



Body 3: Joints

Basic Facts About Joints

A joint is the meeting place of two or more bones.

A joint is often referred to as an articulation because the bones can move (articulate) with respect to each other.

There are three primary classifications of joints:

- Fibrous - little or no movement. Examples: the joint between distal end of tibia and fibula and the sutures of skull;
- Cartilaginous: little or no movement. Examples: the joint between the pubic bones and between the ribs and sternum;
- Synovial: most common, movable joint, contains a joint capsule, synovial membrane, hyaline cartilage, ligaments and synovial fluid. Examples: knee hip, elbow and ankle.

Synovial joints are further classified into several types according to their actions. Two types important in aquafitness exercises are:

- Ball and socket joint: shoulder and hip
- Hinge joint: knee and elbow

Aquafitness and the Joints

Aquafitness is an exercise medium that facilitates decrease joint loading and increased joint space. This has a positive effect on joint ROM.

Buoyancy reduces gravity and decreases the compressive forces and friction within joints.

The amount of gravitational force compressing the joints decreases as depth of immersion increases.

Chest deep aquafitness classes have variable amounts of impact, depending upon the buoyancy options selected for movement.

Propulsive movements may result in substantial impact forces. Light bounce and anchored movements will cause much lower forces on the bones and joints.

CALA

Canadian Aquafitness Leaders Alliance Inc.
Handout



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Suspended movements eliminate all impact.

Participants may experience increased range and comfort of movement while stretching and exercising in the water compared to on land.

Hydrostatic pressure gently shrinks swollen/inflamed joints, easing pain and allowing greater ROM.

Some movements may put unhealthy pressure on hinge joints. For example, 'whip kick' or 'egg beater' are not recommended for aquafitness due to the lateral forces these movements place on the knee joint.

Athletes from race horses to world class sprinters are trained and also rehabilitated using deep water exercise.

Deep water cross training allows athletes to maintain the intensity of their training while minimizing the chances of injuries associated with impact and joint strain.