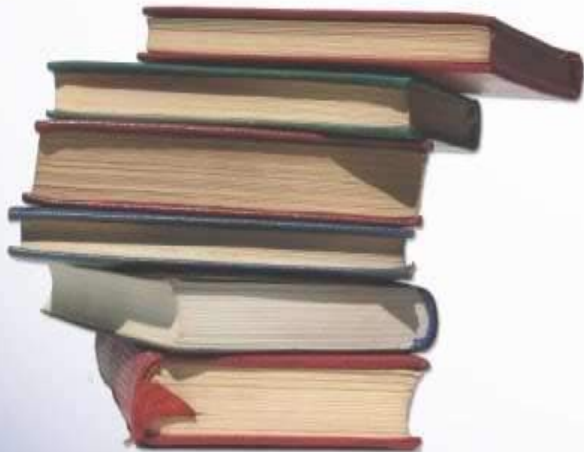


# Introduction to Medical Terminology



**dr. Meidona N. Milla, MCE**  
*Department of Anatomy*  
*Faculty of Medicine*  
*Sultan Agung Islamic University*

# Learning Objectives

By the end of this lecture you will be able to:


- ❖ define medical terminology
- ❖ explain about the reason of using medical terminology
- ❖ Mention the components of medical terminology
- ❖ breakdown and translate medical terminology
- ❖ Mention many kinds of body system and medical terms related
- ❖ Explain about body region, body orientations and body planes

# Medical Terminology

*"Is a language that specifically explain about human's body, its parts, conditions and processes happened inside it in a scientific way"*



# Medical Terms

- Also known as anatomical terms
  - Mainly used latin and greek
  - Anatomy began as descriptive science in the days when Latin was the universal scientific language
- 

*“Why do things have such complex names?”*



**“If only we knew the meaning it would be easier to understand!”**



**“Understanding medical terminology will improve your comprehension of reports and other medical literature.”**

# Why do we have to learn anatomical terms?

- Anatomy is important in everything we do in medicine. accuracy in observation and description stem first from observation and description in anatomy
- anatomical terms are the vocabulary of medicine
- Used by the doctors to communicate with one another, and with the patient

# BASIC MEDICAL TERMINOLOGY

## Components :

- Prefix
- Root
- Suffix



# Building Medical Terms

Word Root

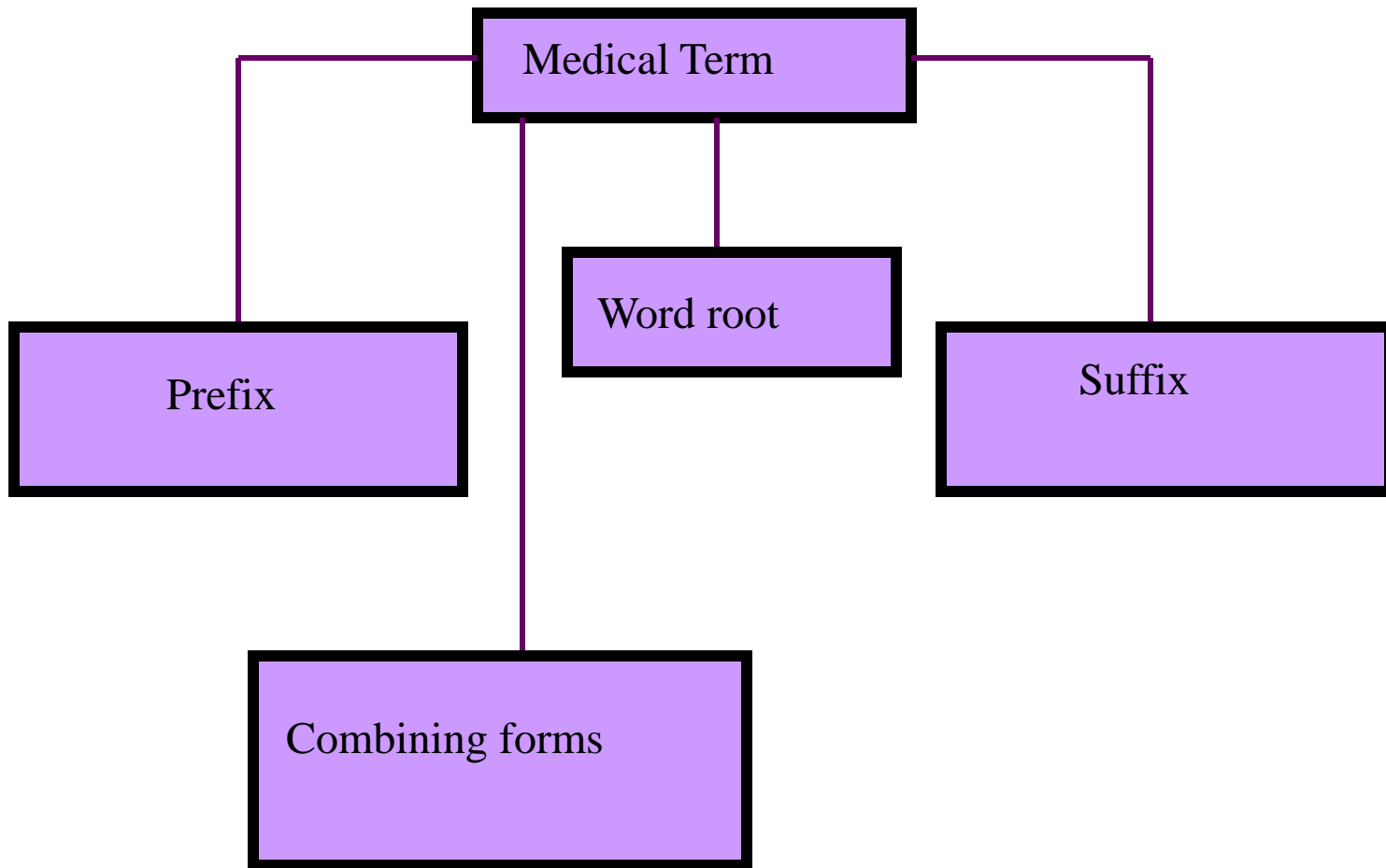
Prefix



Suffix

Combining forms

# Forming Medical Terms



# Forming Medical Terms

Medical terms are formed from two or more word parts.

## Word root

- The main part of a word which contains the basic meaning.

## Prefix

- Word parts attached to the beginning of a word that modifies the meaning.

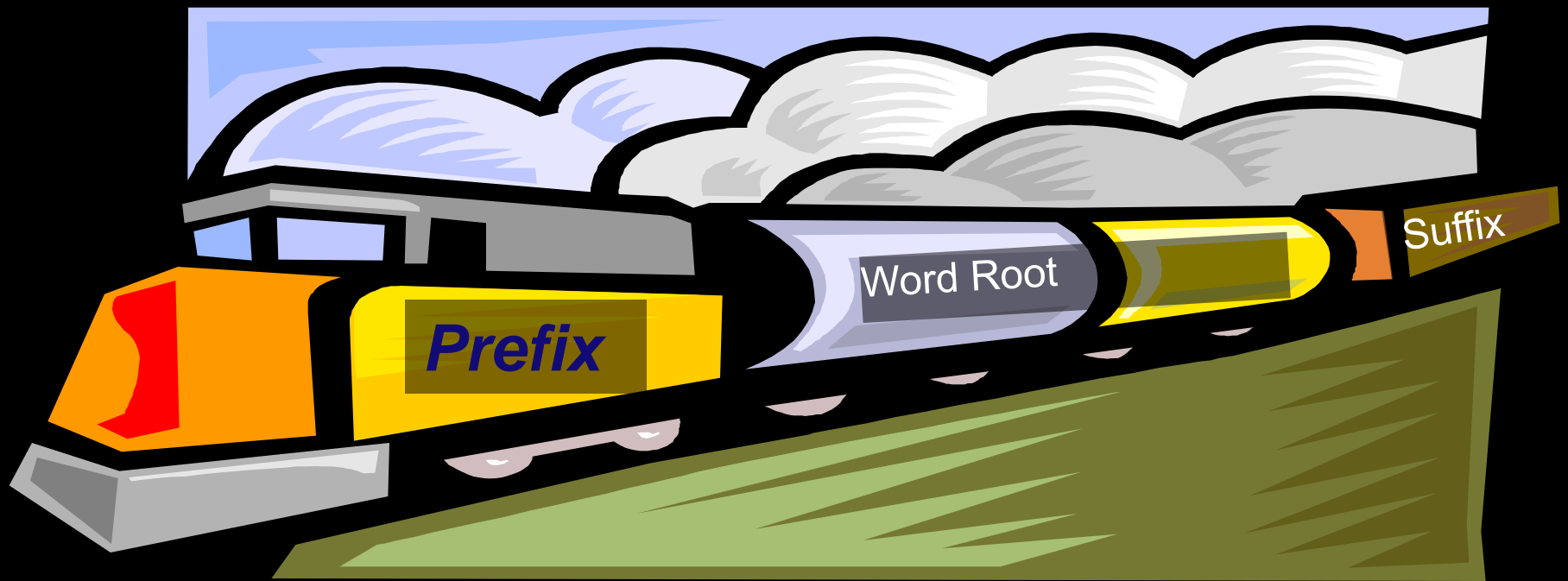
## Suffix

- Word parts attached to the end of a word that modifies the meaning.

## Combining forms

- The word root and a combining vowel that enable two parts to be connected.

# Prefixes



- Prefixes are attached to the beginning of words.
- Modifies the meaning of the word or word root.
- Indicates size, quantity, position of, and location.

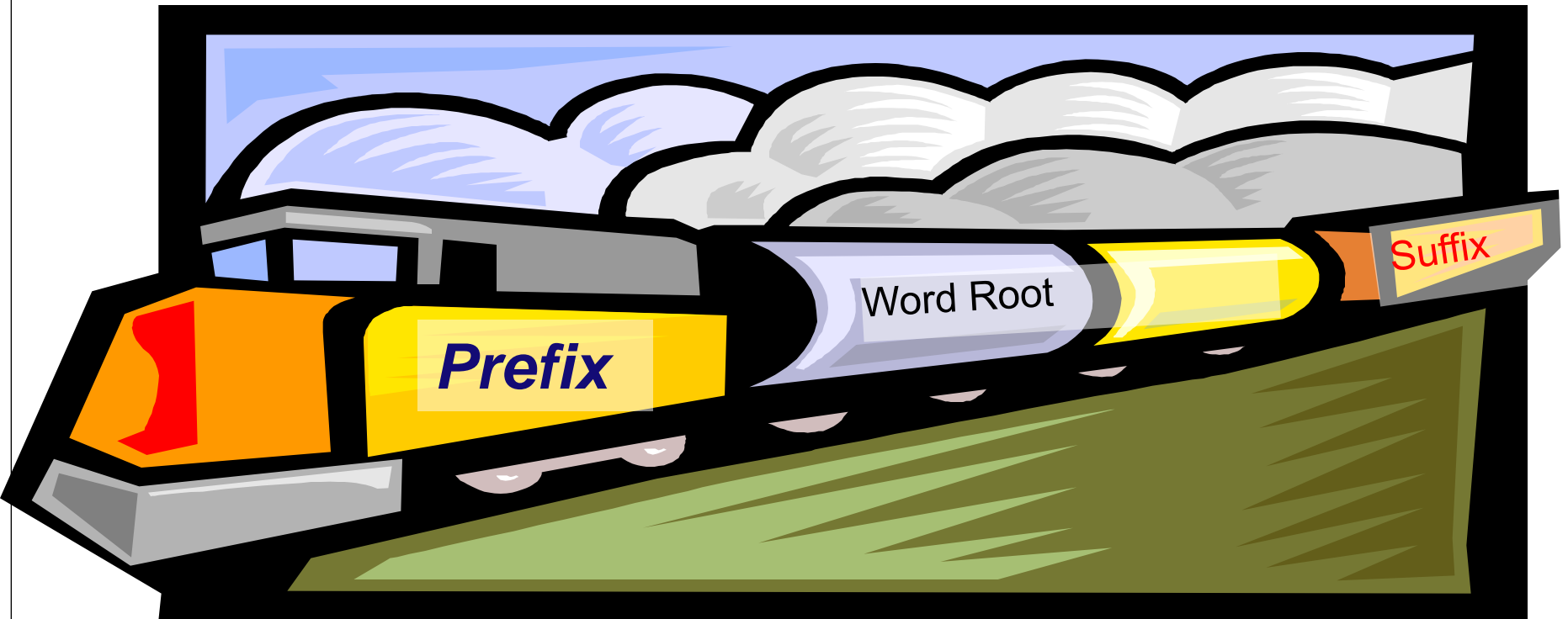
# Prefix Examples

| Word Part                        | English          | Indonesian             | Example                                     |
|----------------------------------|------------------|------------------------|---|
| A                                | without          | tanpa                  | Asexual, tanpa sex                          |
| Ab                               | From, away from  | dari                   | Abduksi, menjauh                            |
| ad-                              | To, lead towards | mendekat               | Adduksi, mendekat                           |
| An                               | without          | tanpa                  | Anestesi, tanpa nyeri                       |
| im-, in-                         | not              | tidak                  | Immatur<br>Tidak matang                     |
| infra- L. below<br>infraorbital, | below            | Di bawah               | Infraorbital<br>Di bawah mata               |
| Ante                             | before           | Sebelum,<br>mendahului | Antebrachii<br>Sebelum brachii (<br>lengan) |

| Word Part     | English        | Indonesian                | Example                                     |
|---------------|----------------|---------------------------|---|
| Anti          | against        | melawan/berlawanan dengan | Antihelix, kebalikan dari helix             |
| Auto          | G. autos, self | sendiri                   | Autonomic, bekerja sendiri                  |
| Bi            | two/double     | ganda                     | Biceps brachii                              |
| brad/y        | slow           | lambat                    | Bradikardi, frek denyut jantung yang lambat |
| ecto-, ex- G. | on outer side  | Lapisan terluar           | ectoderm, Lapisan embrionik luar            |
| extra         | outside        | Sebelah luar              | Extra dural<br>Di luar lapisan dura         |
| en-, endo-    | within         | Lapisan dalam             | endometrium, Lapisan dalam rahim            |
| epi           | upon, over     | Lapisan tepi, luar        | epicardium, Lapisan luar jantung            |
| macro         | big            | Ukuran yang besar         | Macrocyte, sel yang besar                   |

| Word Part      | English                   | Indonesian | Example                                     |
|----------------|---------------------------|------------|---|
| Hemi           | half                      | separuh    | hemisphere,<br>Separuh belahan otak         |
| Hyper          | over, above,<br>excessive | berlebih   | Hypertrophy<br>Pembesaran sel /organ        |
| Peri           | around                    | Sekeliling | Peritoneum<br>Mengelilingi ( dinding perut) |
| prae-, pre- L. | before                    | sebelum    | Prenatal, sebelum lahir                     |
| Semi           | half                      | separuh    | Semimembranosus<br>Separuh membran          |
| sub            | under                     | Di bawah   | Subclavius<br>Di bawah clavícula            |
| supra-         | above                     | Di atas    | Supraspinatus<br>Di atas spina scapula      |
| trans-         | across                    | melintasi  | Transpylorica<br>Melintasi pylorus          |

# Suffixes



- Attaches to the end of the word and carries the underlying meaning of the word.
- Suffixes can also be combining forms.



# Suffixes Examples

| Word Part   | English      | Indonesian               | Example   |
|---|--------------|--------------------------|---|
| Algia   | pain         | nyeri                    | Neuralgia<br>Nyeri saraf                                |
| ectomy  | Cutting out  | Memotong,<br>mengangkat  | Appendectomy<br>Pemotongan dan<br>pengangkatan appediks |
| itis  | inflammation | peradangan               | Conjungtivitis<br>Peradangan pada<br>cconjungtiva       |
| logy (.<br><i>logos,</i> )  | Study of     | Ilmu yang<br>mempelajari | Patologi<br>Ilmu yang mempelajari<br>tentang penyakit   |
| scopy<br>( <i>skopein</i> )   | To view      | melihat                  | Endoskopi<br>Melihat ke dalam                           |
| uria G.<br><i>ouron, urine</i><br><i>haematuria,</i><br><i>blood in urine</i> | urine        | urin                     | Haematuria<br>Adanya darah dalam urin                   |

| Word Part | English                | Indonesian                                    | Example  |
|-----------|------------------------|---|--|
| stomy     | Creating a new opening | Proses pembuatan lubang yang baru             | Colonostomy<br>Pembuatan lubang colon yang baru                            |
| plasty    | Surgical repair        | Perbaiki dengan cara pembedahan               | Angioplasty<br>Proses pembedahan untuk memperbaiki struktur pembuluh darah |
| graaph    | Recording instrument   | Alat untuk membuat catatan tentang data medis | Electrocardiograph<br>Alat untuk mencatat gelombang listrik jantung        |
| therapy   | Course of treatment    | Rangkaian pengobatan                          | Radiotherapy<br>Rangkaian pengobatan menggunakan sinar radioaktif          |
| megali    | Become big             | besar   | Hepatomegali<br>Pembesaran hepar   |

# Linking or combining vowels

- Placed between word parts to help pronouncing a term

For example,

- **Myocarditis - myo/card/itis**

*Myo = muscle (root), card = heart (root) dan itis = peradangan (suffix) pada otot jantung.*

## **Percutaneous - per/cutan/eous**

*Per = through (prefix), cutan = skin (root) dan -eous = pertaining to (suffix); → sesuatu proses yang melalui kulit*

## **Suprascapular - supra/scapular**

*Supra = above (prefix), scapula = shoulder blade (root), and -r = relative to (suffix);*

*area dia atas tulang scapula*

# Word Roots and Combining Forms

## Combining Forms

## Meaning

galact(o)



milk

gluco



glucose

gero



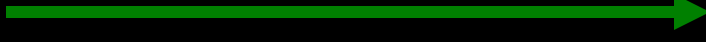
old age

glyco



sugars

gyn(o)



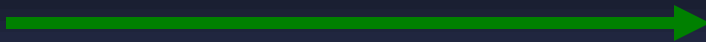
women

home(o)



same

kin(o)



movement

# Word Roots and Combining Forms

## Combining Forms

## Meaning

kinesi(o)



motion

lact(o)



milk

leuk(o)



white

lith(o)



stone

mio



smaller; less

narco



sleep; numbness

necro



death; dying

# BREAKING DOWN THE MEDICAL TERM:

## I. Consist of 3 components:

### a. PREFIX \_\_\_\_ ROOT \_\_\_\_ SUFFIX

- PERI \_\_\_\_ CARDI \_\_\_\_ ECTOMY → **PERICARDIECTOMY**
- PERI \_\_\_\_ CARD \_\_\_\_ ITIS → **PERICARDITIS**

### b. PREFIX \_\_\_\_ ROOT \_\_\_\_ PSEUDOSUFFIX ( Akhiran semu )

- HYPER \_\_\_\_ THERM \_\_\_\_ MIA → **HYPERTHERMIA**
- TRANS \_\_\_\_ URETHR \_\_\_\_ AL → **TRANSURETHRAL**

### c. ROOT \_\_\_\_\_ ROOT \_\_\_\_\_ PSEUDOSUFFIX

- COSTO \_\_\_\_\_ PHREN \_\_\_\_\_ IC → **COSTOPHRENIC**
- STERNO \_\_\_\_\_ CLAVICUL \_\_\_\_\_ AR → **STERNOCLAVICULAR**

### d. ROOT \_\_\_\_\_ ROOT \_\_\_\_\_ SUFFIX

- TRACHEO \_\_\_\_\_ BRONCHO \_\_\_\_\_ SCOPY → **TRACHEOBRONCHOSCOPY**
- RHINO \_\_\_\_\_ PHARYNG \_\_\_\_\_ ITIS → **RHINOPHARYNGITIS**

## II. Consist of 2 components:

### a. PREFIX \_\_\_\_\_ PSEUDO ROOT

- ANTE \_\_\_\_\_ NATAL → **ANTENATAL**
- EPI \_\_\_\_\_ CARDIA → **EPICARDIA**

### b. ROOT \_\_\_\_\_ PSEUDOSUFFIX

- CARDI \_\_\_\_\_ AC → **CARDIAC**
- NEUR \_\_\_\_\_ AL → **NEURAL**

### c. ROOT \_\_\_\_\_ SUFFIX

- BRONCHO \_\_\_\_\_ PATHY → **BRONCHOPATHY**
- CARDIO \_\_\_\_\_ PLEGIA → **CARDIOPLEGIA**



# Test Your Knowledge!

- Pathology
- Myositis
- Colostomy
- cardiomegali
- Microtia
- Athralgia
- Postmatur
- Hemispherium

# Again, test your knowledge!

- Supraclavicular
- Intra cranial
- Post operation
- Autoanamnesa
- Bilateral
- Hyperthermia
- immobilisation

→ Forms of Medical Terms can be constructed by 4-5 words combined from: *Root, Prefix, Suffix, Pseudo root, Pseudosuffix.*

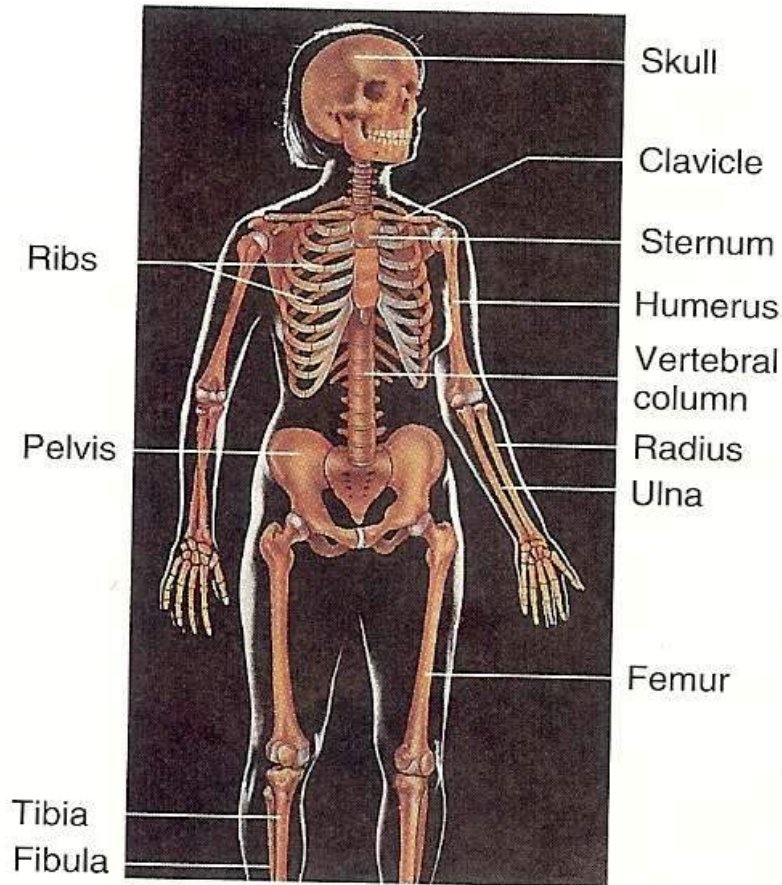
**→ Find some medical terms examples and try to translate them!**



# BODY SYSTEM

- Musculoskeletal System
- Cardiovascular System

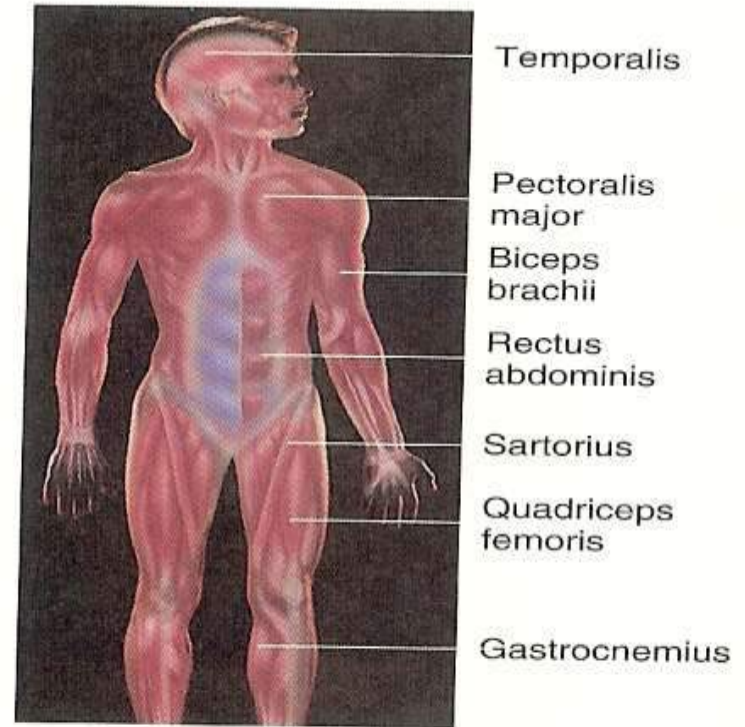
# SKELETAL SYSTEM



## Skeletal System

Provides protection and support, allows body movements, produces blood cells, and stores minerals and fat. Consists of bones, associated cartilages, and joints.

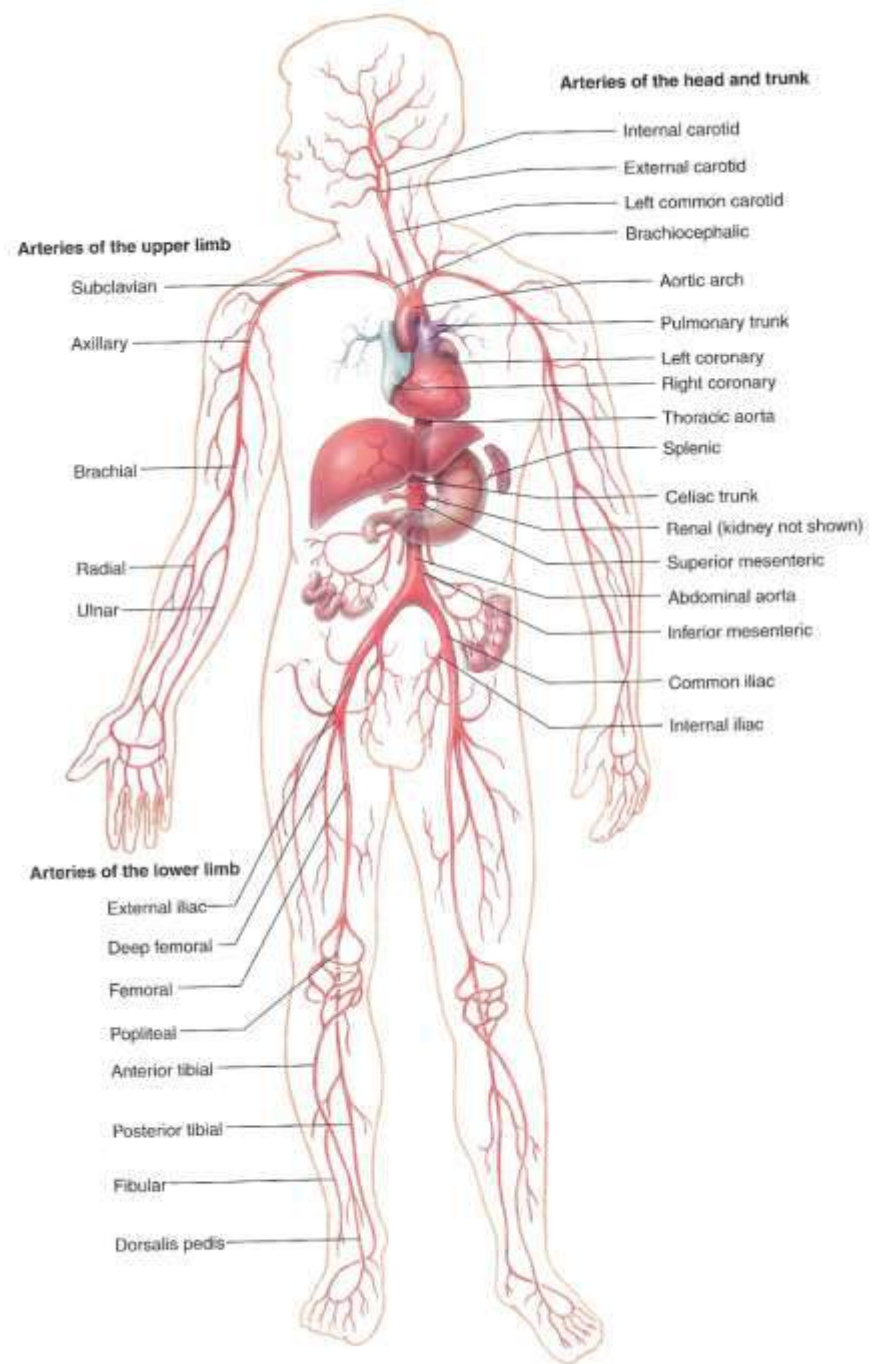
# MUSCULAR SYSTEM



## Muscular System

Produces body movements, maintains posture, and produces body heat. Consists of muscles attached to the skeleton.

# CARDIOVASCULAR SYSTEM



# NERVOUS SYSTEM

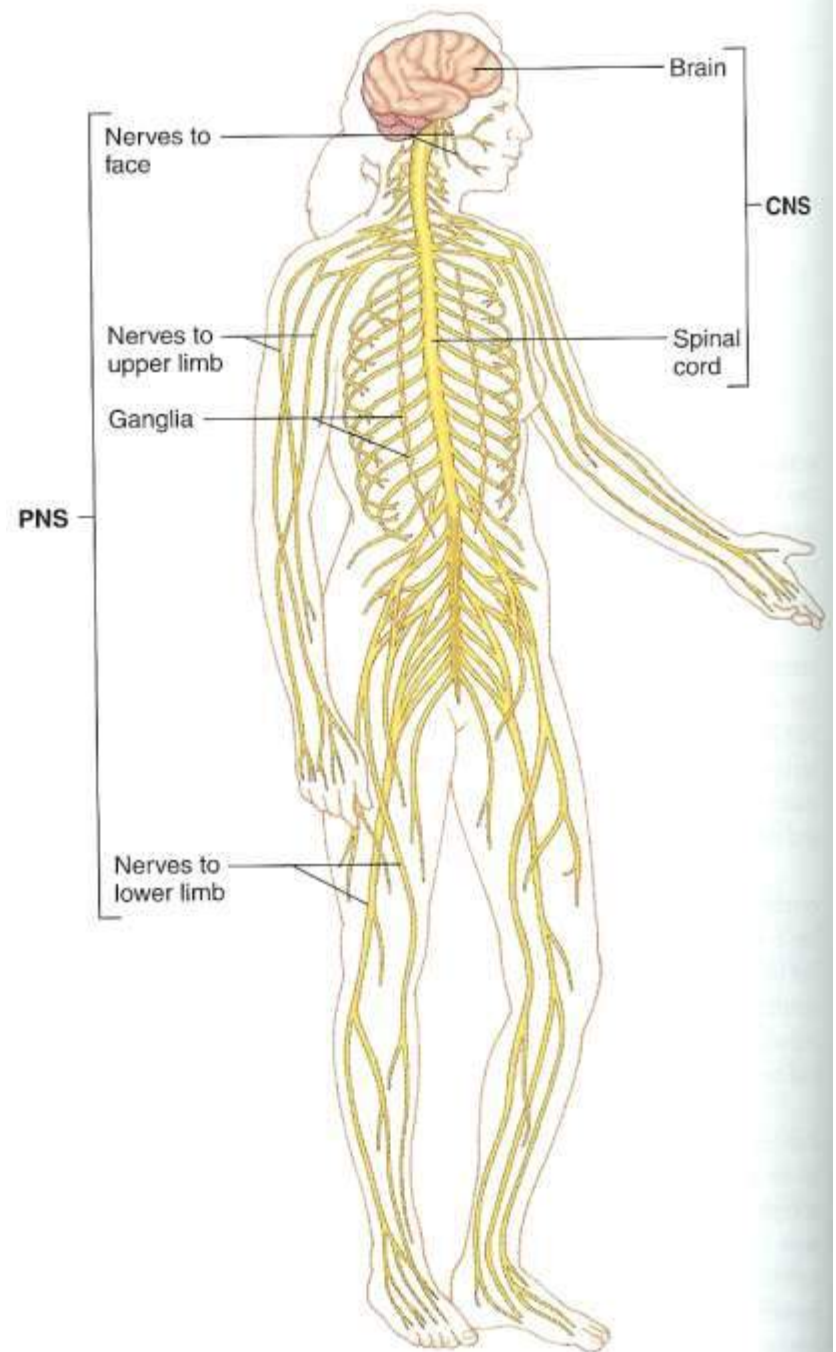


Figure 8.1 The Nervous System

# OPTICAL SYSTEM

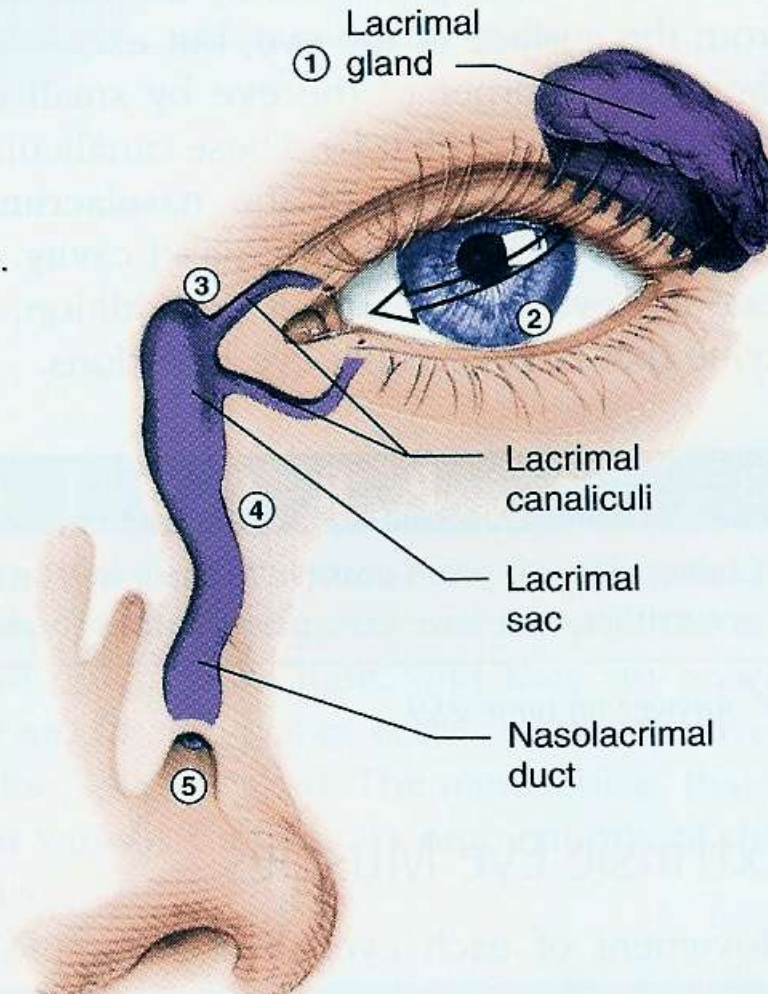
1. Tears are produced in the lacrimal gland.

2. The tears pass over the surface of the eye.

3. Tears enter the lacrimal canaliculi.

4. Tears are carried through the nasolacrimal duct.

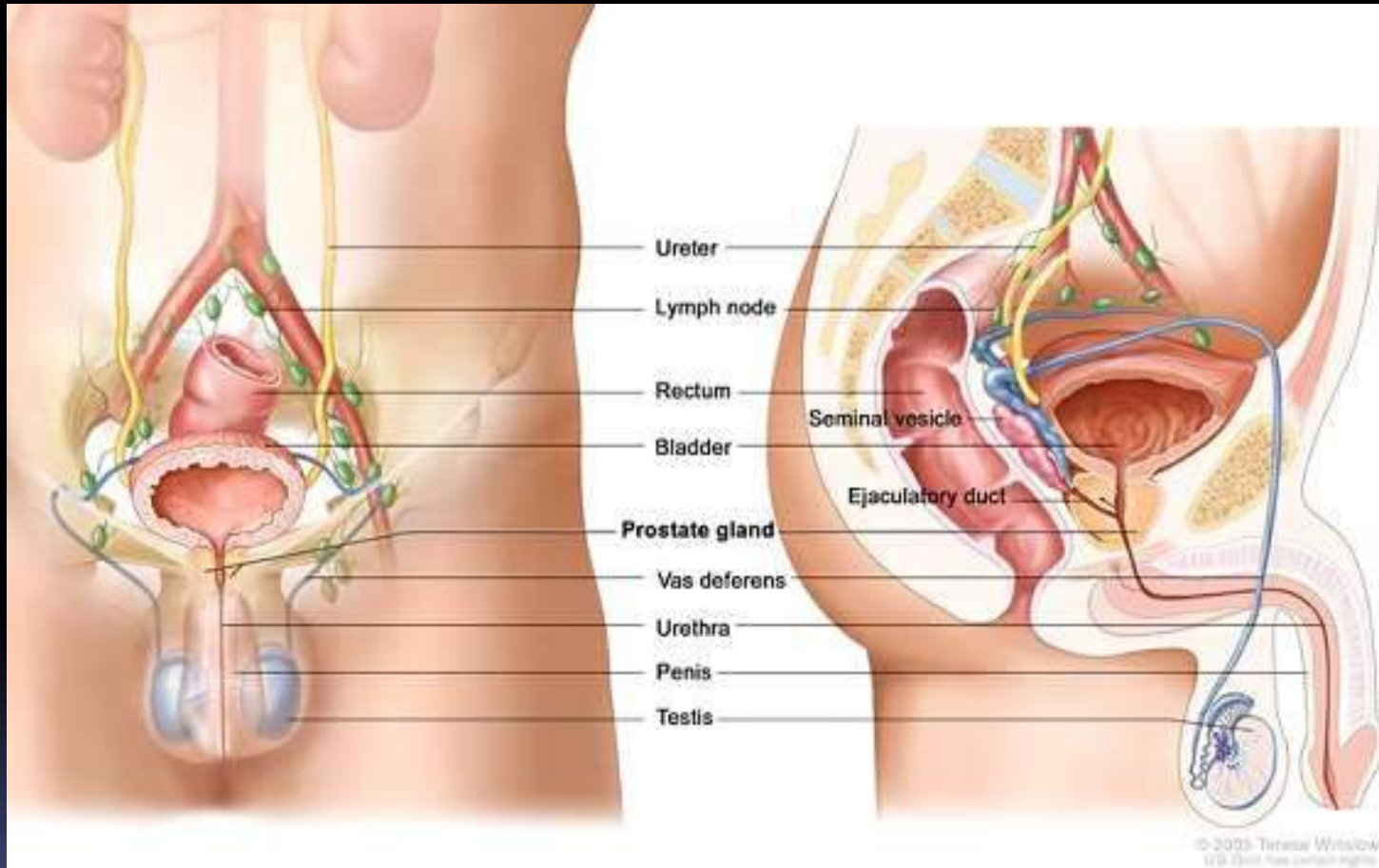
5. Tears enter the nasal cavity from the nasolacrimal duct.



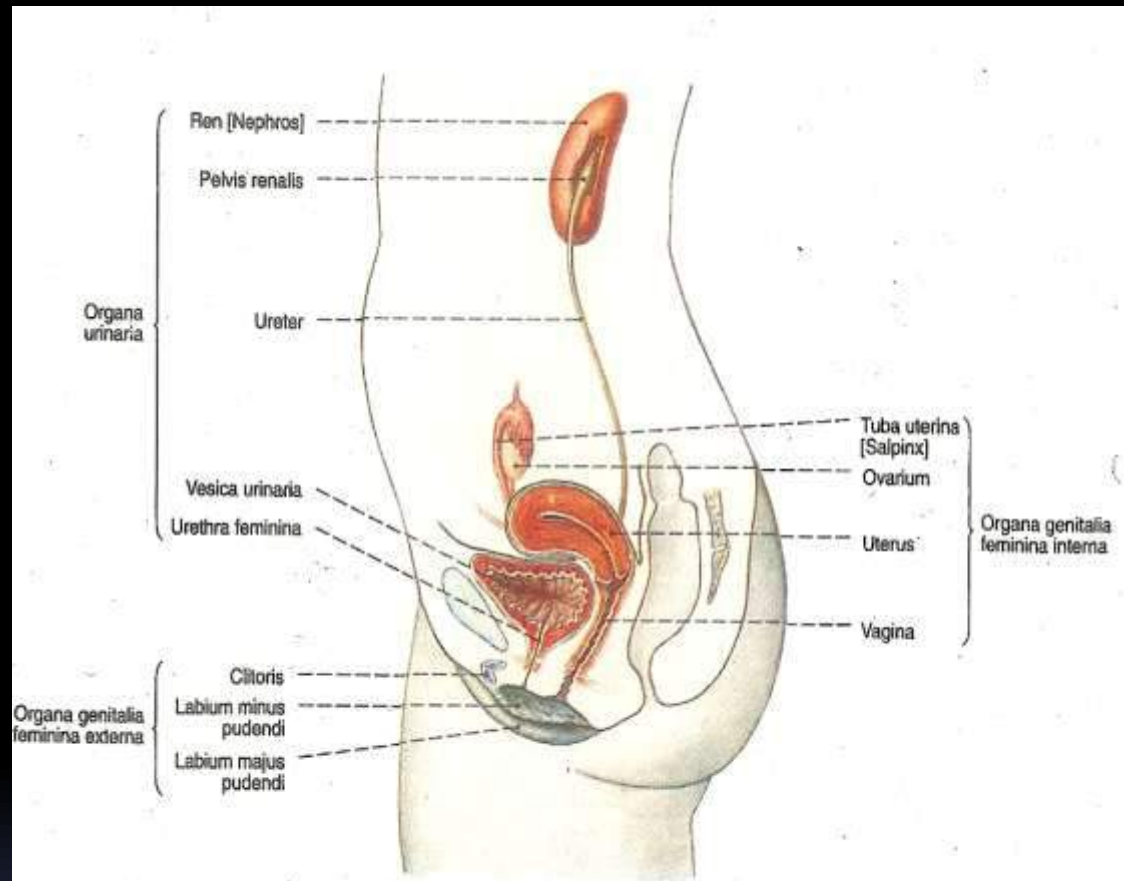
(b)



# MALE UROGENITAL SYSTEM

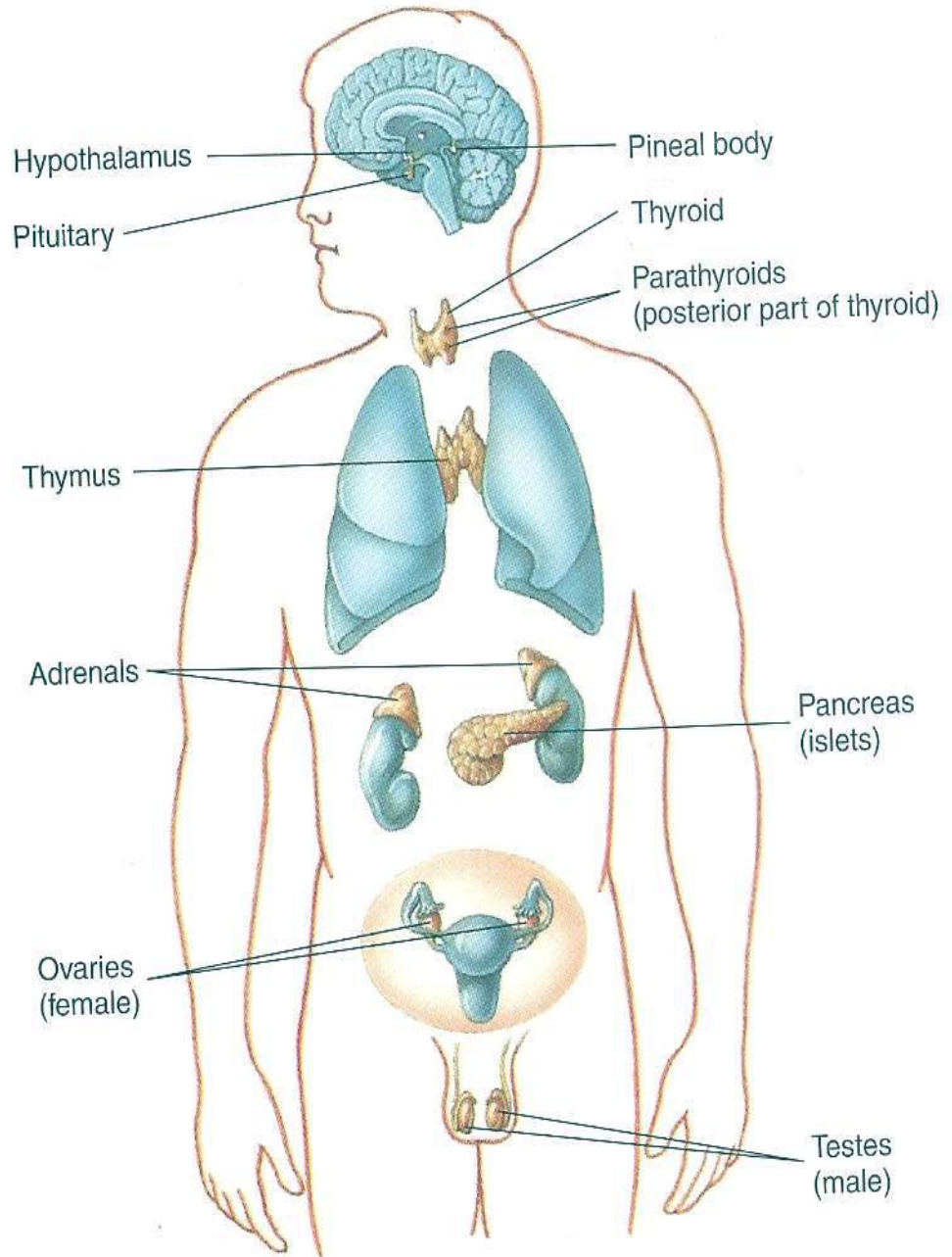


# FEMALE UROGENITAL SYSTEM



Gbr. 30 Gambar organa urinaria dan genitalia wanita; dari medial.

# ENDOCRINE SYSTEM



# TERMS USED IN MUSCULOSKELETAL SYSTEM

## ( *Example* )

- ORIGO : Tempat melekat pangkal suatu otot ( perlekatan Proximal )
- INSERTIO : Tempat melekat ujung suatu otot ( perlekatan Distal )
- TUBER : Tonjolan pendek dan besar.

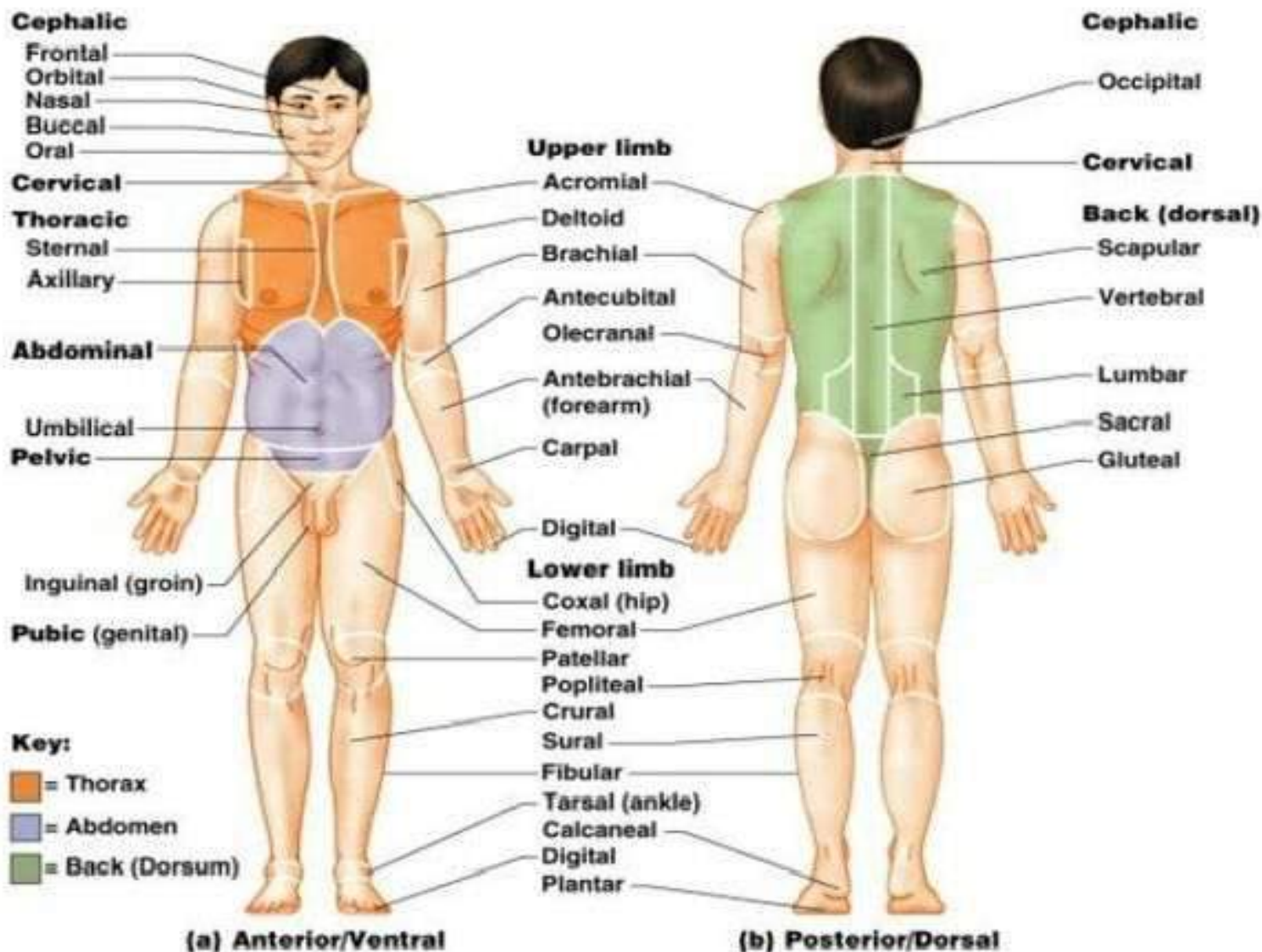
- TUBERKULUM / TUBEROSITAS : Tonjolan kecil
- PROCESS : Tonjolan yang panjang.
- FOSSA : Cekungan besar dan dangkal.
- FOVEA : Cekungan yang dangkal (agak rata)
- Merupakan tempat persingungan.
- FOVEOLA : Lekuk kecil yang agak rata

- FACIES : Dataran / Permukaan.
- FORAMEN : Lubang = HIATUS
- SULCUS : Parit / Saluran memanjang.
- CANALIS : Saluran memanjang yang tertutup di atasnya.
- INCISURA : Cekungan
- CRISTA : Tonjolan tipis yang memanjang.
- SPINA : Tonjolan yang panjang/ runcing.
- COLLUM : Leher.
- CAPUT : Kepala yang besar.
- CAPITULUM: Kepala yang kecil.

# Istilah-istilah

- MEATUS : Canalis yang pendek.
- CAVUM : Rongga.
- APERTURA : Pintu.
- ADITUS : Pintu masuk kedalam suatu ruangan.
- ANTHRUM : Ruang yang berisi udara dalam tulang.
- ALA : Sayap
- LABIUM : Bibir.
- LAMINA : Lembar.

# BODY REGIONS







# Body Orientation

→ *Showing a location of an organ based on its position to other organ*



# Anatomical Position

- **B**ody erect
- **F**eet slightly apart
- **P**alms facing forward
- **T**humbs point away from body

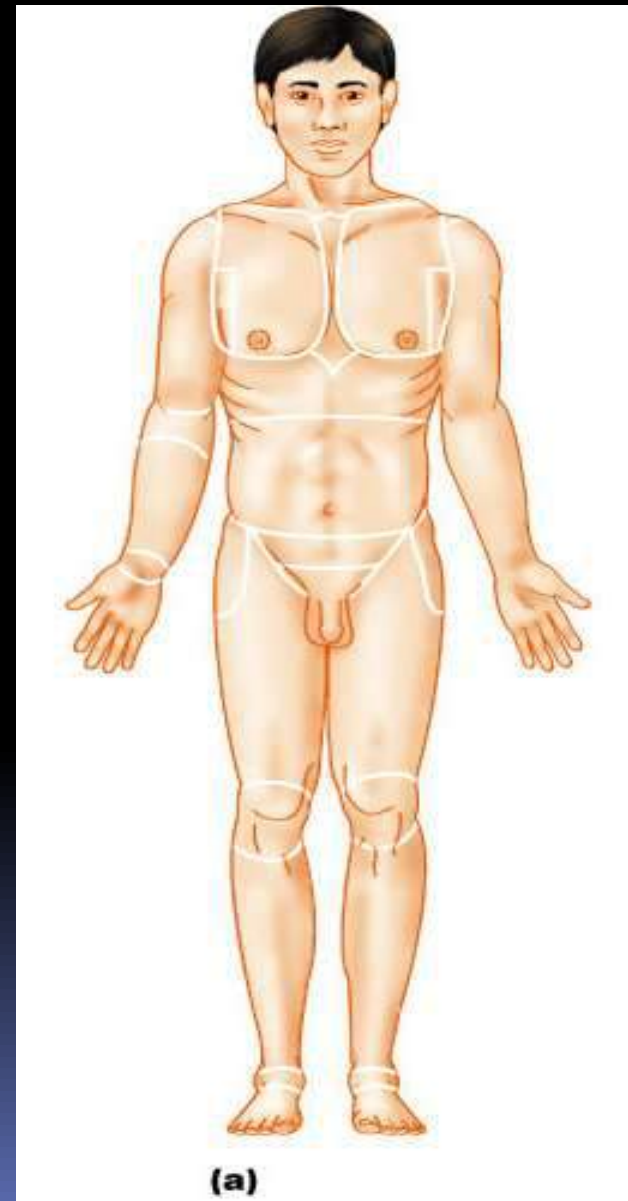
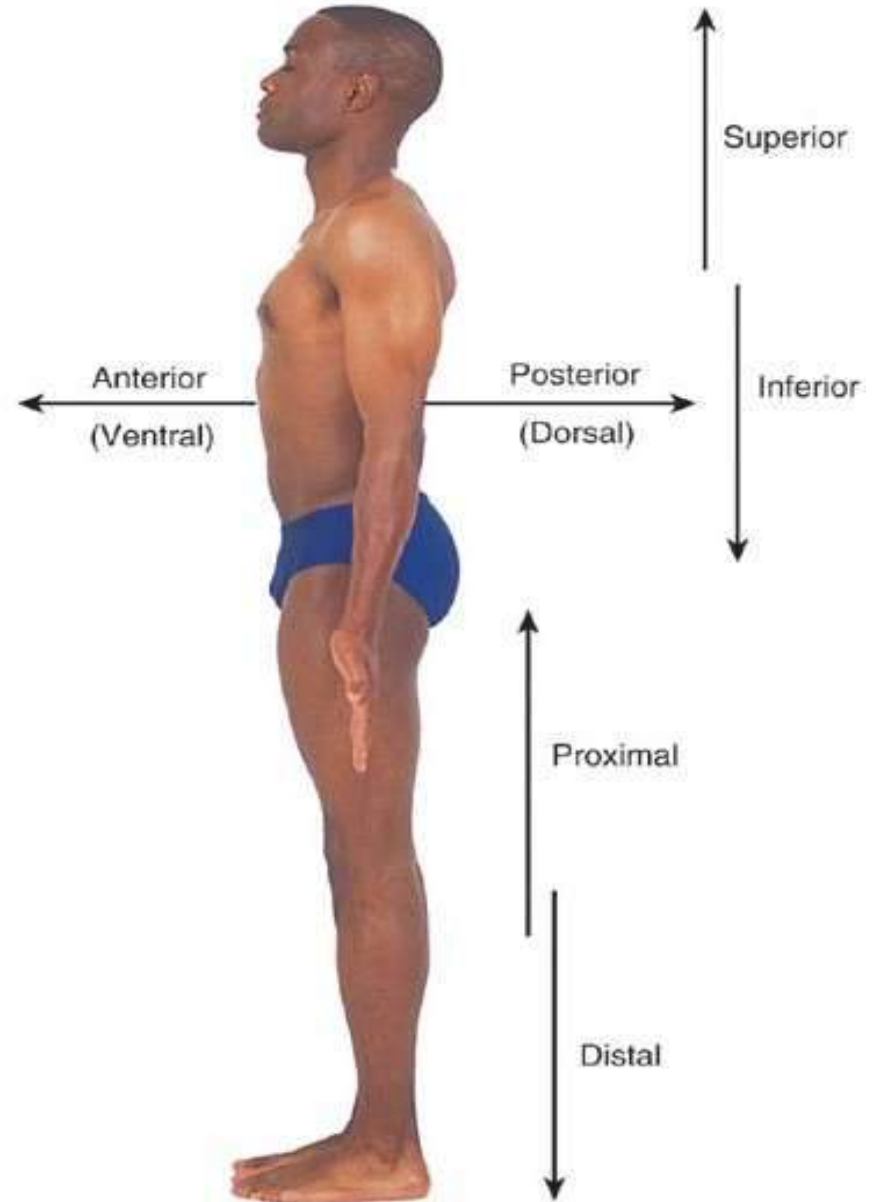
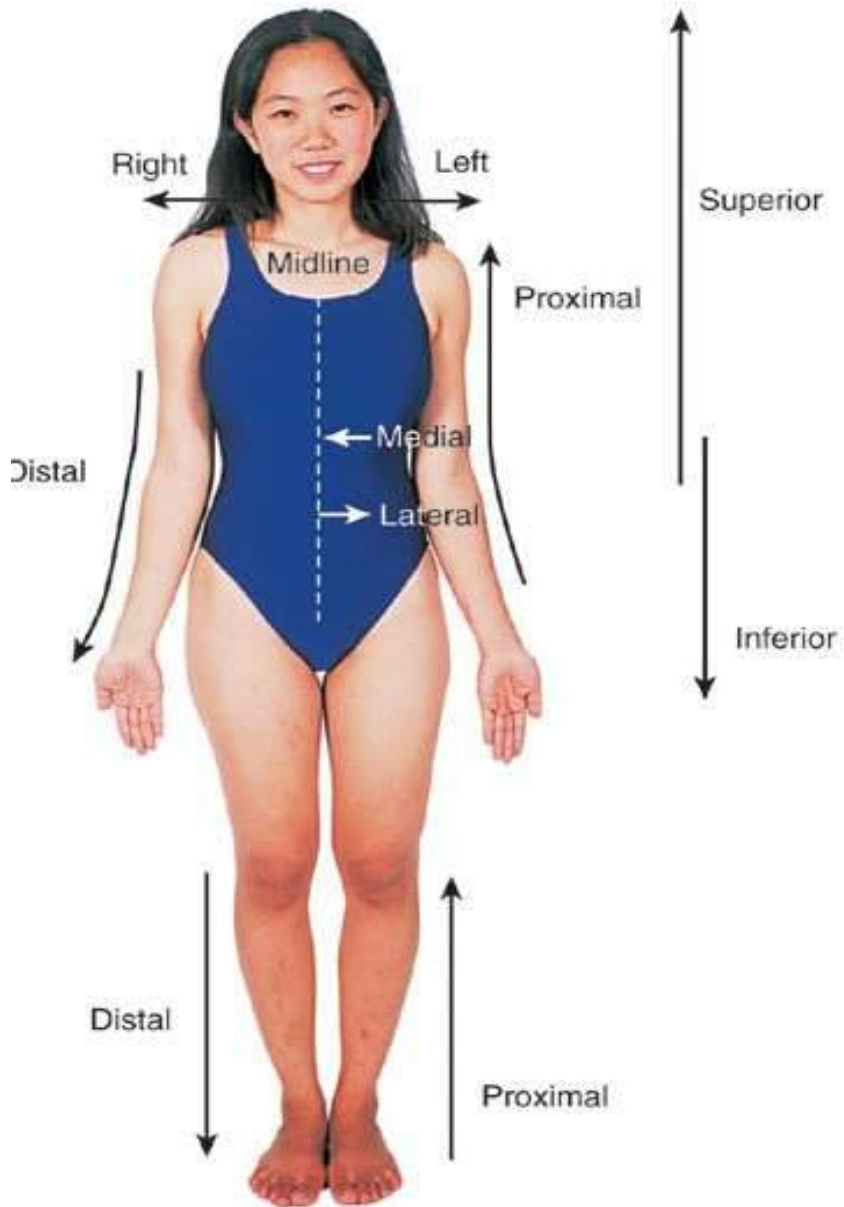
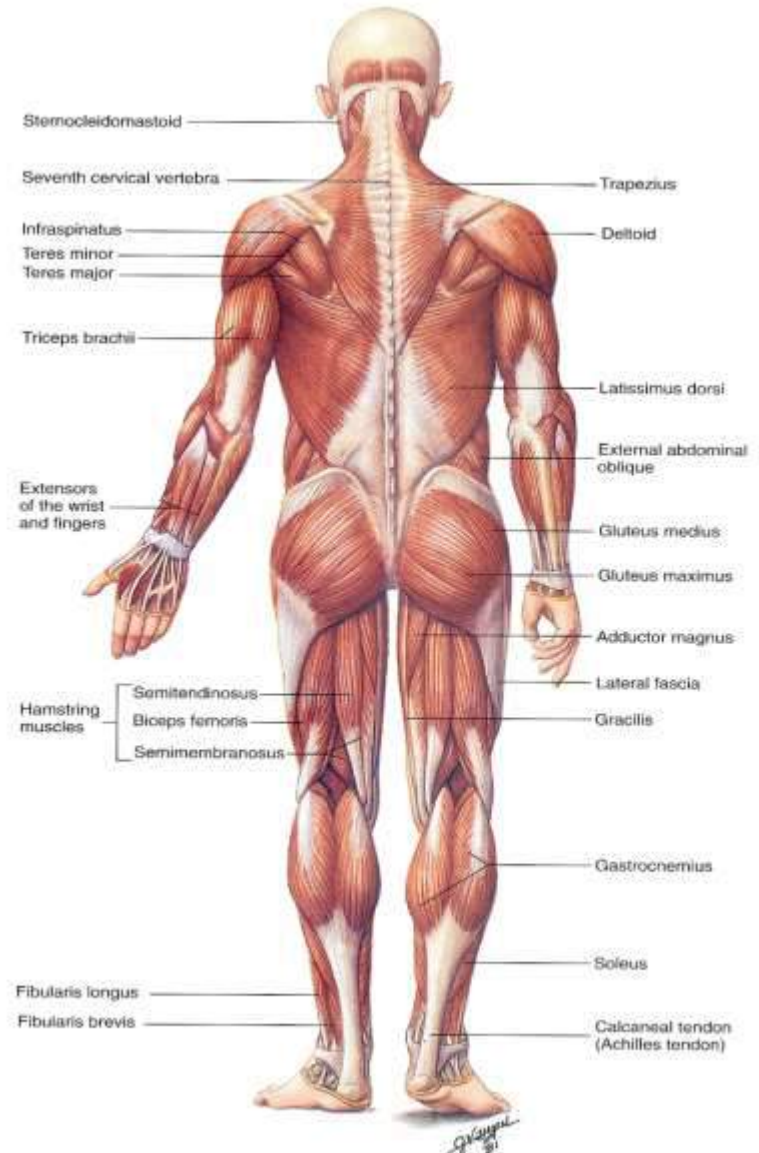
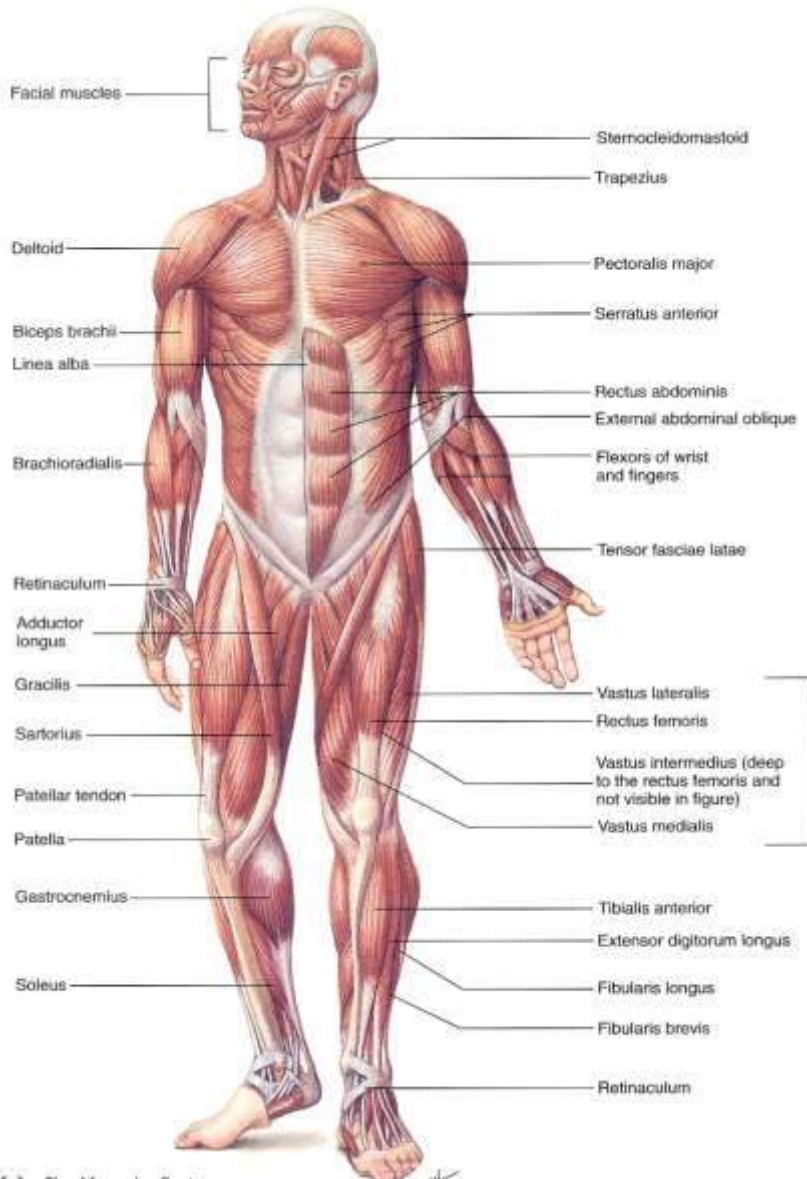


Figure 1.7a

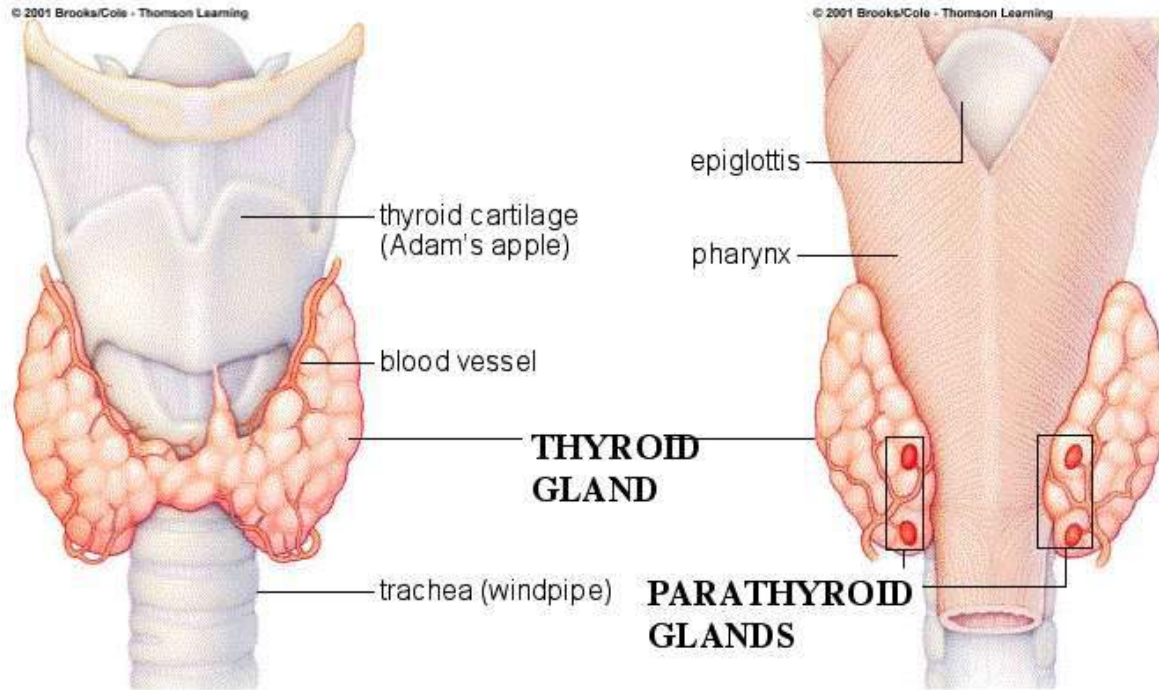
# Body Direction



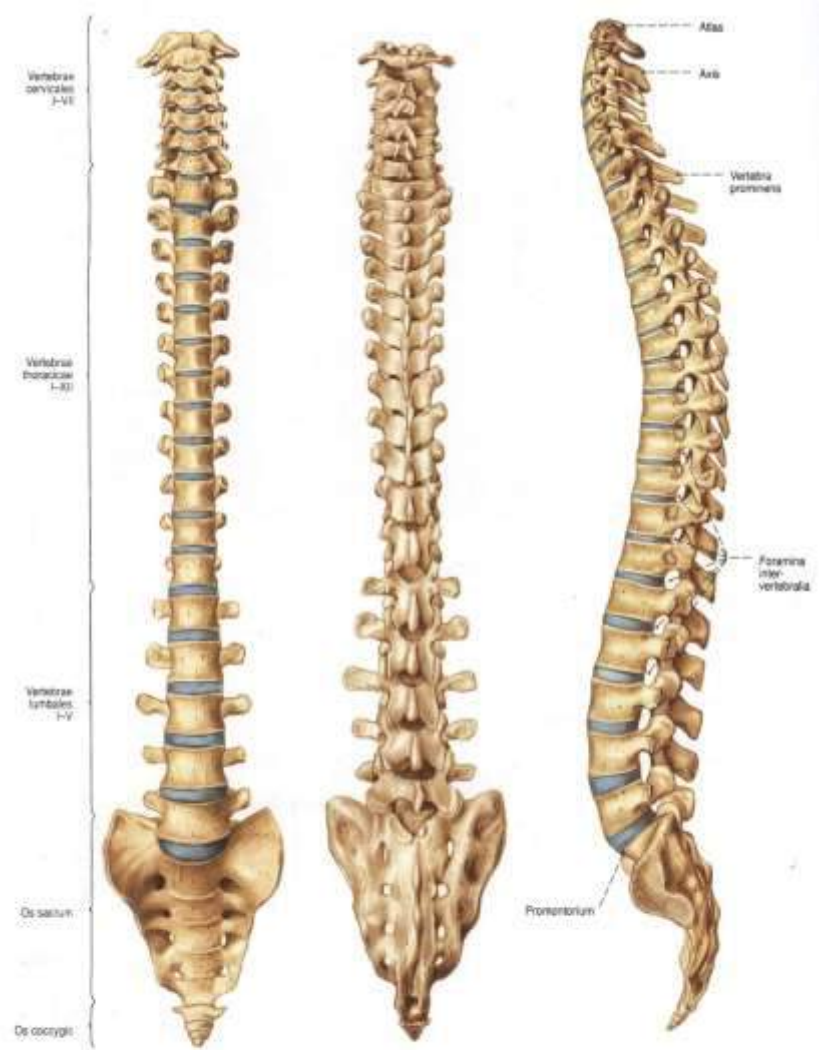
# Anterior-Posterior



# Anterior-Posterior



# Anterior posterior lateral



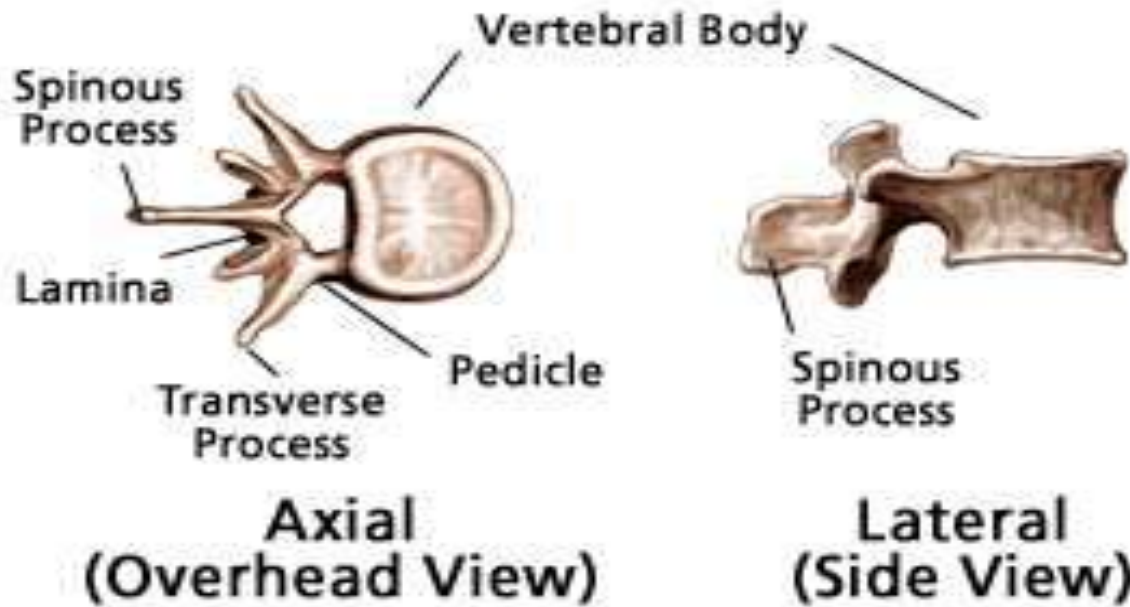
**Gambar 708** Tulang punggung, Columna vertebralis; discus yang terletak di antara vertebra (Discus intervertebralis) diberi warna biru; tampak ventral (30%).

**Gambar 709** Tulang punggung, Columna vertebralis; discus yang terletak antara vertebra (Discus intervertebralis) diberi warna biru; tampak dorsal (30%).

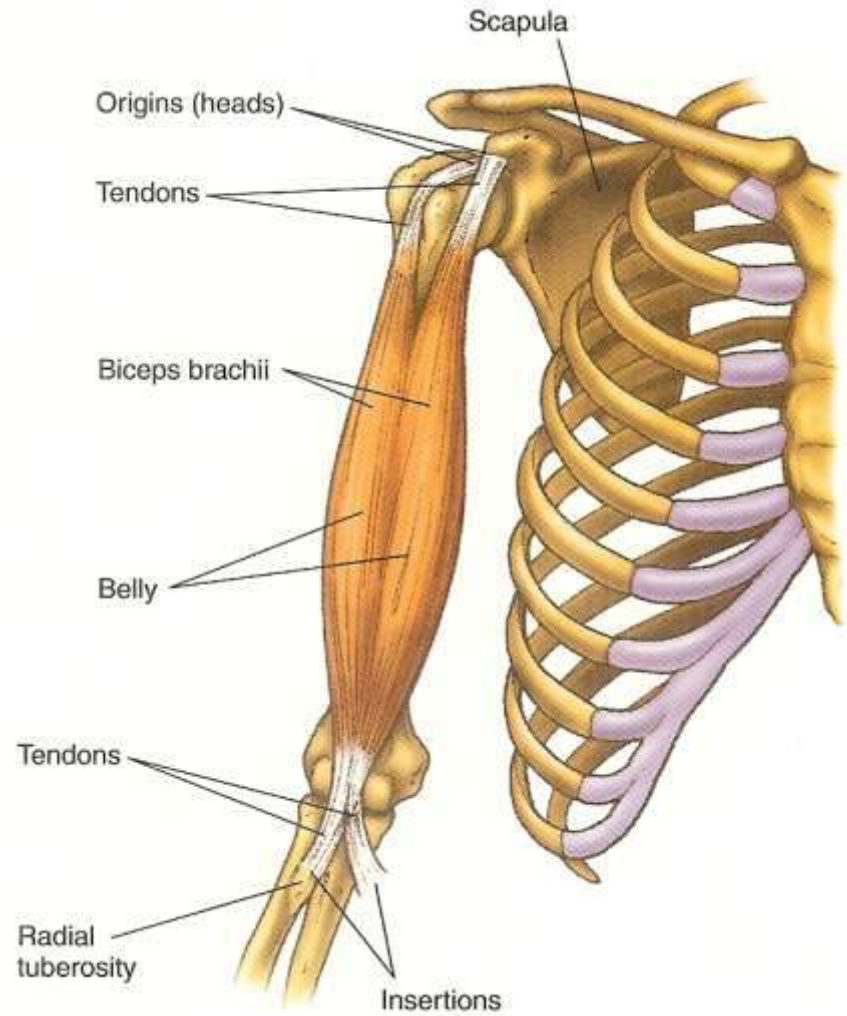
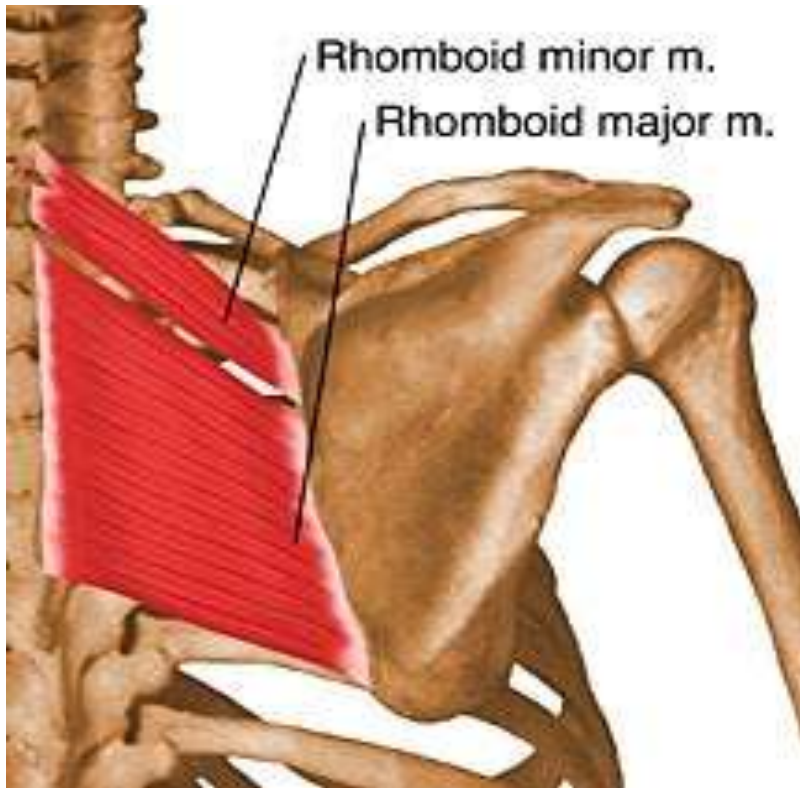
**Gambar 710** Tulang punggung, Columna vertebralis; discus yang terletak antara vertebra (Discus intervertebralis) diberi warna biru; tampak lateral (ki., 30%).

# Superior, Lateral

## Lumbar Vertebrae

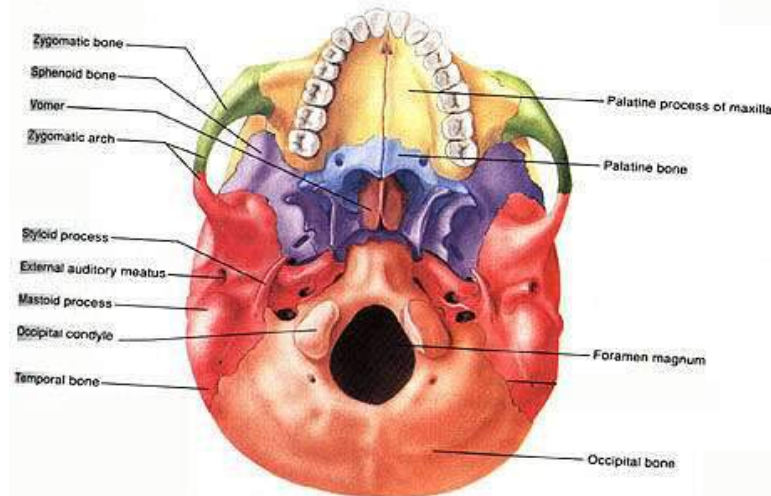
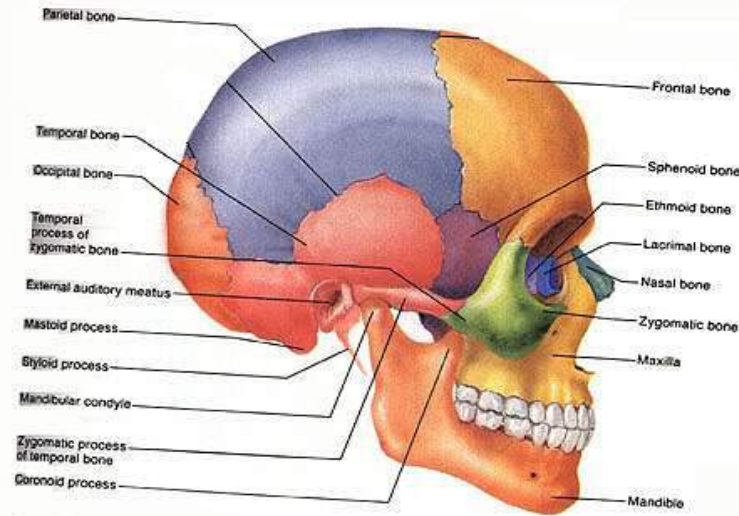


# Superior-Inferior      Lateral-Medial

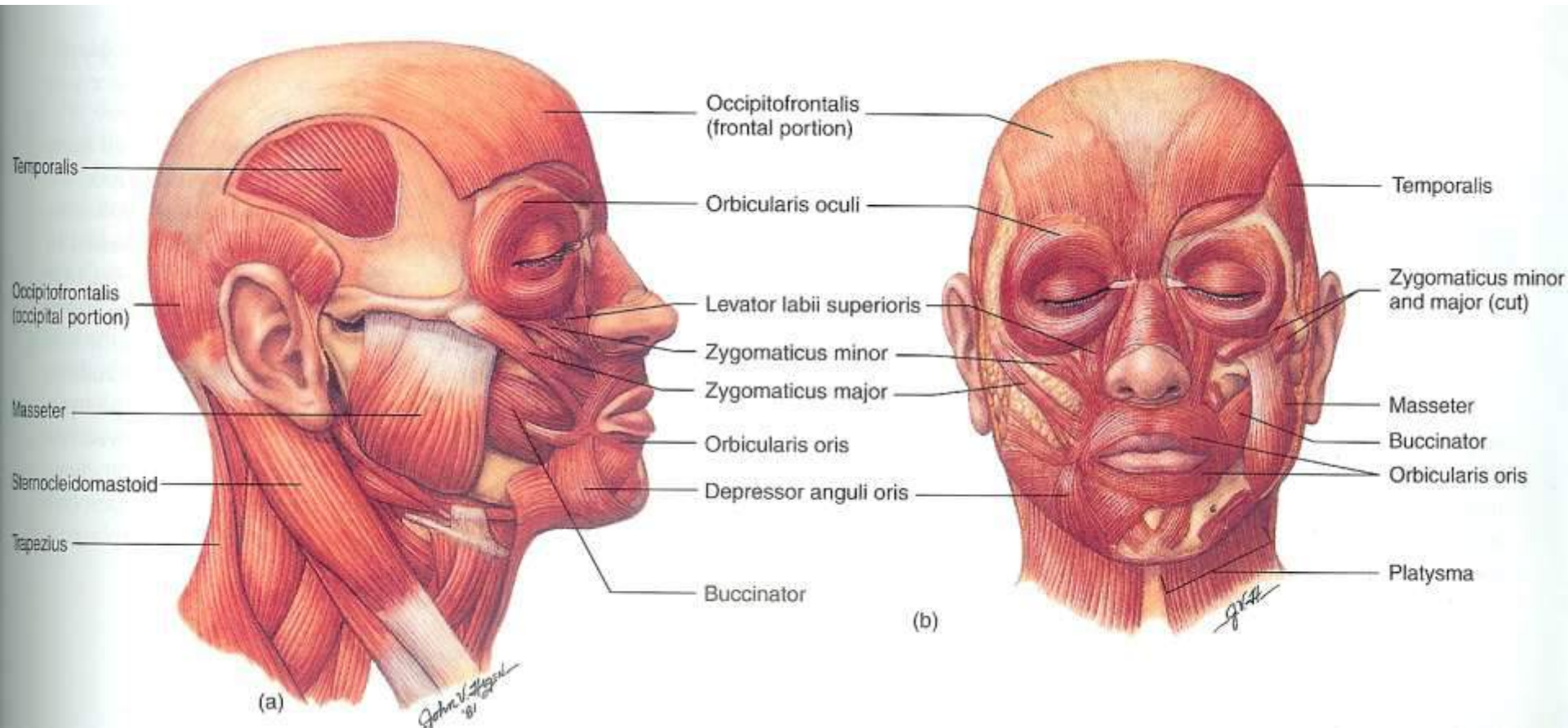




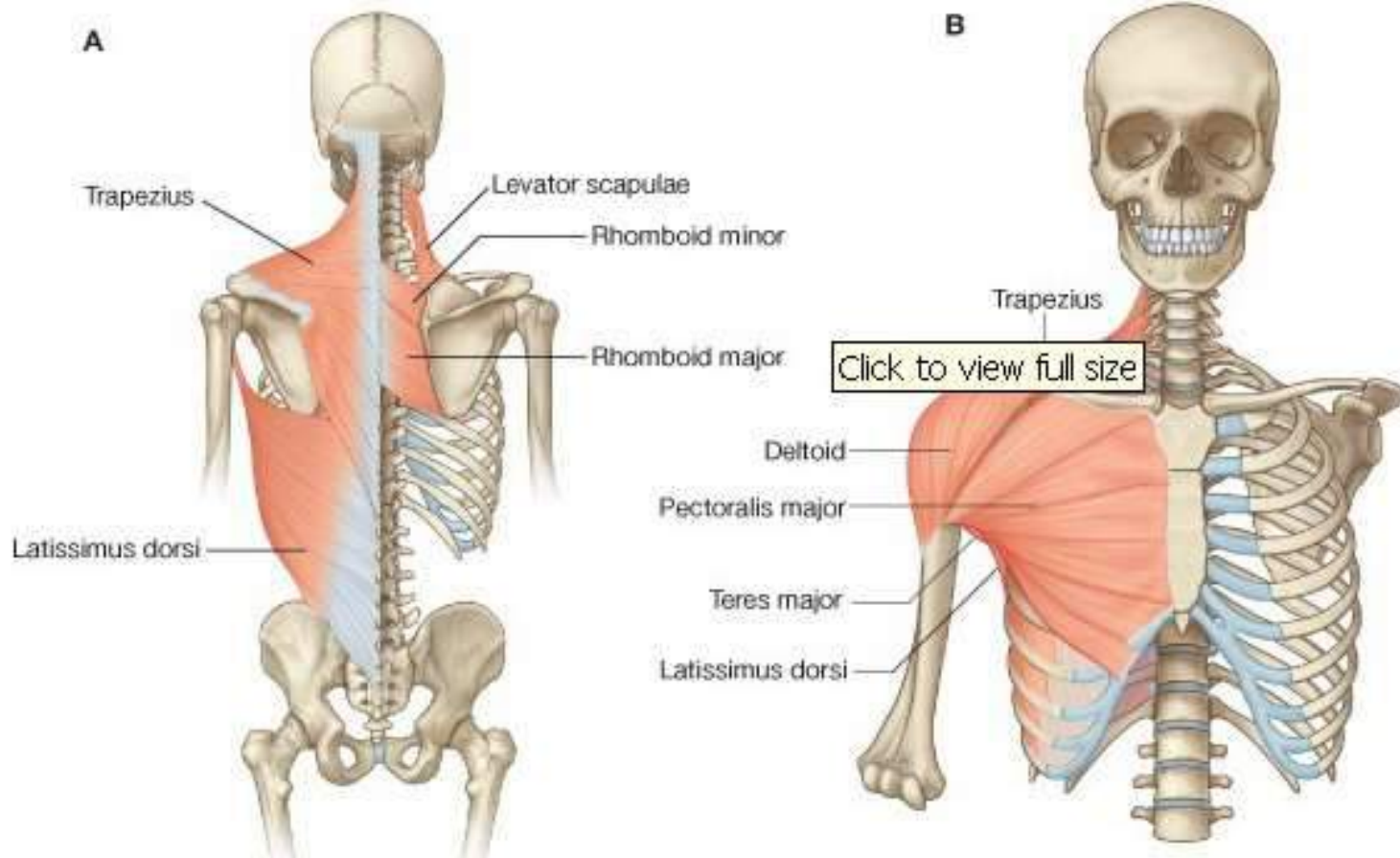
# Test Your Knowledge!



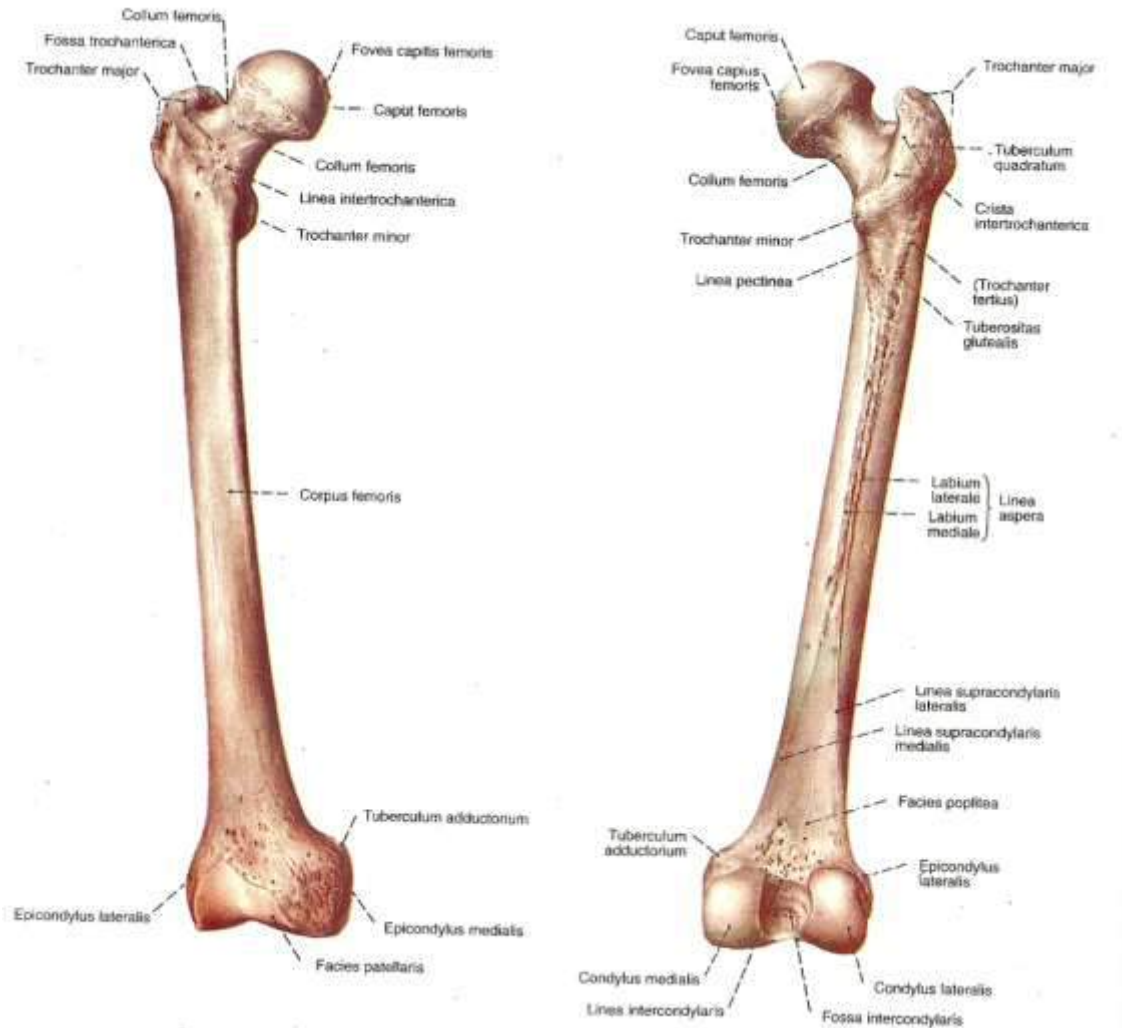
# Test Your Knowledge!



# Test Your Knowledge!

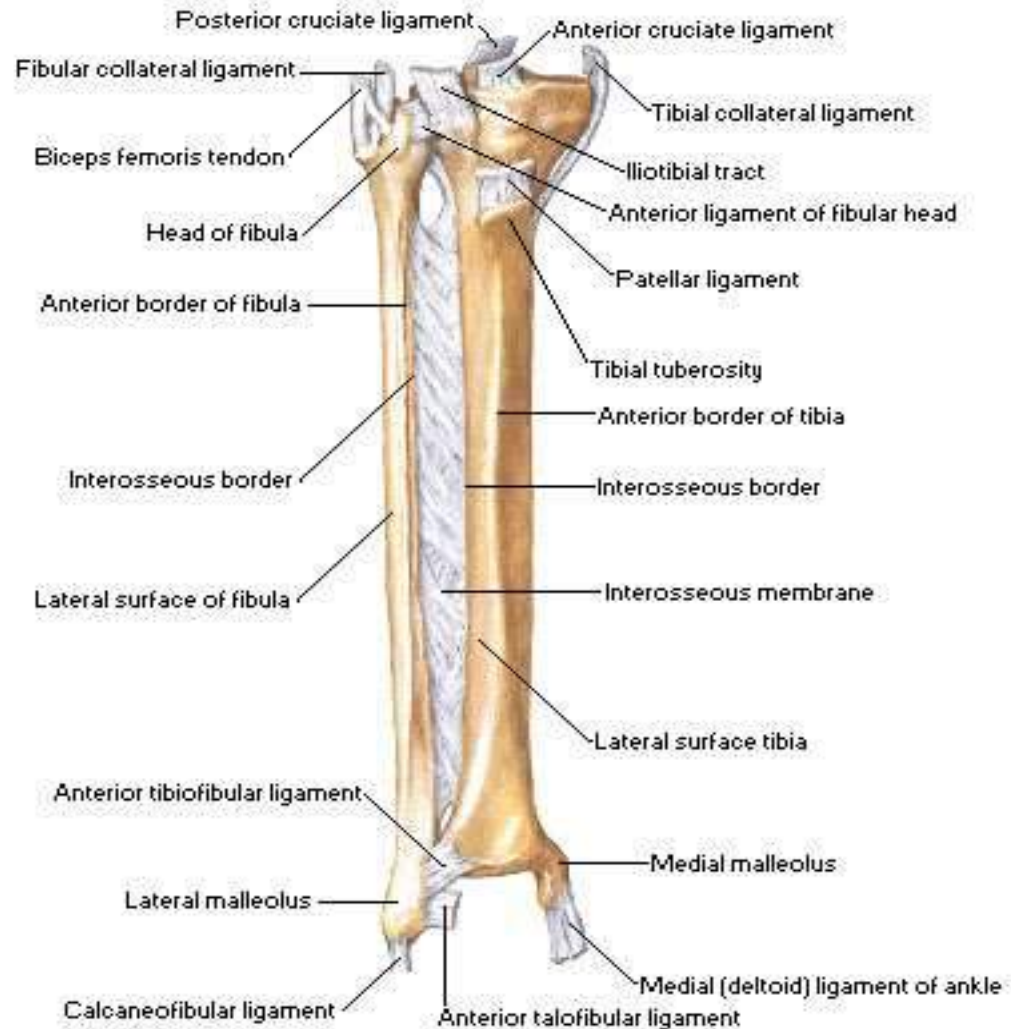


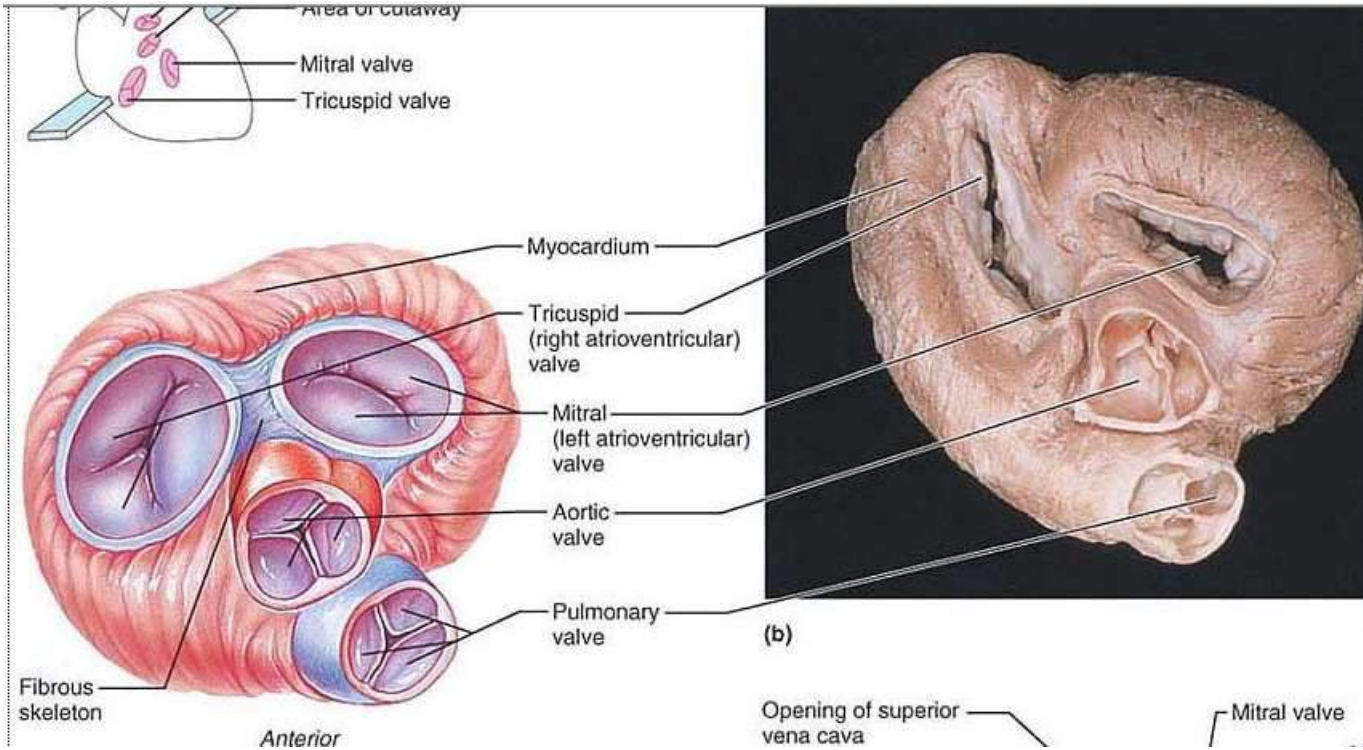
# Test Your Knowledge!



# Test Your Knowledge!

## Anterior View - Ligament Attachments

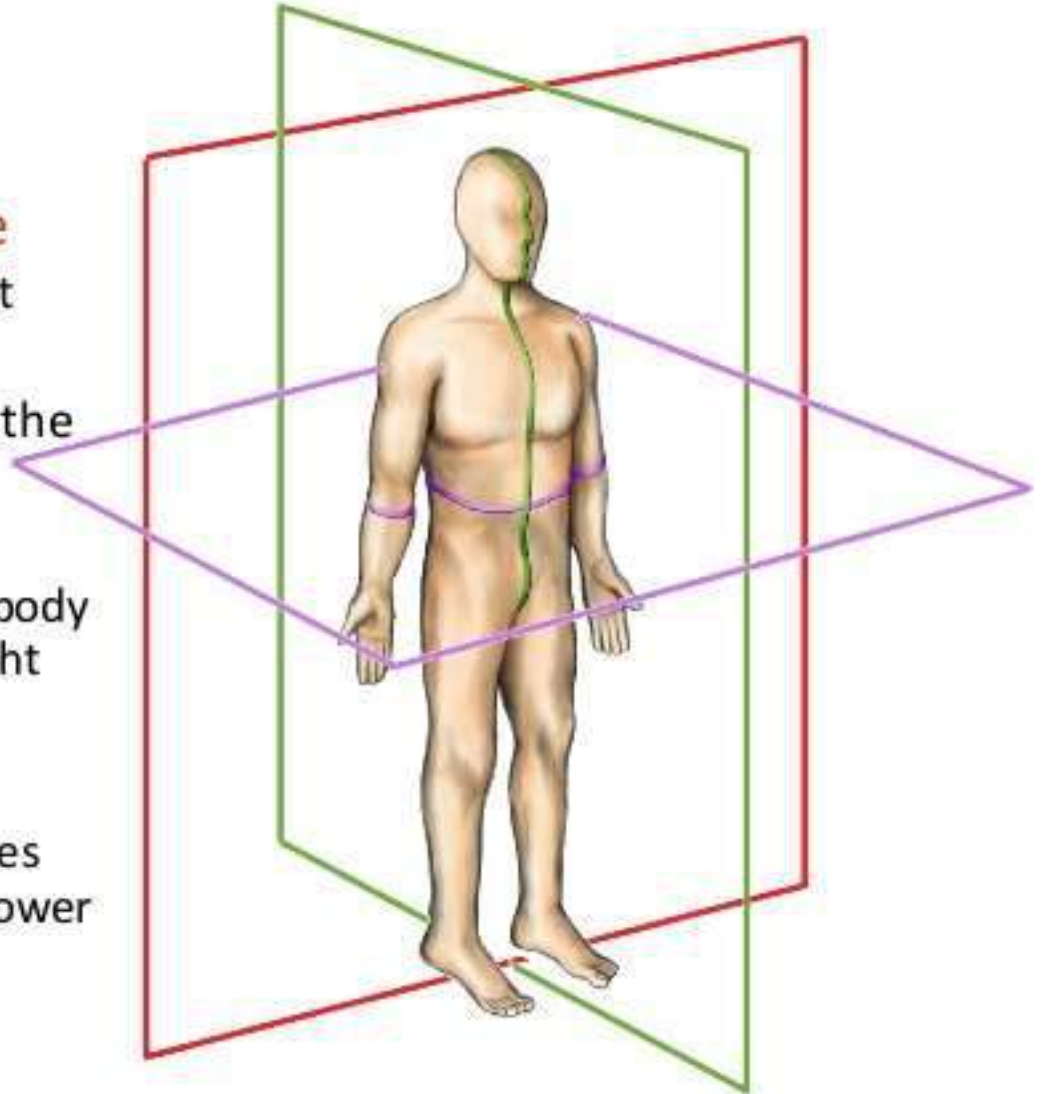




# Body PLANES ( Anatomical PLANES)

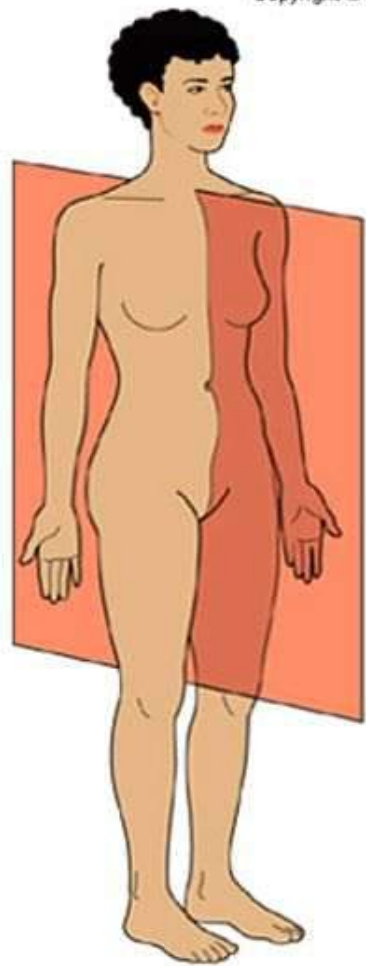
## Anatomical Planes

- Anatomical position
  - Anatomical planes
- **Coronal (Frontal) Plane** divides the body into front and back sections
- **Sagittal Plane** divides the body into left and right sections
  - **Median** - divides the body into equal left and right parts
- **Axial (Horizontal or Transverse) Plane** - divides the body into upper and lower segments

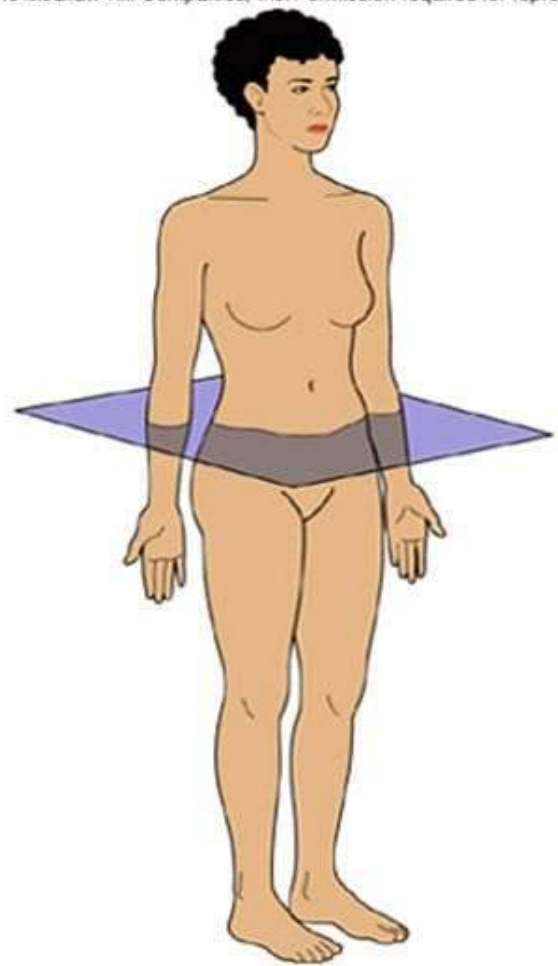


# Body sections are divided by planes

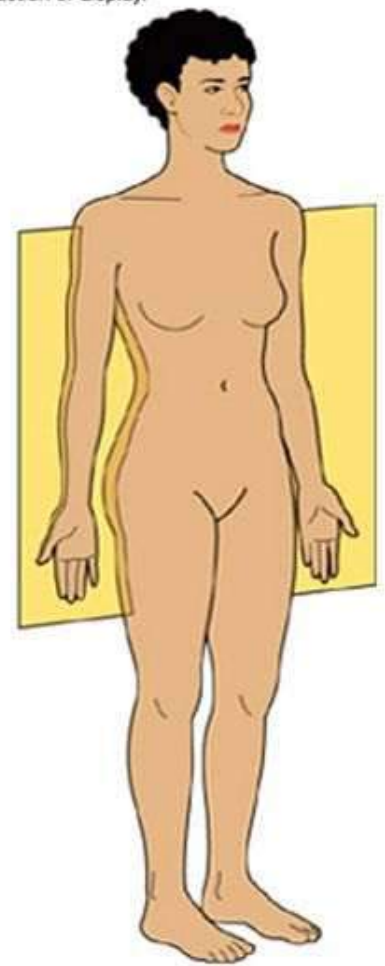
Copyright © The McGraw-Hill Companies, Inc. Permission required for reproduction or display.



**Sagittal plane  
(median plane)**

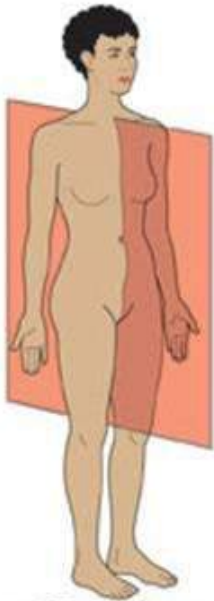


**Transverse plane  
(horizontal plane)**

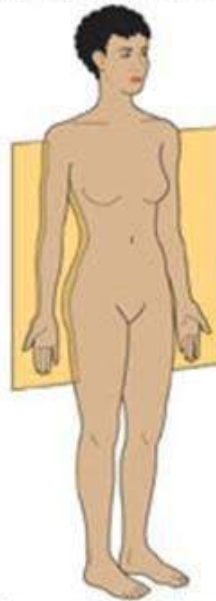


**Coronal plane  
(frontal plane)**

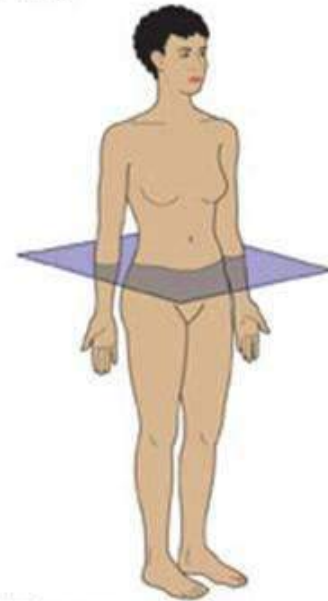




**a. Sagittal (median) plane**



**b. Frontal (coronal) plane**



**c. Transverse (horizontal) plane**



**d. Sagittal section of pelvic cavity**

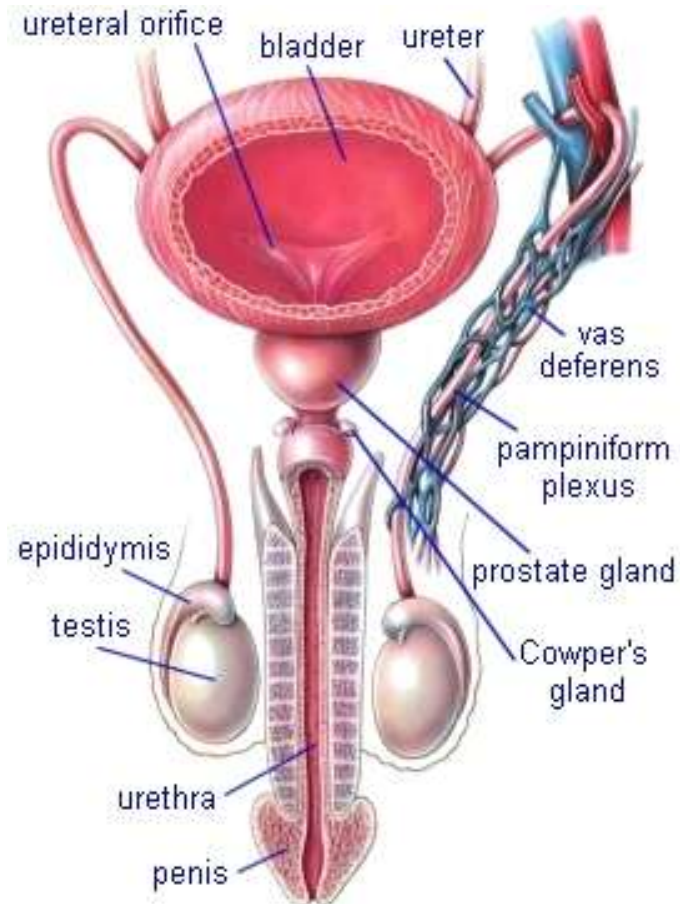


**e. Frontal section of thoracic cavity**

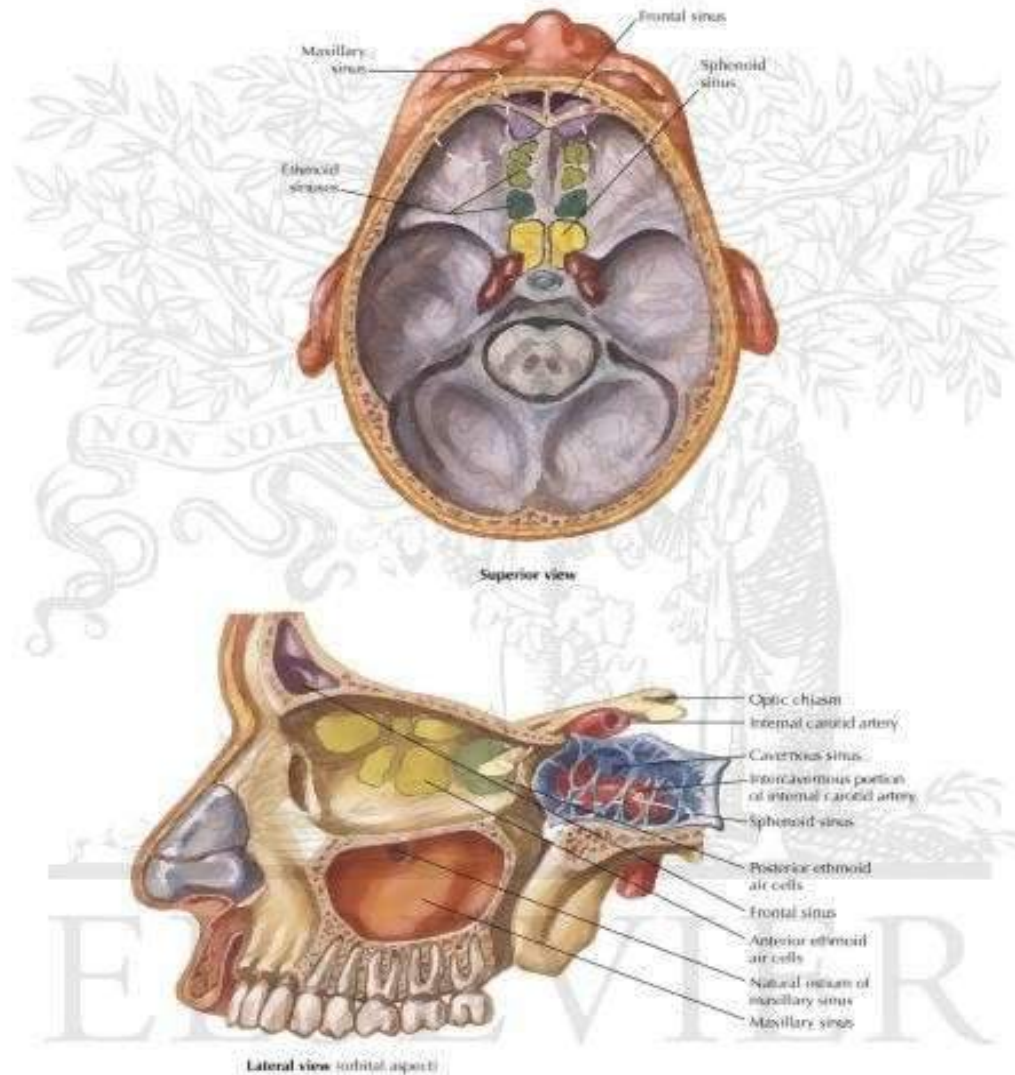


**f. Transverse section of head at eye level**

# Frontal PLANE

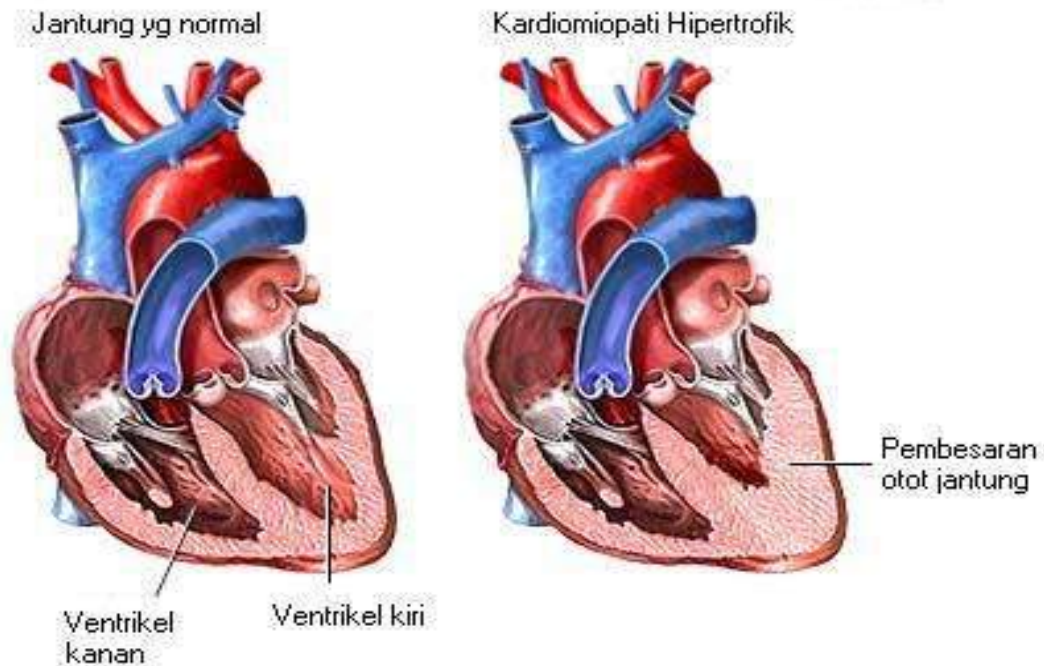


# Transversal and Sagittal Plane

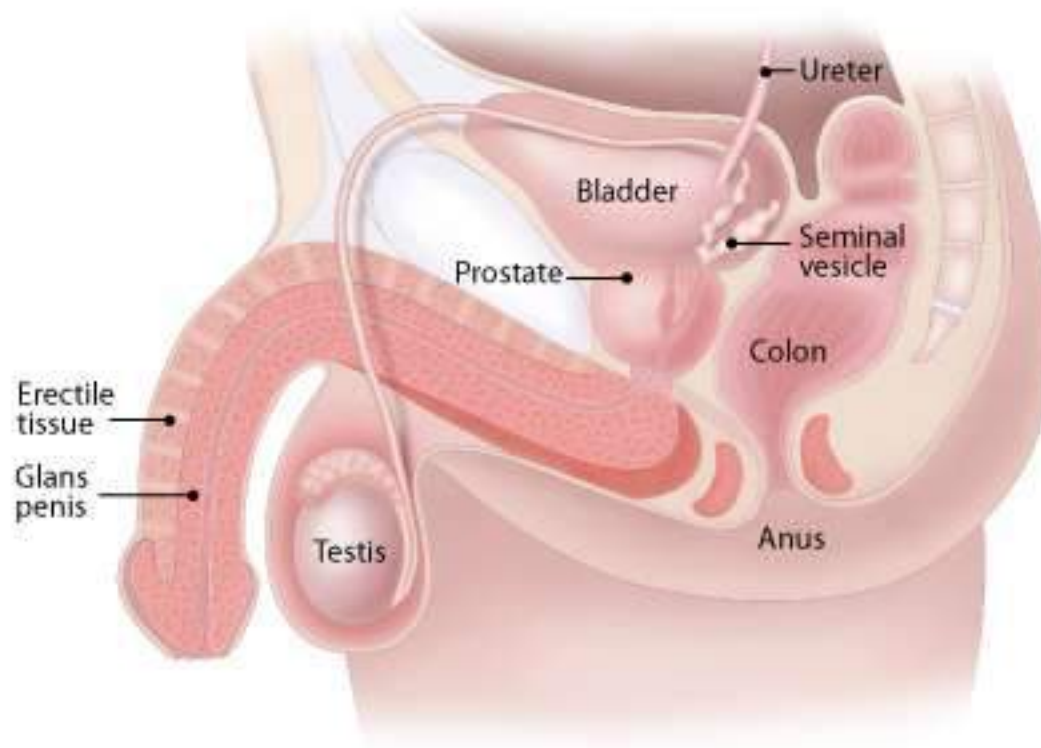


JOHN A. CRAIG

# Test Your Knowledge!



# Test Your Knowledge!



# Summary

- Medical ( anatomical ) terminology is commonly used in medicine to refer body parts, to describe its condition and processes happened in them
- The basic form consist of prefix-root-suffix-combining form
- Body orientation and body planes are used to describe the location of structures or the direction of movements
- Learn and self practice about body regions!



Any Question...??

# Your Assignments

- Practice using:

<https://www.wisc-online.com/learn/natural-science/life-science/ap15405/anatomical-terminology-body-regions>

- Paper work, submitted latest on:

**Friday, Sept 18, 2015, 11.59 am**

( Kordinator SDI Room, MEU )



Thank You!



# References

- Drake R, Gray's Anatomy for Student, Atlas of Anatomy, 2<sup>nd</sup> ed, Churchill Livingstone, Australia
- Seeley RA, 2003, Anatomy & Physiology ed.6 , McGraw-Hill Companies New York
- Snell, RS, 2012, Clinical Anatomy by Region 9<sup>th</sup> edition, Lippincot&Williams
- Sobotta Atlas of Human Anatomy, 15<sup>th</sup> edition, Urban & Fischer