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

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

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

Simple columnar epithelium
- single layer of elongated cells
- may possess _____, _____, and /or _____
-

Pseudostratified ciliated columnar epithelium (PSCCE)
-
-
-

Stratified squamous epithelium
- top layer is flat cells
- can accumulate _____
-
-

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

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

Transitional epithelium
- stratified
-
-

Glandular Epithelium
- 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

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 _____

- 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

- 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

- **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

a. Free nerve endings

b. Tactile (Meissner's) corpuscles

c. 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