

MUSCLES AND MOVEMENT

Objectives

- ① Understand how muscles are attached and how they work
- ① Understand how muscles work in pairs
- ① Understand the effects of exercise on the muscles

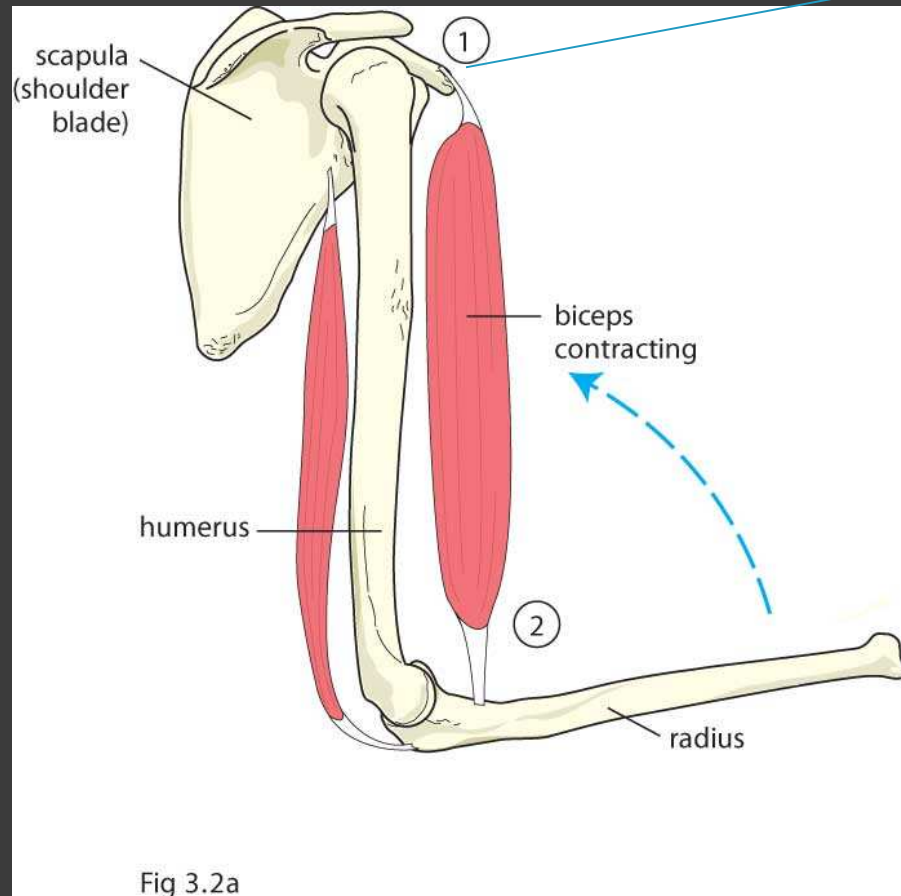
Starter

- Muscles work in pairs
- In pairs can you show the movement of a muscle at a joint where one muscle relaxes while the other one contracts.
- Carefull over violent use of a muscle will result in injury and disqualification

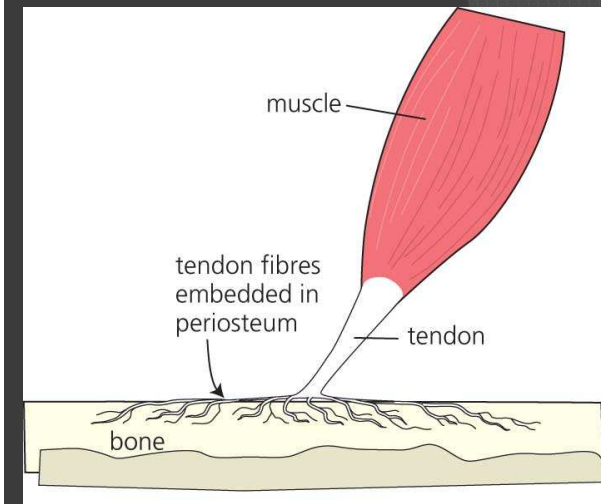
Muscles and Movement

The **ORIGIN** is where the muscle joins the stationary bone - 1

The **INSERTION** is where the muscle joins the moving bone - 2



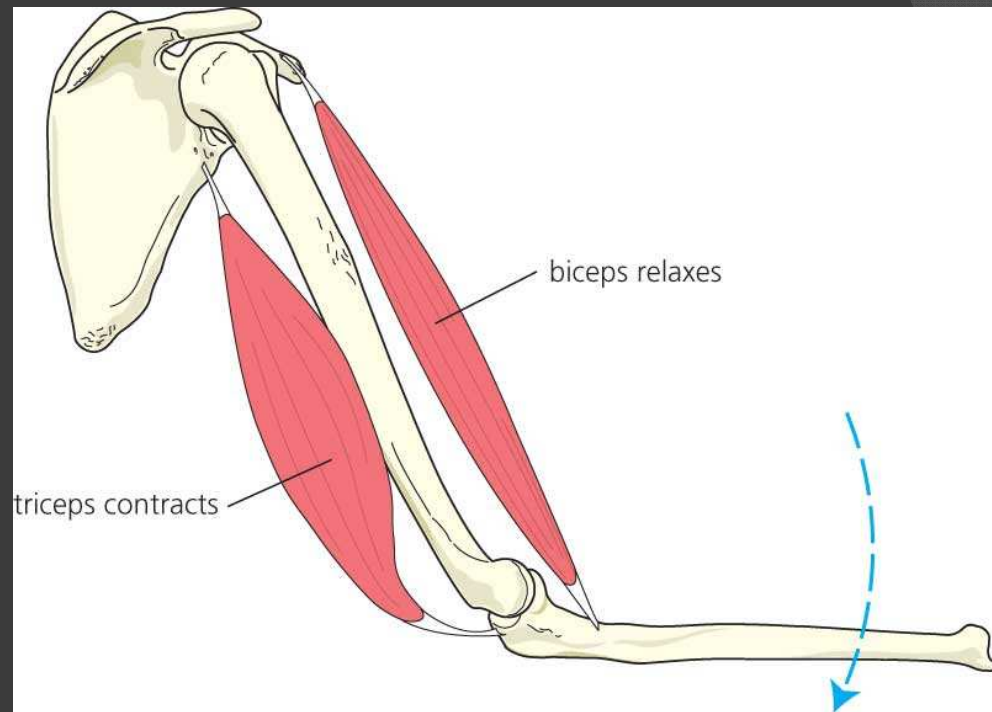
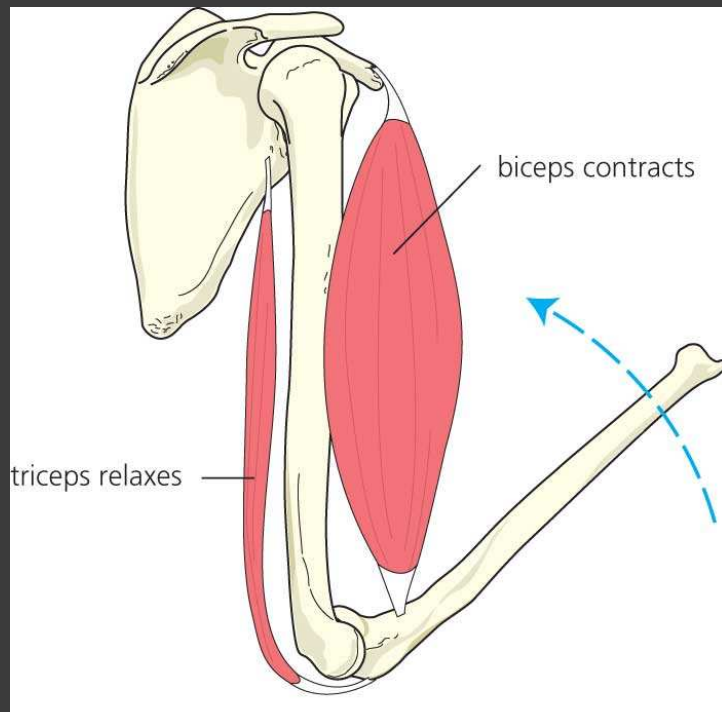
A Voluntary Muscle works across a joint attached to the bones by **TENDONS**



When the muscle contracts usually only one bone moves. E.g the bicep contracts and the radius moves

The **INSERTION** moves towards the **ORIGIN**

Muscles Work in Pairs



ANTAGONISTIC PAIRS / MUSCLE ACTION

The working muscle is called the **PRIME MOVER / AGONIST**

The relaxing muscle is the **ANTAGONIST**

SYNERGISTS hold the stationary bone still e.g as the bicep contracts the synergists stop the shoulder moving

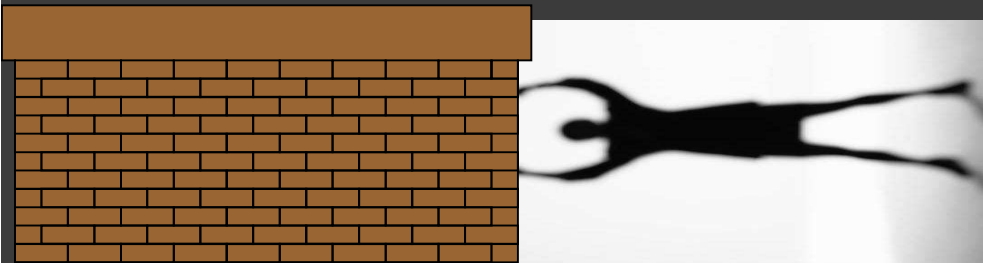
Muscle Tone

- Even when a muscle is relaxed, a small number of fibres are contracted keeping the muscle taut but not causing movement
- Partial contraction = MUSCLE TONE
- Without it you could not stand up straight
- To maintain muscle tone without getting tired the muscles take it turns- relays

Types of contraction

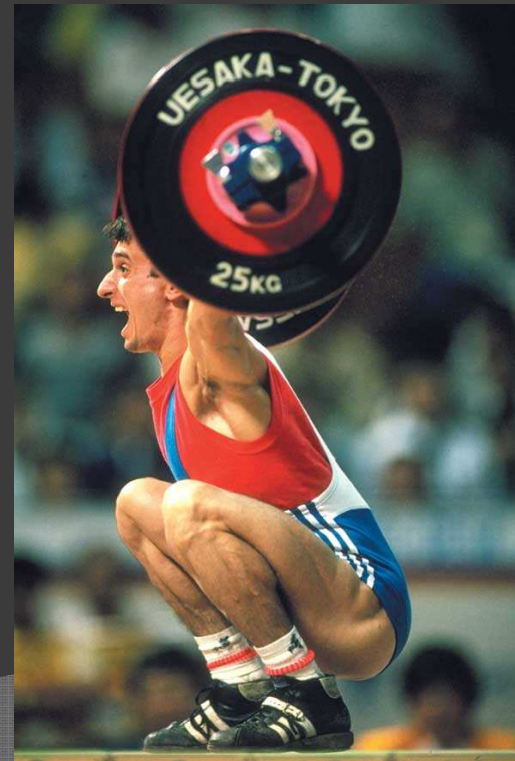
⦿ Isometric Contraction

- The muscle stays the same length as it works



⦿ Isotonic Contraction

- The muscle changes length as it works



Poor Muscle tone = Poor Posture



Homework

Questions 1-6 page 91