

ROKEBY SCHOOL

DARE TO BE THE BEST

THE EFFECT OF EXERCISE ON OUR HEART AND LUNGS.

INTRODUCTION - Exercise

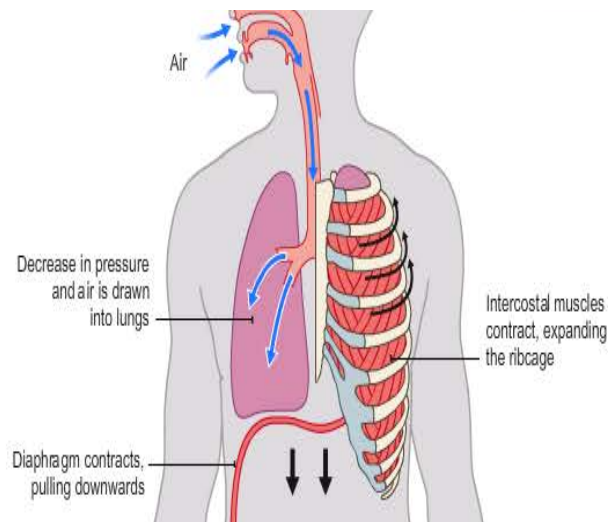
When the muscles in our body exercise then the heart and breathing rate increase.

The more air we breathe in, the more oxygen reaches the muscles and the more energy is released through aerobic respiration.

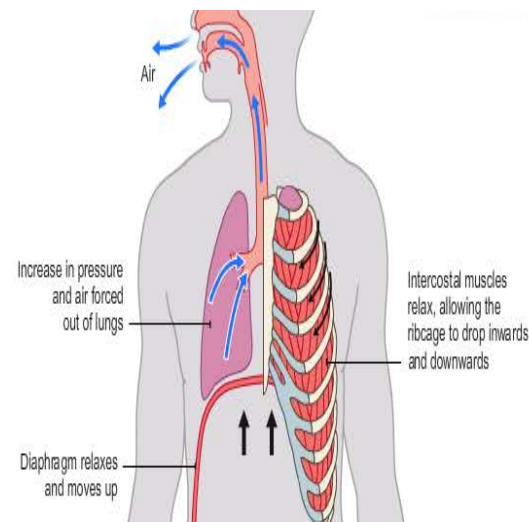
THE RESPIRATORY SYSTEM

- I. Gradual increase in need for oxygen.
- II. Pumping required from heart to oxygenate.
- III. Pulse rate had become faster.

Inhalation



Exhalation



HYPOTHESIS

Exercise makes our heart and lung work harder. Which means that our heart will pump more blood around our body and we will breathe faster.

AIM

To investigate the effect of exercise on our heart and breathing rate.

PREDICTION

We predict that the heart rate and breathing rate will increase after exercise. The higher the intensity of exercise the harder our heart will work.

INDEPENDENT VARIABLE

We are going to change the type of exercise; we will change the intensity of the exercise to examine how it affects our heart and lungs.

DEPENDANT VARIABLE

We will be measuring the pulse rate and breathing rate.

It will be important to first measure our resting pulse rate.

OUR EXPERIMENT

- Our experiment consisted of the effect of walking, jogging and running on our pulse our pulse rate. We also tested for recovery rate, which is the time it takes for the heart to recover from the exercise.

APPARATUS

In order for us to carry out our investigation we needed a few equipment. These were :

- ◉ Pulse Meter
 - ◉ Measuring tape
 - ◉ Stopwatch
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- The stopwatch is used to make sure the participant is doing each activity for the same amount of time i.e. 4 minutes
 - The measuring tape is used to measure distance for the activity (10 metres)
 - The pulse meter is used to measure our pulse rate

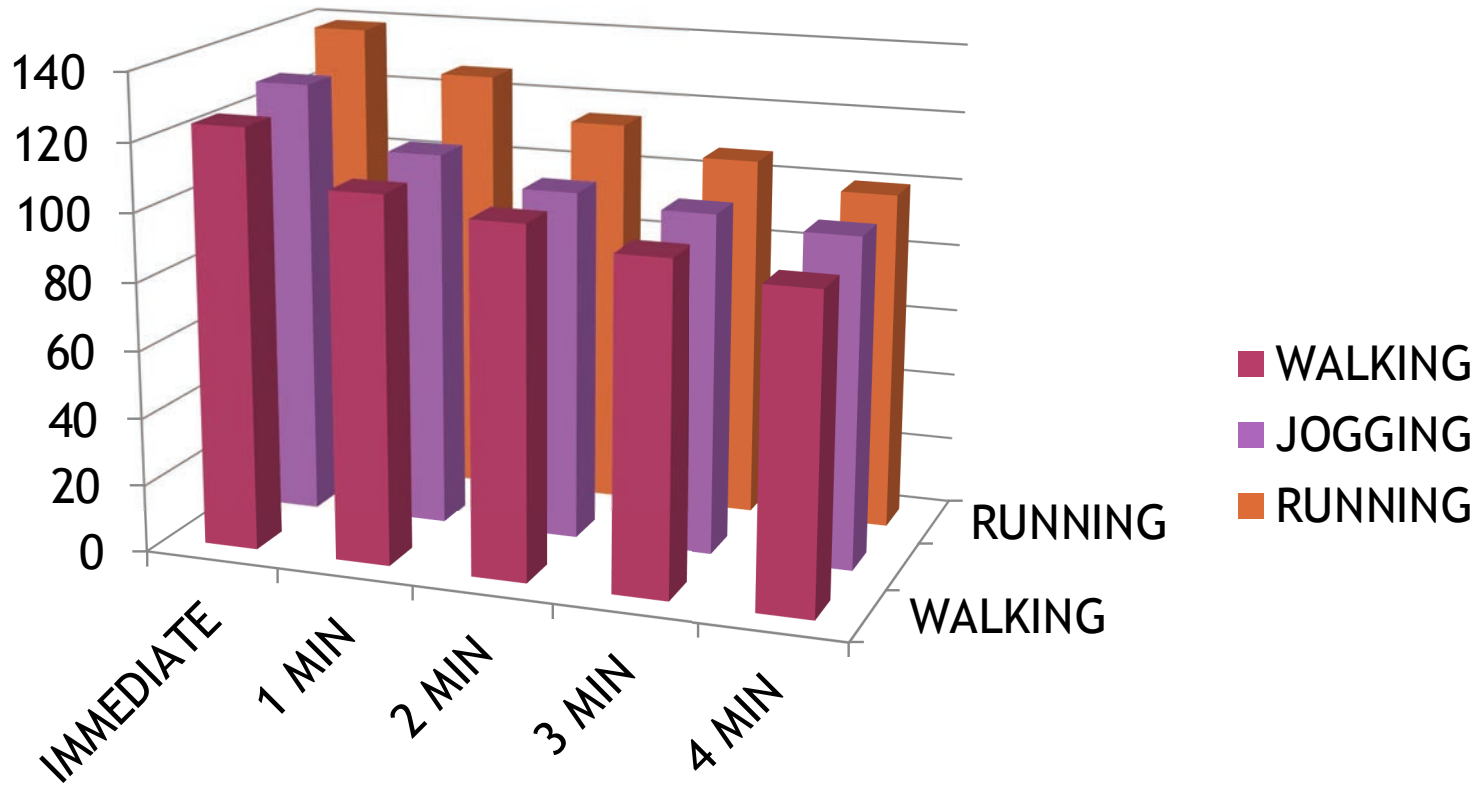
TRIAL EXPERIMENT

- During our trial experiment, we found some difficulty in measuring the breathing rate, therefore we continued with only measuring the pulse rate.
- Another difficulty we faced measuring our pulse manually - we found it difficult to locate our pulse, therefore we used the electronic pulse meter for more accurate data.

METHOD

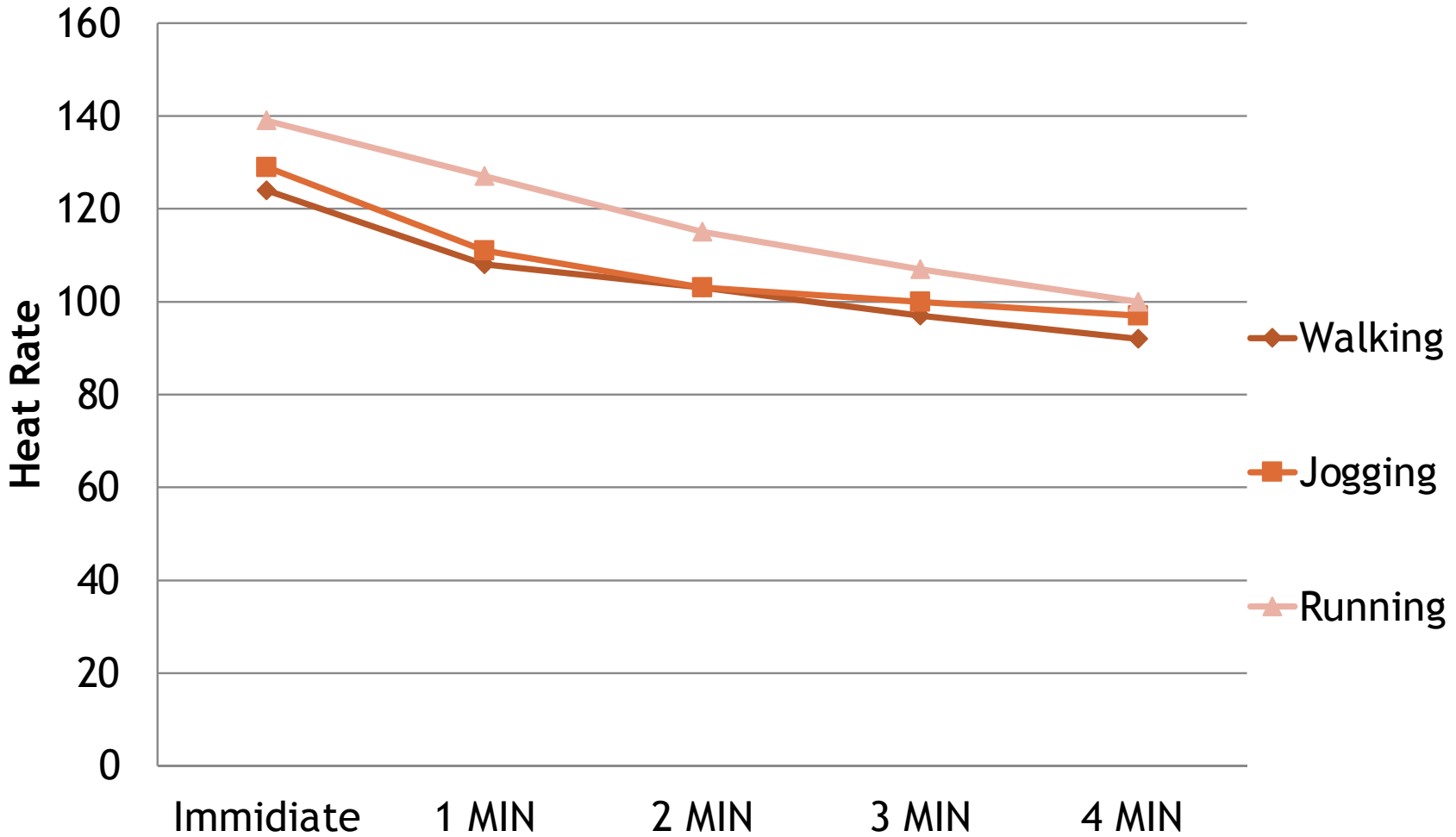
- First, we nominated one member of our group to do the activities - someone who has no health conditions i.e. no medical conditions
- Next, we went out to the playground where there was a lot of space for us to carry out our investigation.
- We measured a distance of 10 metres for the nominee to do the activities.
- The resting pulse rate of the nominee was measured
- He then walked the distance of 10m.
- His pulse rate was measured using the pulse meter immediately after the activity, and again at 1, 2, 3 and 4 minutes in order to work out his recovery rate.
- The experiment was then repeated for jogging and running

RESULTS



RESULTS

Effects of Exercise



CONCLUSION

- ◉ In our experiment, we learnt that exercise does increase our pulse rate.
- ◉ The pattern between exercise and pulse rate is that the higher the intensity of the exercise the quicker our heart will beat. This is because that muscles need more oxygen, so the heart will beat faster to provide the oxygen.
- ◉ We also learnt that the recovery rate (the amount of time it takes for our pulse rate to decrease back to resting pulse rate) depends on the intensity of the exercise. The harder the exercise the longer it took for the heart to return to its resting pulse rate.

EVALUATION - STRENGTHS

The strength of our experiment was that we successfully met our aim of investigating the effect of exercise in our hearts and lungs.

Another strength was the use of a digital pulse meter which allowed us to measure accurately and kept random errors to a minimum.

Another strength was the range of activities we participated in as we began with a mild exercise, with the severity increasing in each activity.

EVALUATION - WEAKNESSES

Our weaknesses was that the experiment was not repeated therefore our figures were not reliable enough.

Another weakness was that we did not experiment on other people therefore the reliability of our data is questionable.

EVALUATION - IMPROVEMENTS

Our experiment could have been better if we used other people which would have increased our reliability.

It could have also been better if we could have researched secondary evidence to support our data. Also using the gym would have made our experiment better.

Another factor that would have increased our reliability and data was that if we measured the breathing rate along with the pulse rate.

THANKS FOR YOUR
PARTICIPATION AND
PATIENCE!