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**
- single layer of flattened cells
- line alveoli
- line blood vessels
- serous membranes
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:
  
  

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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
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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 _____________
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- 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:**
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Nervous Tissue
- found in
  - main cells are ___________
  - 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
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- **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