Title: Exercise Vs Heartrate

**Intro:**

**Aim:**

This investigation will investigate how exercise affects a person’s heart rate.

**Background information:**

Resting heart rate is the number of times your heart beats per minute while you're at rest. (What Should Your Resting Heart Rate Be?, n.d.). It is said that during exercise, your heart typically beats faster so that more blood gets out to your body. Your heart can also increase its stroke volume by pumping more forcefully or increasing the amount of blood that fills the left ventricle before it pumps (Cardiac Output, n.d.). Exercise improves circulation, which results in lowered blood pressure and heart rate (*3 Kinds of Exercise That Boost Heart Health*, 2021),

**Hypothesis:**

It is predicted that the more exercise that a person does the higher their heart beat per second, that someone who doesn’t exercise.

**Variables & Procedures**

Independent Variable:

* Days a week of exercise

Dependent Variable:

* Participants resting heart rate

Controlled:

* Resting time before taking heart beat (1 minute)
* Time taking of heart beat (30 second)
* Same environment

Materials:

* Timer
* Computer to take data
* Participant
* Calculator

Method:

1. Ask the participants how many days of exercise they do in a week
2. Participants rest for 1 minute
3. Then locate heartbeat of participants on under the base of the thumb
4. Then count the number of their pulse for 30 seconds
5. Then multiply the number by 2
6. Then take the data down on the compute in the table
7. Repeat on the same participants another 2 time
8. Calculate their average heartbeat
9. Repeat steps 1-8 on two other participants
10. Then group the exercise data together
11. The average them to find the overall average
12. The graph the averages

**Data:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Resting Heart rate (beats/second) | | |  | GENDER |
| Subject | Exercise | 1 | 2 | 3 | Average | Gender |
| 1 | 2-3 | 82 | 70 | 92 | 81 | F |
| 2 | 0-1 | 72 | 64 | 74 | 70 | F |
| 3 | 0-1 | 86 | 90 | 84 | 86 | F |
| 4 | 2-3 | 82 | 86 | 82 | 83 | F |
| 5 | 4-5 | 87 | 83 | 88 | 86 | F |
| 6 | 2-3 | 77 | 76 | 75 | 76 | M |
| 7 | 4-5 | 70 | 67 | 72 | 70 | F |
| 8 | 2-3 | 85 | 74 | 77 | 79 | F |
| 9 | 4-5 | 77 | 62 | 66 | 68 | F |
| 10 | 4-5 | 64 | 71 | 77 | 71 | F |
| 11 | 2-3 | 78 | 78 | 80 | 79 | F |
| 12 | 2-3 | 70 | 68 | 58 | 65 | F |
| 13 | 2-3 | 80 | 76 | 72 | 76 | M |
| 14 | 5+ | 64 | 72 | 80 | 72 | M |
| 15 | 5+ | 78 | 60 | 70 | 69 | M |
| 16 | 4-5 | 86 | 82 | 65 | 78 | M |
| 17 | 4-5 | 80 | 88 | 90 | 86 | M |
| 18 | 4-5 | 62 | 62 | 64 | 62 | M |
| 19 | 4-5 | 62 | 62 | 64 | 63 | M |
| 20 | 2-3 | 76 | 80 | 72 | 76 | M |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Exercise (days) | 0-1 | 2-3 | 4-5 | 5 + |
| Subject |  |  |  |  |
| 1 |  | I |  |  |
| 2 | I |  |  |  |
| 3 | I |  |  |  |
| 4 |  | I |  |  |
| 5 |  |  | I |  |
| 6 |  | I |  |  |
| 7 |  |  | I |  |
| 8 |  | I |  |  |
| 9 |  |  | I |  |
| 10 |  |  | I |  |
| 11 |  | I |  |  |
| 12 |  | I |  |  |
| 13 |  | I |  |  |
| 14 |  |  |  | I |
| 15 |  |  |  | I |
| 16 |  |  | I |  |
| 17 |  |  | I |  |
| 18 |  |  | I |  |
| 19 |  |  | I |  |
| 20 |  | I |  |  |

|  |  |
| --- | --- |
|  | Average Heartbeat |
| 0-1 | 78 |
| 2-3 | 79 |
| 4-5 | 73 |
| 5+ | 71 |

**Outlier:**

The outlier is people that did 2-3 with the score of 79, the probable reason to this is that more people exercise 2-3 days a week then the rest of the other categorises

**Sources:**

* *Cardiac Output*. (n.d.). <https://myhealth.alberta.ca/Health/Pages/conditions.aspx?hwid=tx4080abc>
* *3 Kinds of Exercise That Boost Heart Health*. (2021, November 3). Johns Hopkins Medicine.

[https://www.hopkinsmedicine.org/health/wellness-and-prevention/3-kinds-of-exercise-that-boost-heart-health#](https://www.hopkinsmedicine.org/health/wellness-and-prevention/3-kinds-of-exercise-that-boost-heart-health)

* *What Should Your Resting Heart Rate Be?* (n.d.). Houston Methodist on Health. <https://www.houstonmethodist.org/blog/articles/2021/apr/what-should-your-resting-heart-rate-be/>