

Heart Rate Monitoring

Overview: When you exercise, your body requires more oxygen in order to burn the fuel that has been stored in your muscles. Since oxygen is moved through your body by red blood cells, exercise increases your heart rate so that the blood can be pumped through your body faster. This delivers the needed oxygen to your muscles faster. The harder you exercise, the more oxygen is needed, so your heart and blood pump even faster still.

Materials

- stopwatch or clock with a second hand
- pencil

Experiment

1. While sitting quietly, place your first two fingers of one hand onto the wrist of the other hand. Feel for the pulse of your radial artery. Practice taking your pulse in intervals of 6 seconds.
2. After you have had some practice with the 6-second interval, take your pulse for this amount of time and multiply it by 10. The 6-second rate times 10 is your heart rate per minute. Record each for experiment data.
3. Now stand up and do 50 jumping jacks. When done, sit down immediately and check your pulse. Again, record the 6-second pulse rate, multiply it by 10 and also record the pulse rate per minute.
4. Finally, go outside and run around as fast as you can without stopping for 3 minutes. Again, immediately sit and take your pulse. Record the 6-second rate, multiply it by 10 and get your heart rate per minute.

Heart Rate Monitoring Data Table

[illegible]

Reading

Exercising means your muscles need more oxygen. They ask your brain to tell your heart and lungs. When your heart gets the message, it starts to beat harder. Your lungs work harder, too. Together, your heart and lungs work as a team to provide the needed oxygen supply to your muscles. You can identify that this process is occurring by your heart rate increase and more rapid breathing rate.

Did you know that your heart is about the size of your fist? It is actually a muscle, and it pumps more than a gallon of blood through your body each minute! An average heart rate is 70 beats per minute, but this can vary depending on age and fitness level. Based on 70 bpm, your heart will beat around 100,000 times per day. That's more than 36 million beats a year!

Exercises

1. Explain how to take a pulse.
2. What units do we use to measure pulse?

Answers to Exercises: Heart Rate Monitoring

1. Explain how to take a pulse. (Find the pulse in your wrist with index and middle fingers, count for 6 seconds, then multiply by 10 to get the rate per minute.)
2. What units do we use to measure pulse? (beats per minute or bpm)