Multimedia Directory

Slide 78  Acne Video
Slide 86  Burn Animation
Slide 88  Decubitus Ulcers Video
Slide 90  Eczema Video
Slide 95  Skin Cancer Video
Integumentary System at a Glance

- Functions of Integumentary System
  - Two-way protective barrier
  - Temperature regulation
  - Houses sensory receptors
  - Secretes important fluids
Integumentary System at a Glance

- Organs of Integumentary System
  - Skin
  - Hair
  - Nails
  - Sebaceous glands
  - Sweat glands
Integumentary System Illustrated

**Skin, p. 52**
- Protective barrier
- Houses sensory receptors
- Secretes sweat and sebum
- Temperature regulation

**Hair, p. 54**
- Provides some protection
- Associated with sensory receptors

**Nail, p. 55**
- Covers and protects tips of digits
Integumentary Combining Forms

- albin/o – white
- bi/o – life
- cry/o – cold
- cutane/o – skin
- cyan/o – blue
- derm/o – skin
- dermat/o – skin
- diaphor/o – profuse sweating
Integumentary Combining Forms

- electr/o – electricity
- erythr/o – red
- hidr/o – sweat
- ichthy/o – scaly, dry
- kerat/o – hard, horny
- leuk/o – white
- lip/o – fat
- melan/o – black
Integumentary Combining Forms

- myc/o – fungus
- necr/o – death
- onych/o – nail
- phot/o – light
- py/o – pus
- rhytid/o – wrinkle
- scler/o – hard
- seb/o – oil
Integumentary Combining Forms

- **trich/o** – hair
- **ungu/o** – nail
- **vesic/o** – bladder
- **xer/o** – dry
Integumentary System Suffixes

- **–derma**  
  skin

- **–opsy**  
  view

- **–tome**  
  instrument to use to cut
Integumentary System Prefixes

- allo- other, different from usual
- xeno- strange, foreign
Anatomy and Physiology

- Skin
- Accessory organs
  - Sweat glands
  - Sebaceous glands
  - Hair
  - Nails
Figure 3.1
Skin structure, including the three layers of the skin and the accessory organs: sweat glands, sebaceous glands, and hair.
Anatomy and Physiology

- Largest organ in body
- Weighs more than 20 pounds (in adult)
- Skin also called:
  - Integument
  - Cutaneous membrane
Functions

- Protection
- House nerve receptors
- Secrete fluids
- Regulate temperature
Protection

• **Primary function**

• **Forms 2-way barrier**
  - Keeps out pathogens and harmful substances
  - Prevents critical body fluids from escaping

• **Protects underlying tissues**
Sensory Receptors

- Located within middle layer of skin
- Detect:
  - Temperature
  - Pain
  - Touch
  - Pressure
- Nerve endings convey messages to brain and spinal cord
Fluids Produced

- Sweat glands:
  - Assist body in maintaining internal temperature
  - Create cooling effect when sweat evaporates

- Sebaceous glands:
  - Oil glands
  - Produce sebum
  - Lubricates the skin surface
Temperature Regulation

- To cool skin:
  - Sweat evaporation
  - Dilate superficial blood vessels to release heat

- To conserve heat
  - Constrict superficial blood vessels to keep warm blood away from surface
  - Continuous fat layer acts as insulation
The Skin

- Three layers
  - **Epidermis** – thin, outer membrane layer
  - **Dermis** – middle, fibrous connective tissue layer
  - **Subcutaneous layer** – innermost layer of fatty tissue
The Skin
Figure 3.1
Skin structure, including the three layers of the skin and the accessory organs: sweat glands, sebaceous glands, and hair.
Epidermis

- Composed of **stratified squamous epithelium**
  - Flat scale-like cells
  - Arranged in overlapping layers called strata
Epidermis

- Has no blood supply or connective tissue
  - Depends on deeper layers of skin for nourishment
- **Basal layer**
  - The deepest layer
Basal Layer of Epidermis

- Cells continuously grow and push old cells toward surface
- During this process
  - Cells shrink, die, and fill with hard protein called **keratin**
- Keratinized cells allow skin to act as barrier to infection
Basal Layer of Epidermis

• **Melanocytes**
  - Special cells of basal layer
  - Produce black pigment **melanin**
  - Gives skin color
  - Protects against ultraviolet rays of sun
Figure 3.2
Photomicrograph showing the three layers of the skin.
(Jubal Harshaw/Shutterstock)
Dermis

- Also called **corium**
- Located between epidermis and subcutaneous layer
- Name means “**true skin**”
- Is living tissue with very good blood supply
Dermis

• Composed of:
  ▪ Connective tissue and collagen fibers
  ▪ Strong fibrous proteins give dermis flexible strength
Dermis

- Houses:
  - Hair follicles
  - Sweat glands
  - Sebaceous glands
  - Blood vessels
  - Lymph vessels
  - Sensory receptors
  - Nerve fibers
  - Muscle fibers
Subcutaneous Layer

- Also called hypodermis
- Third and deepest layer
- Composed of fat cells called lipocytes
- Protects the deeper tissues of body
- Acts as insulation for heat and cold
Accessory Organs

- Located within dermis
- Include:
  - Hair
  - Nails
  - Sweat glands
  - Sebaceous glands
Hair

- Hair follicle
- Hair root
- Hair shaft
- Arrector pili muscle
Hair

- Grows longer from the root
  - Deep cells of hair root force older cells to move upward
  - This forms hair shaft
  - Grows towards surface within hair follicle
- Melanin gives hair its color
Hair

- Arrector pili
  - Slip of smooth muscle
  - Causes hairs to “stand up”
Figure 3.3
Structure of a hair and its associated sebaceous gland.
Nails

- **Nail body**
  - Flat plate of keratin
- **Nail bed**
  - Connects nail body to underlying tissue
- **Lunula**
  - Half-moon white area at base of nail
Nails

- Grow longer from **nail root**
- **Cuticle**
  - Soft tissue that covers nail root
- **Free edge**
  - Exposed edge
Figure 3.4
External and internal structures of nails.
Sebaceous Glands

- Open into hair follicles
- Secrete the oil **sebum**
  - Lubricates hair and skin
  - Prevents drying and cracking
Figure 3.3
Structure of a hair and its associated sebaceous gland.
Sweat Glands

- Also called **sudoriferous glands**
- Coiled gland in dermis
- Sweat travels to surface in **sweat duct**
- **Sweat pore** – surface opening
Figure 3.1
Skin structure, including the three layers of the skin and the accessory organs: sweat glands, sebaceous glands, and hair.
Sweat Glands

- 2 million throughout body
- Sweat or *perspiration*
  - Cools body as evaporates
  - Contains small amount of waste product
  - Normal colorless and odorless
- **Apocrine glands**
  - Found in pubic and underarm areas
  - Thicker sweat that can produce an odor
Additional Combining Forms

- angi/o – vessel
- bas/o – the base
- carcin/o – cancer
- chem/o – chemical
- cis/o – to cut
- cyt/o – cell
- dermat/o – skin
- esthesi/o – feeling
Additional Combining Forms

- **hem/o** – blood
- **pedicul/o** – lice
- **sarc/o** – flesh
- **system/o** – system
Additional Suffixes

- -al  pertaining to
- -ectomy  surgical removal
- -emia  blood condition
- -ia  state, condition
- -ic  pertaining to
- -ism  state of
- -itis  inflammation
- -logy  study of
Additional Suffixes

- **-malacia** - softening
- **-oma** - mass
- **-osis** - abnormal condition
- **-ous** - pertaining to
- **-phagia** - eating
- **-plasty** - surgical repair
- **-rrhea** - discharge
- **-tic** - pertaining to
- **-ule** - small
Additional Prefixes

- **an-** without
- **anti-** against
- **auto-** self
- **de-** without
- **epi-** upon
- **hyper-** excessive
- **hypo-** under
- **intra-** within
Additional Prefixes

- *para-* beside
- *sub-* under
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>cutaneous</td>
<td>Pertaining to the skin</td>
</tr>
<tr>
<td>dermal</td>
<td>Pertaining to the skin</td>
</tr>
<tr>
<td>epidermal</td>
<td>Pertaining to upon the skin</td>
</tr>
<tr>
<td>hypodermic</td>
<td>Pertaining to under the skin</td>
</tr>
<tr>
<td>intradermal</td>
<td>Pertaining to within the skin</td>
</tr>
<tr>
<td>subcutaneous</td>
<td>Pertaining to under the skin</td>
</tr>
<tr>
<td>ungual</td>
<td>Pertaining to the nail</td>
</tr>
</tbody>
</table>
Building Anatomical Terms

• Epidermal
  
  epi-  + derm/o  +  -al
  
  ▪ Pertaining to above the skin

• Hypodermic
  
  hypo-  + derm/o  +  -ic
  
  ▪ Pertaining to under the skin
Building Anatomical Terms

- **Intradermal**
  
  \[ \text{intra-} + \text{derm/o} + \text{-al} \]
  
  - Pertaining to within the skin

- **Subcutaneous**
  
  \[ \text{sub-} + \text{cutane/o} + \text{-ous} \]
  
  - Pertaining to under the skin
# Medical Specialties

<table>
<thead>
<tr>
<th>Medical Specialty</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dermatology</strong></td>
<td>Branch of medicine involving diagnosis and treatment of conditions and diseases of the integumentary system. Physician is a dermatologist.</td>
</tr>
<tr>
<td><strong>Plastic surgery</strong></td>
<td>Surgical specialty involved in repair, reconstruction, or improvement of body structures such as the skin that are damaged, missing, or misshapen. Physician is a plastic surgeon.</td>
</tr>
</tbody>
</table>
## Signs and Symptoms

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>abrasion</td>
<td>friction scraping away skin surface</td>
</tr>
<tr>
<td>anhidrosis</td>
<td>condition of producing no sweat</td>
</tr>
<tr>
<td>comedo</td>
<td>hardened sebum in hair follicle; blackhead</td>
</tr>
<tr>
<td>contusion</td>
<td>injury caused by a blow; causes swelling, pain, and bruising</td>
</tr>
<tr>
<td>cyanosis</td>
<td>bluish tint to skin caused by deoxygenated blood</td>
</tr>
<tr>
<td>cyst</td>
<td>fluid-filled sac under skin</td>
</tr>
</tbody>
</table>
Figure 3.5
A cyanotic infant. Note the bluish tinge to the skin around the lips, chin, and nose. (St. Bartholomew's Hospital, London/Photo Researchers, Inc.)
Figure 3.6
Cyst.
## Signs and Symptoms

<table>
<thead>
<tr>
<th>Sign/Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>depigmentation</td>
<td>loss of normal skin color</td>
</tr>
<tr>
<td>diaphoresis</td>
<td>profuse sweating</td>
</tr>
<tr>
<td>ecchymosis</td>
<td>blood collecting under skin following blunt trauma; a bruise</td>
</tr>
<tr>
<td>erythema</td>
<td>red flushing of skin</td>
</tr>
<tr>
<td>erythrodema</td>
<td>having reddened or flushed skin</td>
</tr>
<tr>
<td>eschar</td>
<td>thick layer of dead tissue develops over a deep burn area</td>
</tr>
</tbody>
</table>
Figure 3.7
Male lying supine with large ecchymosis on lateral rib cage and shoulder.
# Signs and Symptoms

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>fissure</td>
<td>crack-like lesion on skin</td>
</tr>
<tr>
<td>hirsutism</td>
<td>excessive hair growth</td>
</tr>
<tr>
<td>hyperemia</td>
<td>redness of skin due to increased blood flow</td>
</tr>
<tr>
<td>hyperhidrosis</td>
<td>excessive sweating</td>
</tr>
<tr>
<td>hyperpigmentation</td>
<td>abnormal amount of pigmentation</td>
</tr>
<tr>
<td>ichthyodermatia</td>
<td>scaly and dry skin</td>
</tr>
<tr>
<td>lesion</td>
<td>general term for injury or abnormality</td>
</tr>
</tbody>
</table>
Figure 3.8
Fissure.
## Signs and Symptoms

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>leukoderma</td>
<td>white skin from lack of skin pigment</td>
</tr>
<tr>
<td>lipoma</td>
<td>fatty mass</td>
</tr>
<tr>
<td>macule</td>
<td>flat, discolored spot on skin</td>
</tr>
<tr>
<td>necrosis</td>
<td>condition of cell or tissue death</td>
</tr>
<tr>
<td>nevus</td>
<td>pigmented skin blemish, birthmark, or mole; usually benign</td>
</tr>
<tr>
<td>nodule</td>
<td>firm, solid mass larger than 0.5 cm</td>
</tr>
<tr>
<td>onychomalacia</td>
<td>softening of nails</td>
</tr>
</tbody>
</table>
Figure 3.9
Macule.
Figure 3.10
Nodule.
## Signs and Symptoms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>pallor</td>
<td>abnormal paleness of skin</td>
</tr>
<tr>
<td>papule</td>
<td>small, solid raised spot smaller than 0.5 cm</td>
</tr>
<tr>
<td>petechiae</td>
<td>spots from minute hemorrhages under skin</td>
</tr>
<tr>
<td>photosensitivity</td>
<td>skin reacts abnormally to light</td>
</tr>
<tr>
<td>pruritus</td>
<td>severe itching</td>
</tr>
<tr>
<td>purpura</td>
<td>skin hemorrhage due to fragile blood vessels</td>
</tr>
</tbody>
</table>
Figure 3.11
Papule.
Figure 3.12
Petechiae, pinpoint skin hemorrhages.
(Custom Medical Stock)
Figure 3.13
Purpura, hemorrhaging into the skin due to fragile blood vessels.
(Caroll H. Weiss / Camera M.D. Studios)
## Signs and Symptoms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>purulent</td>
<td>infection producing pus; dead bacteria, white blood cells, and tissue debris</td>
</tr>
<tr>
<td>pustule</td>
<td>raised spot on skin containing pus</td>
</tr>
<tr>
<td>pyoderma</td>
<td>having pus on or within the skin</td>
</tr>
<tr>
<td>scleroderma</td>
<td>hardened skin</td>
</tr>
<tr>
<td>seborrhea</td>
<td>oily discharge</td>
</tr>
<tr>
<td>suppurative</td>
<td>containing or producing pus</td>
</tr>
<tr>
<td>ulcer</td>
<td>open sore in skin</td>
</tr>
</tbody>
</table>
Figure 3.14
Pustule.
Figure 3.15
Ulcer.
## Signs and Symptoms

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>urticaria</td>
<td>hives; eruption of wheals with severe itching</td>
</tr>
<tr>
<td>vesicle</td>
<td>small, fluid-filled, raised spot; blister</td>
</tr>
<tr>
<td>wheal</td>
<td>small, round, swollen area; typical of allergic skin reaction</td>
</tr>
<tr>
<td>xeroderma</td>
<td>abnormally dry skin</td>
</tr>
</tbody>
</table>
Figure 3.16
Vesicle.
Figure 3.17
Wheal.
Building Signs & Symptoms Terms

- **Lipoma**
  - `lip/o + -oma`
  - Fatty mass or tumor
- **Cyanosis**
  - `cyan/o + -osis`
  - Abnormal condition of being blue
Building Signs & Symptoms Terms

- Erythroderma
  - erythr/o + -derma
  - Red skin condition
- Onychomalacia
  - onych/o + -malacia
  - Softening of the nail
<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>abscess</td>
<td>collection of pus in skin</td>
</tr>
<tr>
<td>acne</td>
<td>inflammation of sebaceous glands and hair follicles with papules and pustules</td>
</tr>
<tr>
<td>acne rosacea</td>
<td>chronic form of adult acne with redness and tiny pimples, primarily on nose</td>
</tr>
<tr>
<td>acne vulgaris</td>
<td>common form of teenage acne with comedo, papules, and pustules</td>
</tr>
<tr>
<td>albinism</td>
<td>genetic condition; unable to make melanin; white hair and skin, and red eyes</td>
</tr>
</tbody>
</table>
Click on the screenshot to view a video on the topic of acne.
## Pathology of the Skin

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>basal cell carcinoma</strong></td>
<td>cancerous tumor in basal cell layer; common cancer; rarely metastasizes</td>
</tr>
<tr>
<td><strong>burn</strong></td>
<td>skin damage caused by fire, electricity, ultraviolet light, or caustic chemicals; percentage of skin burned is estimated by Rule of Nines</td>
</tr>
</tbody>
</table>
Figure 3.18
Basal cell carcinoma, a frequent type of skin cancer that rarely metastasizes.
*(Bob Craig/CDC)*
Figure 3.19
Comparison of the level of skin damage as a result of the three different degrees of burns.
Figure 3.20
Rule of Nines. A method for determining percentage of body burned. Each differently-colored section represents a percentage of the body surface.
**First Degree Burn**

| First degree burn | skin reddened and painful; no blisters; damage to epidermis |

(Moynahan Medical Center)
Second Degree Burn

- Skin reddened and painful with blisters;
- Damage to epidermis and dermis.
Third Degree Burn

| Third degree burn | skin charred; epidermis and dermis burned away; subcutaneous layer exposed |
Burn Animation

Click on the screenshot to view an animation on the topic of burns.

Back to Directory
### Pathology of the Skin

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>cellulitis</strong></td>
<td>diffuse acute infection of connective tissue of skin</td>
</tr>
<tr>
<td><strong>cicatrix</strong></td>
<td>normal scar</td>
</tr>
<tr>
<td><strong>decubitus ulcer</strong> (decub)</td>
<td>open sore caused by pressure over bony prominences; caused by loss of blood flow to skin</td>
</tr>
<tr>
<td><strong>dermatitis</strong></td>
<td>inflammation of the skin</td>
</tr>
<tr>
<td><strong>dermatosis</strong></td>
<td>presence of a skin condition</td>
</tr>
</tbody>
</table>
Click on the screenshot to view a video on the topic of decubitus ulcers.
## Pathology of the Skin

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dry gangrene</td>
<td>late stages of gangrene; affected area becomes dried, blackened, and shriveled</td>
</tr>
<tr>
<td>eczema</td>
<td>superficial dermatitis; redness, vesicles, itching, and crusting</td>
</tr>
<tr>
<td>gangrene</td>
<td>tissue necrosis due to loss of blood flow</td>
</tr>
<tr>
<td>ichthyosis</td>
<td>skin becomes dry, scaly, &amp; keratinized</td>
</tr>
<tr>
<td>impetigo</td>
<td>highly infections bacterial infection with pustules that rupture and crust over</td>
</tr>
<tr>
<td>Kaposi’s sarcoma</td>
<td>skin cancer seen in AIDS patients; brownish-purple lesions</td>
</tr>
</tbody>
</table>
Eczema Video

Click on the screenshot to view a video on the topic of eczema.

Back to Directory
Figure 3.21
Impetigo, a highly contagious bacterial infection. (Dr. Jason L. Smith)
### Pathology of the Skin

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>keloid</td>
<td>thick hypertrophic scar</td>
</tr>
<tr>
<td>keratosis</td>
<td>condition of excessive growth and thickening of epidermis layer</td>
</tr>
<tr>
<td>laceration</td>
<td>torn or jagged wound</td>
</tr>
<tr>
<td><strong>malignant</strong></td>
<td>dangerous form of cancer; begins in melanocytes; quickly metastasizes</td>
</tr>
<tr>
<td><strong>melanoma</strong></td>
<td></td>
</tr>
<tr>
<td><strong>(MM)</strong></td>
<td></td>
</tr>
<tr>
<td>pediculosis</td>
<td>lice infestation</td>
</tr>
<tr>
<td>psoriasis</td>
<td>chronic inflammatory condition with papules forming “silvery scale” patches</td>
</tr>
</tbody>
</table>
Figure 3.22
Keloid.
Figure 3.23
Malignant melanoma.
(Skin Cancer Foundation/National Cancer Institute)
Skin Cancer Video

Click on the screenshot to view a video on the topic of skin cancer.

Back to Directory
Psoriasis. This photograph demonstrates the characteristic white skin patches of this condition.  

*(kenxro/Shutterstock)*
# Pathology of the Skin

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>rubella</strong></td>
<td>contagious viral infection; German measles</td>
</tr>
<tr>
<td><strong>scabies</strong></td>
<td>mite infestation</td>
</tr>
<tr>
<td><strong>sebaceous cyst</strong></td>
<td>sebum filled sac forms around sebaceous gland</td>
</tr>
<tr>
<td><strong>squamous cell carcinoma</strong> (SCC)</td>
<td>cancer of epidermis layer; may invade deeper tissue and metastasize</td>
</tr>
<tr>
<td><strong>strawberry hemangioma</strong></td>
<td>congenital collection of dilated blood vessels; birthmark</td>
</tr>
</tbody>
</table>
Figure 3.25
Squamous cell carcinoma.
(National Cancer Institute)
Figure 3.26
Strawberry hemangioma
(H.C. Robinson/Science Photo Library/Photo Researchers)
# Pathology of the Skin

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>systemic lupus erythematosus</strong></td>
<td>chronic disease of connective tissue; injures skin, joints, &amp; kidneys; produces red, scaly butterfly rash across face</td>
</tr>
<tr>
<td><strong>tinea</strong></td>
<td>fungal infection; itching &amp; scaling lesions</td>
</tr>
<tr>
<td><strong>tinea capitis</strong></td>
<td>fungal infection on scalp; ringworm</td>
</tr>
<tr>
<td><strong>tinea pedis</strong></td>
<td>fungal infection of foot; athlete’s foot</td>
</tr>
<tr>
<td><strong>varicella</strong></td>
<td>contagious viral infection; chickenpox</td>
</tr>
<tr>
<td><strong>verruca</strong></td>
<td>warts; benign growth caused by virus</td>
</tr>
</tbody>
</table>
Figure 3.27
Varicella or chickenpox, a viral skin infection. In this photograph, the rash is beginning to form scabs.
### Pathology of the Skin

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>vitiligo</strong></td>
<td>disappearance of pigment from skin in patches; causes milk-white lesions</td>
</tr>
<tr>
<td><strong>wet gangrene</strong></td>
<td>area of gangrene with secondary bacterial infection and pus</td>
</tr>
</tbody>
</table>
**Pathology of the Hair**

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>alopecia</td>
<td>absence or loss of hair; baldness</td>
</tr>
<tr>
<td>carbuncle</td>
<td>furuncle involving several hair follicles</td>
</tr>
<tr>
<td>furuncle</td>
<td>bacterial infection of hair follicle; redness, pain, and swelling; a boil</td>
</tr>
<tr>
<td>trichomycosis</td>
<td>fungal infection of hair</td>
</tr>
</tbody>
</table>
# Pathology of the Nails

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>onychia</td>
<td>infected nail bed</td>
</tr>
<tr>
<td>onychomycosis</td>
<td>fungal infection of nail</td>
</tr>
<tr>
<td>onychophagia</td>
<td>nail biting</td>
</tr>
<tr>
<td>paronychia</td>
<td>infection of skin fold around nail</td>
</tr>
</tbody>
</table>
Figure 3.28
Paronychia.
(Local Images, Inc.)
Building Pathology Terms

- **Dermatitis**
  - dermat/o + -itis
  - Inflammation of the skin

- **Trichomycosis**
  - trich/o + myc/o + -osis
  - Abnormal condition of nail fungus
Building Pathology Terms

- Hemangioma
  - hem/o + angi/o + -oma
    - Blood vessel tumor
- Melanoma
  - melan/o + -oma
    - Black tumor
| **culture & sensitivity (C&S)** | grows bacteria removed from infected area to identify infecting bacteria; then determines sensitivity to various antibiotics |
# Biopsy Procedures

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>biopsy</strong> (BX, bx)</td>
<td>removal of piece of tissue to examine under a microscope; aids in diagnosis</td>
</tr>
<tr>
<td><strong>exfoliative cytology</strong></td>
<td>scraping cells from tissue to examine under microscope</td>
</tr>
<tr>
<td><strong>frozen section (FS)</strong></td>
<td>thin piece of tissue is cut from frozen specimen for rapid examination under microscope</td>
</tr>
<tr>
<td><strong>fungal scrapings</strong></td>
<td>scrapings from lesion is cultured and then examined under microscope</td>
</tr>
</tbody>
</table>
Building Diagnostic Terms

- Biopsy
  - bi/o + -opsy
    - View of life
- Cytology
  - cyt/o + -logy
    - Study of cells
## Skin Grafting

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>skin graft (SG)</td>
<td>transfer of skin from normal area to cover another site</td>
</tr>
<tr>
<td>allograft</td>
<td>skin graft from one person to another; also called homograft</td>
</tr>
<tr>
<td>autograft</td>
<td>skin graft from a person’s own body</td>
</tr>
<tr>
<td>xenograft</td>
<td>skin graft from an animal of another species; usually a pig; also called heterograft</td>
</tr>
</tbody>
</table>
Figure 3.29
A freshly applied autograft. Note that the donor skin has been perforated so that it can be stretched to cover a larger exposed area.
(Courtesy of Dr. William Dominic, Community Regional Medical Center)
## Skin Grafting

<table>
<thead>
<tr>
<th>dermatome</th>
<th>instrument for cutting skin or for producing thin transplants of skin</th>
</tr>
</thead>
<tbody>
<tr>
<td>dermatoplasty</td>
<td>skin grafting</td>
</tr>
</tbody>
</table>
# Surgical Procedures

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>cauterization</td>
<td>destruction of tissue by using chemicals, electricity, heat, or freezing</td>
</tr>
<tr>
<td>cryosurgery</td>
<td>use of extreme cold to freeze and destroy tissue</td>
</tr>
<tr>
<td>curettage</td>
<td>removal of superficial skin lesion with a scraper (curette)</td>
</tr>
<tr>
<td>debridement</td>
<td>removal of foreign material &amp; dead or damaged tissue from wound</td>
</tr>
</tbody>
</table>
## Surgical Procedures

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>electrocautery</td>
<td>using an electric current to destroy tissue</td>
</tr>
<tr>
<td>incision &amp; drainage (I&amp;D)</td>
<td>making an incision to drain material such as pus</td>
</tr>
<tr>
<td>onychectomy</td>
<td>surgical removal of a nail</td>
</tr>
</tbody>
</table>
### Plastic Surgery

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>chemabrasion</td>
<td>abrasions using chemicals; chemical peel</td>
</tr>
<tr>
<td>dermabrasion</td>
<td>abrasion using wire brushes or sandpaper; removes scars, tattoos</td>
</tr>
<tr>
<td>laser therapy</td>
<td>removal of lesions using a laser beam</td>
</tr>
<tr>
<td>liposuction</td>
<td>removal of fat beneath skin by means of suction</td>
</tr>
<tr>
<td>rhytidectomy</td>
<td>surgical removal of excess skin to eliminate wrinkles; face lift</td>
</tr>
</tbody>
</table>
Building Surgical Terms

- Dermatoplasty
  - dermat/o + -plasty
    - Surgical repair of the skin
- Onychectomy
  - onych/o + -ectomy
    - Surgical removal of a nail
- Rhytidectomy
  - rhytid/o + -ectomy
    - Surgical removal of wrinkles
## Integumentary Pharmacology

<table>
<thead>
<tr>
<th>Category</th>
<th>Function</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>anesthetic</strong></td>
<td>deaden pain</td>
<td>Xylocaine, Novocain</td>
</tr>
<tr>
<td><strong>antibiotic</strong></td>
<td>kill bacteria</td>
<td>Neosporin</td>
</tr>
<tr>
<td><strong>antifungal</strong></td>
<td>kill fungi</td>
<td>Monistat, Lotrimin</td>
</tr>
<tr>
<td><strong>antiparasitic</strong></td>
<td>kill mites or lice</td>
<td>Kwell, Nix</td>
</tr>
</tbody>
</table>
## Integumentary Pharmacology

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>antipruritic</td>
<td>reduce severe itching</td>
<td>Benadryl, Caladryl</td>
</tr>
<tr>
<td>antiseptic</td>
<td>kill bacteria</td>
<td>isopropyl alcohol, hydrogen peroxide</td>
</tr>
<tr>
<td>anti-viral</td>
<td>treat herpes simplex infection</td>
<td>Valtrex, Famvir, Zovirax</td>
</tr>
<tr>
<td>corticosteroid cream</td>
<td>powerful anti-inflammatory</td>
<td>Cortaid; Kenalog</td>
</tr>
</tbody>
</table>
# Integumentary Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCC</td>
<td>basal cell carcinoma</td>
</tr>
<tr>
<td>BX, bx</td>
<td>biopsy</td>
</tr>
<tr>
<td>C&amp;S</td>
<td>culture and sensitivity</td>
</tr>
<tr>
<td>decub</td>
<td>decubitus ulcer</td>
</tr>
<tr>
<td>Derm, derm</td>
<td>dermatology</td>
</tr>
<tr>
<td>FS</td>
<td>frozen section</td>
</tr>
</tbody>
</table>
# Integumentary Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSV</td>
<td>herpes simplex virus</td>
</tr>
<tr>
<td>I&amp;D</td>
<td>incision and drainage</td>
</tr>
<tr>
<td>ID</td>
<td>intradermal</td>
</tr>
<tr>
<td>MM</td>
<td>malignant melanoma</td>
</tr>
<tr>
<td>SCC</td>
<td>squamous cell carcinoma</td>
</tr>
<tr>
<td>SG</td>
<td>skin graft</td>
</tr>
</tbody>
</table>
## Integumentary Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLE</td>
<td>systemic lupus erythematosus</td>
</tr>
<tr>
<td>STSG</td>
<td>split thickness skin graft</td>
</tr>
<tr>
<td>subcu, SC, sc, subq</td>
<td>subcutaneous</td>
</tr>
<tr>
<td>UV</td>
<td>ultraviolet</td>
</tr>
</tbody>
</table>
Combining Forms Match Up

1. albin/o → a. red
2. cyan/o → b. blue
3. erythr/o → c. white
4. melan/o → d. black
5. phot/o → e. light
Classroom Response System
Pop Question 1

Which is NOT a layer of the skin?

A. Subcutaneous
B. Epidermis
C. Epicutaneous
D. Dermis
Answer 1

Which is NOT a layer of the skin?

A. Subcutaneous
B. Epidermis
C. Epicutaneous
D. Dermis
Pop Question 2

The skin aids in temperature control.

A. True
B. False
Answer 2

The skin aids in temperature control.

A. True
B. False
Pop Question 3

The pigment that gives skin and hair its color is called:

A. Keratin
B. Melanin
C. Sebum
D. Adipose
The pigment that gives skin and hair its color is called:

A. Keratin

B. **Melanin**

C. Sebum

D. Adipose
Pop Question 4

What is the purpose of sebum?

A. Cool the skin
B. Heal skin
C. Give skin its color
D. Lubricate the skin
Answer 4

What is the purpose of sebum?

A. Cool the skin
B. Heal skin
C. Give skin its color
D. Lubricate the skin
Pop Question 5

The sweat glands in the underarm area are called _______________ glands.

A. Sebaceous
B. Apocrine
C. Sudoriferous
D. Perspiration
Answer 5

The sweat glands in the underarm area are called ___________ glands.

A. Sebaceous
B. Apocrine
C. Sudoriferous
D. Perspiration
Pop Question 6

Which anatomical term means “pertaining to upon the skin”?

A. Hypodermic  
B. Intradermal  
C. Epidermal  
D. Subcutaneous
Which anatomical term means “pertaining to upon the skin”?

A. Hypodermic
B. Intradermal
C. Epidermal
D. Subcutaneous
Pop Question 7

Which term describes abnormally dry skin?

A. Xeroderma
B. Leukoderma
C. Pyoderma
D. Ichthyderma
Which term describes abnormally dry skin?

A. Xeroderma
B. Leukoderma
C. Pyoderma
D. Ichthyoderma
Pop Question 8

Which term means a scar?

A. Comedo
B. Eschar
C. Cicatrix
D. Nevus
Answer 8

Which term means a scar?

A. Comedo
B. Eschar
C. Cicatrix
D. Nevus
Pop Question 9

Which term refers to a black-and-blue bruise?

A. Ecchymosis
B. Purpura
C. Cyanosis
D. Petechiae
Which term refers to a black-and-blue bruise?

A. Ecchymosis  
B. Purpura  
C. Cyanosis  
D. Petechiae
Pop Question 10

Which term refers to severe itching?

A. Pallor
B. Pruritus
C. Purulent
D. Purpura
Which term refers to severe itching?

A. Pallor
B. **Pruritus**
C. Purulent
D. Purpura
A crack-like lesion of the skin is called a(n):  
A. Macule  
B. Laceration  
C. Fissure  
D. Ulcer
A crack-like lesion of the skin is called a(n):

A. Macule
B. Laceration
C. Fissure
D. Ulcer
Pop Question 12

A lice infestation is called:

A. Pediculosis
B. Eczema
C. Scabies
D. Cellulitis
Answer 12

A lice infestation is called:

A. **Pediculosis**
B. Eczema
C. Scabies
D. Cellulitis
Pop Question 13

The Rule of Nines is used to determine:

A. Severity of an infection
B. Size of a skin cancer
C. Extent of a burn
D. Depth of an ulcer
Answer 13

The Rule of Nines is used to determine:

A. Severity of an infection
B. Size of a skin cancer
C. Extent of a burn
D. Depth of an ulcer
Pop Question 14

Another name for tinea capitis is:

A. Chickenpox
B. Ringworm
C. German measles
D. Athlete’s foot
Another name for tinea capitis is:

A. Chicken pox
B. Ringworm
C. German measles
D. Athlete’s foot
Pop Question 15

Which of the following is a bacterial infection?

A. Rubella  
B. Varicella  
C. Tinea pedis  
D. Furuncle
Which of the following is a bacterial infection?

A. Rubella  
B. Varicella  
C. Tinea pedis  
D. Furuncle
Pop Question 16

Which of the following involves removing a piece of tissue for microscopic examination?

A. Biopsy
B. Onychia
C. Cauterization
D. Plication
Answer 16

Which of the following involves removing a piece of tissue for microscopic examination?

A. Biopsy
B. Onychia
C. Cauterization
D. Plication
Pop Question 17

Which term refers to the removal of damaged tissue from a wound?

A. Cauterization
B. Debridement
C. Dermabrasion
D. Electrolysis
Answer 17

Which term refers to the removal of damaged tissue from a wound?

A. Cauterization
B. Debridement
C. Dermabrasion
D. Electrolysis
Pop Question 18

Which type of skin graft comes from the person’s own body?

A. Allograft
B. Xenograft
C. Heterograft
D. Autograft
Which type of skin graft comes from the person’s own body?

A. Allograft
B. Xenograft
C. Heterograft
D. Autograft
Pop Question 19

Which medication is used to kill bacteria?

A. Anesthetics  
B. Antipruritics  
C. Antibiotics  
D. Corticosteroid creams
Answer 19

Which medication is used to kill bacteria?

A. Anesthetics
B. Antipruritics
C. Antibiotics
D. Corticosteroid creams
Which abbreviation refers to a laboratory test?

A. C&S  
B. ID  
C. SG  
D. BCC
Which abbreviation refers to a laboratory test?

A. C&S
B. ID
C. SG
D. BCC