

HMS2408

Basic Health Sciences

CAPT. DR. PONGSAK JAROENNGARMSAMER

MEDICAL AND PUBLIC HEALTH SECRETARY

ศัพท์พื้นฐาน

- การแพทย์
- พยาบาลและ
- สาธารณสุข

นายแพทย์พงษ์ศักดิ์ เจริญงามเสมอ

Line ID: online1



Chapter 1 :

What is the “SCIENCES”?

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- ▶ Sciences is the way of logical thinking with provable true.
 - ▶ How to be a scientist?
 - ▶ What is the health sciences?

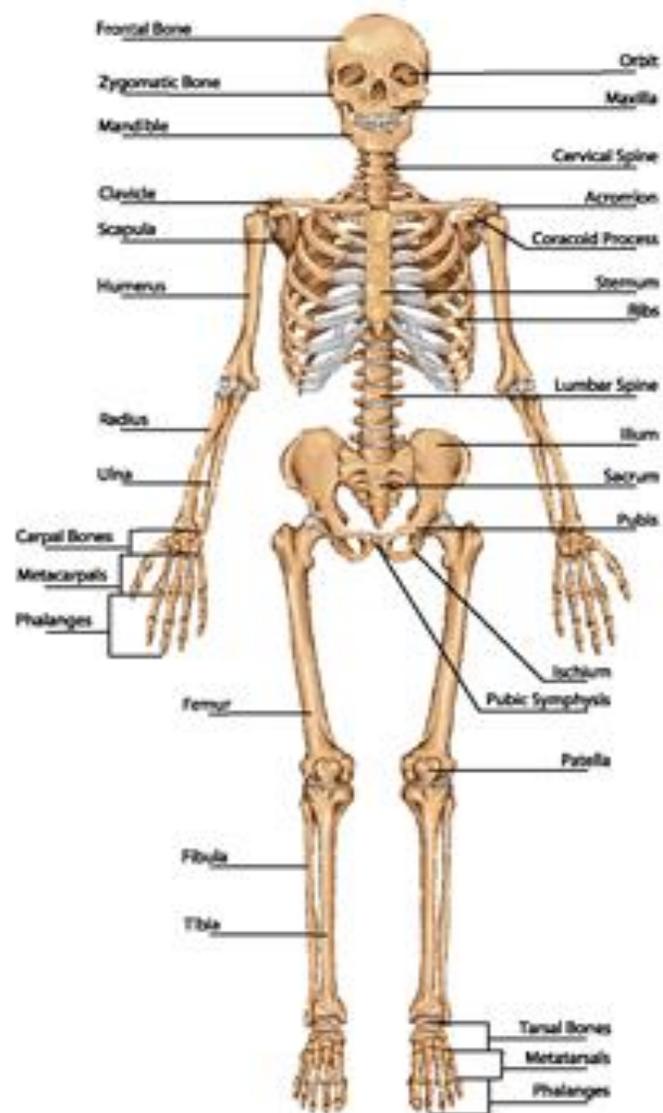
- 
- ▶ Basic science and health science
 - ▶ The research about health sciences
 - ▶ Back to the basic

Basic anatomy

- ▶ How to prepare soft cadaver

- ▶ Musculoskeletal system

composed of 206 bones as multifunction





▶ Head

▶ Covered with “SCALP” as skin, (dense) connective tissue, aponeurosis, loose connective tissue and periosteal

▶ Skull

- 
- ▶ Frontal bone and sagittal suture
 - ▶ Mandibular bone or mandible
 - ▶ The joint at temporal bone is temporo-mandibular joint

- 
- ▶ Maxillary bone
 - ▶ Occipital bone
 - ▶ Parietal bone
 - ▶ Occipital suture and posterior fontanel

- 
- ▶ Parietal bone
 - ▶ Sagittal suture is the suture in the middle
 - ▶ Coronal suture and anterior fontanel
 - ▶



▶ Temporal bone

▶ Pterion

▶ Neck คอ

C1 is atlas

C2 is axis

Then C3-C7

▶ Intervertebral disc and spinal cord with spinal nerve

▶ Cricoid cartilage



▶ Chest, Thoracic

Thoracic spine T1 to T12

Ribs and sternum to composed as chest wall

Rib 1-7 connected to sternum called true ribs

Ribs 8-10 are connected to rib 7 called false ribs

Ribs 11 and 12 are floating ribs

▶ Xiphoid bone or xiphoid process

Clavicle

Connected with sternum by sternoclavicular joint

Scapular bone at the back

Lumbar spine and sacrum

Pelvis composed with ilium or iliac bone

Symphysis pubis or pubic symphysis is cartilage

Sacroiliac joint and Sacrococcygeal joint with coccyx



- ▶ Arm

- ▶ Humerus is comparable with femur

- ▶ Radius and Ulnar are compared with tibia and fibular





- ▶ Hand

- ▶ Wrist or carpal bones 8 pieces as

- ▶ trapezium, trapezoid, capitate, hammate, scaphoid, lunate, fusiform and triquitum

- ▶ Metacarpal bones and phalanges



▶ Leg

▶ Femur from hip joint to knee

▶ Head of femur in acetabulum as a rotator

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- ▶ Knee with patellar bone in the tendon of quadriceps femoris
 - ▶ Tibia and medial malleolus
 - ▶ Fibular bone and lateral malleolus



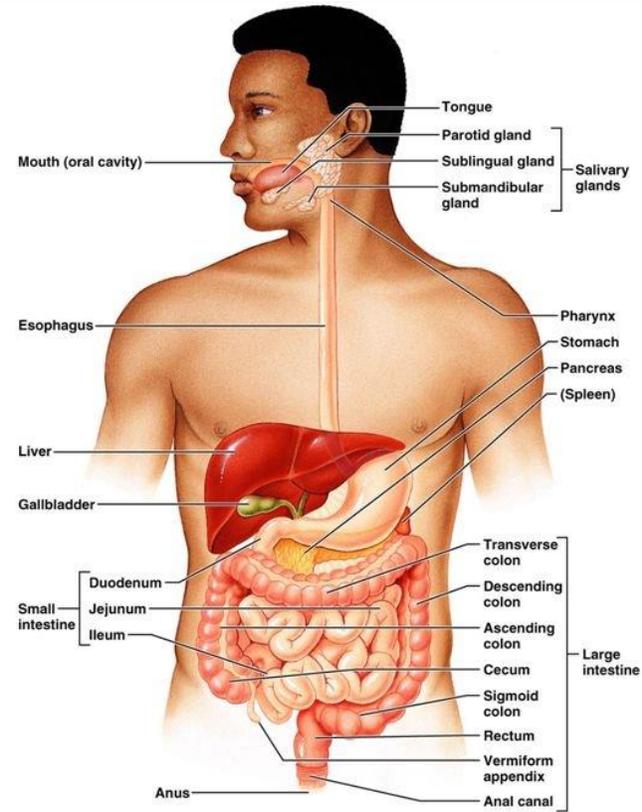
▶ Foot

Tarsus 7 pieces as

Talus, calcaneus, cuboid, navicular and 3 cuneiform

Metatarsus and phalanges

Digestive system



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- ▶ Mouth or oral cavity and buccal mucosa
 - ▶ Tongue
 - ▶ Tooth as 20 milk teeth
 - ▶ 32 teeth as incisor, canine, molar

- 
- ▶ Gum
 - ▶ Palate as hard palate and soft palate

 - ▶ Uvula
 - ▶ Tonsil
 - ▶ Acute tonsillitis

- 
- ▶ Salivary gland
 - ▶ Parotid gland
 - ▶ Submandibular gland
 - ▶ Sublingual gland
 - ▶ Pharynx

- ▶ Esophagus
- ▶ Peristalsis movement
- ▶ Cardiac orifice



▶ Stomach

▶ Lesser curvature and greater curvature

- 
- ▶ 1. Cardiac part or Cardia from esophagus
 - ▶ 2. Fundus
 - ▶ 3. Body
 - ▶ 4. Pyloric part with pyloric sphincter

- 
- ▶ Small intestine are divided as duodenum, jejunum and ileum
 - ▶ Duodenum is the retroperitoneal organ
 - ▶ 12 inches



▶ Jejunum

▶ Ileum

▶ Large intestine as cecum, ascending colon, transverse colon, descending colon, sigmoid colon, rectum and anal canal

- 
- ▶ Cecum
 - ▶ 5-7 cm
 - ▶ Ileocecal valve
 - ▶ Vermiform appendix
 - ▶ Mc Burney's point is the line from anterior superior iliac spine to umbilicus on the outer third
 - ▶ Tenderness and rebound tenderness of acute appendicitis

- 
- ▶ Ascending colon and hepatic flexor
 - ▶ Transverse colon and splenic flexor
 - ▶ Descending colon and sigmoid colon



▶ Sigmoid colon

▶ Rectum

▶ Anal canal or anus

- ▶ Liver beneath the diaphragm
- ▶ Right lobe and Left lobe
- ▶ Gall bladder



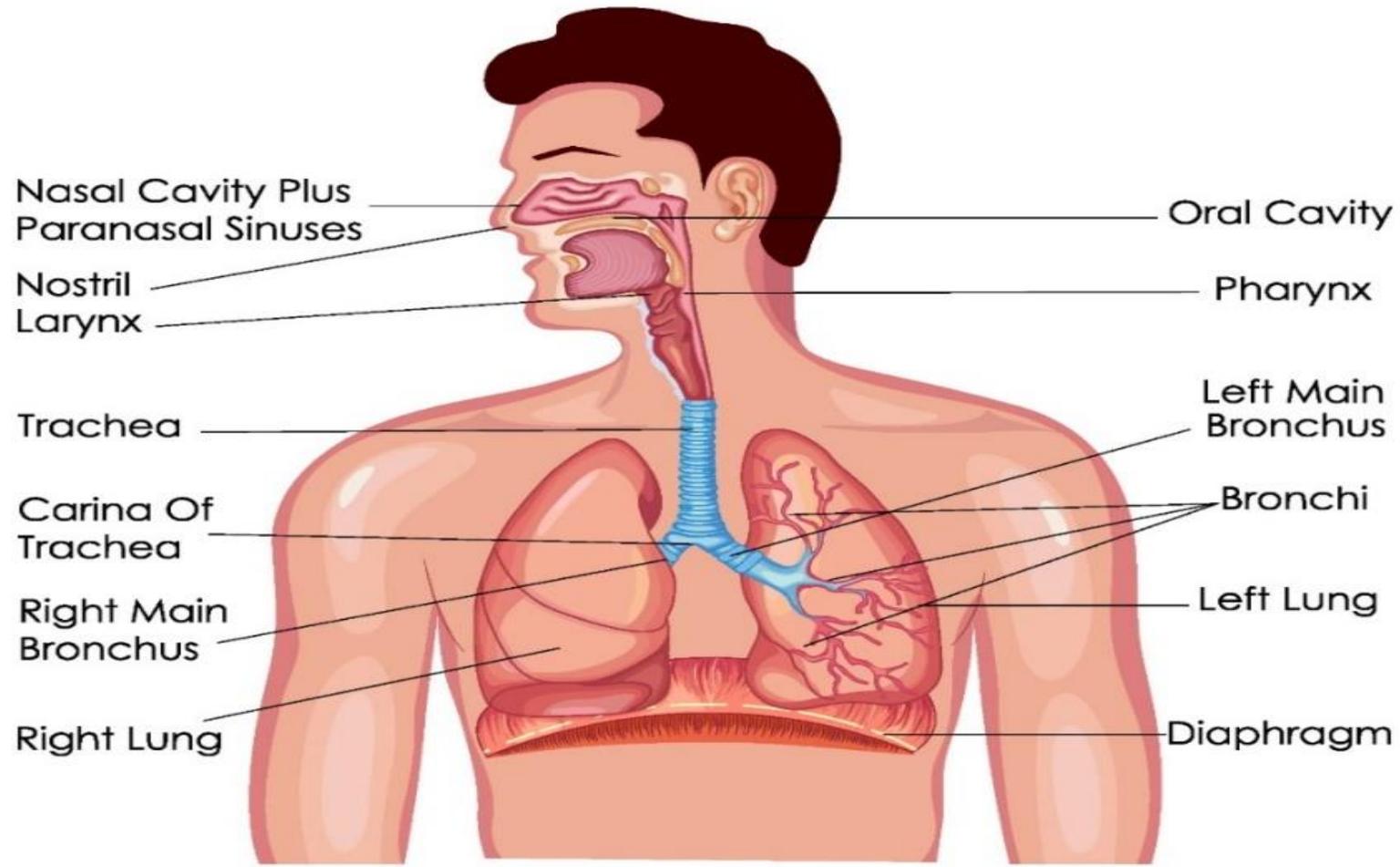
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- ▶ Pancreas is the retroperitoneal organ
 - ▶ Head of pancreas is an endocrine producing insulin and glucagon

Respiratory system

- ▶ Nasal orifice and nasal septum
- ▶ Nasal cavity
- ▶ Sinus as frontal sinus, ethmoidal sinus, sphenoidal sinus and maxillary sinus

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- ▶ Nasal turbinate
 - ▶ Pharynx and Larynx
 - ▶ Epiglottis and vocal cord

Respiratory System

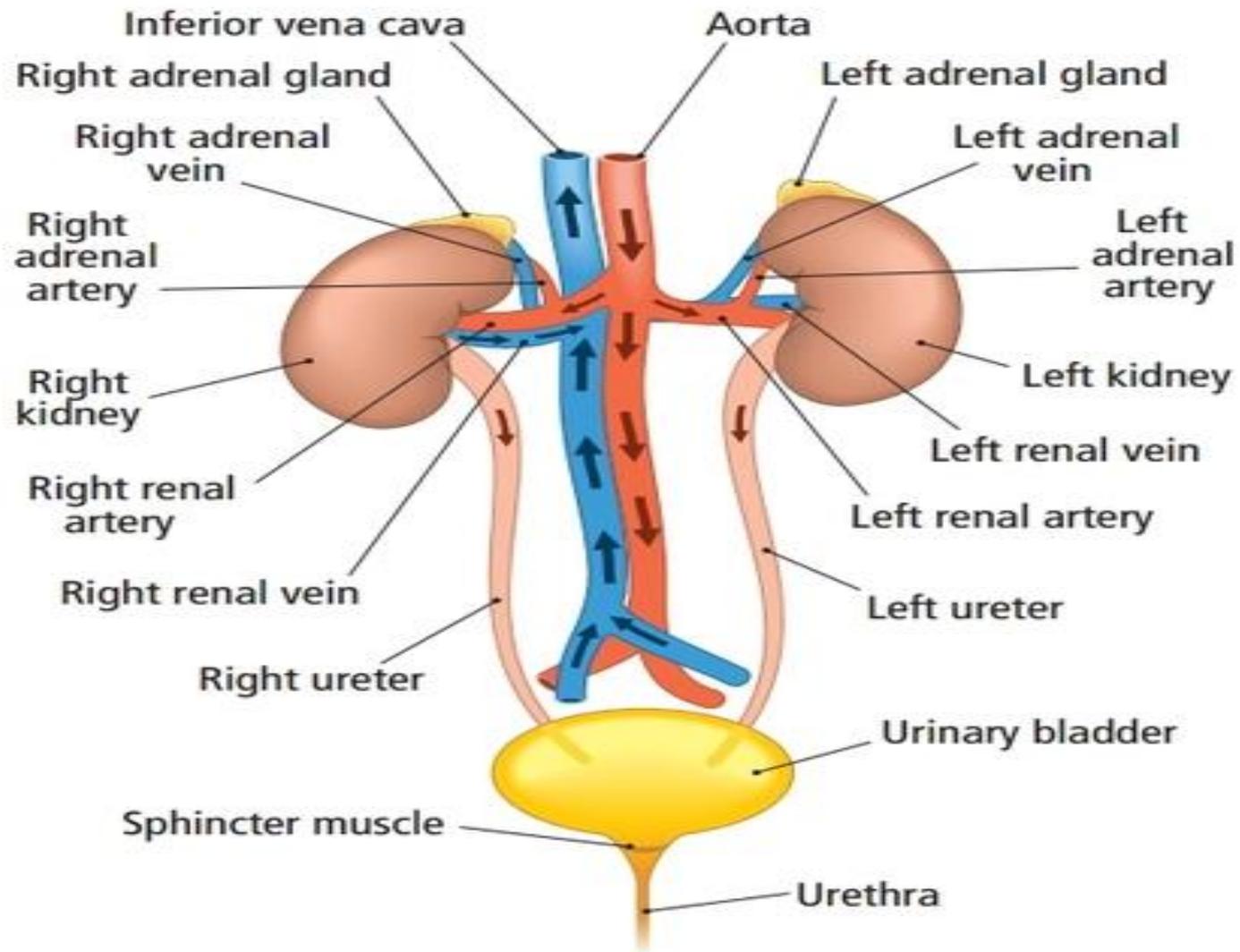


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- ▶ Trachea behind sternum has bifurcation at carina
 - ▶ Bronchus and bronchiole
 - ▶ Alveoli
 - ▶ Lung as pulmonary system
 - ▶ 3 lobes on the right and 2 on the left

- 
- ▶ Pleura and pleural cavity
 - ▶ Anti-surfactant
 - ▶ Diaphragm in between the thoracic cavity and abdominal cavity

Urinary system

▶ Kidney



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- ▶ Kidney is the retroperitoneal organ
 - ▶ From T12 to L3
 - ▶ Renal artery to glomerulus
 - ▶ Renal pelvis to ureter

- ▶ Adrenal gland is an endocrine producing adrenaline, noradrenaline and others steroid
- ▶ Ureter is the retroperitoneal organ
- ▶ Bladder trigone

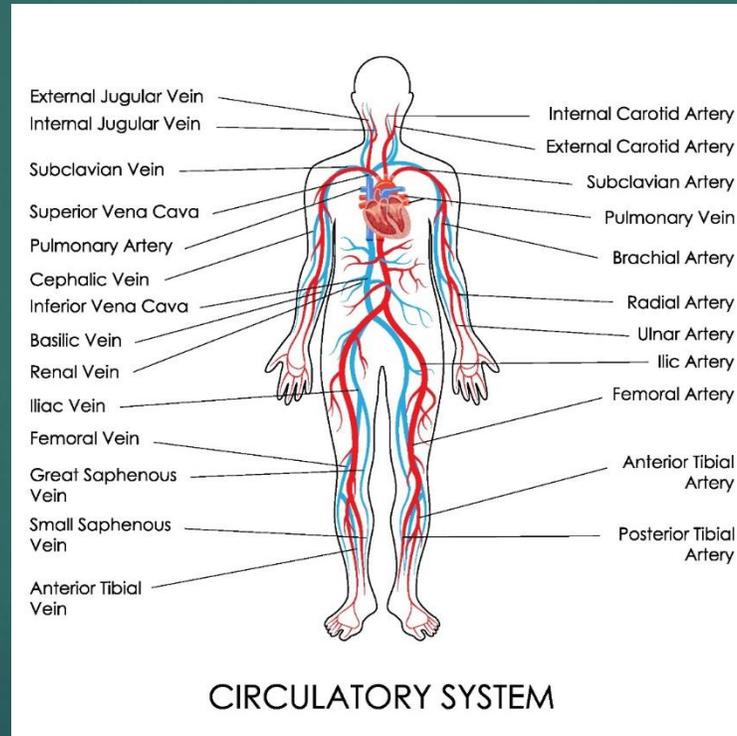


▶ Urinary bladder

▶ Urethra

▶ Urethral opening

Cardiovascular system



- 
- ▶ Heart 4 chambers
 - ▶ Heart valve and septum
 - ▶ 2 Atrium and 2 ventricle

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- ▶ Right atrium from superior vena cava and inferior vena cava via tricuspid valve
 - ▶ Right ventricle to pulmonary artery via pulmonary valve or semilunar valve



▶ Left atrium by pulmonary vein via mitral valve

▶ Left ventricle to aortic valve and aorta

- 
- ▶ Aorta
 - ▶ Ascending aorta
 - ▶ Arch of aorta
 - ▶ Descending aorta as thoracic aorta and abdominal aorta

- 
- ▶ Carotid artery
 - ▶ Artery
 - ▶ Arteriole
 - ▶ Capillary
 - ▶ Jugular vein
 - ▶ Superior vena cava



- ▶ Inferior vena cava

- ▶ Vein

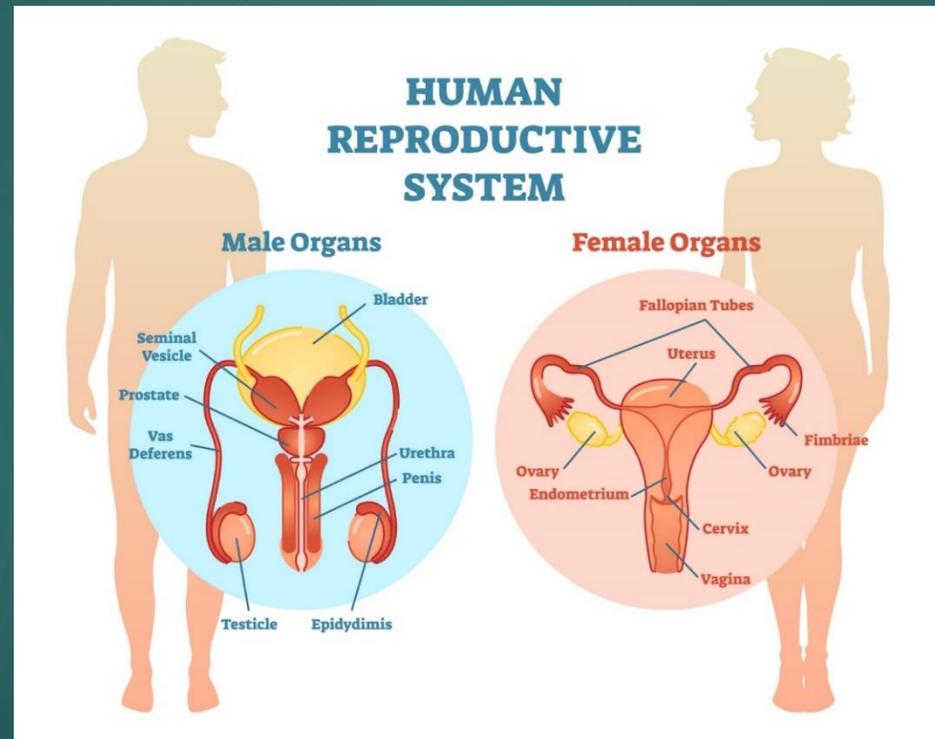
- ▶ Bone marrow



▶ Spleen

▶ Splenectomy

Reproductive system





▶ Anus

▶ Bladder



- 
- ▶ Cervix
 - ▶ Adnexa
 - ▶ Fallopian tube
 - ▶ Glans penis and prepuce
 - ▶ Labia majora
 - ▶ Labia minora
 - ▶ Mons pubis and pubic hair

- ▶ Ovary
- ▶ Estrogen and progesterone
- ▶ Penis
- ▶ Prepuce
- ▶ Circumcision



▶ Pubic hair

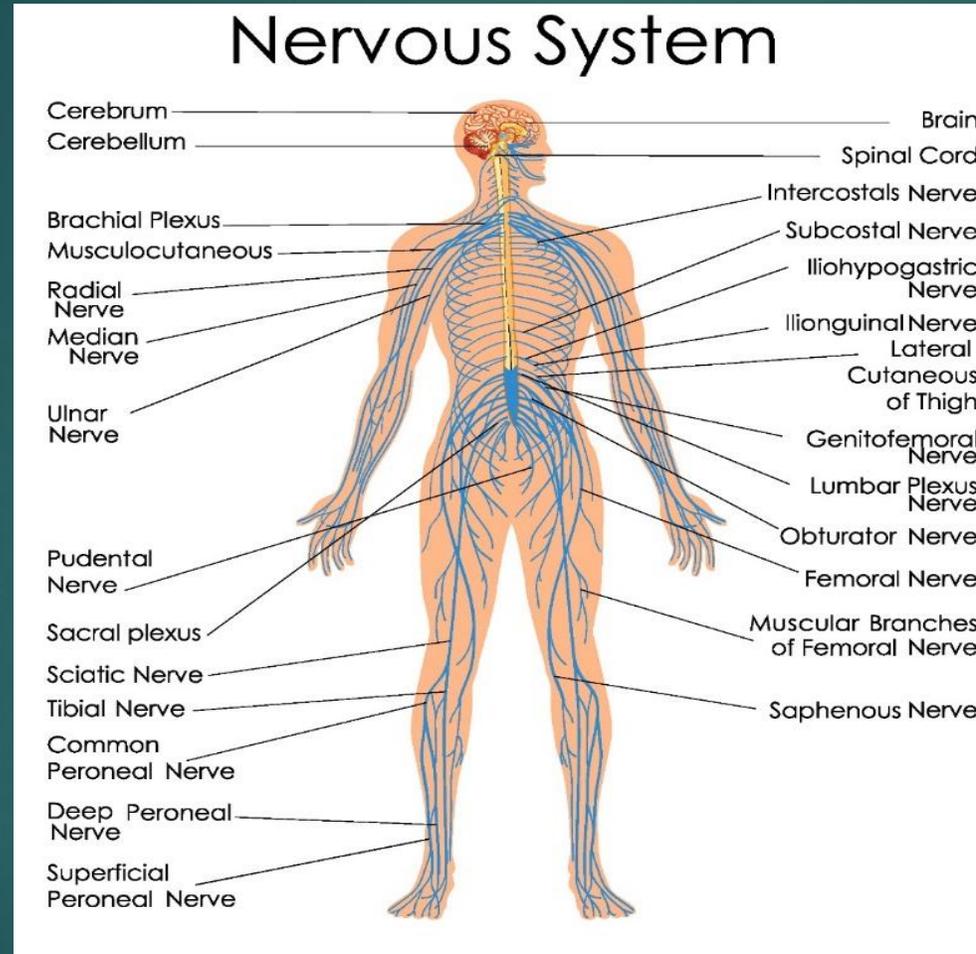
▶ Scrotum

▶ Testis

- ▶ Urethra
- ▶ Urethral opening
- ▶ Glans penis

- 
- ▶ Uterus
 - ▶ Endometrium and menstruation
 - ▶ Vagina

Neurological system





- ▶ Brain

- ▶ Cerebrum

- ▶

- Dura

- Arachnoid

- Pia

- ▶ Cerebellum
- ▶ Brain stem
- ▶ Cranial nerve



- 
- ▶ 1. Olfactory nerve (CN I) (sensory neuron)
 - ▶ 2. Optic nerve (CN II) (sensory neuron)
 - ▶ 3. Oculomotor nerve (CN III) (motor neuron)
 - ▶ 4. Trochlear nerve (CN IV) (motor neuron)
 - ▶ 5. Trigeminal nerve (CN V) (mix neuron)
 - ▶ Frontal branch
 - ▶ Maxillary branch
 - ▶ Mandibular branch

- 
- ▶ 6. Abducens nerve (CN VI) (motor neuron)
 - ▶ 7. Facial nerve (CN VII) (mix neuron)
 - ▶ 8. Vestibulocochlear nurse or Auditory nerve (CN VIII) (sensory neuron)
 - ▶ 9. Glossopharyngeal nerve (CN IX) (mix neuron)

- 
- ▶ 10. Vagus nerve (CN X) (mix neuron)
 - ▶ 11. Accessory nerve (CN XI) (motor neuron)
 - ▶ 12. Hypoglossal nerve (CN XII) (motor neuron)

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- ▶ Pituitary gland
 - ▶ -Thyroid stimulating hormone, TSH
 - ▶ -Growth hormone, GH
 - ▶ -Adrenocorticotropic hormone, ACTH
 - ▶ -Leutinizing hormone, LH และ Follicular stimulating hormone, FSH
 - ▶ -Prolactin
 - ▶ -Melanin stimulating hormone, MSH



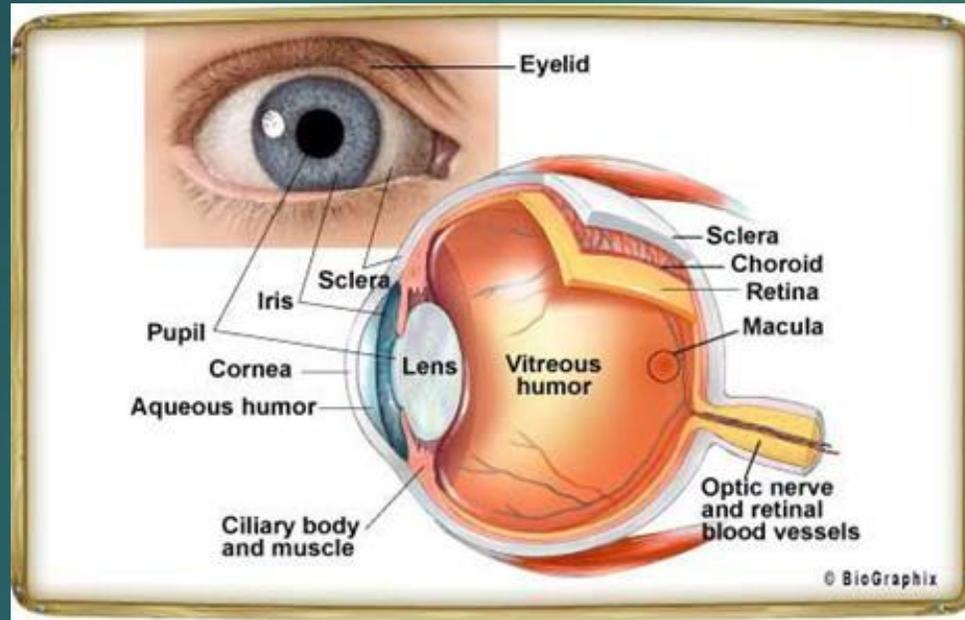
▶ Hypothalamus

▶ -Oxytocin

▶ -Antidiuretic hormone, ADH

- 
- ▶ Spinal cord
 - ▶ Cauda equina
 - ▶ Spinal nerve (dorsal ganglion)
 - ▶ Cervical nerve
 - ▶ Thoracic nerve
 - ▶ Lumbar nerve
 - ▶ Sacral nerve

Eye, ear, nose throat



Eye

Eye lid

Conjunctiva

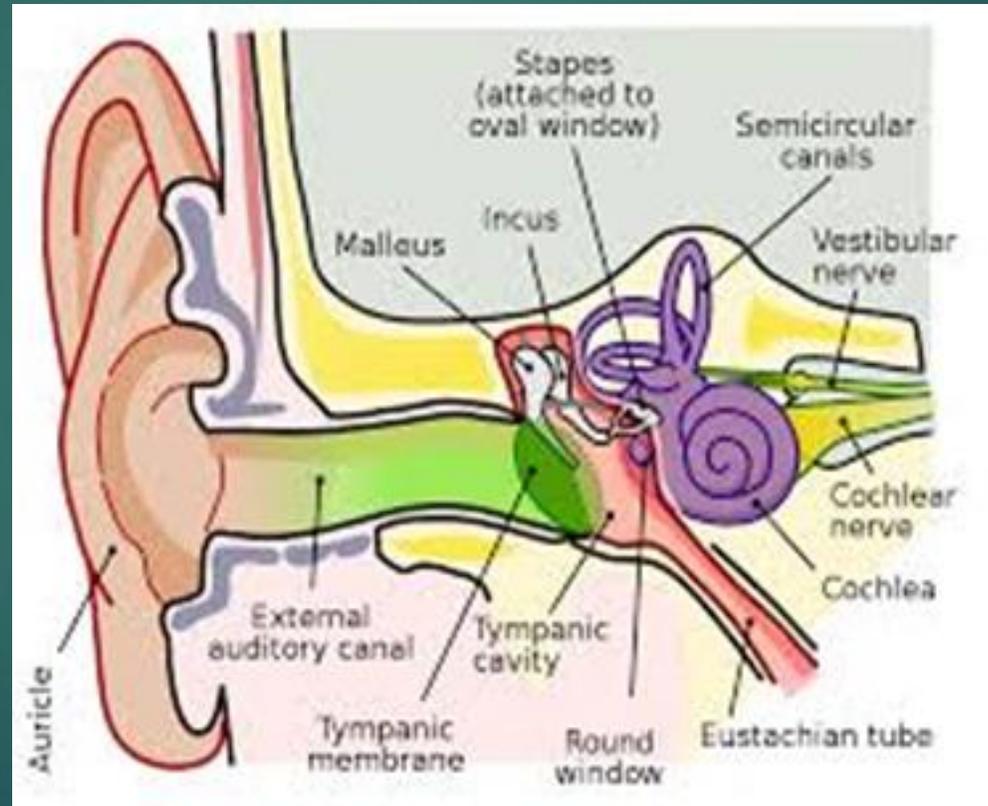
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- ▶ Eye ball and sclera
 - ▶ Cornea
 - ▶ Iris and pupil
 - ▶ Lens
 - ▶ Retina
 - ▶ Vitreous

Anterior chamber

Cataract

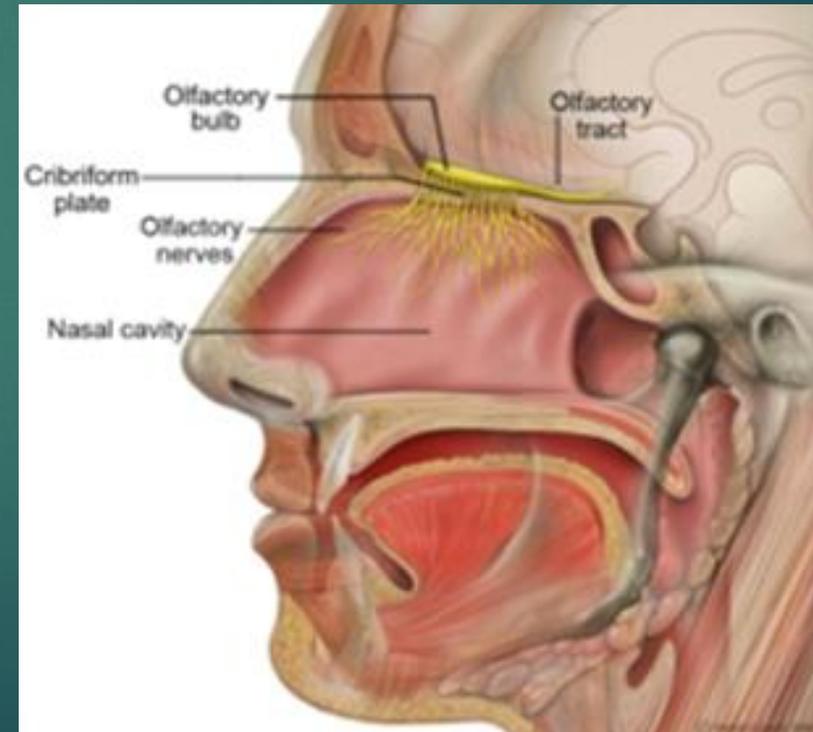


EAR



- 
- ▶ Ear
 - ▶ Tympanic membrane or ear drum
 - ▶ Ear pinna or auricle
 - ▶ Ear canal, external auditory meatus
 - ▶ Semicircular canal

Nasal turbinate



Questions?