

## Chapter 23

### Unit III The Musculoskeletal system

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### The Skeletal System

- Protects internal organs, framework for body, acts with muscles to produce body movement, produces blood cells, stores calcium.
- Cranium - frontal, parietal, temporal, ethmoid, sphenoid, occipital.
- Facial - maxillary, mandible, nasal, lacrimal, zygomatic (cheeks) vomer (nasal septum)
- Vertebral – cervical, thoracic, lumbar, sacrum, coccyx.
- Rib cage – All 24 attached posteriorly to thoracic vertebrae, first 7 attach anteriorly to sternum, next 3 converge and join 7<sup>th</sup> rib.
- Sternum – breast bone
- Upper Extremities – clavicle (collar bone) scapula (shoulder blade)
- Arm and hand humerus, ulna, radius, carpals, metacarpals, phalanges
- Lower extremities pelvic ilium, ischium, pubis
- Leg/foot femur, patella, tibia, fibula, tarsals, metatarsals, phalanges.
- Joint- where 2 or more bones meet to allow for movement, ligaments

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### The Muscular System produces movement

- Voluntary (skeletal) – controlled by conscious portion of brain. Muscles work in pairs. Tendons attach muscles to bones.
- Involuntary - respond to impulses from autonomic nerves, located in blood vessels and organs.
- Cardiac muscle, in the heart. Is it voluntary or involuntary?

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### Diseases of the Musculoskeletal System

- Arthritis – over 100 different types , most common osteoarthritis, and rheumatoid.
- Ruptured Disk –slipped or herniated or herniated nucleus pulposus (HNP)
- Osteoporosis – loss of bone mass
- Paget’s disease – an imbalance in the bones ability to constantly dissolve and rebuild.
- Fractures – broken bone can be closed, open or compound, greenstick (bent and partially broken) comminuted, (splintered or crushed) or spiral (twisted apart)

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