GNM 1st year

Tissues of Body : Unit 2

- Tissue is a group of similar cells, usually with similar origin that is specialised for particular function.
- Classification of body tissues :- epithelial
  - connective
  - muscular
  - Nervous

⇒ Epithelial Tissue :

- Epithelial tissue forms the innermost & outermost surfaces of body structures & forms glands.
- Epithelium consists of cells with little extracellular material.
- Epithelium is arranged in sheets & attached to basement membrane.
- Epithelial layers can be - simple (one layer)
  - stratified (several layers)

These cell shapes may be - squamous (flat)
- cuboidal (cube like)
- columnar (rectangular)

simple squamous epithelium is found parts where filteration & diffusion are pre-dominant

simple cuboidal epithelium functions in secreations & absorption.

Non-ciliated simple columnar epithelium lines most of GI tract. cells containing microvilli perform absorption, goblet cells secrete mucus.

ciliated simple columnar epithelium found in few parts of upper respiratory track. ~~cells containing~~.

- Stratified squamous epithelium has non-keratinized that lines the mouth, keratinized variety forms epidermis of skin.
- Stratified cuboidal epithelium found in sweat glands & a portion of male urethra
- Stratified columnar epithelium is found in portion of male urethra.
- A gland is single cell or group of epithelial cells adapted for secreation
- Endocrine Glands secrete hormones into interstitial fluid & into the blood
- Exocrine glands secrete hormones into ducts.
- Connective Tissues :

- It is most abundant body tissue
- Fibres provide strength & support
- They are of 3types :- collagen fibres
  - elastic fibres
  - reticular fibres
- collagen fibres are found in bone, tendons & ligaments
- Elastic fibres are found in skin, blood vessels & lungs
- Reticular fibres found around fat cells, nerve fibres & skeletal & smooth muscle cells.
- Connective Tissue divided into several types : Loose or dense connective tissue, cartilage, bone tissue & liquid connective tissues.
- Loose connective tissue includes areolar connective tissue, adipose tissue & rectricular connective tissue
- Areolar connective tissue is found in subcutaneous layer, in mucous membrane & around blood vessels, nerves & body organ.

- Adipose Tissue consists of adipocytes (stores fat) & is found in subcutaneous layer & in yellow bone marrow.
- Bone Adipose Tissue (BAT) generates heat
- Recticular connective Tissue is found in liver, spleen & lymph nodes
- Dense connective Tissue includes dense regular & dense irregular connective tissues & elastic connective tissue.
- ~~Dense~~ Elastic connective tissue is found in walls of large arteries, lungs, trachea & brachial tubes.

→ Cartilages

- cartilages contains collagen & elastic fibres
- Hyaline cartilages is found in ends of bones in nose & in respiratory structures
- Hyaline cartilages is flexible, allows movement & provide support
- Fibro cartilages in symphysis pubis, intervertebral disc, knee joint
- Elastic cartilages in epiglottis, auditary tubes & external ear contains thread like elastic fibres.
- Cartilage enlarges by interstitial growth

→ Bones:

- Bone consists of matrix of mineral salts & collagen fibres that contribute to hardness of bone.
- Osteocytes that are located in lacunae.
- It supports, protects, provides a surface area of muscle attachment, helps provide movement.

→ Liquid connective Tissues :

- Blood consists of blood plasma & formed elements.
- Blood cells transport. O_2 & CO_2, carry on phagocytosis, provide immunity & blood clotting.
- lymph (extra-cellular fluid flowing in lymphatic vessels) consists of a clear fluid similar to blood plasma.

* Body Cavities :

- Body cavities are spaces within the body that help protect, separate and support internal organs.
- Bones muscles, ligament & other structures separate the various body cavities from one another.

1.) Cranial cavity :

. It is formed by cranial bones & contain brain

2.) Vertebral cavity :

- It is formed by vertebral column & contains spinal cord & the beginning of spinal nerves.
- There are 3 protective layers or meninges line the cranial cavity & vertebral cavity.

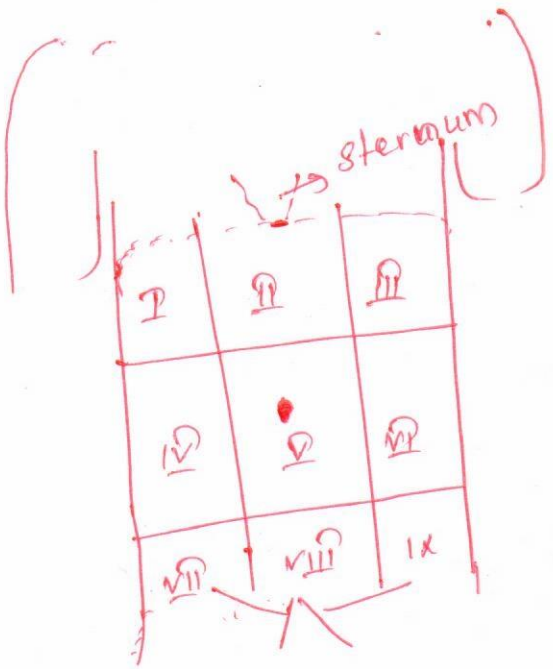
3.) Thoracic cavity :

- It is formed by ribs, the muscles of chest, sternum & thoracic portion of vertebral column.
- It contains pleural & pericardial activities & mediastinum.

4.) Abdomino-pelvic cavity :

- It extends from diaphragm to the groin & is encircled by abdominal wall; the bones & the muscles.
- Abdominal cavity : - It contains stomach, spleen, liver, gall bladder small intestine & large portion of large intestine
- Pelvic cavity : It contains urinary bladder, portions of large intestines. & internal organs of reproductive organs.
- organs inside thoracic & abdomino-pelvic cavities is known viscera.

* Abdomino-pelvic regions & Quadrants



I : right hypochondraic region

II : epigastric regions.

III : Left hypochondriac region

IV : Right lumbar region

V : umbilical region

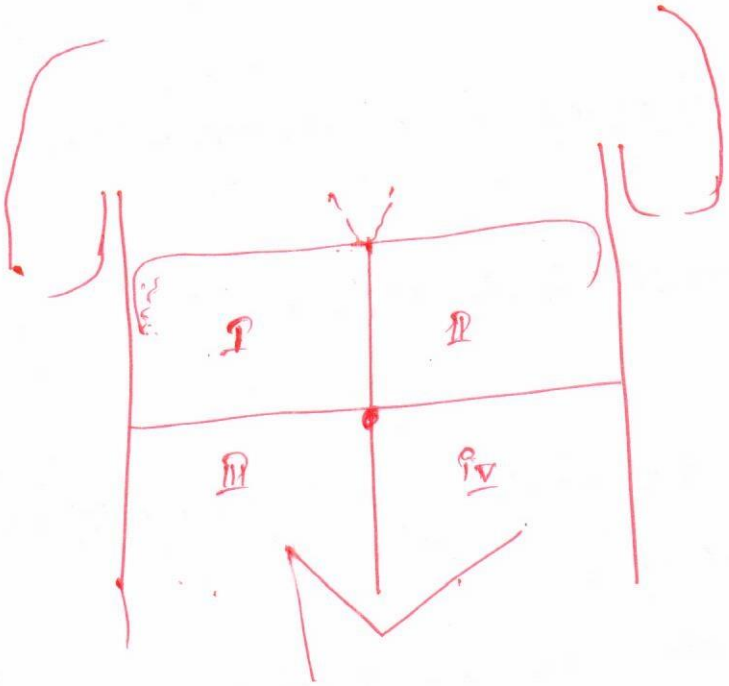
VI : Left lumbar region

VII : Right iliac region

VIII) Hypogastric region

IX : Left iliac region.

Fig: Abdominopelvic regions



I = Right upper Quadrant [RUQ]

II = Left upper Quadrant [LUQ]

III = Right lower Quadrant [RLQ]

iv = Left Lower Quadrant [LLQ

Fig: Abdomino pelvic Quadrants