## 3.1.1.5 The musculo-skeletal system and analysis of movement in physical activities

**Types of muscular contraction**

**Concentric contraction**

## Eccentric contraction

**Isometric contraction**

If we use the bicep curl as an example

1. During the upward phase the bicep brachii is contracting to produce flexion of the elbow joint. In this situation it is performing a **concentric** contraction.
2. During the downward phase if you put your hand on a partner’s bicep brachii you will still feel tension. This means the muscle is not relaxing but performing an **eccentric** contraction where it lengthens under tension.
3. If the weight is held still at a 90 degree angle, the bicep brachii is under tension even though we do not see any movement. This is an **isometric** contraction.

 a) b) c)