

Bitesize GCSE Science – Biology

Respiration

Sport and Exercise Science Professor Lars McNaughton on respiration

Respiration is the process of breathing in and out and as we start to exercise our breathing rate increases and its pretty much related to intensity of exercise, the harder I work the harder I'm going to breath in and out.

The aim of that is two fold. The aim of breathing in is to get oxygen to the working muscles because they require oxygen to operate and to break down the food sources and breathing out, I'm breathing out carbon dioxide which is a by product of the exercise and the breaking down of food substances.

Aerobic exercise , a practical example is, I'm going for a 10K run at a steady pace that is aerobic activity, typically anything longer than about five minutes.

Anaerobic exercise on the other hand is short term sprinting type activity think 100metres, 200 metres, 400 metres and there are different products from aerobic activity and different products from anaerobic activity.

In aerobic activity, the carbon dioxide we get rid of that if we don't that builds up and creates fatigue.

The anaerobic activity on the other hand, the length of the activity depends on the by products, but the one that most people would be familiar with is lactic acid.

Lactic acid builds up again, 400 metres flat out activity, a minute to two minutes very tough exercise but as soon as it build up it breaks down and there are these little things called hydrogen ions and it's the actual hydrogen ions that cause fatigue.