

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)

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.