**Introduction**

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In this task, we will acquire a total of three heartbeat results from each individual person in this Cardiovascular health in teens task to make sure you are counting your heartbeat right. We will then calculate the average of each person by combining their three results and dividing it by three and continuing until you have all the averages of each distinct person. The goal of this experiment is to determine if the total average of heartbeats per minute will have a huge consequence depending on how much you exercise every week.

**Research**

Since this heart's function is so vital, the heart rate is crucial. The heart pumps blood throughout the body that is oxygenated and nutrient rich. When it isn't performing properly, it has an impact on nearly everything, according to (How is your heart rate and why does it matter? - Harvard School of Public Health, 2022) According to the definition of health, it is necessary to use because if you are unhealthy, you will die quickly, and the definition of heart in health is the benefit of a healthy cardiovascular and circulatory system, a heart-healthy food, and a heart-healthy activity (2022, Merriam-webster, Incorporated) The age, medical illnesses you have, drugs you need, food, gender, and how often you exercise in a week are all factors that affect your heart rate. According to the American Heart Association, how often you exercise in a week has a significant impact since it increases the muscles' ability to pull oxygen from the blood, lessening the demand for the heart to pump more blood to the muscles (Exercise and the Heart, 2022)

**Hypothesis**

It is thought that people who exercise more frequently throughout the week have a lower resting heart rate than individuals who only exercise one or two days each week. This is because when you go for a quick walk, swim, or ride a bike, your heart rate increases both during and after the activity. However, regular exercise progressively lowers the resting heart rate (Harvard Health Publishing). The lower the beats per minute, the better. For an average teenager, the results must be between 60 and 100 BPM.

**Variables**

Variable that is not dependent: How many times each week do they exercise?

Variable that is dependent: heartbeats per minute

Variable that can be controlled:

* 30 seconds was the time taken to compute the heart rate.
* All heart rates were measured three times, with the average being the final figure (answer)
* All heart rates were recorded while the subjects were at rest.

**Materials and Method**

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The materials that we need for this investigation is 14 different people, pen so you can write the records and a timer or stopwatch.

**Method**

The participants had to wait for their hearts to come to a resting condition before they could start counting. They next used their pointer and middle finger to locate their pulse, which may be on their arm or neck. They set the timer for 30 seconds and counted their heartbeats after locating their pulse. When the timer beeped, the student had to multiply the result the results, and repeat the process twice more to make 3 results in total. Then they summed up all the results and divided by three to obtain an average for each person, and then they asked how many times they exercised in a week, and then they had to repeat the process 13 times more to get 14 different results and averages for different people.

**Reliability & Validity**

The experiment's reliability and validity were checked, and it was determined that the experiment was valid and that each individual person took three results and then an average was calculated to ensure that it was reliable, and that we ensured that each individual person would rest, that the timer would be held by the same person, and that only one person would count the heat beats so that he or she would not be confused.

**Results**

**Table Format**

Resting Heart rate (beats per minute)

Bpm=Beats per minute

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| People | Heart rate  Result 1  (Bpm) | Heart rate  Result Test 2  (Bpm) | Heart rate  Result Test 3  (Bpm) | Average | How many times do they exercise in a week | Gender |
| 1 | **70** | **72** | **68** | **70** | **1-2** | **Female** |
| 2 | **78** | **70** | **70** | **72** | **1-2** | **Female** |
| 3 | **66** | **68** | **66** | **67** | **2-3** | **Female** |
| 4 | **66** | **62** | **72** | **67** | **1-2** | **Female** |
| 5 | **80** | **70** | **80** | **80** | **2-3** | **Male** |
| 6 | **66** | **80** | **70** | **69** | **3-4** | **Male** |
| 7 | **80** | **82** | **84** | **80** | **3-4** | **Male** |
| 8 | **71** | **72** | **74** | **72** | **4** | **Male** |
| 9 | **94** | **102** | **100** | **91** | **5+** | **Male** |
| 10 | **50** | **52** | **70** | **57.3** | **5+** | **Female** |
| 11 | **90** | **88** | **86** | **90** | **1-2** | **Female** |
| 12 | **78** | **76** | **78** | **77** | **1-2** | **Female** |
| 13 | **50** | **50** | **44** | **48** | **3-4** | **Female** |
| 14 | **54** | **52** | **50** | **52** | **1-2** | **Female** |
| 15 | **55** | **60** | **90** | **69** | **3** | **Male** |
| 16 | **70** | **67** | **76** | **71** | **2** | **Male** |
| 17 | **85** | **86** | **56** | **71** | **1-2** | **Female** |
| 18 | **75** | **56** | **67** | **66** | **4-5** | **Male** |
| 19 | **76** | **67** | **54** | **66** | **3-4** | **Male** |
| 20 | **65** | **76** | **57** | **66** | **2-3** | **Female** |

**Graphing**

Beat per minute