Sick Call Screener Course

Integumentary System

(2.10)
Enabling Objectives

• 1.52 Utilize the knowledge of integumentary system anatomy while assessing a patient with an integumentary complaint

• 1.53 Utilize the knowledge of integumentary system physiology while assessing a patient with an integumentary complaint

• 1.54 Identify types of lesions

• 1.55 Perform a dermatological examination
Enabling Objectives (Cont.)

• 1.56 State signs and symptoms of common dermatological disorders
• 1.57 State treatments for common dermatological disorder
• 1.16 State Red Flag criteria
Introduction

• Helps maintain a constant body temperature
• Protects the body
• Provides sensory information about the surrounding environment.
Integumentary System

- Skin
- Hair
- Oil & Sweat Glands
- Nails
- Sensory Receptors
Epidermis

- **Stratum Corneum:**
  - Protection from harmful environment

- **Cellular Stratum:**
  - Keratin cells are synthesized

Bates guide to physical examination and history taking [12th ed.]. My Athens/STAT!Ref
Dermis

- Connective tissue layer of the skin
- Supports and separates the epidermis from the cutaneous adipose tissue

Hypodermis

• Also known as the subcutaneous layer (subQ)
Skin Appendages

• **Sebaceous Glands**
  – Also known as the Oil Glands

• **Sweat Glands**
  – The cells of these glands release sweat
Hair

- Columns of dead keratinized epidermal cells
• Nails
  – Plates of tightly packed, hard, dead, keratinized epidermal cells
Functions of the Skin

• Thermoregulation
• Blood Reservoir
• Protection
• Cutaneous Sensation
• Excretion and Absorption
• Synthesis of Vitamin D
Functions of the Sebaceous Glands

- Secrete an oily substance called sebum

Functions of the Sweat Glands

• Regulate body temperature through evaporation

Functions of Hair

• Provides protection and decrease heat loss
Functions of Nails

• Protects the distal end of the digits
Cutaneous Lesions

- Identified based upon clinical appearance
- Biopsy is necessary for definitive diagnosis.

Treatment of a Crohn's disease–related cutaneous facial lesion with topical tacrolimus Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology. Shah, Neha P., BDS; Goel, Rishi M., MBBS, ... Show all. Published September 1, 2014. Volume 118, Issue 3. Pages e71-e73. © 2014. Fig. 1. My Athens/ Clinical Keys
Lesion Evaluation

- Irregularities should be evaluated for:
  - A- Asymmetry
  - B- Borders
  - C- Color
  - D- Diameter
  - E- Evolution over time
Skin Lesion Description

• Good description includes:
  – Number
  – Size
  – Color
  – Shape
  – Texture
  – Primary lesion
  – Location
  – Configuration

Primary Lesions

Describing Findings:

• Primary Lesion
  – Flat
    • Macule
    • Patch

Primary Lesions (Cont.)

Describing Findings:

• Primary Lesion
  – Raised
    • Papule
    • Plaque
    • Vesicle
    • Bulla

Number of Lesions

Describing Findings:

- Number
  - Solitary or multiple
  - If multiple, record how many

Size

Describing Findings:

• Size
  – Measure with ruler
  – Millimeters or Centimeters

Seidel's Guide to Physical Examination. Published January 1, 2019. Pages 131-183. © 2019. FIG. 9.60 (From the Centers for Disease Control and Prevention/Carl Washington, MD, Emory University School of Medicine; Mona Saraiya, MD, MPH.) Malignant melanoma. My Athens/ Clinical Key
Shape

Describing Findings:

• Shape
  – Examples are "circular," "oval," "annular"

Color

Describing Findings:

• Color
  – Refer to a color wheel
Texture

Describing Findings:

• Texture
  – Palpate the lesion

Location

Describing Findings:

• Location
  – For single lesions, measure their distance from other landmarks

Describing Findings:

- **Configuration**
  - Describing patterns is often very helpful
Secondary Lesions

- Scales
- Crusts
- Excoriations
- Erosion
- Ulcer
- Scar
- Fissure

Both images from Syphilis, Yaws, Bejel, and Pinta Andrews’ Diseases of the Skin. James, William D., MD; Berger, Timothy G.,… Show all. Published January 1, 2016. Pages 343-358.e3. © 2016. Fig. 18-3.
History

• Subjective includes:
  – CC
  – HPI
  – PMH
  – Family History
  – Personal and Social History
  – Review of Systems

History of Present Illness

- Changes in skin
- Changes to lesions
- Onset
- Location
- Duration
- Characteristics

- Exposure to environment, travel, people
- What makes it better or worse
- Treatments tried
Past Med Hx

- Previous skin problems
- Sensitivities to light and touch
- Loss, growth or thinning of hair
- Systemic disease
- Infections
Family Hx

- Dermatologic disorders or diseases
- Allergies
- Hair loss
Personal and Social Hx

- Skin care
- Hair care
- Nail care
- Tobacco
- Alcohol
- STIs
Review of Systems

- Constitutional
- Cardio
- Gastro
- Blood/lymph
- Endocrine
Skin Examination

• Inspection

• Palpation
Hair Examination

• Inspection
  – Scalp, face, neck, chest, back, arms, legs, pubic region

• Palpation
  – Texture
  – Dryness
Nail Examination

• Inspect
  – Color, length, shape, configuration, cleanliness and symmetry

• Palpate
  – Uniformity, thickness, hardness, softness and smoothness
Special Tests

• Woods Lamp Test

• Used to identify if a lesion is caused by a fungal infection

• Lesion will fluoresce if a fungus is present
Acne Vulgaris

• Signs and Symptoms
  – Mild Acne
  – Moderate Acne
  – Severe Acne

Acne Plan

• Keep face clean and dry

• Mild Form

• Moderate Form

• Severe Form

The Skin Textbook of Physical Diagnosis. Swartz, Mark H., MD, FACP... Published January 1, 2014. Pages 81-144.e1. © 2014. Figure 5–77 Acne. My Athens/ Clinical Key
Folliculitis

- Folliculitis
- Furuncles
- Carbuncles

Folliculitis Dermatology Essentials. Published January 1, 2014. Pages 268-282. © 2014. Fig. 31.9 Courtesy, A. Paul Kelly, MD. Pseudofolliculitis barbae. Multiple firm hyperpigmented papules on the lower face and neck (beard distribution). My Athens/ Clinical Key
Folliculitis (Cont.)

• Signs and Symptoms
  – Folliculitis
  – Furuncles
  – Carbuncle

Folliculitis Dermatology Essentials. Published January 1, 2014. Pages 268-282. © 2014. Fig. 31.9 Courtesy, A. Paul Kelly, MD. Pseudofolliculitis barbae. Multiple firm hyperpigmented papules on the lower face and neck (beard distribution). My Athens/ Clinical Key
Folliculitis Plan

- Keep hands off the face
- Avoid squeezing lesions
- Immobilize area
- Avoid over manipulation
- Folliculitis
  - Antibiotics

Furuncle & Carbuncle Plan

- **Furuncles**
  - Hot compress
  - May require I&D
  - Antibiotics

- **Carbuncles**
  - Hot compressed
  - I&D if fluctuant
  - Antibiotics


Bacterial infection – Staphylococcal and streptococcal Dermatology: An Illustrated Colour Text Published January 1, 2017. Pages 50-51. © 2017. Fig. 25.4 My Athens/ Clinical Key
• Signs and Symptoms
  – Starts as a small papule
  – Progresses into eroded vesicles
  – “Honey-colored crusted plaques" with erythematous base.

Bacterial Infections Oral and Maxillofacial Pathology. Published January 1, 2016. Pages 164-190. © 2016. Fig. 5-2 Impetigo.
Impetigo Plan

- Keep area clean and dry
- Antibiotics
- Refer to provider for isolation procedures
Cellulitis

• Signs and Symptoms
  
  – Large, well-defined area of erythema
  
  – Edema and pain with touch
  
  – The appearance and texture is that of an orange peel

Cellulitis Clinical Overview. Published April 21, 2016. © 2017. 37(2):96-9, 2008, Figure 1B. My Athens/ Clinical Key
Cellulitis Plan

- Warm soaks, bed rest, keep affected area elevated
- Antibiotics
- Refer to provider for isolation procedures
Pityriasis Rosea

• Signs and Symptoms
  – Numerous flesh-colored or mildly erythematous papules and plaques with fine scaling
  – “Herald patch" and bilateral/symmetrical lesions
  – Patient does not look ill
Pityriasis Rosea Plan

- Symptomatic treatment
- No medications can cure
- Expose affected areas to the sun
- Lesions sometime take as long as 8 weeks to cure
- If persistent

Psoriasis

- Chronic Disease
- Over production of new skin
- Areas of body
- Cosmetics issue
Psoriasis (Cont.)

• Signs and Symptoms
  – Irregularly shaped thickened plaques with flaky silver scales
  – Excoriation
  – Pitting of the nails
  – Arthritis

Psoriasis Plan

- **Mild** – Steroid cream & sun bathing
- **Moderate** – Topical steroid
- **Severe** – Dermatologic consultation

Tinea Infections

• Signs and Symptoms
  – Findings range from mild scaling and erythema to exfoliation, fissuring and maceration.
  – It is prudent to take samples of the scales.
Tinea Capitis & Tinea Corporis

• Signs and Symptoms
  – Tinea Capitis
    • Areas of alopecia, scaling
  – Tinea Corporis
    • Annular lesions
Tinea Cruris

• Signs and Symptoms
  – Tinea Cruris
  • Intertriginous areas on adjacent upper thigh and buttock
  • Scrotum rarely ever involved
Tinea Manus

• Signs and Symptoms
  – Tinea Manus
    • Usually in the dominant hand of a patient
Tinea Pedis

• Signs and Symptoms
  
  – Tinea Pedis

  • Intensely pruritic

  • May look like annular lesions with an advancing serpinginous borders with central clearing

Tinea Plan

- Topical antifungals
- Oral antifungals
- Foot powder
- Hygiene practices
Tinea Versicolor

• Signs and Symptoms
  – Fungal infection
  – Primarily on the back and chest
  – Hot, humid weather
  – Patches can be either lighter or darker than the surrounding skin

Tinea Versicolor Plan

- Selsun shampoo
- Educate patient
- If no resolution
Eczema

• Signs and Symptoms
  – Eczematous inflammation
  – Redness, scaling, vesicles and itching
Eczema Plan

- Topical and systemic corticosteroids
- Educate patients

Eczema Skin Disease: Diagnosis and Treatment. Published January 1, 2018. Pages 12-84. © 2018. Fig. 2.32. My Athens/ Clinical Key
Contact Dermatitis

• Signs and Symptoms
  – Intensely pruritic and becomes erythematous
  – Grouped vesicles/bullae of varying sizes
  – Lesions erupt, weep and painful
Contact Dermatitis Plan

- Antihistamines
- Wash the exposed area with soap and water
- Topical medications
- Instruct patient to avoid irritating agents

Atopic Dermatitis

• Signs and Symptoms
  – Erythematous scaling skin
  – Blisters, oozing and crusting
  – Markedly dry, thickened and scratched

Atopic dermatitis/eczema Clinical Overview. Published December 14, 2017. © 2017. Piel. 31(1):15-23, 2016, Figure 5. My Athens/ Clinical Key
Atopic Dermatitis Plan

- Topical steroids
- Oral antihistamines
- Oral antibiotics
- Good skin care
Urticaria

• Signs and Symptoms
  – Generalized distribution of well circumscribed wheals with red, raised borders
  – May be the first sign of Anaphylaxis
Urticaria Plan

- Antihistamines
- Call medical officer immediately if evidence of anaphylactic reaction

Urticaria Skin Disease: Diagnosis and Treatment. Published January 1, 2018. Pages 85-100. © 2018. Fig. 3.10. My Athens/ Clinical Key
Scabies

• Signs and Symptoms
  – May not appear up to a month
  – Gray – brown or skin colored ridges
  – Secondary bacterial infections

Scabies Clinical Overview. Published May 12, 2016. © 2017. My Athens/ Clinical Key
Scabies Plan

- Topical medication
- Close contacts should also be treated simultaneously
- Personal items should be washed
- Refer to provider for isolation procedures

Scabies Clinical Overview. Published May 12, 2016. © 2017. My Athens/ Clinical Key
Pediculosis

- Signs and Symptoms
  - Itching in the involved areas
  - Lice and eggs (nits) cemented to the bases of hair shafts close to the skin
Pediculosis Plan

- Good hygiene measures
- Recommend shaving hair

Warts

• Signs and Symptoms
  – Flesh colored
  – Dome shaped
  – Firm papule
  – Corrugated surface
Warts Plan

• Cryotherapy with liquid nitrogen

• Only a medical provider should use cryotherapy on genital warts
Herpes

• Signs and Symptoms
  – Clustered vesicles
  – Painful ulcerated lesions
  – Erythematous base
  – Develop on pharyngeal and oral mucosa
  – Rapidly ulcerate, and increase in number

Herpes Plan

- Acyclovir
- Valacyclovir
- Avoid salty, acidic, or sharp foods
- Reinforce safe sexual practices

Update on Oral Herpes Virus Infections Dental Clinics of North America. Published April 1, 2014. Volume 58, Issue 2. Pages 265-280. © 2014. Fig. 2. My Athens/Clinical Key
Shingles (Herpes Zoster)

• Signs and Symptoms
  – Prodromal Phase
    • Tingling, paresthesias
    • Itching
    • Boring "knife-like" pain
  – Acute Phase
    • Rash
    • Vesicles
Herpes Zoster Plan

- Antiviral agents
- Warn of potential risk of transmitting illness
Chickenpox

• Signs and Symptoms
  – Rash
  – Pruritic rash present in various stages
  – Lesions may be present on mucous membranes
Chickenpox Plan

- Supportive: antipyretics for fever
- Avoid aspirin in children
- Local and/or systemic antipruritic agents for itching

Varicella (Chickenpox) Conn's Current Therapy 2018. Mayans, Laura, MD, MPH... Published January 1, 2018. Pages 642-644. © 2018. Figure 2. My Athens/ Clinical Key
Skin Cancer

• Two distinct types:
  – Non-Melanoma Skin Cancer (NMSC)
    • Basal Cell Carcinoma (BCC)
    • Squamous Cell Carcinoma (SCC)
  – Melanoma

Results of the treatment of skin cancer European Journal of Cancer. Published August 1, 2016. Volume 63. Pages 41-52. © 2016. Fig. 4. My Athens/ Clinical Key
Basal Cell Carcinomas

- Slow growing malignant lesion that rarely metastasize

Both images from Malignant Skin Neoplasms Medical Clinics of North America. Published November 1, 2009. Volume 93, Issue 6. Pages 1241-1264. © 2009. Fig. 8. My Athens/ Clinical Key
Squamous Cell Carcinomas

- Extensive malignant lesion involving the dermis and epidermis

Both images from Malignant Skin Neoplasms Medical Clinics of North America. Published November 1, 2009. Volume 93, Issue 6. Pages 1241-1264. © 2009. Fig. 8. My Athens/ Clinical Key
Malignant Melanoma

- Deadliest
- ABCDE of Melanoma

Malignant Melanoma (Cont.)

- (A) Asymmetrical
- (B) Borders irregular
- (C) Color variation
- (D) Diameter larger than pencil eraser
- (E) Elevated lesion
Skin Cancers Plan

• Referral to Dermatology is required for positive findings
Cancer Screening Test

- Screening and early detection
- 3 Point Checklist

Cutaneous Manifestations of Internal Disease Skin Disease: Diagnosis and Treatment. Published January 1, 2018. Pages 586-620. © 2018. Fig. 22.41. My Athens/ Clinical Key
Three-Point Checklist

- Based on 3 dermoscopic criteria:
  - Asymmetry of pattern and distribution
  - Atypical network
  - Blue-white structures
Checklist Scoring

- One point is assigned to each criterion present
- Two points is considered positive
Enabling Objectives

• 1.52 Utilize the knowledge of integumentary system anatomy while assessing a patient with an integumentary complaint

• 1.53 Utilize the knowledge of integumentary system physiology while assessing a patient with an integumentary complaint

• 1.54 Identify types of lesions

• 1.55 Perform a dermatological examination
Enabling Objectives (Cont.)

• 1.56 State signs and symptoms of common dermatological disorders
• 1.57 State treatments for common dermatological disorder
• 1.16 State Red Flag criteria
Questions
Application

• Integumentary System, Job Sheet SCSC 2.10-3

• SCSC Performance Test 10