Reduced risk of obesity

- Social benefits include:
  Friendship
  Teamwork
  Co-operation
  Competition with others

**Long term effects of regular exercise on a sports performer**

A model response:

There are a number of adaptations to the respirator system as a result of regular physical activity. The muscles responsible for breathing in (inspiration) and breathing out (expiration) - the diaphragm and the intercostal muscles – grow in strength and size. This is known as hypertrophy. As a result, the mechanics of breathing become more efficient and the lungs can hold a greater volume of air. The maximum amount of air the lungs can expire, known as vital capacity, also increases. These changes mean that more oxygen can enter the body and more carbon dioxide can be expired, which means the athlete can exercise for longer, thus increasing their aerobic capacity.

The number of alveoli activated in the lungs also increases. These tiny air sacs are the sites of gaseous exchange in the lungs. As a result, more oxygen enters the bloodstream to be delivered to the cells of the body for respiration to occur. More energy can be produced which means the athlete can work aerobically for longer.

Finally, the body becomes better at repaying and oxygen debt after working anaerobically. Oxygen is needed to break down lactic acid in to carbon dioxide and water. As more air (containing oxygen) can be brought in to the body, more lactic acid can be broken down, aiding recovery.

**Applied anatomy and physiology**

**Muscular system**

*Muscle types:*

1. Smooth muscle- found in the internal organs and blood vessels – this is involuntary
2. Cardiac muscle- found only in the heart – this too is involuntary
3. Skeletal muscle- attached to the skeleton – this is voluntary

*Muscle fibre types:*

1. Slow twitch, also known as type 1 – oxidative