

## Chapter 23

### Body Structure and Skin

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### Body Cells

- Cell is basic unit of all life.
- Humans are made up of trillions of cells.
- Cells perform specific functions
- Size and shape vary according to function.
- Can't see without a microscope.
- Constantly growing and reproducing.
- Parts include **cell membrane** flexible, allows solution to move in and out, keeps cell intact.
- **Cytoplasm** main body, activities occur here.
- **Nucleus** control center, reproduction, chromosomes, some cells have several nuclei, and some none.
- Skeletal cells have several, and mature RBC have none.

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### Body Tissues

- Cells that work together to perform a function.
- Four types of tissues:
  1. Epithelial - forms protective coverings (skin), lines body openings (resp) and forms glands.
  2. Connective – Connects tissues to one another, bones, fat, and cartilage and provides immunity.
  3. Muscle – allows contraction and relaxation
  4. Nerve – allows for conduction of impulses and coordinates body activities.

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**Body Organs, systems, cavities**

- Organs made up of several kinds of tissues.
- System - a group of organs that work together.
- Cavity – spaces that contain internal organs like:
  - cranial**-brain
  - thoracic** – heart, lungs, esophagus
  - abdominal** – stomach, intestines, kidneys, liver, pancreas, gallbladder, spleen.
  - pelvic** – bladder, urethra, ureters, reproductive organ
  - spinal** – spinal cord

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**Body Directional Terms**

- **Superior** – above, eye is superior to mouth
- **Inferior** (caudal) – below, mouth is inferior to nose
- **Anterior** (ventral) – in front of (ribs anterior to shoulder.
- **Posterior** (dorsal) in back of (shoulder blade is posterior to ribs)
- **Lateral** to the side, little toe lateral to big toe
- **Medial** – middle, brachial artery is medial to thumb
- **Abduction** - away from
- **Adduction** - towards

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**The Skin**

- Largest organ of body.
- Protects underlying tissues, regulates temp, sensory.
- Outer layer epidermis, sheds old cells, reproduces new.
- Dermis under epidermis connective tissue, contains blood vessels, nerve endings, and sweat and oil glands, hair follicles.
- Subcutaneous- thick, fat containing, below dermis, connects skin to surface muscles.

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### Diseases of the skin (Cancer)

- Cancer – unregulated new growth of abnormal cells occur until a mass (tumor) or neoplasm forms.
- Tumor interrupts body functions and interferes food and blood supply to normal cells.
- Cancerous tumors are malignant and become progressively worse.
- Metastasize is to spread from one organ to another through blood or lymph.
- Some examples of skin cancers include, melanoma, squamous cell (Bowen’s disease, squamous *in situ* ) basal cell, Kaposi’s sarcoma, Leukoplakia.

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### Other Skin Disorders

- Burns – 1<sup>st</sup> degree, epidermis, red skin, 2<sup>nd</sup> degree involves the dermis also, blisters, 3<sup>rd</sup> degree involves the subcutaneous too, blackened skin.
- Abscesses – cavity containing pus, bodies attempt to wall off the infection and keep it from spreading.
- Lacerations – wound with tearing of body tissue.
- Gangrene – death of body tissue from lack of blood supply, or infection. Skin becomes black and necrotic, malodorous. Surgical debridement is required.
- Infection – may be caused by viruses, bacteria, fungi

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### Homework

- Complete Review Questions and Exercises in book.
- Complete Take Home Test
- Both due next week

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