CALA
Canadian Aquafitness Leaders Alliance Inc.

Handout

Body 1: Bones

Basic Facts About Bone Tissue

- Bone is composed of inorganic (non-living) and organic (living) material
- Bone contains calcium, sodium, potassium and other minerals important in maintaining bone density.
- Bone is the site of red blood cell production.
- There are 206 bones that give structure to the body.
- Bones protect delicate body tissues: brain, spinal cord, and internal organs.
- Bones are attachment sites for muscles, ligaments, tendons and fascia.
- Bones act as levers, which facilitate movement and generate force.
- Bones are different sizes and shapes. They are classified as follows:
  - Long (femur, humerus)
  - Short (carpals, tarsals)
  - Flat (scapula, ilium)
  - Irregular (vertebrae, ischium, pubis, maxilla)
  - Sesamoid - small bones embedded within a tendon (patella)

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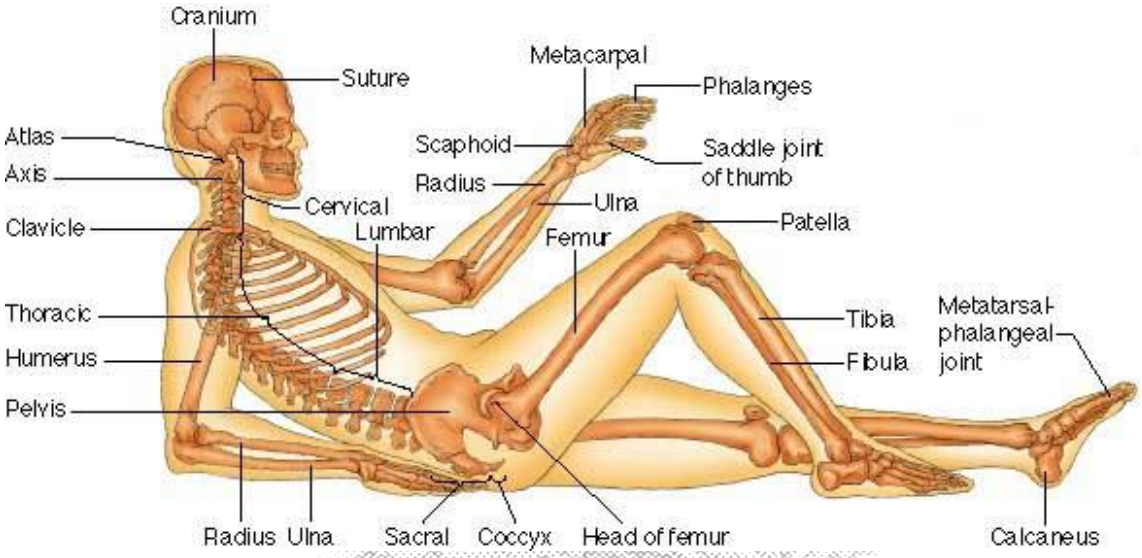

Aquafitness and Bone Tissue

- The amount of impact on bones and joints is less during aquafitness than during land exercise due to buoyancy.
- There is less gravitational loading and shock to the bones and joints during aquafitness than on land. Fragile bones/joints can benefit from the gentler aquatic environment.
- The amount of impact decreases as the depth of immersion increases.
- Participants with advanced osteoporosis may find water exercise a perfect alternative to land exercise.
- Performing aquafitness exercises in chest deep water involves some impact, which loads bones (more than deep water). This can assist in maintenance of bone mass.
- The multi-directional resistance provided by the water causes the muscles to pull on the bones. This loading can maintain or increase bone mass.