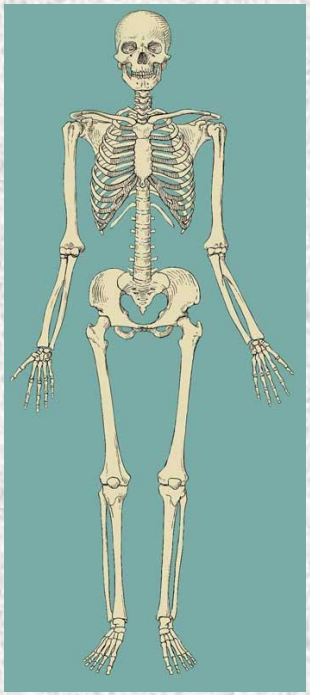
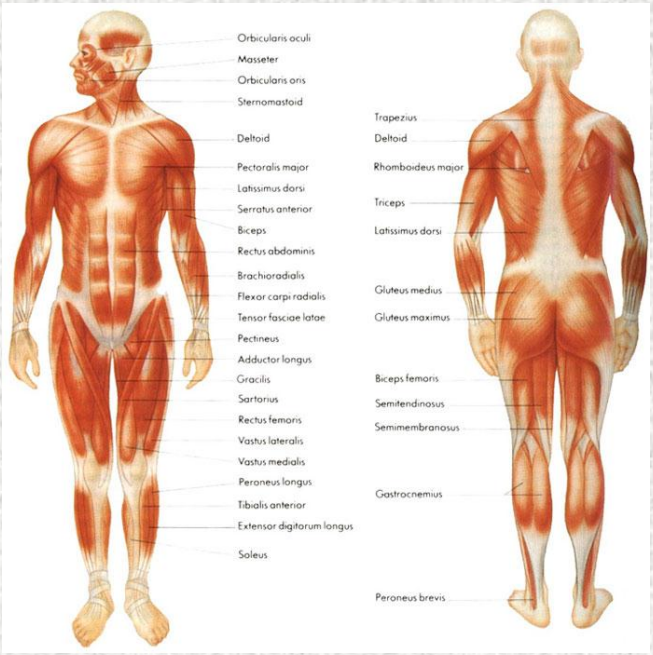
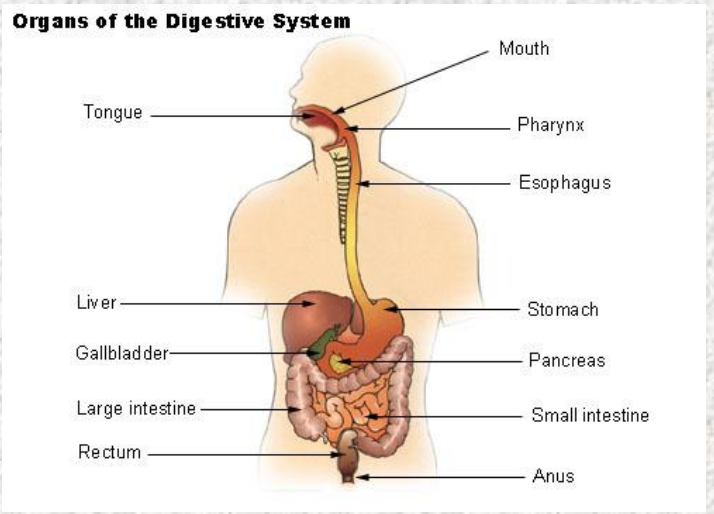
Anatomy

The study of the body's structure.







* 1. Systemic- Study of each of the body's systems.
2. Regional- Study of a specific area of the body
3. Surface- Study of external features.

Physiology

The study of the functions of living things.

* 1. Systemic- The study of the functioning of each system.

2. Cellular- The study of the functioning of cells.

The structure of a particular body part often determines the function it performs.

Biological Organization

Chemical → Cell → Tissue

Organ → System → Organism

Systems of the Body:

1. Integumentary System
2. Skeletal System
3. Muscular System
4. Nervous System
5. Endocrine System
6. Cardiovascular System
7. Lymphatic and Immune system
8. Respiratory System
9. Reproductive System
10. Digestive System
11. Urinary System

Life Processes

The processes in humans that are necessary to maintain life.

1. Metabolism-All of the chemical reactions that take place in living things
2. Responsiveness-the ability to react or respond to stimuli
3. Movement-The ability to transport material into and out of cells as well as around the body of organisms

4.Growth- an increase in the size and number of cells within an organism

5. Differentiation-the ability of cells and organs to perform specialized functions

6.Reproduction-the ability to repilcate life within a species.

Homeostasis

The process where the body tries to maintain a constant internal environment.

Examples:

-water
-temperature
-blood pressure
-oxygen levels.....etc.

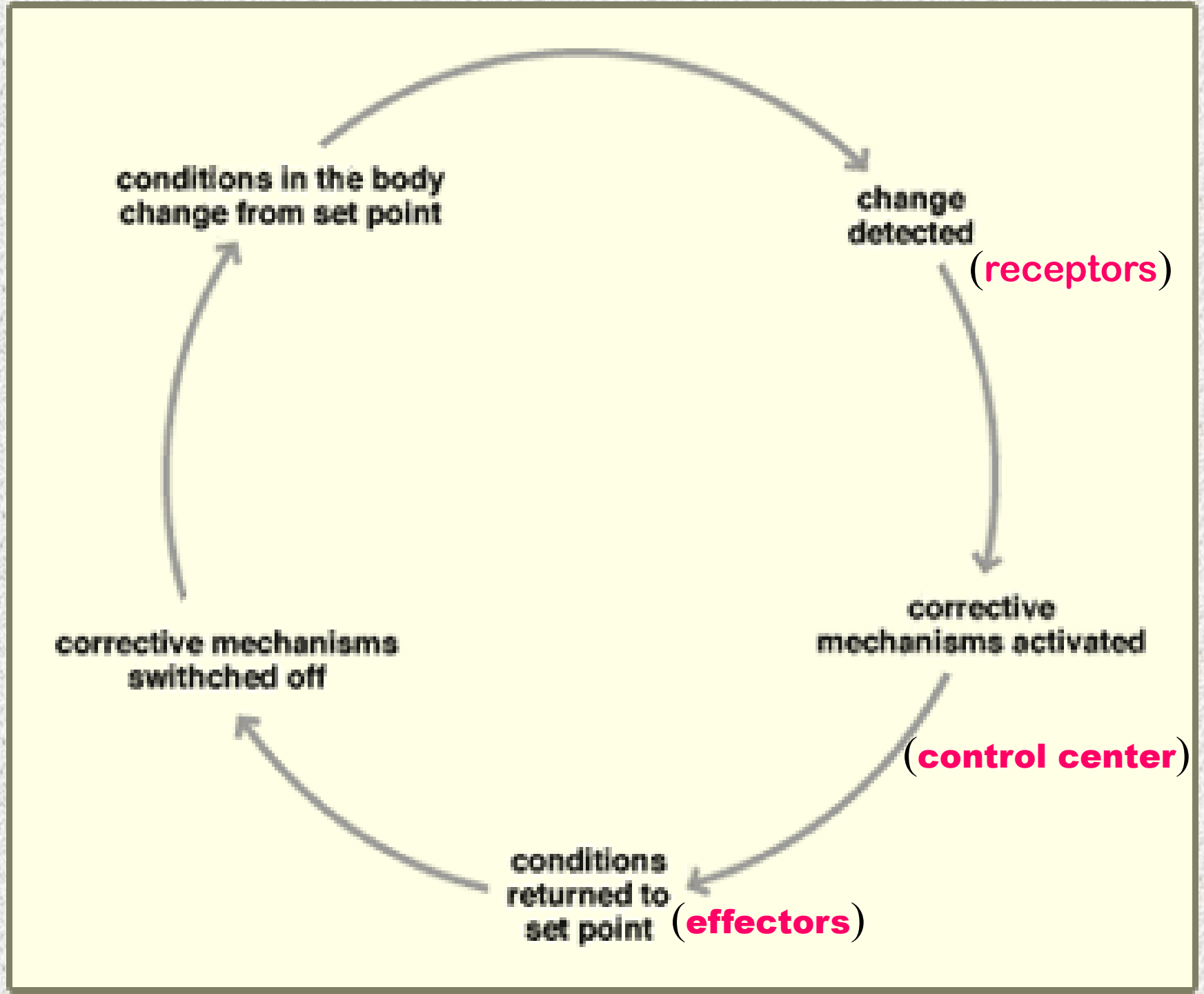
Feedback Systems

A cycle of events required to maintain homeostasis. A feedback system consists of

1. a receptor
2. a control center
3. an effector.

1. Negative Feedback

A mechanism that tries to maintain a constant environment by resisting changes from the normal levels.


conditions in the body change from set point
change detected
(receptors)
corrective mechanisms activated
(control center)
conditions returned to set point
(effectors)
corrective mechanisms switched off

2. **Positive Feedback**

When changes in a system occur the body responds by making the change larger.

This type of feedback is rare in humans.

Example-Stretching of the uterus, and contractions during child birth.

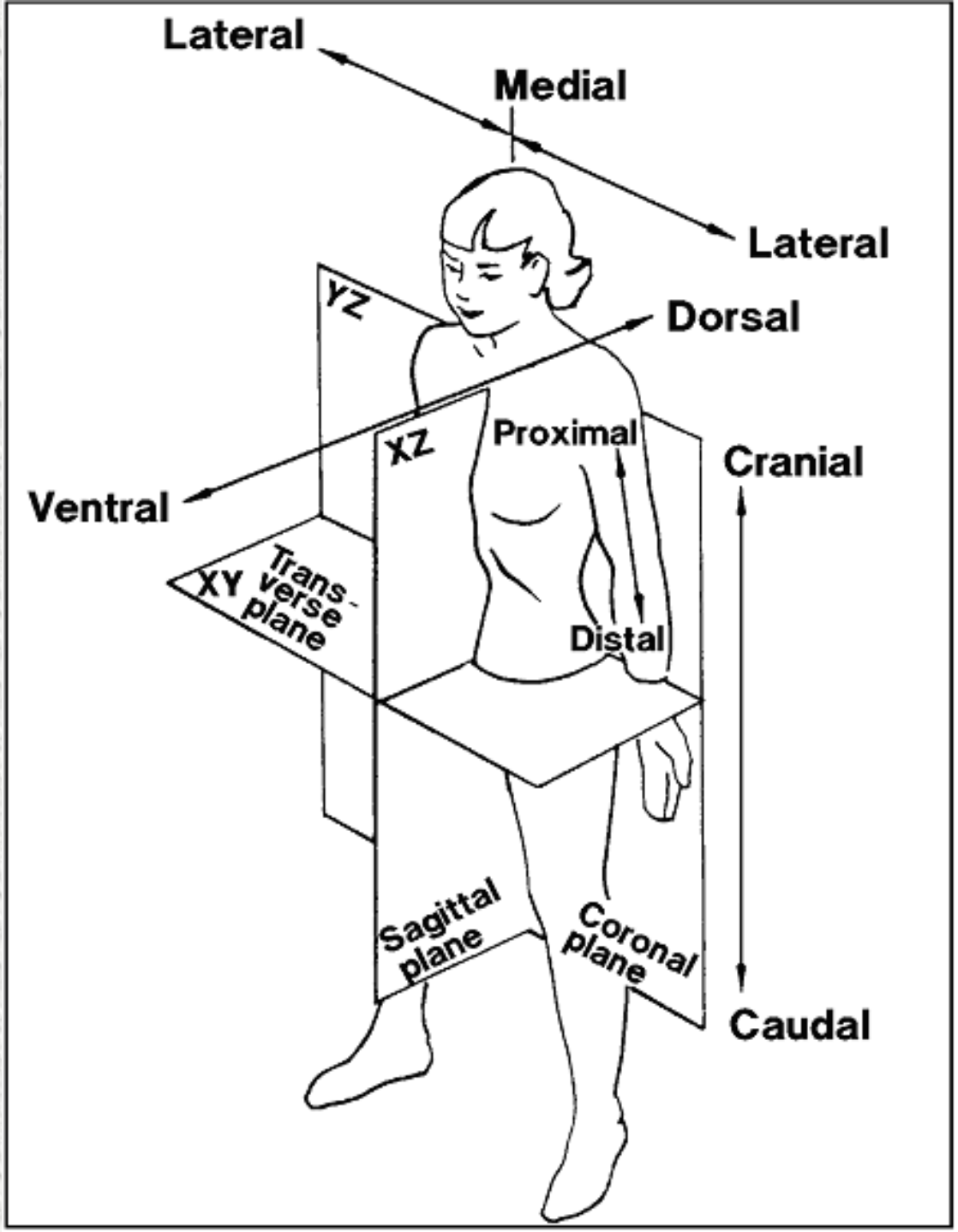
Directional terms

Inferior-A structure lower than another

Superior-A structure higher than another

Anterior-Toward the front of the body

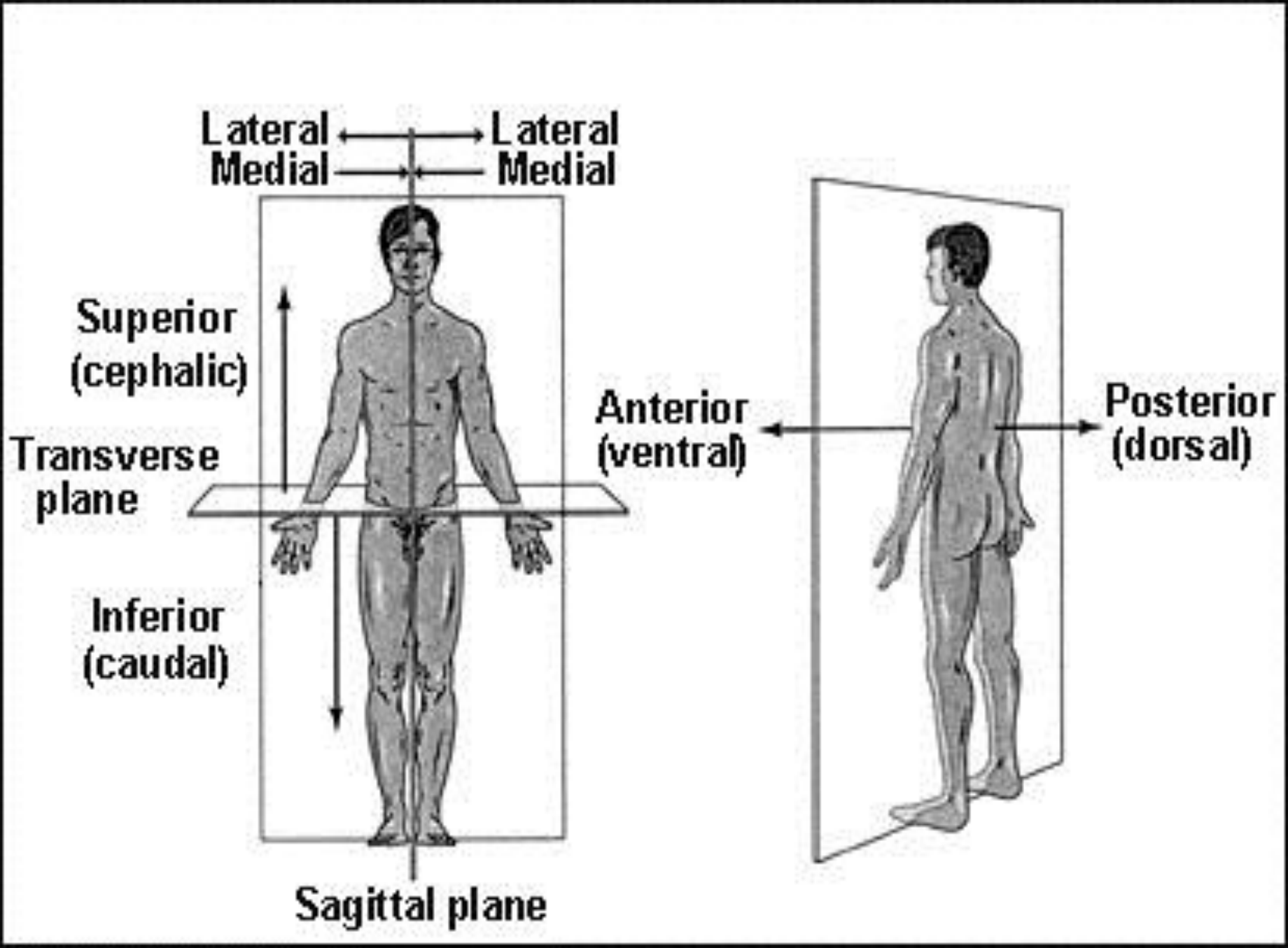
Posterior-Toward the back of the body

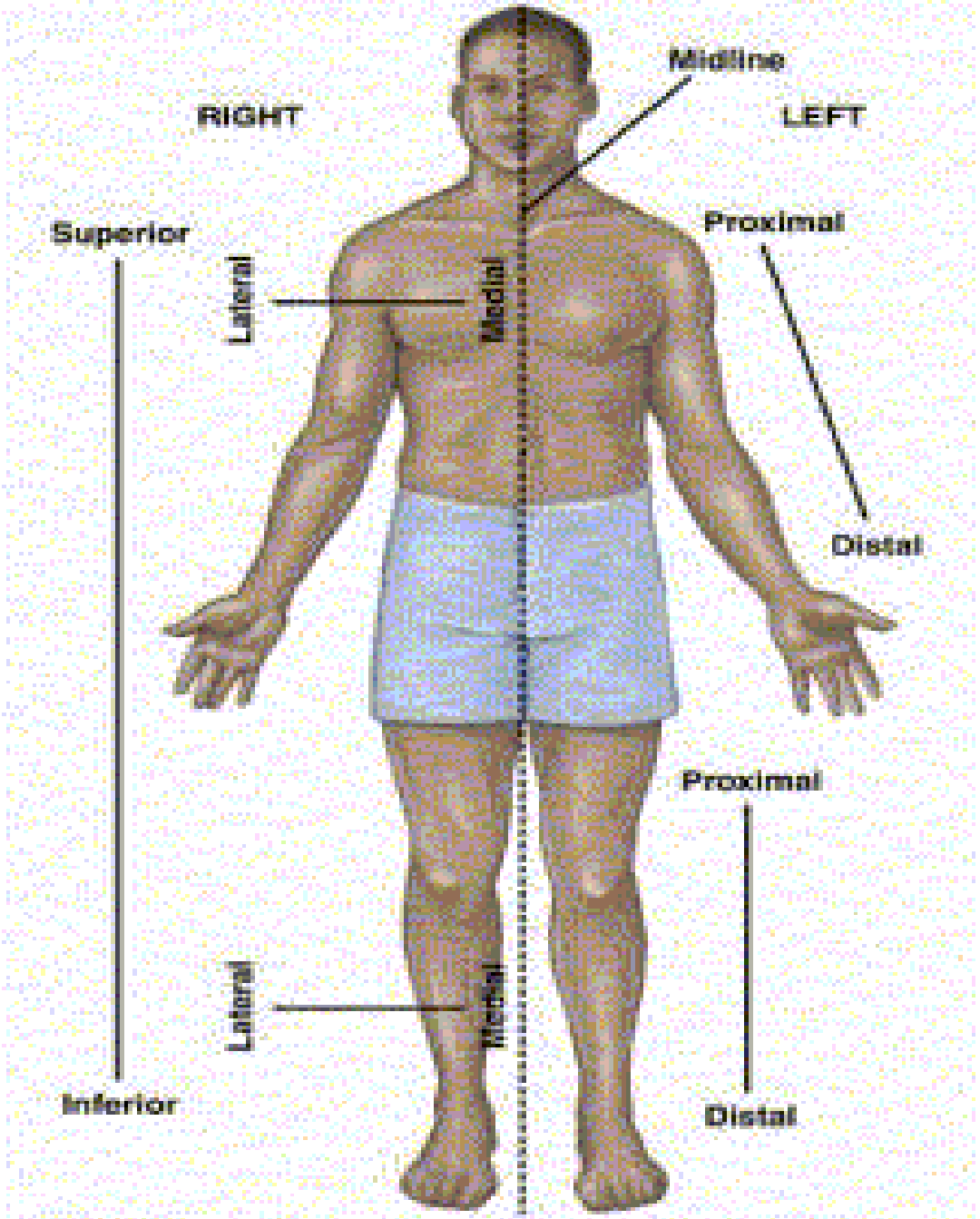

Lateral
Medial
Lateral
YZ
Dorsal
XZ
Proximal
Cranial
Ventral
XY
Trans-
verse
plane
Distal
Sagittal
plane
Coronal
plane
Caudal

Dorsal-Toward the top or back
Ventral-Toward the belly

Proximal-Closer to the point of attachment on the trunk
Distal- Farther from the point of attachment on the trunk

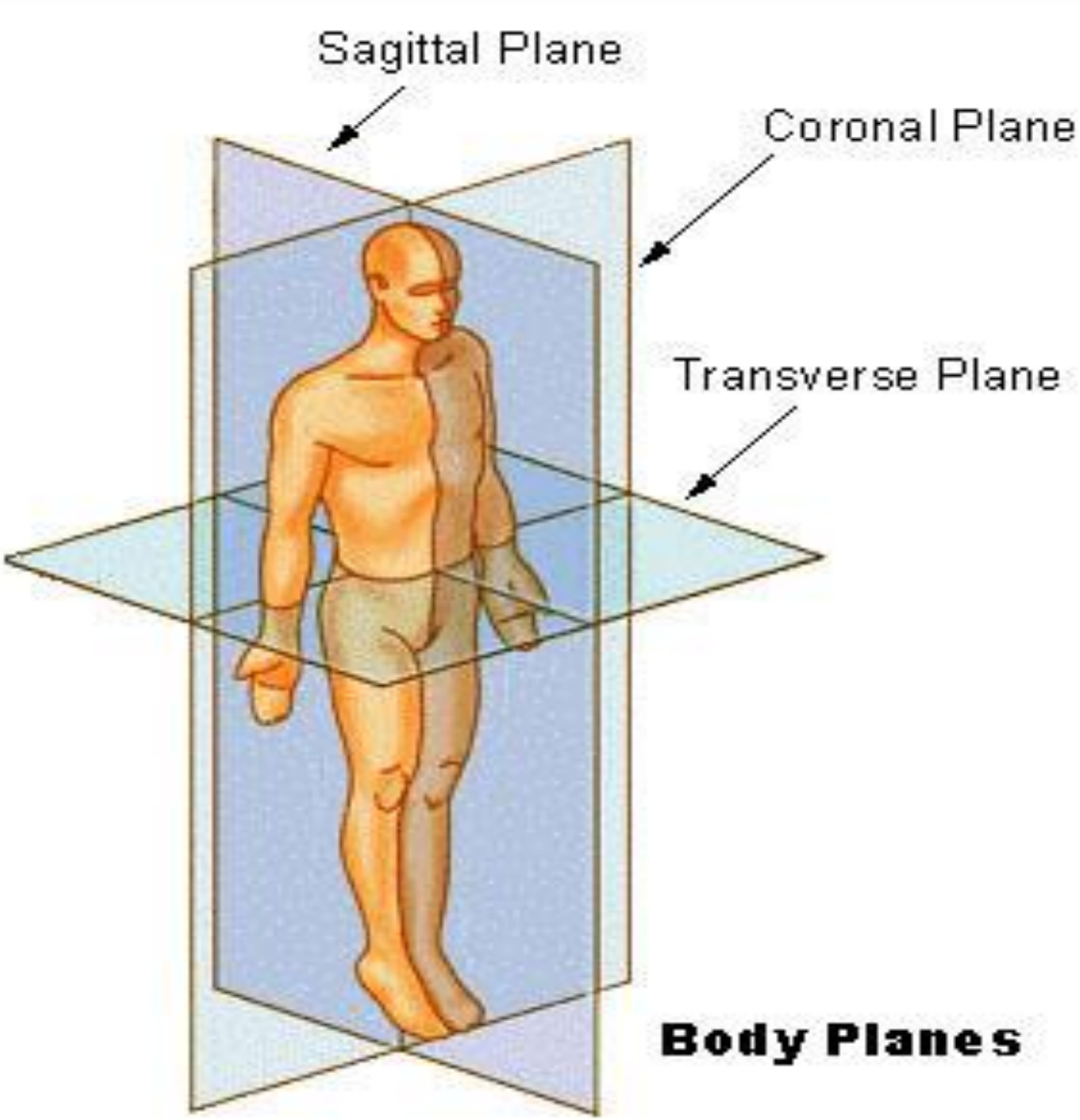
Lateral-Away from the midline or toward the side.
Medial-Towrd the middle
Superficial-Toward the surface
Deep-Away from the surface or internal


Lateral
Medial
Lateral
Medial
Superior
(cephalic)
Transverse
plane
Inferior
(caudal)
Sagittal plane
Anterior
(ventral)
Posterior
(dorsal)


Midline
RIGHT
LEFT
Superior
Proximal
Lateral
Medial
Distal
Proximal
Lateral
Medial
Distal
Inferior

Planes

Sagital-**vertically** through the body, **right and left** halves.



Body Planes

Transverse(horizontal)- parallel to the ground, **top and bottom** portions

Frontal(coronal)- vertically from right to left making **front and back** halves.

Oblique-passes through the body at an **angle.**

Body Regions

Head-cephalic

Neck-cervical

Armpit-axillary

Arm-brachial

Wrist-carpal

Palm-metacarpal

Fingers-digital or phalangeal

mouth-oral

groin-inguinal

hand-manual

ankle-tarsal

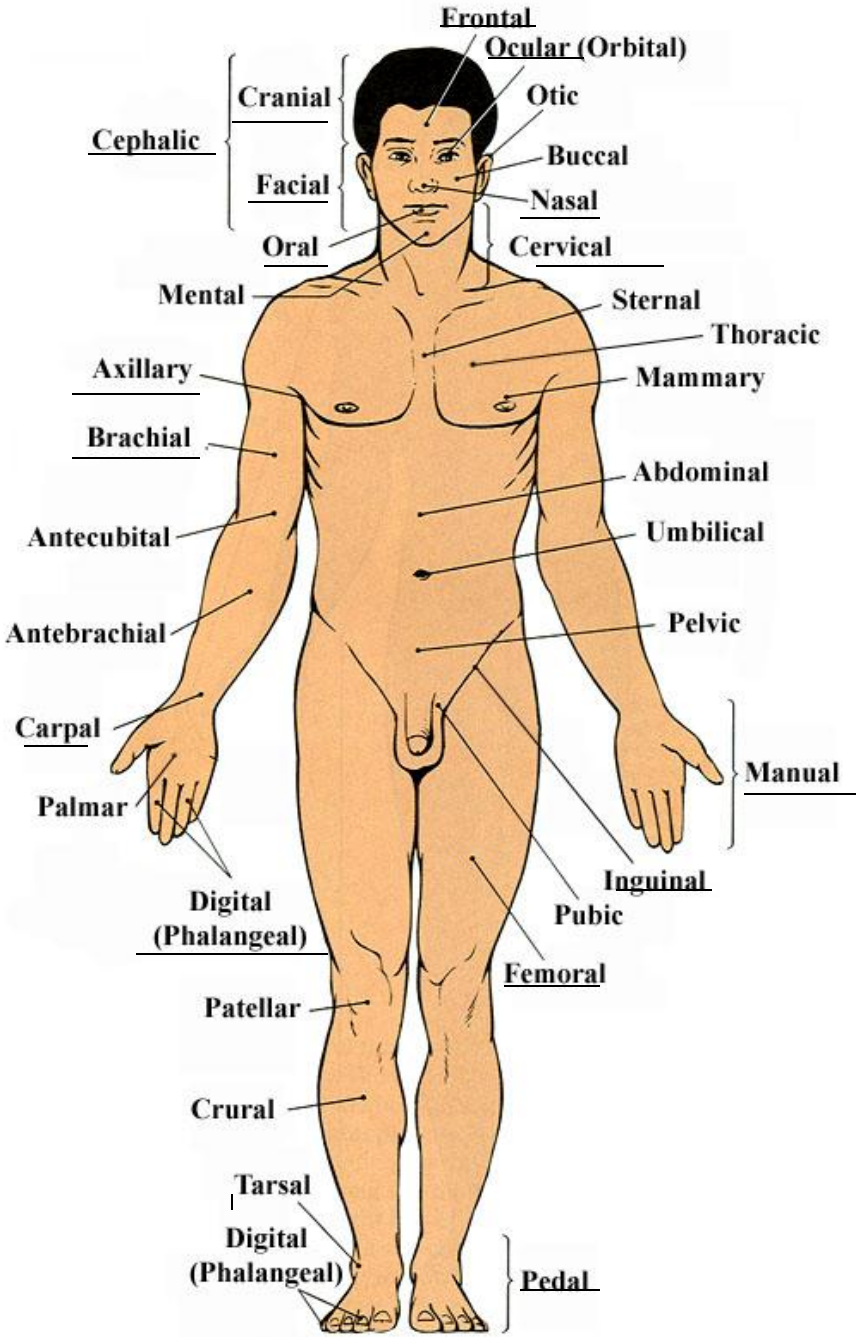
foot-pedal

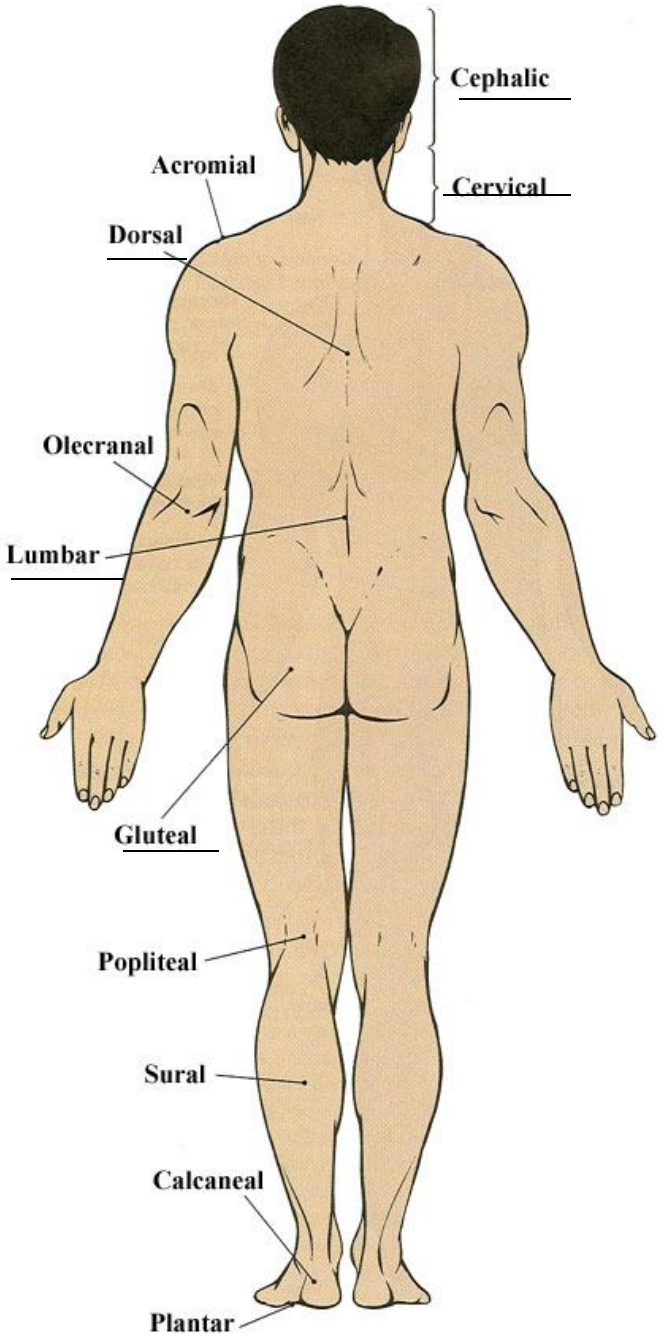
back-dorsal

buttocks-gluteal

low back-lumbar

Thigh-femoral
Forehead-frontal
Eye-orbital
Nose-nasal


Frontal
Ocular (Orbital)
Cranial
Otic
Cephalic
Buccal
Facial
Nasal
Oral
Cervical
Mental
Sternal
Thoracic
Axillary
Mammary
Brachial
Abdominal
Antecubital
Umbilical
Antebrachial
Pelvic
Carpal
Manual
Palmar
Inguinal
Digital
(Phalangeal)
Pubic
Femoral
Patellar
Crural
Tarsal
Digital
(Phalangeal)
Pedal


Cephalic
Acromial
Cervical
Dorsal
Olecranal
Lumbar
Gluteal
Popliteal
Sural
Calcaneal
Plantar

Appendicular-

Arm, forearm, shoulder(pectoral girdle).

Thigh, leg, hip(pelvic girdle).

Axial-

Head, neck, **trunk** (thorax, abdomen, pelvis)

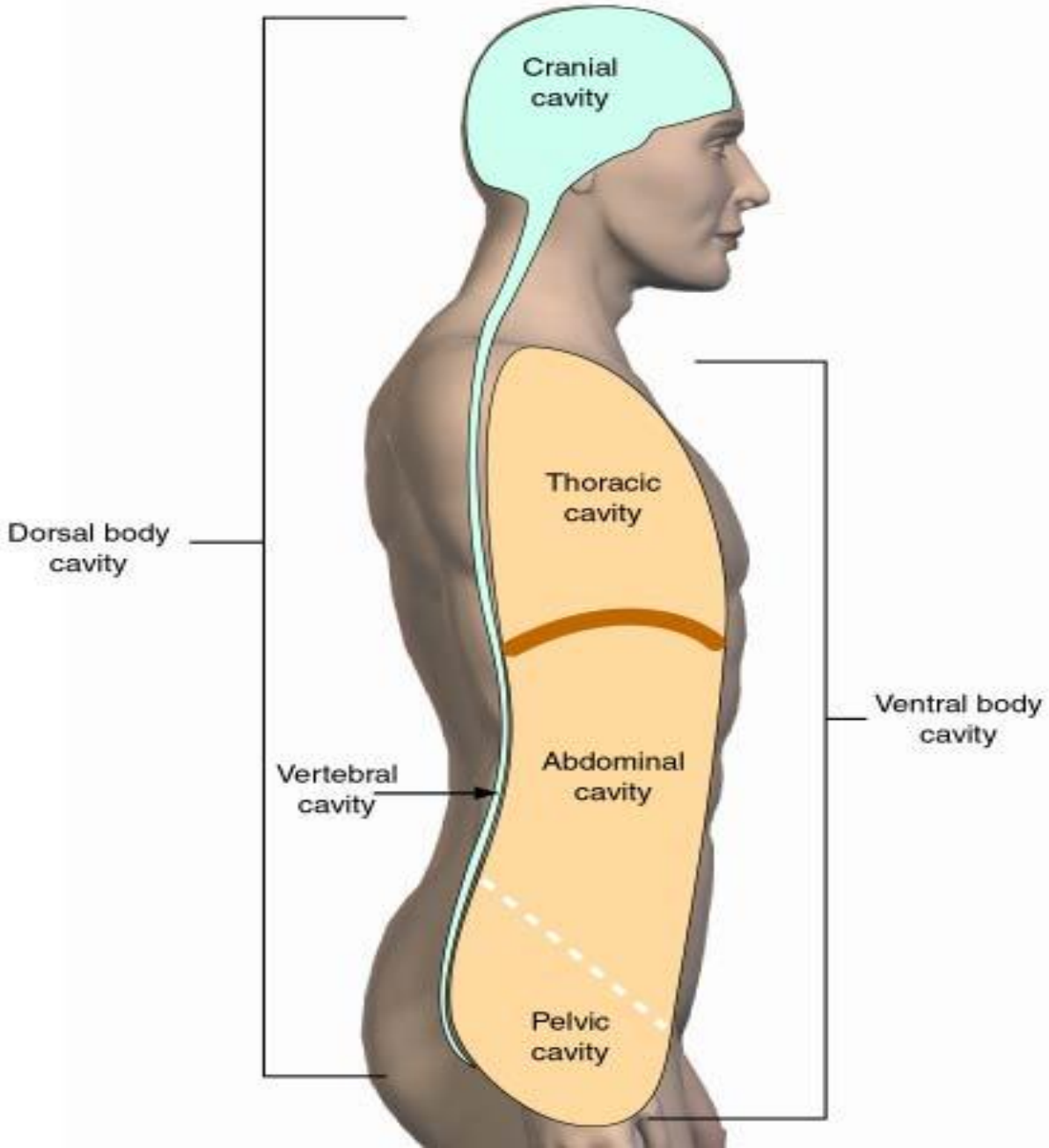
Body Cavities

Dorsal Body Cavities

Cranial Cavity-Contains the brain.

Vertebral Canal- Contains the **spinal cord**

Dorsal and Ventral Body Cavities



Ventral Body Cavities

Thoracic- Chest cavity, surrounded by rib cage. Within the thoracic cavity there are smaller cavities:

Mediastinum-region between the lungs which contains **the heart, trachea, esophagus**.

Pericardium-contains the heart.

Pleural cavity-contains the **lungs.**

Abdominopelvic- Is **inferior** to the thoracic cavity, and is separated from it by **the diaphragm**.

Consists of both the **abdominal region** (contains the digestive organs) and **pelvic region**(contains the urinary bladder and female and some male reproductive organs).

Membranes

Serous membranes line the body cavities and cover the organs.

-Visceral: Covers the **organs**

-**Parietal**: Outer serous membrane, closer to the cavity wall.

There is a space or cavity between the visceral and parietal membranes that contains a lubricating fluid:

-**pericardial cavity**: surrounds the heart.
-**pleural cavity**: surrounds the lungs.
-**peritoneal cavity**: located within the abdominal cavity.