



ANATOMY

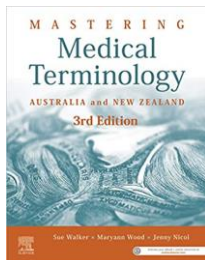
Khaleel Alyahya, PhD, MEd
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RESOURCES

I

Mastering Medical
Terminology

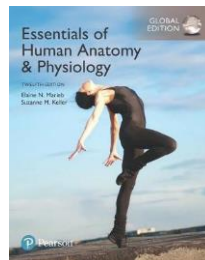
By Sue Walker, Maryann
Wood and Jenny Nicol



II

Essential of Human Anatomy
and Physiology

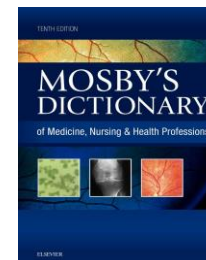
By Elaine Marieb and
Suzanne Keller



III

Mosby's Dictionary

By Mosby



IV

KENHUB

www.kenhub.com



Introduction

- Anatomy is a branch of the biological science which is concerned with the description of body structures of various living organisms as revealed by dissection.
- The word anatomy is derived from the **Greek** word **anatomē**, where “**ana**” means up and “**tome**” means to cutting.
- Originally, anatomy was first learnt by cutting up cadaver, hence the name **anatomy**.
- It is related most closely to gross anatomical studies because in such studies, preserved animals or their organs are dissected (cut up) to be examined.
- Microscopic anatomy, in contrast, is the study of body structures that are too small to be seen with the naked eye.



Importance

- In the field of medicines and life science sectors, anatomy place a vital role as it helps us to learn about the different parts in an organism, including plants, animals and humans, along with their structure and characteristic features.



Types of Anatomy

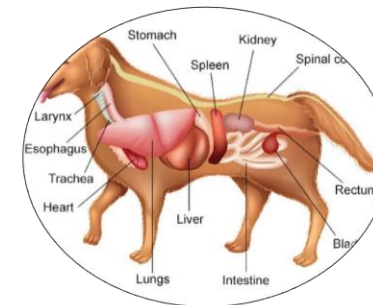
▪ Human Anatomy

- Human anatomy involves the study of the physical structure of the human body.
- It focuses on numerous systems, including circulatory, digestive, endocrine, skeletal, lymphatic, nervous, respiratory, urinary, reproductive and muscular systems.



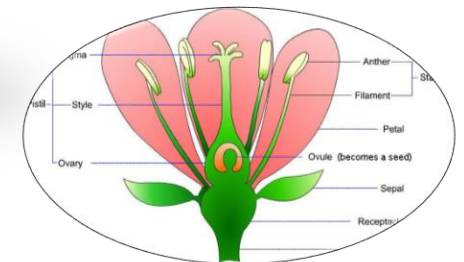
▪ Animal Anatomy

- Also called as the **zootomy**.
- It deals with the study of the internal structure of an animal including the cells, tissues, organs, bones and other organs of the animal body.



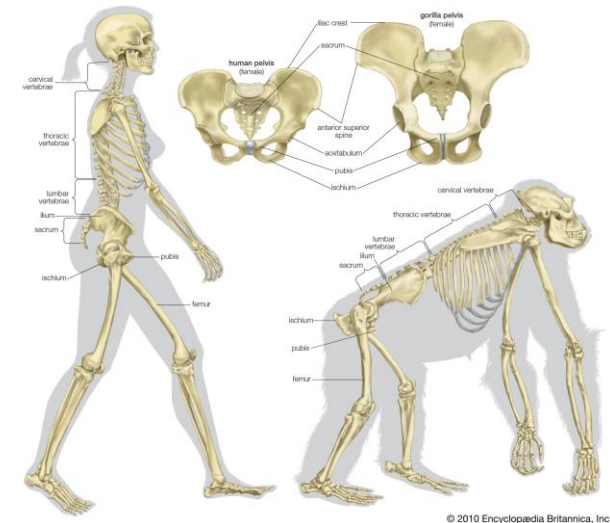
▪ Plant Anatomy

- Also called as the **phytotomy**.
- It is the study of the internal structure of plant including the tissues, root system, stem, leaves, flower, fruit and seeds.



Comparative Anatomy

- It is the study of similarities and differences in the anatomy of different species.
- It involves homology, analogy, difference and origin for some vertebrate organs.
- It also apply comparison of the anatomical structures of vertebrate systems with their corresponding invertebrates.



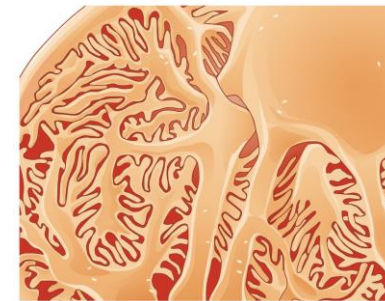
Macroscopic Anatomy

- It is known as **gross** anatomy.
- It is the study of an organism's structures which are visible to the naked eye.
- The main objective of gross anatomy is to obtain complete information about the structural organization of an organism.

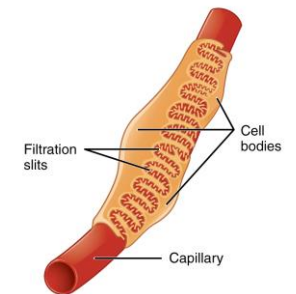


Microscopic Anatomy

- It is known as **histology**.
- It is the study of cells and tissues as discerned by a microscope.
- The individuals who specialize in this study are called histologists.
- The process involves marking and dividing cells and tissues into sections to be viewed under a microscope.
- The biological samples are dissected into thin slices so that they could be clearly examined.
- Stains are added to these dissected samples to enhance visibility and highlight important structures.
- Microscopic anatomy is useful to examine and compare different types of organisms, their structures and different stages of the cell cycle.



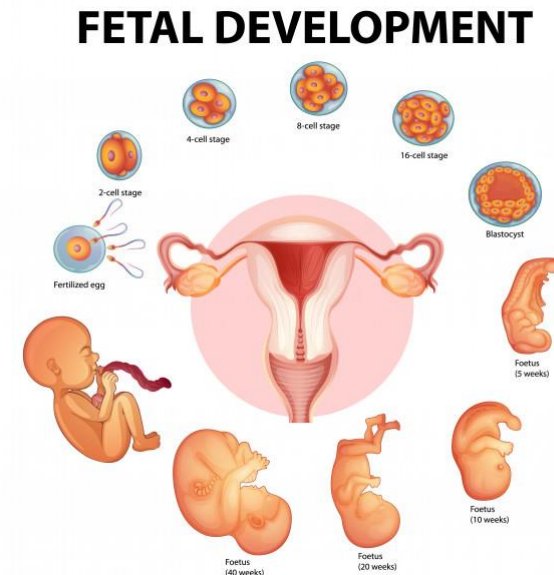
(a)



(b)

Embryology

- It is a branch of science that is related to the formation, growth, and development of embryo.
- It deals with the prenatal stage of development beginning from formation of gametes, fertilization, formation of zygote, development of embryo and fetus to the birth of a new individual.
- Two basic processes involved are growth and differentiation.
- These lead to formation of various tissues and organs in body specialized to perform specific functions.
- Neuroembryology is related to the development of central nervous system (brain and spinal cord) and peripheral nervous system (spinal, cranial, and autonomic nerves) in the body.



Clinical Anatomy

- The goal of Clinical Anatomy is to provide a medium for the exchange of current information between anatomists and clinicians.
- It embraces anatomy in all its aspects including gross, histologic, developmental, and neurologic - as applied to medical practice.
- It also assists physicians in keeping abreast of new methodologies for patient management and informs educators of new developments in clinical anatomy and teaching techniques.



Body Regions

- The body regions are divided into various anatomic districts which can be projected by the shape of planes onto the body surface.
- The human body is divided into six big regions:
 - Head & Neck
 - Thoracic & Back
 - Abdomen
 - Pelvis
 - Upper limbs
 - Lower limbs
- The human body is subdivided further into smaller subregions.



Head & Neck

▪ Bones

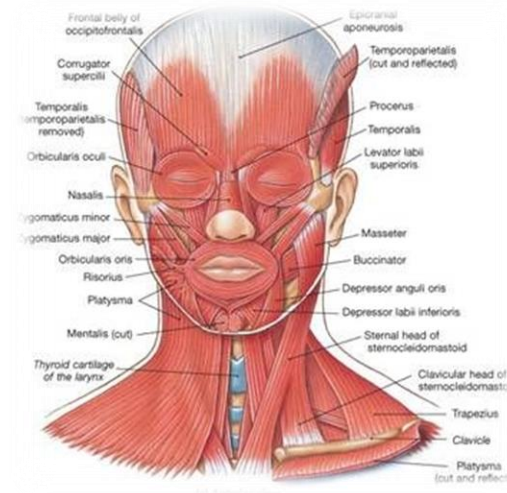
- Skull
- Mandible
- Facial Bones
- Cervical vertebrae

▪ Muscles

- Scalp muscles
- Muscles of facial expression
- Muscles of mastication
- Sternocleidomastoid
- Omohyoid
- Thyrohyoid

▪ Organs

- Brain
- Thyroid gland
- Pharynx
- Larynx
- Mouth, Nose, Eyes and Ears



Thoracic & Back

▪ Bones

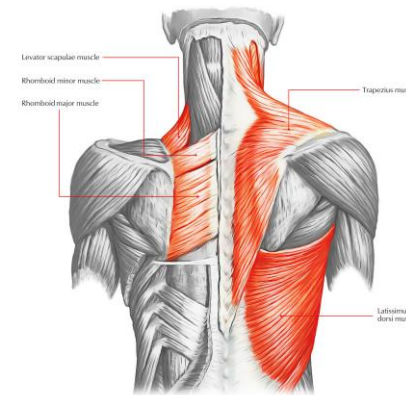
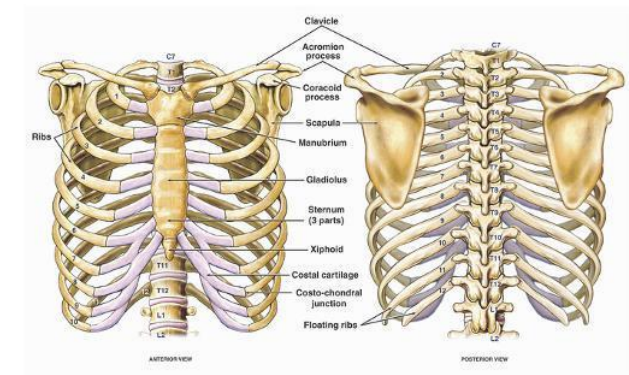
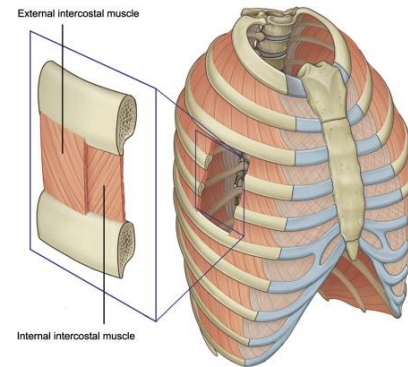
- Ribs
- Sternum
- Thoracic spine
- Thoracic cage
- Vertebral column

▪ Muscles

- Intercostal
- Diaphragm
- Trapezius
- Latissimus dorsi

▪ Organs

- Heart
- Lungs
- Pleura
- Thymus gland



Upper Limbs

▪ Bones

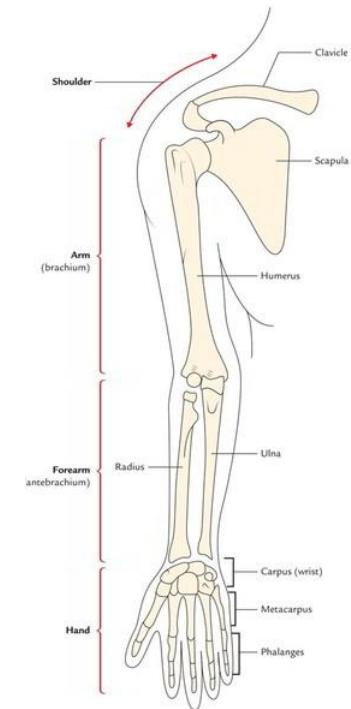
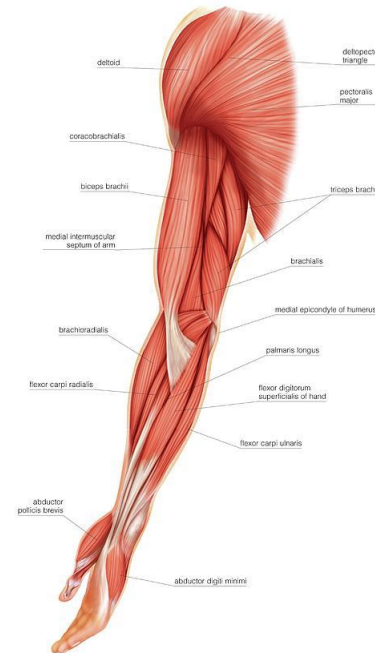
- Scapula & Clavicle
- Humerus
- Ulna & Radius
- Hand

▪ Muscles

- Deltoid
- Biceps
- Triceps
- Brachialis

▪ Joints

- Shoulder joint
- Elbow joint
- Wrist joint
- Hand joints



Abdomen

- **Bones**

- Lumbar spine

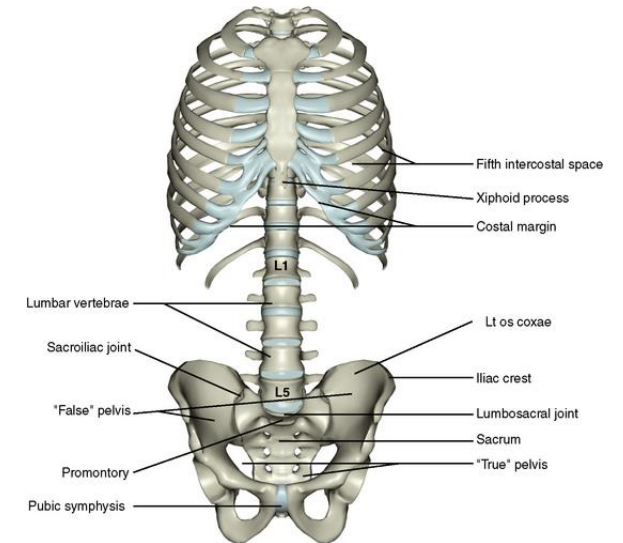
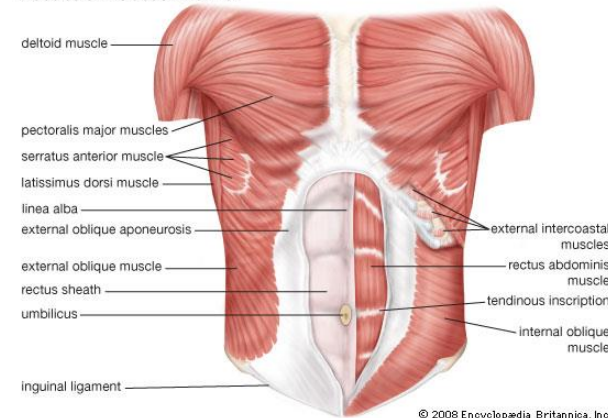
- **Muscles**

- Anterior abdominal wall
- Posterior abdominal wall

- **Organs**

- Stomach
- Intestines
- Liver
- Pancreas
- Spleen
- Adrenal glands

Muscles of the abdominal wall



Pelvis

▪ Bones

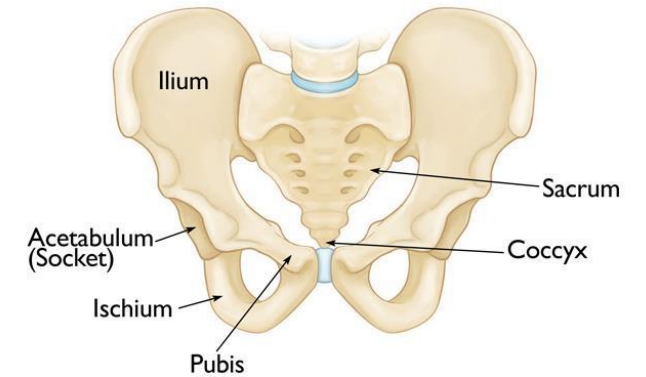
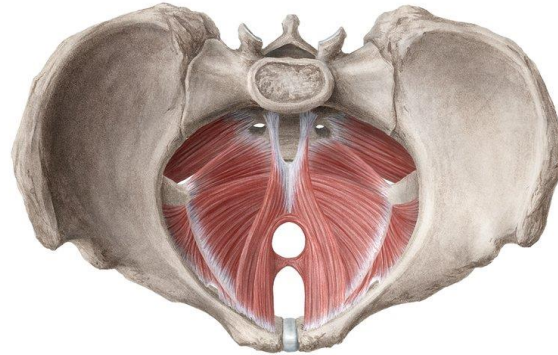
- Hip bone
- Pelvic girdle
- Sacrum

▪ Muscles

- Levator Ani (Pelvic floor)

▪ Organs

- Uterus
- Urethra
- Urinary bladder
- Ovaries
- Testes



Lower Limbs

▪ Bones

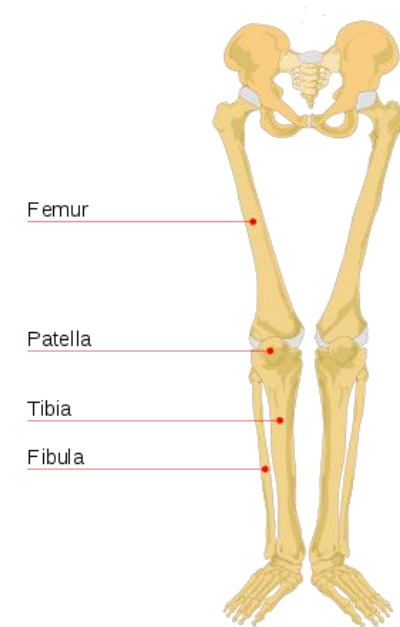
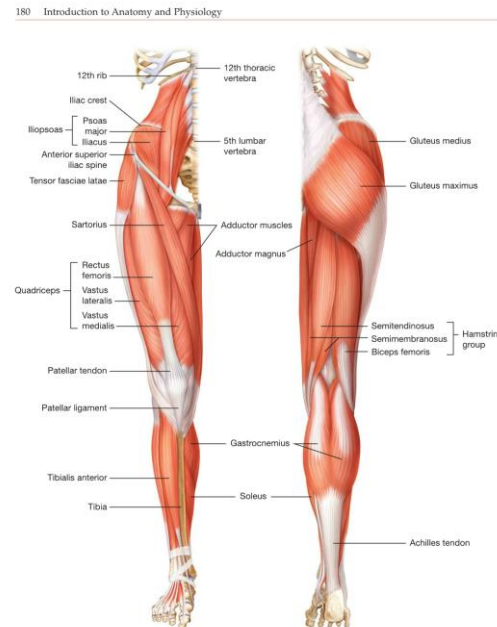
- Pelvic bone
- Femur
- Patella
- Tibia & Fibula
- Foot

▪ Muscles

- Gluteal muscles
- Quadriceps femoris
- Rectus femoris
- Sartorius

▪ Joints

- Hip joint
- Knee joint
- Ankle joint
- Foot joints





Questions?

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