

Heart Experiment 1

Why do you need to have a heart?

To pump blood and circulate it all over your body.

Why do you need to have blood circulate to all the parts of your body?

To bring them fuel and oxygen, in order to keep them alive.

How does your heart pump blood? What is a heart beat?

Your heart pumps blood by relaxing, letting blood flow in, and then contracting, squeezing it out into the body. Each contraction and relaxation is one heart beat.

List some activities or stimuli that may increase a person's heart rate.

Exercising, being sick, being frightened, angry, excited or surprised, among many others.

Why would it be useful for the heart to beat faster during these activities or in response to these stimuli?

So that blood can be pumped more quickly and carry oxygen and fuel (in the form of sugars) to all parts of your body, to keep your body going.

Are there any activities or stimuli that you think may decrease a person's heart rate?

Meditation, relaxation (sleep) and hypothermia were the only ones I could think of.

Experiment:

For our experiment today, we hypothesized that the human heart rate would increase after exercise (or any other form of stimulation or activity, although we picked exercise). Each of us exercised, and then had our pulse taken (number of beats per 30 seconds and then multiplied by 2 to make number of beats per minute) every minute until it returned to its resting heart rate. We took the pulse through the artery in the wrist. The results were sometimes confusing, because we found that the pulse became irregular as it went back down to normal. Also, the pulse seemed to drop down and then bounce back up a bit. Please view the spreadsheet for the results.

If you were going to repeat the experiment, how could you improve your experiment?

I would get a heart rate monitor that you could put on your wrist, then you could exercise, look at it and record the heart rate every minute. Mom would have someone listening to the pulse with a stethoscope and on the wrist.