Melanocytes	141
Acquired Melanocytic Nevi (MN)	141
Halo Melanocytic Nevus	146
Blue Nevus	148
Nevus Spilus	149
Spitz Nevus	151
Mongolian Spot	152
Nevus of Ota	153
Vascular Tumors and Malformations	154
Vascular Tumors	155
Hemangioma of Infancy (HI)	155
Pyogenic Granuloma	158
Glomus Tumor	159
Vascular Malformations	160
Capillary Malformations	160
Port-Wine Stain	160
Spider Angioma	162
Venous Lake	163
Cherry Angioma	164
Angiokeratoma	165
Lymphatic Malformation	167
“Lymphangioma”	167
Capillary/Venous Malformations (CVMs)	168
Miscellaneous Cysts and Pseudocysts	170
Epidermoid Cyst	170
Trichilemmal Cyst	171
Epidermal Inclusion Cyst	171
Milium	172
Digital Myxoid Cyst	173

Miscellaneous Benign Neoplasms and Hyperplasias	174
Seborrheic Keratosis	174
Becker Nevus (BN)	177
Trichoepithelioma	178
Syringoma	179
Cylindroma	180
Sebaceous Hyperplasia	181
Nevus Sebaceous	181
Epidermal Nevus	182
Benign Dermal and Subcutaneous Neoplasms and Hyperplasias	183
Lipoma	183
Dermatofibroma	184
Hypertrophic Scars and Keloids	185
Infantile Digital Fibromatosis	188
Skin Tag	188



SECTION 10

PHOTOSENSITIVITY, PHOTO-INDUCED DISORDERS, AND DISORDERS BY IONIZING RADIATION

189

Skin Reactions to Sunlight	189
Acute Sun Damage (Sunburn)	191
Drug-/Chemical-Induced Photosensitivity	193
Phototoxic Drug-/Chemical-Induced Photosensitivity	194
Systemic Phototoxic Dermatitis	194
Topical Phototoxic Dermatitis	196
Phytophotodermatitis (PPD)	197
Photoallergic Drug/Chemical-Induced Photosensitivity	199
Polymorphous Light Eruption (PMLE)	202
Solar Urticaria	204
Photo-Exacerbated Dermatoses	205
Metabolic Photosensitivity—the Porphyrrias	205
Porphyria Cutanea Tarda	206
Variegate Porphyria	210
Erythropoietic Protoporphyrria	211
Chronic Photodamage	213
Dermatoheliosis (“Photoaging”)	213
Solar Lentigo	215
Chondrodermatitis Nodularis Helicis	216
Actinic Keratosis	217
Skin Reactions to Ionizing Radiation	217
Radiation Dermatitis	217



SECTION 11

PRECANCEROUS LESIONS AND CUTANEOUS CARCINOMAS

221

Epidermal Precancers and Cancers	221
Actinic Keratosis	221
Cutaneous Horn	225
Arsenical Keratoses	225
Squamous Cell Carcinoma In Situ	227

Invasive Squamous Cell Carcinoma	230
Keratoacanthoma	235
Basal Cell Carcinoma (BCC)	236
Basal Cell Nevus Syndrome (BCNS)	244
Malignant Appendage Tumors	246
Merkel Cell Carcinoma	246



SECTION 12

MELANOMA PRECURSORS AND PRIMARY CUTANEOUS MELANOMA 248

Precursors of Cutaneous Melanoma	248
Dysplastic Melanocytic Nevus (DN)	248
Congenital Melanocytic Nevus (CMN)	253
Cutaneous Melanoma	256
Melanoma In Situ (MIS)	258
Lentigo Maligna Melanoma (LMM)	260
Superficial Spreading Melanoma (SSM)	262
Nodular Melanoma (NM)	267
Desmoplastic Melanoma (DM)	270
Acral Lentiginous Melanoma (ALM)	271
Amelanotic Melanoma	273
Malignant Melanoma of the Mucosa	274
Metastatic Melanoma	274
Staging of Melanoma	277
Prognosis of Melanoma	278
Management of Melanoma	278



SECTION 13

PIGMENTARY DISORDERS 280

Vitiligo	280
Oculocutaneous Albinism	287
Melasma	289
Pigmentary Changes Following Inflammation of the Skin	290
Hyperpigmentation	290
Hypopigmentation	293

PART II DERMATOLOGY AND INTERNAL MEDICINE 297



SECTION 14

THE SKIN IN IMMUNE, AUTOIMMUNE, AUTOINFLAMMATORY, AND RHEUMATIC DISORDERS 298

Urticaria and Angioedema	298
Erythema Multiforme (EM) Syndrome	306
Cryopyrinopathies (CAPS)	311
Lichen Planus (LP)	312
Behçet Disease	317
Dermatomyositis	320

Lupus Erythematosus (LE)	324
Systemic Lupus Erythematosus (SLE)	326
Subacute Cutaneous Lupus Erythematosus (SCLE)	330
Chronic Cutaneous Lupus Erythematosus (CCLE)	332
Chronic Lupus Panniculitis (CLP)	335
Livedo Reticularis	336
Raynaud Phenomenon	337
Scleroderma	339
Scleroderma-Like Conditions	343
Morphea	343
Lichen Sclerosus et Atrophicus (LSA)	347
Vasculitis	349
Hypersensitivity Vasculitis	349
Henoch-Schönlein Purpura	351
Polyarteritis Nodosa	352
Granulomatosis with Polyangiitis	353
Giant Cell Arteritis	355
Urticarial Vasculitis	356
Nodular Vasculitis	357
Pigmented Purpuric Dermatoses (PPD)	358
Kawasaki Disease	359
Reactive Arthritis (formerly Reiter Syndrome)	362
Sarcoidosis	364
Granuloma Annulare (GA)	368
Systemic AL Amyloidosis	370
Systemic AA Amyloidosis	372
Localized Cutaneous Amyloidosis	372



SECTION 15

ENDOCRINE, METABOLIC, AND NUTRITIONAL DISEASES **374**

Skin Diseases Associated with Diabetes Mellitus	374
Diabetic Bullae	375
“Diabetic Foot” and Diabetic Neuropathy	376
Diabetic Dermopathy	377
Necrobiosis Lipoidica	378
Cushing Syndrome and Hypercorticism	379
Graves Disease and Hyperthyroidism	380
Hypothyroidism and Myxedema	380
Addison Disease	382
Metabolic and Nutritional Conditions	383
Xanthomas	383
Xanthelasma	385
Xanthoma Tendineum	385
Xanthoma Tuberosum	385
Eruptive Xanthoma	387
Xanthoma Striatum Palmare	388
Normolipemic Plane Xanthoma	389
Scurvy	389
Acquired Zinc Deficiency and Acrodermatitis Enteropathica	391
Pellagra	393

Gout	394
Skin Diseases in Pregnancy	395
Cholestasis of Pregnancy (CP)	396
Pemphigoid Gestationis (PeG)	396
Polymorphic Eruption of Pregnancy (PEP)	397
Prurigo of Pregnancy and Atopic Eruption of Pregnancy (AEP)	398
Pustular Psoriasis in Pregnancy	398
Skin Manifestations of Obesity	398



SECTION 16

GENETIC DISEASES **399**

Pseudoxanthoma Elasticum	399
Tuberous Sclerosis (TS)	400
Neurofibromatosis (NF)	403
Hereditary Hemorrhagic Telangiectasia	407



SECTION 17

SKIN SIGNS OF VASCULAR INSUFFICIENCY **408**

Atherosclerosis, Arterial Insufficiency, and Atheroembolization	408
Thromboangiitis Obliterans (TO)	412
Thrombophlebitis and Deep Venous Thrombosis	413
Chronic Venous Insufficiency (CVI)	414
Most Common Leg/Foot Ulcers	419
Livedoid Vasculitis (LV)	421
Chronic Lymphatic Insufficiency	422
Pressure Ulcers	423



SECTION 18

SKIN SIGNS OF RENAL INSUFFICIENCY **426**

Classification of Skin Changes	426
Calciophylaxis	426
Nephrogenic Fibrosing Dermopathy (NFD)	428
Acquired Perforating Dermatoses	429



SECTION 19

SKIN SIGNS OF SYSTEMIC CANCERS **430**

Mucocutaneous Signs of Systemic Cancers	430
Classification of Skin Signs of Systemic Cancer	430
Metastatic Cancer to the Skin	431
Mammary Paget Disease	436
Extramammary Paget Disease	437
Cowden Syndrome (Multiple Hamartoma Syndrome)	438
Peutz-Jeghers Syndrome	440
Glucagonoma Syndrome	441
Malignant Acanthosis Nigricans	443
Paraneoplastic Pemphigus (PNP) (Paraneoplastic Autoimmune Multiorgan Syndrome)	443



SECTION 20

SKIN SIGNS OF HEMATOLOGIC DISEASE

444

Thrombocytopenic Purpura	444
Disseminated Intravascular Coagulation	445
Cryoglobulinemia	448
Leukemia Cutis	450
Langerhans Cell Histiocytosis	453
Mastocytosis Syndromes	457



SECTION 21

CUTANEOUS LYMPHOMAS AND SARCOMA

461

Adult T Cell Leukemia/Lymphoma	461
Cutaneous T Cell Lymphoma	462
Mycosis Fungoides (MF)	462
Mycosis Fungoides Variants	468
Sézary Syndrome	470
Lymphomatoid Papulosis	470
Cutaneous Anaplastic Large Cell Lymphomas (CALCLs)	472
Cutaneous B Cell Lymphoma	473
Kaposi Sarcoma (KS)	474
Angiosarcoma	479
Dermatofibrosarcoma Protuberans (DFP)	480
Atypical Fibroxanthoma (AFX)	481

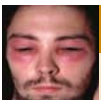


SECTION 22

SKIN DISEASES IN ORGAN AND BONE MARROW TRANSPLANTATION

482

Most Common Infections Associated with Organ Transplantation	482
Skin Cancers Associated with Organ Transplantation	483
Graft-Versus-Host Disease (GVHD)	483
Acute Cutaneous GVHD	484
Chronic Cutaneous GVHD	487



SECTION 23

ADVERSE CUTANEOUS DRUG REACTIONS

489

Adverse Cutaneous Drug Reactions	489
Exanthematous Drug Reactions	494
Pustular Eruptions	496
Drug-Induced Acute Urticaria, Angioedema, Edema, and Anaphylaxis	498
Fixed Drug Eruption	499
Drug Hypersensitivity Syndrome	501
Drug-Induced Pigmentation	502
Pseudoporphyria	505
ACDR-Related Necrosis	506
ACDR-Related to Chemotherapy	509



SECTION 24

DISORDERS OF PSYCHIATRIC ETIOLOGY 513

Body Dysmorphic Syndrome (BDS)	513
Delusions of Parasitosis	513
Neurotic Excoriations and Trichotillomania	515
Factitious Syndromes (Münchhausen Syndrome)	517
Cutaneous Signs of Injecting Drug Use	518

PART III DISEASES CAUSED BY MICROBIAL AGENTS**521**

SECTION 25

BACTERIAL COLONIZATIONS AND INFECTIONS OF SKIN AND SOFT TISSUES 522

Erythrasma	522
Pitted Keratolysis	524
Trichomycosis	525
Intertrigo	526
Impetigo	528
Abscess, Folliculitis, Furuncle, and Carbuncle	533
Soft-Tissue Infection	541
Cellulitis	541
Necrotizing Soft-Tissue Infections	547
Lymphangitis	548
Wound Infection	550
Disorders Caused by Toxin-Producing Bacteria	553
Staphylococcal Scalded-Skin Syndrome	553
Toxic Shock Syndrome	555
Scarlet Fever	556
Cutaneous Anthrax	557
Cutaneous Diphtheria	559
Cutaneous <i>Nocardia</i> Infections	559
Rickettsial Disorders	560
Tick Spotted Fevers	561
Rocky Mountain Spotted Fever	562
Rickettsialpox	563
Infective Endocarditis	564
Sepsis	566
Meningococcal Infection	567
<i>Bartonella</i> Infections	569
Cat-Scratch Disease (CSD)	569
Bacillary Angiomatosis (BA)	571
Tularemia	572
Cutaneous <i>Pseudomonas Aeruginosa</i> Infections	573
Mycobacterial Infections	573
Hansen Disease (Leprosy)	574
Cutaneous Tuberculosis	579
Nontuberculous Mycobacterial Infections	583

<i>Mycobacterium Marinum</i> Infection	583
<i>Mycobacterium Ulcerans</i> Infection	585
<i>Mycobacterium Fortuitum</i> Complex Infections	586
Lyme Disease	589



SECTION 26

FUNGAL INFECTIONS OF THE SKIN, HAIR, AND NAILS **594**

Introduction	594
Superficial Fungal Infections	594
Candidiasis	594
Cutaneous Candidiasis	595
Oropharyngeal Candidiasis	598
Genital Candidiasis	602
Chronic Mucocutaneous Candidiasis	603
Disseminated Candidiasis	605
Tinea Versicolor	606
Trichosporon Infections	611
Tinea Nigra	612
Dermatophytoses	613
Tinea Pedis	616
Tinea Manuum	619
Tinea Cruris	622
Tinea Corporis	624
Tinea Facialis	628
Tinea Incognito	630
Dermatophytoses of Hair	630
Tinea Capitis	631
Tinea Barbae	634
Majocchi Granuloma	636
Invasive and Disseminated Fungal Infections	637
Subcutaneous Mycoses	637
Sporotrichosis	637
Phaeohyphomycoses	639
Cryptococcosis	641
Histoplasmosis	642
Blastomycosis	644
Coccidioidomycosis	646
Penicilliosis	647



SECTION 27

VIRAL DISEASES OF SKIN AND MUCOSA **649**


Introduction	649
Poxvirus Diseases	649
Molluscum Contagiosum	649
Human Orf	653
Milkers' Nodules	655
Smallpox	655


Human Papillomavirus Infections	656
Human Papillomavirus: Cutaneous Diseases	658
Systemic Viral Infections with Exanthems	665
Rubella	667
Measles	669
Enteroviral Infections	671
Hand-Foot-and-Mouth Disease	671
Herpangina	673
Erythema Infectiosum	674
Gianotti–Crosti Syndrome	675
Arbovirus	676
Dengue	677
Chikungunya	678
Zika	679
Herpes Simplex Virus Disease	679
Nongenital Herpes Simplex	682
Neonatal Herpes Simplex	686
Eczema Herpeticum	688
Herpes Simplex with Host Defense Defects	690
Varicella Zoster Virus Disease	693
VZV: Varicella	694
VZV: Herpes Zoster	696
VZV: Host Defense Defects	701
Human Herpesvirus-6 and 7 Disease	704
Human Immunodeficiency Virus Disease	706
Acute HIV Syndrome	709
Eosinophilic Folliculitis	710
Papular Pruritic Eruption of HIV	711
Photosensitivity in HIV Disease	712
Oral Hairy Leukoplakia	712
Adverse Cutaneous Drug Eruptions in HIV Disease	713
Variations in Common Mucocutaneous Disorders in HIV Disease	717




SECTION 28

ARTHROPOD BITES, STINGS, AND CUTANEOUS INFESTATIONS	720
Cutaneous Reactions to Arthropod Bites	720
Pediculosis Capitis	726
Pediculosis Corporis	728
Pediculosis Pubis	729
Demodicidosis	731
Scabies	732
Cutaneous Larva Migrans	739
Water-Associated Diseases	741
Schistosome Cercarial Dermatitis	741
Seabather's Eruption	742
Cnidaria Envenomations	742

	SECTION 29	
	SYSTEMIC PARASITIC INFECTIONS	744
	Leishmaniasis	744
	Human American Trypanosomiasis	749
	Human African Trypanosomiasis	750
	Cutaneous Amebiasis	751

	SECTION 30	
	SEXUALLY TRANSMITTED DISEASES	752
	Human Papillomavirus: Anogenital Infections	752
	Genital Warts	753
	HPV: Squamous Cell Carcinoma In Situ (SCCIS) and Invasive SCC of Anogenital Skin	756
	Herpes Simplex Virus: Genital Disease	760
	<i>Neisseria Gonorrhoeae</i> Disease	765
	<i>Neisseria Gonorrhoeae</i> : Gonorrhea	766
	Syphilis	767
	Primary Syphilis	768
	Secondary Syphilis	770
	Latent Syphilis	775
	Tertiary/Late Syphilis	775
	Congenital Syphilis	777
	Lymphogranuloma Venereum	778
	Chancroid	779
	Donovanosis	781

PART IV SKIN SIGNS OF HAIR, NAIL, AND MUCOSAL DISORDERS 783

	SECTION 31	
	DISORDERS OF HAIR FOLLICLES AND RELATED DISORDERS	784
	Biology of Hair Growth Cycles	784
	Hair Loss: Alopecia	786
	Pattern Hair Loss	786
	Alopecia Areata	791
	Telogen Effluvium	794
	Anagen Effluvium	797
	Cicatricial or Scarring Alopecia	798
	Excess Hair Growth	805
	Hirsutism	805
	Hypertrichosis	808

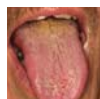


SECTION 32

DISORDERS OF THE NAIL APPARATUS

809

Normal Nail Apparatus	809
Components of the Normal Nail Apparatus	809
Local Disorders of Nail Apparatus	810
Chronic Paronychia	810
Onycholysis	811
Green Nail Syndrome	812
Onychauxis and Onychogryphosis	812
Psychiatric Disorders	813
Nail Apparatus Involvement of Cutaneous Diseases	813
Psoriasis	813
Lichen Planus (LP)	815
Alopecia Areata (AA)	817
Darier Disease (Darier–White Disease, Keratosis Follicularis)	817
Chemical Irritant or Allergic Damage or Dermatitis	818
Neoplasms of the Nail Apparatus	818
Myxoid Cysts of Digits	819
Longitudinal Melanonychia	819
Acrolentiginous Melanoma (ALM)	820
Squamous Cell Carcinoma	820
Infections of the Nail Apparatus	821
Acute Paronychia	822
Felon	822
Candida Onychia	823
Tinea Unguium/Onychomycosis	824
Nail Signs of Multisystem Diseases	827
Transverse or Beau Lines	827
Leukonychia	828
Yellow Nail Syndrome	829
Periungual Fibroma	830
Splinter Hemorrhages	830
Nail Fold/Periungual Erythema and Telangiectasia	831
Koilonychia	833
Clubbed Nails	833
Drug-Induced Nail Changes	834



SECTION 33

DISORDERS OF THE MOUTH

835

Diseases of the Lips	835
Angular Cheilitis (Perlèche)	835
Actinic Cheilitis	835
Conditions of the Tongue, Palate, and Mandible	836
Fissured Tongue	836
Black or White Hairy Tongue	838
Oral Hairy Leukoplakia	838
Migratory Glossitis	838
Palate and Mandibular Torus	839

Diseases of the Gingiva, Periodontium, and Mucous Membranes	839
Gingivitis and Periodontitis	839
Lichen Planus	840
Acute Necrotizing Ulcerative Gingivitis	841
Gingival Hyperplasia	842
Aphthous Ulceration	842
Leukoplakia	844
Premalignant and Malignant Neoplasms	848
Dysplasia and Squamous Cell Carcinoma In Situ (SCCIS)	848
Oral Invasive Squamous Cell Carcinoma	849
Oral Verrucous Carcinoma	850
Oropharyngeal Melanoma	851
Submucosal Nodules	852
Mucocele	852
Irritation Fibroma	852
Cutaneous Odontogenic (Dental) Abscess	853
Cutaneous Disorders Involving the Mouth	854
Pemphigus Vulgaris (PV)	854
Paraneoplastic Pemphigus	855
Bullous Pemphigoid	856
Cicatricial Pemphigoid	857
Systemic Diseases Involving the Mouth	857
Lupus Erythematosus	858
Stevens-Johnson Syndrome/Toxic Epidermal Necrolysis	859



SECTION 34

DISORDERS OF THE GENITALIA, PERINEUM, AND ANUS	860
Pearly Penile Papules	860
Sebaceous Gland Prominence	861
Angiokeratoma	861
Sclerosing Lymphangitis of Penis	861
Lymphedema of the Genitalia	862
Plasma Cell Balanitis and Vulvitis	863
Phimosis, Paraphimosis, Balanitis Xerotica Obliterans	864
Mucocutaneous Disorders	865
Genital (Penile/Vulvar/Anal) Lentiginoses	865
Vitiligo and Leukoderma	866
Psoriasis Vulgaris	866
Lichen Planus	868
Lichen Nitidus	869
Lichen Sclerosus	869
Migratory Necrolytic Erythema	872
Genital Aphthous Ulcerations	872
Eczematous Dermatitis	872
Allergic Contact Dermatitis	872
Atopic Dermatitis, Lichen Simplex Chronicus, Pruritus Ani	873
Fixed Drug Eruption	874
Premalignant and Malignant Lesions	874
Squamous Cell Carcinoma (SCC) In Situ	874

HPV-Induced Intraepithelial Neoplasia (IN) and Squamous Cell Carcinoma In Situ	876
Invasive Anogenital Squamous Cell Carcinoma	876
Invasive SCC of Penis	876
Invasive SCC of Vulva	877
Invasive SCC of Cutaneous Anus	877
Genital Verrucous Carcinoma	877
Malignant Melanoma of the Anogenital Region	877
Extramammary Paget Disease	879
Kaposi Sarcoma	880
Anogenital Infections	880



SECTION 35

GENERALIZED PRURITUS WITHOUT SKIN LESIONS (PRURITUS SINE MATERIA)

881

APPENDICES

885

APPENDIX A: Differential Diagnosis of Pigmented Lesions	886
APPENDIX B: Drug Use in Pregnancy	891
APPENDIX C-1: Dermatologic Manifestations of Diseases Inflicted by Biologic Warfare/Bioterrorism	893
APPENDIX C-2: Chemical Bioterrorism and Industrial Accidents	894

INDEX

897

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PREFACE

“Time is change; we measure its passage by how much things alter.”

Nadine Gordimer

Thirty-four years ago in 1983, the first edition of this book appeared and has been expanded *pari passu* with the major developments that have occurred in dermatology over the past three and a half decades. Dermatology is now one of the most sought-after medical specialties because the burden of skin disease has become enormous and the many new innovative therapies available today attract large patient populations.

The *Color Atlas and Synopsis of Clinical Dermatology* has been used by thousands of primary care physicians, dermatology residents, dermatologists, internists, and other health

care providers principally because it facilitates dermatologic diagnosis by providing color photographs of skin lesions and, juxtaposed, a succinct summary outline of skin disorders as well as the skin signs of systemic diseases.

The eighth edition has been extensively revised, rewritten, and expanded by new material. Around 30% of the old images have been replaced by new ones and additional images have been added. There is a complete update of etiology, pathogenesis, management, and therapy. There is also an online version. For this edition, videos containing clinical material relevant to the text are available at: mhprofessional.com/mediacenter.

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Our secretary, Renate Kosma, worked hard to meet the demands of the authors. In the present McGraw-Hill team, we appreciated the counsel of Karen Edmonson, Senior Sponsoring Editor, and Robert Pancotti, Senior Project Development Editor.

Karen was the major force behind this edition. Her good nature, good judgment, loyalty to the authors, and, most of all, patience guided us to make an even better book.

HOW TO USE THIS BOOK

The *Color Atlas and Synopsis of Clinical Dermatology* is proposed as a “field guide” to the recognition of skin disorders and their management. The skin is a treasury of important lesions that can usually be recognized clinically. Gross morphology in the form of skin lesions remains the hard core of dermatologic diagnosis. Therefore, this text is accompanied by more than 900 color photographs illustrating skin diseases, skin manifestation of internal diseases, infections, tumors, and incidental skin findings in otherwise well individuals. We have endeavored to include information relevant to gender dermatology and a large number of images showing skin disease in different ethnic populations. This *Atlas* covers the entire field of clinical dermatology but does not include very rare syndromes or conditions. With respect to these, the reader is referred to another McGraw-Hill Publication: *Fitzpatrick’s Dermatology in General Medicine*,

8th edition, 2012, edited by Lowell A. Goldsmith, Stephen I. Katz, Barbara A. Gilchrist, Amy S. Paller, David J. Leffell, and Klaus Wolff.

This text is intended for all physicians and other health care providers, including medical students, dermatology residents, internists, oncologists, and infectious disease specialists dealing with diseases with skin manifestations. For nondermatologists, it is advisable to start with “Approach to Dermatologic Diagnosis” and “Outline of Dermatologic Diagnosis” to familiarize themselves with the principles of dermatologic nomenclature and lines of thought.

The *Atlas* is organized into four parts, subdivided into 35 sections, and there are three short appendices. Each section has a color label that is reflected by the bar on the top of each page. This is to help the reader find his or her bearings rapidly when leafing through the book. Each disease is labeled with the respective ICD10 codes.

APPROACH TO DERMATOLOGIC DIAGNOSIS

There are two distinct clinical situations regarding the nature of skin changes:

- I. The skin changes are *incidental* findings in *well* and *ill* individuals noted during the routine general physical examination:
 - “Bumps and blemishes”: many asymptomatic lesions that are medically inconsequential may be present in well and ill persons, and may not be the reason for their visit to the physician; every general physician should be able to recognize these lesions to differentiate them from asymptomatic but important, e.g., malignant, lesions.
 - *Important skin lesions not* noted by the patient but that must not be overlooked by the physician: e.g., dysplastic nevi, melanoma, basal cell carcinoma, squamous cell carcinoma, café-au-lait macules in von Recklinghausen disease, and xanthomas.
- II. The skin changes are the *chief complaint* of the patient:
 - “Minor” problems: e.g., localized itchy rash, “rash,” rash in groin, nodules such as common moles and seborrheic keratoses.
 - “4-S”: serious skin signs in sick patients.

SERIOUS SKIN SIGNS IN SICK PATIENTS

- **Generalized red rash with fever:**
 - Viral exanthems.
 - Rickettsial exanthems.
 - Drug eruptions.
 - Bacterial infections with toxin production.
- **Generalized red rash with blisters and prominent mouth lesions:**
 - Erythema multiforme (major).
 - Toxic epidermal necrolysis.
 - Pemphigus.
- **Bullous pemphigoid.**
- **Drug eruptions.**
- **Generalized red rash with pustules:**
 - Pustular psoriasis (von Zumbusch).
 - Drug eruptions.
- **Generalized rash with vesicles:**
 - Disseminated herpes simplex.
 - Generalized herpes zoster.
 - Varicella.
 - Drug eruptions.
- **Generalized red rash with scaling over whole body:**
 - Exfoliative erythroderma.
- **Generalized wheals and soft-tissue swelling:**
 - Urticaria and angioedema.
- **Generalized purpura:**
 - Thrombocytopenia.
 - Purpura fulminans.
 - Drug eruptions.
- **Generalized purpura that can be palpated:**
 - Vasculitis.
 - Bacterial endocarditis.
- **Multiple skin infarcts:**
 - Meningococcemia.
 - Gonococcemia.
 - Disseminated intravascular coagulopathy.
- **Localized skin infarcts:**
 - Calciphylaxis.
 - Atherosclerosis obliterans.
 - Atheroembolization.
 - Warfarin necrosis.
 - Antiphospholipid antibody syndrome.
- **Facial inflammatory edema with fever:**
 - Erysipelas.
 - Lupus erythematosus.
 - Dermatomyositis.

OUTLINE OF DERMATOLOGIC DIAGNOSIS

In contrast to other fields of clinical medicine, patients should be examined before a detailed history is taken because patients can see their lesions and thus often present with a history that is flawed with their own interpretation of the origin or causes of the skin eruption. Also, diag-

nostic accuracy is higher when objective examination is approached without preconceived ideas. However, a history should always be obtained but if taken during or after the visual and physical examination, it can be streamlined and more focused following the objective find-

ings. Thus, recognizing, analyzing, and properly interpreting skin lesions are the sine qua non of dermatologic diagnosis.

PHYSICAL EXAMINATION

Appearance Uncomfortable, “toxic,” well.

Vital Signs Pulse, respiration, temperature.

Skin: “Learning to Read” The entire skin should be inspected and this should include mucous membranes, genital and anal regions, as well as hair and nails and peripheral lymph nodes. Reading the skin is like reading a text. The basic skin lesions are like the letters of the alphabet: their shape, color, margination, and other features combined will lead to words, and their localization and distribution to a sentence or paragraph. The prerequisite of dermatologic diagnosis is thus the recognition of (1) the type of skin lesion, (2) the color, (3) margination, (4) consistency, (5) shape, (6) arrangement, and (7) distribution of lesions.

Recognizing Letters: Types of Skin Lesions

- **Macule** (Latin: *macula*, “spot”) A macule is a circumscribed area of change in skin color

without elevation or depression. It is thus not palpable. Macules can be well defined and ill defined. Macules may be of any size or color (Fig. I-1). White, as in vitiligo; brown, as in café-au-lait spots; blue, as in Mongolian spots; or red, as in permanent vascular abnormalities such as port-wine stains or capillary dilatation due to inflammation (erythema). Pressure of a glass slide (*diascopy*) on the border of a red lesion detects the extravasation of red blood cells. If the redness remains under pressure from the slide, the lesion is purpuric, that is, results from extravasated red blood cells; if the redness disappears, the lesion is due to vascular dilatation. A rash consisting of macules is called a *macular exanthem*.

- **Papule** (Latin: *papula*, “pimple”) A papule is a superficial, elevated, solid lesion, generally considered <0.5 cm in diameter. Most of it is elevated above, rather than deep within, the plane of the surrounding skin (Fig. I-2). A papule is palpable. It may be well defined or ill defined. In papules, the elevation is caused by metabolic or locally produced deposits, by localized cellular infiltrates, inflammatory or

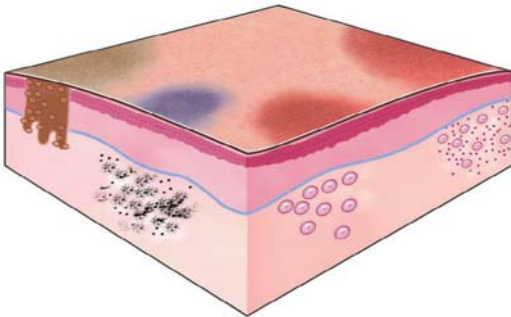


FIGURE I-1 Macule

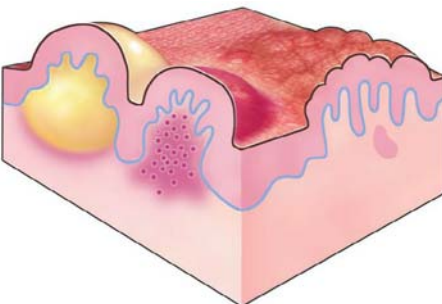


FIGURE I-2 Papule



noninflammatory, or by hyperplasia of local cellular elements. Superficial papules are sharply defined. Deeper dermal papules have indistinct borders. Papules may be dome-shaped, cone-shaped, or flat-topped (as in lichen planus) or consist of multiple, small, closely packed, projected elevations that are known as a *vegetation* (Fig. I-2). A rash consisting of papules is called a papular *exanthem*. Papular exanthems may be grouped (“lichenoid”) or disseminated (dispersed). Confluence of papules leads to the development of larger, usually flat-topped, circumscribed, plateau-like elevations known as plaques (French: *plaque*, “plate”). See the following.

- **Plaque** A plaque is a plateau-like elevation above the skin surface that occupies a relatively large surface area in comparison with its height above the skin (Fig. I-3). It is usually well defined. Frequently, it is formed by a confluence of papules, as in psoriasis. *Lichenification* is a less well-defined large plaque where the skin appears thickened and the skin

markings are accentuated. Lichenification occurs in atopic dermatitis, eczematous dermatitis, psoriasis, lichen simplex chronicus, and mycosis fungoides. A *patch* is a barely elevated plaque—a lesion fitting between a macule and a plaque—as in parapsoriasis or Kaposi sarcoma.

- **Nodule** (Latin: *nodulus*, “small knot”) A nodule is a palpable, solid, round, or ellipsoidal lesion that is larger than a papule (Fig. I-4) and may involve the epidermis, dermis, or subcutaneous tissue. The depth of involvement and the size differentiate a nodule from a papule. Nodules result from inflammatory infiltrates, neoplasms, or metabolic deposits in the dermis or subcutaneous tissue. Nodules may be well defined (superficial) or ill defined (deep); if localized in the subcutaneous tissue, they can often be better felt than seen. Nodules can be hard or soft upon palpation. They may be dome-shaped and smooth or may have a warty surface or crater-like central depression.

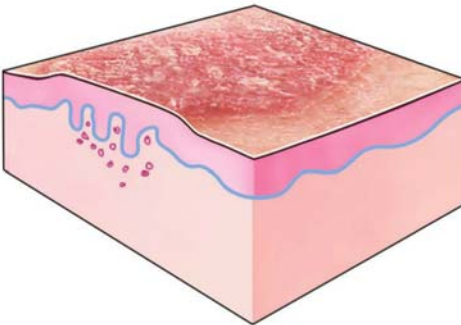


FIGURE I-3 Plaque

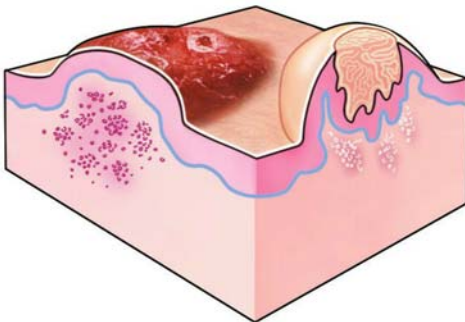


FIGURE I-4 Nodule



- **Wheal** A wheal is a rounded or flat-topped, pale red or white papule or plaque that is characteristically evanescent, disappearing within 24 to 48 h (Fig. 1-5). It is due to edema in the papillary body of the dermis. If the edema is very pronounced, it will compress the dilated capillaries and the wheal will turn white (Fig. 1-5). Wheals may be round, gyrate, or irregular with pseudopods—changing rapidly in size and shape due to shifting papillary edema. A rash consisting of wheals is called a *urticarial exanthema* or *urticaria*.
- **Vesicle-Bulla (Blister)** (Latin: *vesicula*, “little bladder”; *bulla*, “bubble”) A vesicle (<0.5 cm) or a bulla (>0.5 cm) is a circumscribed, elevated, superficial cavity containing fluid (Fig. 1-6). Vesicles are dome-shaped (as in contact dermatitis, dermatitis herpetiformis), umbilicated (as in herpes simplex), or flaccid (as in pemphigus). Often the roof of a vesicle/bulla is so thin that it is transparent, and the serum or blood in the cavity can be seen. Vesicles containing serum are yellowish; those

containing blood from red to black. Vesicles and bullae arise from a cleavage at various levels of the superficial skin; the cleavage may be sub-corneal or within the epidermis (i.e., intraepidermal vesication) or at the epidermal–dermal interface (i.e., subepidermal), as in Figure 1-6. Since vesicles/bullae are always superficial they are always well defined. A rash consisting of vesicles is called a *vesicular exanthem*; a rash consisting of bullae a *bullous exanthem*.

- **Pustule** (Latin: *pustula*, “pustule”) A pustule is a circumscribed superficial cavity of the skin that contains a purulent exudate (Fig. 1-7), which may be white, yellow, greenish-yellow, or hemorrhagic. Pustules thus differ from vesicles in that they are not clear but have a turbid content. This process may arise in a hair follicle or independently. Pustules may vary in size and shape. Pustules are usually dome-shaped, but follicular pustules are conical and usually contain a hair in the center. The vesicular lesions of herpes simplex and varicella zoster virus infections may

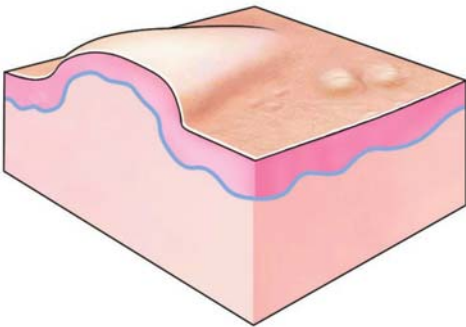


FIGURE 1-5 Wheal

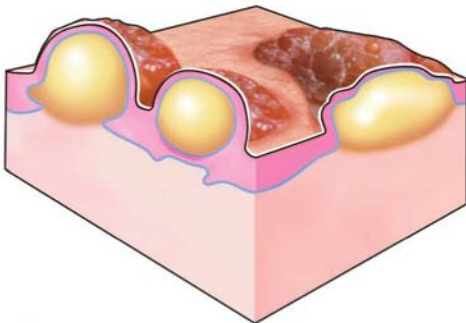


FIGURE 1-6 Vesicle



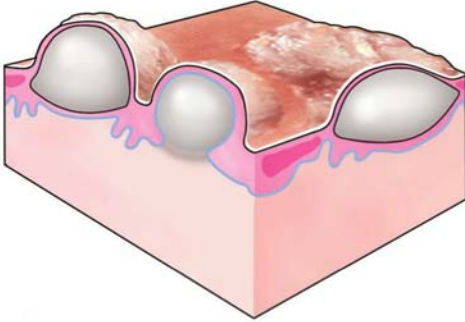


FIGURE I-7 Pustule

become pustular. A rash consisting of pustules is called a *pustular exanthem*.

- **Crusts** (Latin: *crusta*, “rind, bark, shell”) Crusts develop when serum, blood, or purulent exudate dries on the skin surface (Fig. I-8). Crusts may be thin, delicate, and friable or thick and adherent. Crusts are yellow when formed from dried serum; green or yellow-green when formed from purulent exudate; or brown, dark red, or black when formed from blood. Superficial crusts occur as honey-colored, delicate, glistening particulates on the surface and are typically found in impetigo (Fig. I-8). When the exudate involves the entire epidermis, the crusts may be thick and adherent, and if it is accompanied by necrosis of the deeper tissues (e.g., the dermis), the condition is known as *ecthyma*.
- **Scales (squames)** (Latin: *squama*, “scale”) Scales are flakes of stratum corneum (Fig. I-9). They may be large (like membranes, tiny [like dust], pityriasisform (Greek: *pityron*, “bran”),

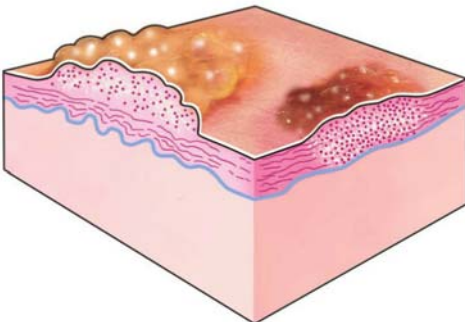


FIGURE I-8 Crust



adherent, or loose. A rash consisting of papules with scales is called a *papulovesicular exanthem*.

- **Erosion** An erosion is a defect only of the epidermis, not involving the dermis (Fig. I-10); in contrast to an ulcer, which always heals with scar formation (see the following), an erosion heals without a scar. An erosion is sharply defined, red, and oozes. There are superficial erosions, which are subcorneal or run through the epidermis, and deep erosions, the base of which is the papillary body (Fig. I-10). Except physical abrasions, erosions are always the result of intraepidermal or subepidermal cleavage and thus of vesicles or bullae.
- **Ulcer** (Latin: *ulcus*, “sore”) An ulcer is a skin defect that extends into the dermis or deeper (Fig. I-11) into the subcutis and always occurs within pathologically altered tissue. An ulcer is therefore always a secondary phenomenon. The pathologically altered tissue that gives rise



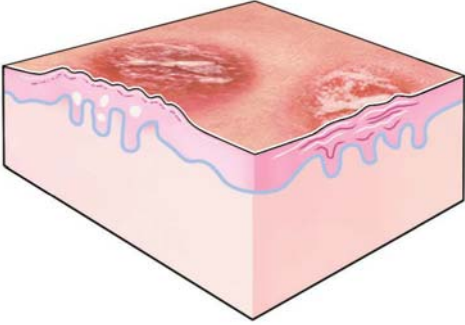


FIGURE I-9 Scale

to an ulcer is usually seen at the border or the base of the ulcer and is helpful in determining its cause. Other features helpful in this respect are whether borders are elevated, undermined, hard, or soggy; location of the ulcer; discharge; and any associated topographic features, such as nodules, excoriations, varicosities, hair



distribution, presence or absence of sweating, and arterial pulses. Ulcers always heal with scar formation.

- **Scar** A scar is the fibrous tissue replacement of the tissue defect by previous ulcer or a wound. Scars can be hypertrophic and

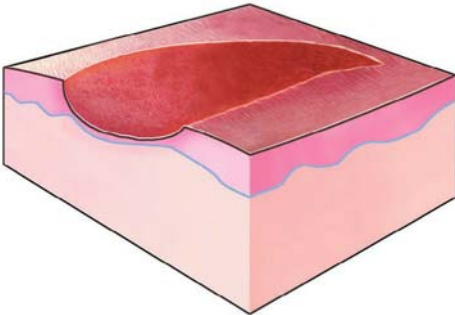


FIGURE I-10 Erosion

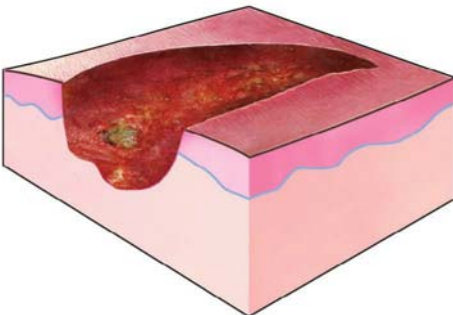


FIGURE I-11 Ulcer



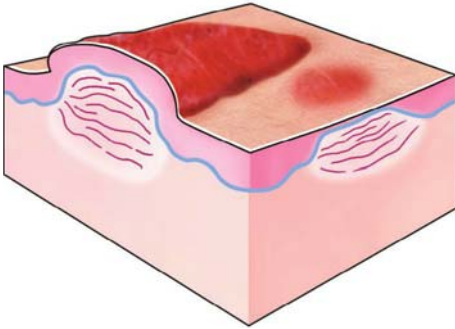


FIGURE I-12 Scar



hard (Fig. I-12) or atrophic and soft with a thinning or loss of all tissue compartments of the skin (Fig. I-12).

- **Atrophy** This refers to a diminution of some or all layers of the skin (Fig. I-13). Epidermal atrophy is manifested by a thinning of the epidermis, which becomes transparent, revealing the papillary and subpapillary vessels; there

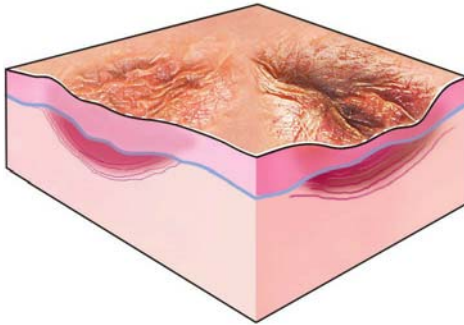


FIGURE I-13 Atrophy

are loss of skin texture and cigarette paper-like wrinkling. In dermal atrophy, there is loss of connective tissue of the dermis and depression of the lesion (Fig. I-13).

- **Cyst** A cyst is a cavity containing liquid or solid or semisolid (Fig. I-14) materials and may be superficial or deep. Visually it appears like a spherical, most often dome-shaped papule or

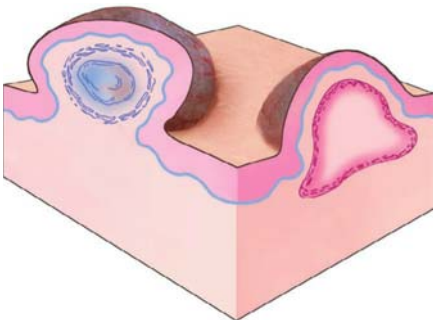


FIGURE I-14 Cyst

