



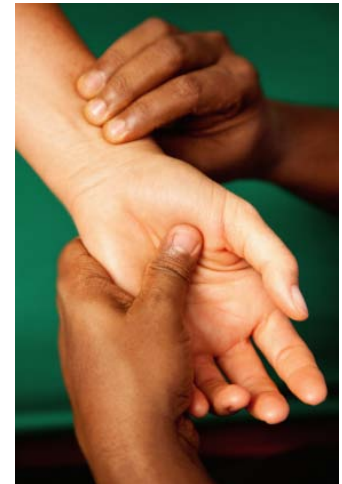
In this activity you will measure your heart rate and investigate the effect that other things have on your heart rate.

### Information sheet

You can measure your heart (pulse) rate anywhere on your body where a major artery is close to the surface of your skin.

The easiest places are:

- on the front of your forearm
- just above your wrist on your thumb side
- on the side of your neck about half way between your chin and your ear.



### Finding your pulse

Try to locate your pulse in one of these places, using the tips of your index and middle fingers. You should feel a gentle, regular beat. This is your heart rate. Do not use your thumb, as your thumb has a pulse of its own.

### Taking your pulse

When you find your pulse, use a stopwatch or a watch with a second hand to count how many beats there are in a full minute (60 seconds).

In most situations, taking your pulse rate over one minute will give a reasonably accurate result, but if you want to take your pulse after exercise, you should do so over a much shorter time interval.

After exercise your pulse rate will be changing rapidly. To get a reasonably accurate result, start to measure the rate immediately after the exercise and count the number of beats in 10 seconds. Multiply this number by six to find your heart rate.

For an adult, a normal resting heart rate is between 60–100 beats a minute. The fitter you are, the lower your resting heart beat will be. For athletes it may be 40–50 beats a minute, or lower. The best time to take your resting heart rate is just after you have woken up in the morning.

You can use relaxation techniques to try and lower your pulse rate. These could involve focussing on:

- your breathing
- relaxing your mind
- listening to music
- relaxing your muscles

#### Think about

What else might affect your heart rate?

## Worksheet Collecting data for an investigation

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For these activities you need to collect data to complete an investigation into heart rate.

For each investigation you need to:

- a** Design a suitable data collection sheet
- b** Use a spreadsheet or table to display the results of your data collection
- c** Use measures of location and spread (where appropriate) to compare the data
- d** Use an appropriate statistical diagram to compare the data
- e** Draw conclusions and summarise your findings.

### You should

Consider whether you have used a suitable sample to draw conclusions.

Check your work makes sense.

### Try one of these

- 1** Investigate whether heart rate varies with age or sex.

Compare the resting heart rate by age group or by gender (males/females).

- 2** Investigate how different types of exercise affect your heart rate.

Compare resting heart rate with heart rate after different types of exercise.

- 3** Investigate the effect of using relaxation techniques on the length of time it takes for heart rate to return to resting rate after exercise.

Compare the length of time it takes for the heart rate to return to resting rate with and without using relaxation techniques.

### Other possible investigations to consider

How does listening to different types of music affect your heart rate?

Does heart rate increase in stressful situations?

Does the caffeine in coffee, tea and cola drinks affect heart rate?

### At the end of the activity consider:

- whether your data collection sheet worked well
- whether your sample or the accuracy of your data could have been improved
- whether you used the most appropriate statistical diagram and measures of location and spread
- whether your results were what you expected
- what you would do differently in another investigation.

### Think about

Possible measures of location and spread you can use to compare the data.

Possible statistical diagrams you can use to compare the data.