

Anatomy and physiology

Football Year 7

1-SBU

Musculoskeletal system

Femur - Upper leg. Attaches at the hip and knee.

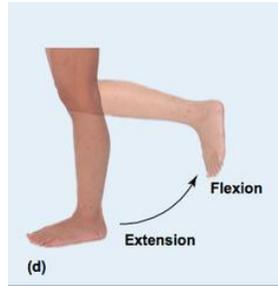
Tibia - lower leg. Attaches at the knee and ankle

Fibula - lower leg. Only attached to the tibia
Bones provide a framework for the muscles to attach to.

Antagonistic muscle pairs

Hamstrings - Contracts when the leg flexes (flexion). Relaxes when the leg extends.

Quadriceps Contracts when the arm extends (extension). Relaxes when the arm flexes.



How can you link these to a kick in football?

Respiratory system

Lungs

Working Muscles

Mouth

Gaseous exchange

- Oxygen is breathed in through the mouth
- It then enters the lungs and the chest cavity becomes larger.
- Oxygen is then diffused into the blood and transported to working muscles that need it.
- Carbon dioxide is created by the working muscles and is a waste product
- Carbon dioxide is transported by the blood back to the lungs and is breathed out

Cardiovascular system

Heart

Blood vessels

- **Arteries** - Carry OXYGENATED blood away from the heart
- **Veins** - Carry DEOXYGENATED blood to the heart

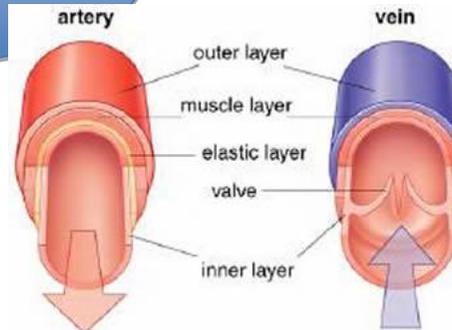
Cardiac Output = Stroke volume x Heart rate

Cardiac Output - The volume of blood pumped out of the heart in 1 minute

Stroke Volume - The volume of blood pumped out of the heart per beat

Heart Rate - How many times the heart beats per minute.

What happens to each of these when you exercise?



COMMAND WORDS

Describe - Set out characteristics. Give a brief account

Explain - make an idea clear to someone by describing it in more detail or revealing relevant facts.

Compare - Identify similarities and or differences

Justify - Support a case with evidence (e.g. link it to sporting movements)

Identify - Name or otherwise characterise

Aerobic - Exercise whilst using oxygen (e.g. jogging for long periods of time)

Anaerobic - Exercise without using oxygen (short, fast movements. Lasts a few seconds)

Short term effects of exercise (what happens straight away)

Increased stroke volume
Increase in blood pressure
Increased breathing rate
Increase in heart rate

Long term effects of exercise

Decrease in resting heart rate
Increase maximum cardiac output
Increased lung capacity

How can you link anaerobic and aerobic exercise to sections of your sport?

Synovial Joints

Hinge joint- Elbow + Knee

Ball and socket- Shoulder and Hips

The hinge joint at the knee allows flexion and extension when performing football kick.

