

Relationship between Resting heart rate (BPM) and days of exercise

Introduction:

The aim of this investigation is to determine if exercise effects the Cardiovascular Health of 16-year-old high school students by measuring the student's resting heartrate and number of hours exercised weekly. Heart rate is measured in beats per minute (bpm). Your resting heart rate is best measured when you are sitting or lying down, and you are in a calm state. (Chertoff, J. (2020, April 21)). The cardiac muscle is strengthened through exercise. It makes it possible for it to pump more blood with each heartbeat. Muscles receive more oxygen as well. This means that the heart beats less frequently in a nonathlete and more frequently in an athlete. During exercise, though, an athlete's heart rate may reach 180 to 200 beats per minute. (Chertoff, J. (2020, April 21)). If a 16-year-old high school student exercises more than 3 days a week then they will have a lower resting heart rate because the cardiac muscle is strengthened through regular exercise. The dependent variable for this experiment is the resting heartrate of the 16-year-old high school students. The independent variable for this experiment is how many days of exercise a 16-year-old high school student takes part in.

Materials and method

The participants gently press their tips of their index and middle finger over the lateral part of their wrist, just below the thumb side of their hand. They count the beats for a full minute (or count for 30 seconds and multiply by 2 or count for 10 seconds and multiply by 6). They complete this process three times and the experimenter record the data each time. The participants are then asked how many days a week they exercise, and this is recorded by the experimenter. The BPM for each participant is added together then divided by three to get the average resting heart rate for each student. This experiment is semi reliable because the participants could of miss counted the amount of beats they felt this could be reminded by using an electrical heart rate monitor to track the heart rate. This experiment was not completely valid because the second measurement of heart rate was taken directly after the first making it that they could no longer be at rest after the third measurement.

Results

The average resting heart rate (BPM) and days of exercise of the participants is displayed in Figure 1.

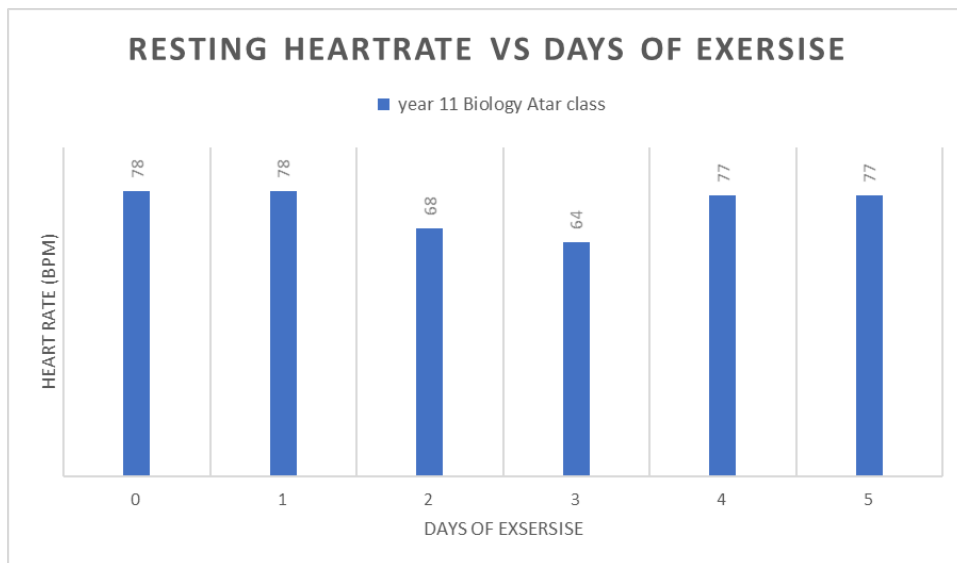


Figure 1. Relationship between Resting heart rate (BPM) and days of exercise

References

Chertoff, J. (2020, April 21). *Why Do Athletes Have a Lower Resting Heart Rate?* Healthline.

[https://www.healthline.com/health/athlete-heart-](https://www.healthline.com/health/athlete-heart-rate#:~:text=An%20athlete's%20resting%20heart%20rate,of%20blood%20with%20each%20heartbeat.)

[rate#:~:text=An%20athlete's%20resting%20heart%20rate,of%20blood%20with%20each%20heartbeat.](https://www.healthline.com/health/athlete-heart-rate#:~:text=An%20athlete's%20resting%20heart%20rate,of%20blood%20with%20each%20heartbeat.)