

Topic 3  
Anatomy I: Basics

3.1 Briefly describe each of these tissues and its function: Muscle

A MUSCLE is tissue consisting of bundles of parallel fibers wrapped in fascia.

Properties	Roles
<ul style="list-style-type: none"><li>❖ Excitable – Reacts to stimuli via innervation</li><li>❖ Contractible – May contract upon stimulation in 3 different ways<ul style="list-style-type: none"><li>~ Centrically – Muscle shortens</li><li>~ Eccentrically – Muscle lengthens</li><li>~ Isometrically – Muscle neither shortens or lengthens during contraction</li></ul></li><li>❖ Extensible - May be stretched</li><li>❖ Elastic - Able to recoil</li></ul>	<ul style="list-style-type: none"><li>❖ Agonist – Prime mover muscle</li><li>❖ Synergist – Supporting muscle to help the agonist in movement</li><li>❖ Antagonist – Opposes prime mover to slow and monitor movement</li><li>❖ Protects joint</li><li>❖ Stabilizer – A muscle that pairs with an opposing muscle to keep a bone in place</li></ul>

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A **LIGAMENT** is a dense piece of connective tissue that connects one bone to another bone. Protects joints Avascular - no blood supply Barely elastic difficult to heal

A **TENDON** is a tough, fibrous continuation of muscle fascia that attaches muscle to bone. Stabilizes joint Transmits and supports muscle force Woven into the periosteum/outer shell of the bone

**CARTILAGE:** Cartilage is supplementary tissue to muscle providing strength, rigidity, and a little elasticity.

Fibrocartilage Hyaline Cartilage Cushioning, pillowy Shock-absorbing Avascular - no blood supply Smooth, glassy Reinforcing coat where bones rub against one another Avascular - no blood supply

2 *The elbow is a hinge joint and the hip is a ball-and-socket joint. What are the movements of a hinge joint? Name the plane.*

The movements of a hinge joint are flexion and extension, and the plane is the Sagittal Plane.

3 *What are the movements of a ball-and-socket joint? In how many planes does a ball-and-socket joint move and what are the actions in each of the planes?*

The movements of a ball-and-socket joint and their corresponding planes are: 1. Rotation (internal and external) in the Transverse Plane 2. Flexion & Extension in the Sagittal Plane 3. Adduction & Abduction in Coronal Plane \* Circumduction involves all movements and planes in combination

4 *What is the job of an agonist? What is the job of a synergist?*

An agonist is the prime mover muscle that does the bulk of the work in a movement. The synergist is a supporting muscle that assists the agonist in doing the movement or compensates if the agonist is injured/dysfunctional.