Lecture Outline: Tissues & Skin
[Chapters 5, 6, 12 (p. 446-447)]

Chapter 5: Tissues

Def.: Tissue =

Four basic tissue types
1. 
2. 
3. 
4. 

Epithelial Tissues

General Characteristics
- line body cavities, cover organs and ______
- 
- 
- 
- classified according to _____________
  and _____________

Classification based on cell shape:
  
  
  

# of cell layers:
  
  
  
Simple squamous epithelium
  o single layer of flattened cells
  o line alveoli
  o line blood vessels
  o serous membranes
Bio 103 Tissues and Skin

Simple cuboidal epithelium
  o single layer of cube-shaped cells
  o
  o

Simple columnar epithelium
  o single layer of elongated cells
  o may possess __________, __________, and /or __________
  o

Pseudostratified ciliated columnar epithelium (PSCCE)
  o
  o
  o

Stratified squamous epithelium
  o top layer is flat cells
  o can accumulate _________
  o
  o

Stratified cuboidal epithelium
  o 2-3 layers of cubed-shaped cells
  o

Stratified columnar epithelium
  o top layer elongated cells
  o deeper layers are cuboidal
  o

Transitional epithelium
  o stratified
  o
  o

Glandular Epithelium
  o composed of specialized cells that ________________

Endocrine glands:
  -
  -
Exocrine glands -
  Unicellular

  Multicellular

Types of Glandular Secretions (Exocrine)

  Merocrine
  - fluid product

  Apocrine
  - part of a cell released

  Holocrine
  - whole cell released

Endocrine glands:
  
  
Ex.

Types of Membranes

  Serous
  - line body cavities that ________________
  - reduce __________
  - thoracic and abdominal cavities
  - secrete __________

  Cutaneous
  
  
Mucous
  - line tubes and organs that ________________
  - lining of ________________
  - secrete __________
Synovial

Connective Tissues
General Characteristics:
- Functions
  - connect, support, protect
  - lots of matrix
  - usually vascular

Connective Tissue Cells:
- Fibroblasts
- Mast cells
- Macrophages

Connective Tissue Fibers:
- Collagen
- Reticular fibers
- Elastic fibers

Connective tissue proper:
- loose CT
- adipose
- reticular
- dense

Specialized CT:
- cartilage
- bone
- blood
Bio 103 Tissues and Skin

Loose CT (areolar)
- mostly fibroblasts

Adipose tissue
- adipocytes store fat

Reticular CT
- reticular fibers
- supports organ walls

Dense CT
- collagen and elastic fibers
- tendons, ligaments (__________)
- dermis (______________)

Bone (osseous) tissue
- hard matrix
- supports and protects

Cartilage
- rigid matrix
- chondrocytes in __________
Bio 103 Tissues and Skin

- 3 types:

**Hyaline cartilage:**

**Elastic cartilage:**

**Fibrocartilage (fibrous):**

**Blood**
- fluid matrix ( )
- formed elements (____________, ____________, ____________)
  
  
**Muscle Tissue**
- General characteristics:
  
  
  
  3 types:

  **Skeletal muscle:**

  **Smooth muscle:**

  **Cardiac muscle:**
Nervous Tissue
  o found in
    o main cells are ____________
    o support cells are ________

Clinical Application
  Cancer

Liver Fibrosis

Heart Failure and Atherosclerosis

Collagen Disorders:
  Chondrodysplasia
    - collagen chains too wide
    - stunted growth (epiphyseal (growth) plates do not produce bone normally)
    - deformed joints

  Marfan syndrome
    - Not enough fibrillin (CT protein)
    - Long limbs, sunken chest, elongated fingers, weak aorta
    - Famous People with Marfans
Chapter 6: **Skin and Integumentary System**

**Functions:**
- Protection
- Retards water loss
- Regulates ____________
- Contains sensory receptors
- Synthesis (   )
- Excretion

**Regions of the Skin**
- **Epidermis**
- **Dermis**

  Subcutaneous region (hypodermis)
  -
  -
  - loose CT
  -
  -

  **Epidermis**
  -
  -
  - thickest on palms and soles
  - melanocytes
  -

  **Layers of Epidermis**
  - Stratum corneum
  - Stratum lucidum
  - Stratum granulosum
  - Stratum spinosum
  - Stratum basale
Bio 103 Tissues and Skin

- **Dermis**
  - contains dermal papillae

**Hair Follicles**

- tube-like depression
- hair shaft
- hair root
- hair papillae
- melanin
  - arrector pili muscle

**Nails**

- nail plate
- nail bed
- lunula

**Sebaceous Glands**

- associated with hair follicles
- secretes _________
Sweat (sudoriferous) Glands

- originate in dermis or hypodermis
- eccrine
- apocrine

Modified sweat glands:
- ceruminous
- mammary

Sense Receptors (Chap. 12)

Exteroreceptors
- Free nerve endings
- Tactile (Meissner's) corpuscles
- Lamellated (Pacinian) corpuscles

Regulation of Body Temperature

To lower body temperature:

- [ ]

To increase body temperature:

- [ ]
Problems in Temperature Regulation

Hyperthermia (elevated body temperature)
  • exposure to sustained high temperatures
    Treatment: administer liquids, cool the skin
  • fever
    Treatment: antipyretics (ibuprofen, acetaminophen, aspirin)

Hypothermia
  •
  •

**Skin Color**

  Genetic Factors

  Environmental Factors

  Physiologic Factors
Life Span Changes

Clinical Application