

The effects of exercise on heart rate



This experiment is to investigate the effects of exercise on heart rate. In my experiment which I will devise I will have independent variables which I will be able to change without affecting the other variables which are the constant variable and the dependant variable which I will measure. Safety will be an important factor at all time and all actions will be taken to avoid accidents.

Method: I will be using a running machine to do my exercise on. I will be wearing a heart rate monitor which measures the beats per minute and sends a signal to the machine where the heart rate is displayed on the screen. I will run at five different speeds for two minutes each and I will do this three times. I will take measurements of the heart rate immediately after exercise and note them on my table. compare them to the control (rest).

An average will be taken of the three sets of results. Independent variable: The independent (manipulated) variable will be the work rate (speed). As the running machines have pre-set speeds, it will be easy to adjust the rate, so when I come to do the three repeats I will be able to run at exactly the same speed. I will run at five different speeds for two minutes each, starting with a slow walk up to a sprint. I will use levels 5, 10, 12, 15 and 20. I will take measurements of my heart rate after each speed.

A break will be taken in between each speed to allow my heart to return to the control (rest). This is the only independent variable. Constant variable: The constant variable is the variable which does not change, and is not

affected by the independent variable. The constant variables in my experiment are; 1.

Time – I will run for two minutes at each speed. 2. Temperature – the temperature will remain the same. 3. Equipment – I shall use the same equipment each time.

4. Recovery periods – shall all be long enough to allow my heart rate to return to the control level. These ensure that the experiment is a fair test and that error is taken out of the equation as much as possible. Control: The control for this experiment shall be my heart rate at rest before any exercise and I shall wait until my heart rate has returned to this level between exercises before I commence any more. Dependant variable: The dependant variable is the data which I shall be measuring.

As I have already mentioned I will be using a heart rate monitor to measure my pulse in beats per minute (bpm), and I shall do this immediately after the two minutes exercise. I shall repeat this three times so that I end up with a wide range of results covering all ranges of heart rates. Then I will take an average of the results. I shall record the data in a table so that it is easy to view and understand. Safety: Safety will be an important factor throughout the experiment and I will take the following precautions: Ensure that circuit breaker clip is attached when on the machine, that all shoe laces are done up and all loose clothing is secured. The machine shall be checked to see if it is in running order and any problems will be reported, and a sensible attitude will be maintained throughout.