

EXAM OF THE FUTURE

CONTENT OUTLINE AND BLUEPRINT FOR BASIC EXAM

This document was developed by a committee of the American Board of Dermatology (ABD) for the purpose of preparing the BASIC Examination. The BASIC Exam is assessment of fundamental knowledge and skills. It is intended as an evaluation of residents nearing completion of their first year of dermatology training. The approximate numbers of items on the exam are listed in parentheses after each heading. These numbers and the percentages from each content area are approximations only; actual numbers may vary. Not all the content listed will appear on a given exam, and ABD does not guarantee that the content of every item on a given exam is contained within this outline.

GENERAL DERMATOLOGY

VISUAL RECOGNITION

(20% / 40 ITEMS)

1. Diagnose dermatologic conditions based on physical examination (visual recognition).

The majority of the items will come from Group 1.

1.01 Identify diagnoses based on clinical morphology for common and less common diagnoses that have characteristic physical findings (Group 1).

GROUP 1

Acanthosis nigricans	Molluscum contagiosum
Acne vulgaris	Morbilloform drug eruption
Actinic keratosis	Nevocellular nevus and atypical nevus
Alopecia areata	Nummular dermatitis
Atopic dermatitis	Onychomycosis
Basal cell carcinoma	Perioral dermatitis
Candidiasis	Pityriasis rosea
Cellulitis	Prurigo nodularis
Contact dermatitis	Psoriasis
Cutaneous T cell lymphoma	Pyoderma gangrenosum
Dermatofibroma	Rosacea
Dermatomyositis	Scabies and lice
Eczema herpeticum	Sebaceous gland hyperplasia
Erythema multiforme	Seborrheic dermatitis
Granuloma annulare	Seborrheic keratosis
Hemangioma	Small vessel vasculitis
Herpes simplex	Squamous cell carcinoma, including KA and in-situ
Herpes zoster	Stasis dermatitis
Impetigo	Tinea: capitis, corporis, cruris, faciei, manuum, pedis
Keloid	Tinea versicolor
Lentigo simplex	Toxic epidermal necrolysis
Lichen planus	Urticaria
Livedo reticularis	Varicella
Lupus erythematosus	Vitiligo
Melanoma	Wart

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General Dermatology / Visual Recognition - *continued*

01.02 Identify diagnoses based on clinical morphology for common and less common diagnoses that have characteristic physical findings (Group 2).

GROUP 2

Acute generalized exanthematous pustulosis	Lichen striatus
Angiofibroma	Lichenoid drug eruption
Angiokeratoma	Lipodermatosclerosis
Arthropod bites	Melasma
Beau lines	Morphea / localized scleroderma
Becker nevus	Necrobiosis lipoidica
Blue nevus	Neurofibromatosis
Bullous pemphigoid	Nevus sebaceus
Calciphylaxis	Nevus spilus
Chondrodermatitis nodularis helioides	Parapsoriasis: small plaque and large plaque
Cutaneous larva migrans	Pemphigus foliaceus, vegetans, vulgaris
Dermatitis herpetiformis	Phototoxic/photoallergic eruption
Dyshidrotic eczema	Pigmented purpura
Erythema nodosum	Pitted keratolysis
Factitial dermatitis	Pityriasis rubra pilaris
Fixed drug eruption	Poikiloderma of Civatte
Folliculitis	Polymorphous light eruption
Geographic tongue	Porokeratosis
Hand-foot-mouth disease	Porphyria cutanea tarda
Hidradenitis suppurativa	Pyogenic granuloma
Ichthyosis vulgaris	Sarcoidosis
Keratosis pilaris	Sporotrichosis
Lichen nitidus	Sweet syndrome / atypical neutrophilic dermatosis
Lichen sclerosus	Syringoma
Lichen simplex chronicus	Systemic sclerosis / scleroderma / CREST

GENERAL DERMATOLOGY (30% / 60 ITEMS)

1. Construct a realistic differential diagnosis.

- 1.01 Based on lesion morphology, e.g., macule, papule, nodule, bulla.
- 1.02 Based on anatomic site, e.g., scalp, face, hands, lower legs.
- 1.03 Based on associated systemic disease, e.g., rheumatic disease, internal malignancy.

2. Know the fundamental pathophysiology, exacerbating factors, and associations of common skin conditions.

- 2.01 Papulosquamous diseases, e.g., psoriasis and lichen planus
- 2.02 Eczematous diseases, e.g., atopic dermatitis, contact dermatitis, and stasis dermatitis
- 2.03 Urticarial and erythematous eruptions, e.g., urticaria, erythema multiforme, drug eruptions
- 2.04 Petechial and purpuric eruptions, e.g., capillaritis, vasculopathy, and small vessel vasculitis
- 2.05 Neutrophilic dermatoses, e.g., pyoderma gangrenosum
- 2.06 Bullous disorders, e.g., pemphigus, pemphigoid, dermatitis herpetiformis
- 2.07 Rheumatological disorders, e.g., cutaneous lupus and dermatomyositis
- 2.08 Non-infectious granulomatous disorders and xanthomas. e.g., sarcoidosis, granuloma annulare, necrobiosis lipoidica, xanthelasma, eruptive xanthomas
- 2.09 Metabolic disorders, e.g., amyloidosis, porphyrias, nutritional deficiencies, calcifying disorders.
- 2.10 Adnexal disorders, e.g., acne, rosacea, folliculitis and hidradenitis
- 2.11 Disorders of hypo- and hyperpigmentation, e.g., vitiligo and melasma
- 2.12 Hair disorders: hirsutism, alopecias, e.g., androgenetic alopecia, alopecia areata
- 2.13 Nail disorders, e.g., psoriasis and onychomycosis
- 2.14 Infections, e.g., impetigo, herpesvirus, human papillomavirus, and dermatophytoses
- 2.15 Photodermatoses, e.g., drug-induced photosensitivity and polymorphous light eruption
- 2.16 Benign epidermal tumors and proliferations, e.g., seborrheic keratoses, junctional nevi, and acanthosis nigricans
- 2.17 Benign dermal growths, e.g., dermal nevi, cysts, and lipomas
- 2.18 Cutaneous malignancies, e.g., basal cell carcinoma, squamous cell carcinoma, melanoma

3. Construct an appropriate evaluation and properly interpret history, clinical findings, and test results.

- 3.01 Pruritus and excoriations
- 3.02 Papulosquamous lesions
- 3.03 Eczematous lesions
- 3.04 Urticarial and erythematous lesions, including erythroderma
- 3.05 Petechial and purpuric lesions

- 3.06 Ulcerative lesions
- 3.07 Vesicles and blisters
- 3.08 Photodistributed eruptions
- 3.09 Acneiform eruptions
- 3.10 Hypo- and hyperpigmented lesions
- 3.11 Alopecias
- 3.12 Nail abnormalities
- 3.13 Epidermal and dermal tumors and proliferations
- 3.14 Atrophic lesions, e.g., morphea and lichen sclerosus
- 3.15 Subcutaneous nodules

4. Construct an initial management plan for uncomplicated conditions.

- 4.01 Papulosquamous conditions such as psoriasis and lichen planus
- 4.02 Eczemas such as atopic, irritant/allergic contact, nummular, and stasis
- 4.03 Infections and infestations, e.g., impetigo, HSV, VZV, molluscum, HPV, scabies, and tinea
- 4.04 Acute urticaria
- 4.05 Autoimmune blistering disorders, e.g., pemphigoid and dermatitis herpetiformis
- 4.06 Rheumatic diseases primarily affecting the skin, e.g., discoid & subacute cutaneous lupus
- 4.07 Acneiform eruptions
- 4.08 Hypo- and hyperpigmented lesions, e.g., vitiligo and melasma
- 4.09 Alopecia, e.g., androgenic alopecia and limited alopecia areata
- 4.10 Benign growths and proliferations, e.g., seborrheic keratoses, cysts, and acanthosis nigricans
- 4.11 Cutaneous malignancies, e.g., basal cell carcinoma
- 4.12 Atrophic lesions, e.g., morphea and lichen sclerosus
- 4.13 Ulcerations and erosions resulting from trauma or dermatologic conditions

5. Modify management plan, depending on response to therapy.

- 5.01 Limited psoriasis
- 5.02 Mild atopic dermatitis
- 5.03 Inflammatory acne failing oral antibiotics
- 5.04 Dermatophyte infections
- 5.05 Localized bullous pemphigoid

6. Know the adverse effects and proper use and monitoring of commonly used topical and systemic agents.

- 6.01 Antibiotics (oral and topical)
- 6.02 Antifungals (oral and topical)
- 6.03 Antihistamines
- 6.04 Antimalarials
- 6.05 Antivirals
- 6.06 Corticosteroids (oral and topical)
- 6.07 Cyclosporine

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General Dermatology - *continued*

- 6.08 Methotrexate
- 6.09 Retinoids (oral and topical)
- 6.10 TNF-inhibitors
- 6.11 Topical antineoplastic agents
- 6.12 Topical moisturizers and keratolytics
- 6.13 Dapsone

7. Communicate effectively and practice in an ethical manner.

- 7.01 Involve the patient in decision-making.
- 7.02 Communicate the natural history and the risks and benefits of treatment.
- 7.03 Practice in an ethical manner.
- 7.04 Apply principles of quality and safety in clinical practice.
- 7.05 Comply with requirements of relevant regulatory authorities, such as HIPPA.

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Pediatric Dermatology

PEDIATRIC DERMATOLOGY (12.5% / 25 ITEMS)

1. Recognize characteristic pediatric presentations of skin disease and develop appropriate plans for evaluation and basic management.

- 1.01 Atopic dermatitis, seborrheic dermatitis, contact dermatitis, nummular dermatitis
- 1.02 Psoriasis, pityriasis rosea, lichen striatus
- 1.03 Infections such as impetigo, staphylococcal scalded skin syndrome, tinea versicolor, dermatophyte infections, viral exanthems, warts, molluscum contagiosum; infestations (e.g. scabies, head lice); and insect bite reactions
- 1.04 Acne, perioral dermatitis, keratosis pilaris
- 1.05 Disorders of pigmentation (e.g. vitiligo, pityriasis alba, post-inflammatory pigmentary alteration) and hair (e.g. alopecia areata, trichotillomania)
- 1.06 Erythema multiforme, Stevens-Johnson syndrome, urticaria, and Henoch-Schönlein purpura
- 1.07 Nutritional disorders (e.g. acrodermatitis enteropathica)
- 1.08 Granuloma annulare, juvenile xanthogranuloma, Langerhans cell histiocytosis, mastocytosis, melanocytic nevi including Spitz nevi, pilomatricoma
- 1.09 Common genodermatoses (e.g. neurofibromatosis, tuberous sclerosis)

2. Recognize skin conditions that characteristically present during the neonatal period or infancy, and develop appropriate plans for evaluation and management.

- 2.01 Diaper rashes (e.g., irritant, Candida)
- 2.02 Cutaneous infections with Staphylococcus aureus, Candida, and herpes simplex
- 2.03 Transient neonatal dermatoses such as erythema toxicum neonatorum, transient neonatal pustular melanosis, and neonatal cephalic pustulosis
- 2.04 Birthmarks – vascular (e.g. nevus simplex, port-wine stains, infantile hemangiomas), pigmentary (melanocytic nevi, café-au-lait macules, nevus depigmentosus, pigmentary mosaicism, dermal melanocytosis), and other hamartomas (e.g. epidermal nevi)
- 2.05 Developmental anomalies such as accessory tragi, aplasia cutis congenita, skin signs of occult spinal dysraphism, and supernumerary nipples

3. Integrate age, developmental status, and psychosocial factors into the approach to dermatologic care in neonates, infants, children, and adolescents.

- 3.01 Choose age- and developmentally appropriate treatments for common conditions such as warts, molluscum, and alopecia areata.
- 3.02 Provide appropriate education to patients and their families on the natural history and management of common pediatric skin conditions.
- 3.03 Consider patient age at disease onset when developing a differential diagnosis of common and less common pediatric skin conditions.

SURGICAL DERMATOLOGY (12.5% / 25 ITEMS)

1. Demonstrate competence in basic procedures and principles.

- 1.01 Know how to perform cryotherapy for treatment of benign and pre-cancerous lesions.
- 1.02 Know how to perform curettage and electrodesiccation.
- 1.03 Know the definitions of electrosurgery, electrocautery, electrocoagulation, electrofulguration, electrodesiccation, electrosection, monopolar, bipolar, monoterminial, and biterminal.
- 1.04 Know how and when to perform incision and drainage of abscesses and hematomas.
- 1.05 Understand how to perform shave, punch, snip, saucerization, incisional, and excisional biopsies, and when each is most appropriate.
- 1.06 Know the essential components of informed consent, including risks and benefits that should be discussed prior to the above procedures.
- 1.07 Instruct the patient in proper post-procedure care for the above procedures.
- 1.08 Understand the principles of universal precautions.
- 1.09 Understand basic principles of quality improvement.
- 1.10 Recognize emergency situations and know how to manage the patient until the emergency response team arrives.

2. Understand preoperative considerations for excisional surgery.

- 2.01 Understand the important components of pre-, peri-, and post-operative education of patients.
- 2.02 Identify patients who are at increased risk for poor wound healing and instruct about how to minimize the risk, e.g., smoking cessation.
- 2.03 Know the clinical settings in which peri-operative antibiotics are indicated.
- 2.04 Understand how to manage special situations including anticoagulant therapy, implanted devices, stated allergies to anesthetics, and pregnancy.
- 2.05 Describe the risks associated with excisional surgery.
- 2.06 Know the essential components of the pre-operative procedural pause (time out).
- 2.07 Understand the advantages and disadvantages of different surgical preps.
- 2.08 Know which local anesthetic is most appropriate in different clinical situations.

3. Understand the principles of basic scalpel surgery.

- 3.01 Identify instruments commonly used in excisional surgery and choose appropriate instruments for different settings.
- 3.02 Choose appropriate closure materials, including type of suture and needle.
- 3.03 Plan an appropriate width, length, depth, and orientation of excision.
- 3.04 Know what surgical margins are necessary for excision of various entities, including basal cell carcinoma, squamous cell carcinoma, atypical nevi, melanoma-in-situ, and invasive melanoma.

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Surgical Dermatology - *continued*

- 3.05** Understand fundamentals of proper closure technique, including when and how to undermine, suturing techniques to minimize wound tension and maximize wound strength, modifications of linear repairs, and how to create good eversion and apposition of wound edges.
 - 3.06** Know how to manage perioperative bleeding.
 - 3.07** Identify sites at higher risk for injury to nerves, vessels, or other underlying structures.
 - 3.08** Understand relevant anatomy, including relation to complications.
 - 3.09** Prevent and recognize post-operative complications, including cellulitis, dermatitis, hematoma, necrosis, dehiscence, nerve injury, and suture reaction.
 - 3.10** Understand the use of common wound dressing materials.
 - 3.11** Instruct the patient in proper post-operative wound care.
- 4. Demonstrate comprehension of the basics of Mohs micrographic surgery.**
- 4.01** Describe the difference in specimen processing between Mohs micrographic surgery and routine breadloaf pathology.
 - 4.02** Articulate the advantages and disadvantages of Mohs micrographic surgery.
 - 4.03** Articulate Appropriate Use Criteria for Mohs Surgery.
- 5. Understand essential elements of oncology related to surgical dermatology.**
- 5.01** Understand skin cancer epidemiology, diagnosis, treatment and prevention
- 6. Understand ethical issues related to surgical dermatology.**
- 6.01** Understand essential principles related to ethics and medicolegal issues in surgical dermatology.
 - 6.02** Comply with requirements of relevant regulatory authorities, such as HIPPA.

DERMATOPATHOLOGY (12.5% / 25 ITEMS)

1. Understand proper use of dermatopathology equipment and supplies.

- 1.01 Know proper use and care of microscopes.
- 1.02 Know how to handle specimens collected for routine histology, immunofluorescence, and tissue culture.

2. Recognize normal histology.

- 2.01 Identify normal cells and structures present in the skin.
- 2.02 Identify normal staining patterns of basic immunohistochemical stains such as S100, SOX10, and pankeratin.
- 2.03 Identify normal staining patterns of basic special stains, such as PAS, Fite, colloidal iron, iron, Fontana, etc.

3. Classify dermatoses by reaction pattern and dominant cell type involved.

- 3.01 Identify reaction patterns such as spongiotic, interface/lichenoid, psoriasisform, granulomatous, vesiculobullous, and vasculopathic.
- 3.02 Know archetypical examples of diseases that have the above reaction patterns (e.g., lichen planus as example of lichenoid pattern).
- 3.03 Distinguish primarily septal from primarily lobular panniculitis.
- 3.04 Identify the dominant inflammatory cell type(s) in a specimen.
- 3.05 Know archetypical examples of diseases with lymphocytic infiltrates (e.g., lupus erythematosus, lichen planus, spongiotic dermatitis), neutrophilic infiltrates, (e.g., Sweet syndrome, pyoderma gangrenosum, cellulitis), and histiocytic infiltrates (e.g., granuloma annulare, juvenile xanthogranuloma).
- 3.06 Recognize direct immunofluorescence (DIF) patterns.
- 3.07 Recognize examples illustrating basic dermpath descriptive terms, such as acantholysis, apoptosis, epidermolysis and epidermotropism.

4. Recognize common disorders in their characteristic histologic presentations.

- 4.01 Identify the characteristic histologies of common disorders such as basal cell carcinoma, seborrheic keratosis, epidermal inclusion cyst, pilar cyst, dermatofibroma, actinic keratosis, benign melanocytic nevus, molluscum, granuloma annulare, melanoma, herpes simplex virus (HSV)/zoster and erythema nodosum.
- 4.02 Correlate clinical and histologic findings to determine the most likely diagnosis.

5. Select the appropriate diagnostic procedure.

- 5.01 Choose the proper site for biopsy of inflammatory skin conditions, neoplasms of uncertain etiology, and suspected infectious processes.
- 5.02 Choose the proper procedure for biopsy of subcutaneous nodules.
- 5.03 Know where to biopsy when taking a sample for direct immunofluorescence.

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Dermatopathology - continued

6. Interpret bedside tests and pathology reports.

- 6.01** Know how to collect specimens for potassium hydroxide (KOH), Tzanck, and scabies preps.
- 6.02** Identify tinea corporis, tinea capitis, and tinea versicolor in KOH preps of skin and hair specimens.
- 6.03** Recognize common KOH artifacts.
- 6.04** Accurately interpret Tzanck smears.
- 6.05** Recognize scabies microscopically.
- 6.06** Interpret pathology reports in the context of the clinical findings.

SCIENCE & RESEARCH (12.5% / 25 ITEMS)

1. Understand fundamentals of carcinogenesis relevant to dermatology.

- 1.01 Understand basic principles of carcinogenesis and terminology: e.g., DNA repair, oncogene, tumor suppressor, apoptosis, cell cycle, epigenetics.
- 1.02 Identify predisposing factors relevant to dermatology: e.g., ultraviolet radiation, human papillomavirus, immunosuppression.

2. Understand fundamentals of embryology relevant to dermatology.

- 2.01 Know the basic progenitors of different cells types and their derivatives (ectoderm, endoderm, mesoderm).
- 2.02 Know the steps in the development of the epidermis and dermis.

3. Understand fundamentals of epidemiology and public health relevant to dermatology.

- 3.01 Understand basic statistical terminology such as mean, median, and mode; standard deviation and standard error of the mean; statistical significance; power; confidence interval.
- 3.02 Understand basic clinical research terminology: types of clinical studies; association v. causation; prevalence v. incidence; sensitivity v. specificity; null hypothesis; negative and positive predictive value; types of bias.
- 3.03 Understand the concepts of relative and absolute risk reduction and number needed to treat/harm.

4. Understand fundamentals of genetics relevant to dermatology.

- 4.01 Know the major Mendelian patterns of inheritance and modifying factors (e.g., reduced penetrance, variable expression).
- 4.02 Understand what is meant by mosaicism, mitochondrial inheritance, loss of heterozygosity, chromosomal translocation, polyploidy, and aneuploidy.
- 4.03 Understand the fundamentals of molecular genetics (such as mutations, gene structure, replication, transcription, translation) and genomics.

5. Understand fundamentals of immunology, inflammation, and wound healing relevant to dermatology.

- 5.01 Know what is meant by innate v. adaptive immunity, and identify the fundamental components of each.
- 5.02 Know the fundamental physiology of molecular effectors of immunity and inflammation, including cytokines, chemokines, and complement.
- 5.03 Know the fundamental physiology of cellular effectors of immunity and inflammation.
- 5.04 Know the group classification (fungus, bacterial, etc.) of major infectious diseases, as well as critical details of organism structure and mechanisms of disease.
- 5.05 Know the fundamental physiology of wound healing and scar formation, for example, major cellular and molecular effectors, sequence of events, and tensile strength of scars.

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Science & Research - *continued*

6. Understand fundamentals of photobiology relevant to dermatology.

- 6.01** Understand the concept of electromagnetic spectrum, where UVA and UVB fit in that spectrum, and the timing and specific elements of the response to UV in the skin.
- 6.02** Know the mechanisms of photoprotection of chemical and physical sunscreens, and their optimal use.

7. Understand fundamentals of pharmacology relevant to dermatology.

- 7.01** Know the mechanism of action of pharmacologic agents commonly used in skin diseases, e.g., corticosteroids, commonly used antibiotics, antifungals, antivirals, antihistamines, retinoids, methotrexate, cyclosporine, dapsone, hydroxychloroquine, TNF-inhibitors, topical antineoplastic agents, and topical moisturizers and keratolytics.
- 7.02** Understand the basic components of the skin barrier and how topical medications interact with the barrier to effect drug delivery.

8. Understand fundamentals of the structure and function of the skin.

- 8.01** Know the major components of the skin, their basic structure and their normal function: keratinocytes, basement membrane zone, melanocytes, adnexa, extracellular matrix, vasculature, and effectors of cutaneous innervation.
- 8.02** Understand basic principles of biochemistry, molecular and cellular biology relevant to dermatology.