

The Effects of Caffeine on Heart Rate

Casandra Ortega

1. Observation:

As someone who sometimes gets anxiety, I've noticed that when I take a pre-workout or drink coffee it enhances my anxiety and makes my heart beat faster.

2. Question:

How does caffeine consumption affect heart rate?

3. Hypothesis:

The consumption of caffeine will make the individual's heart rate increase because caffeine is a stimulant.

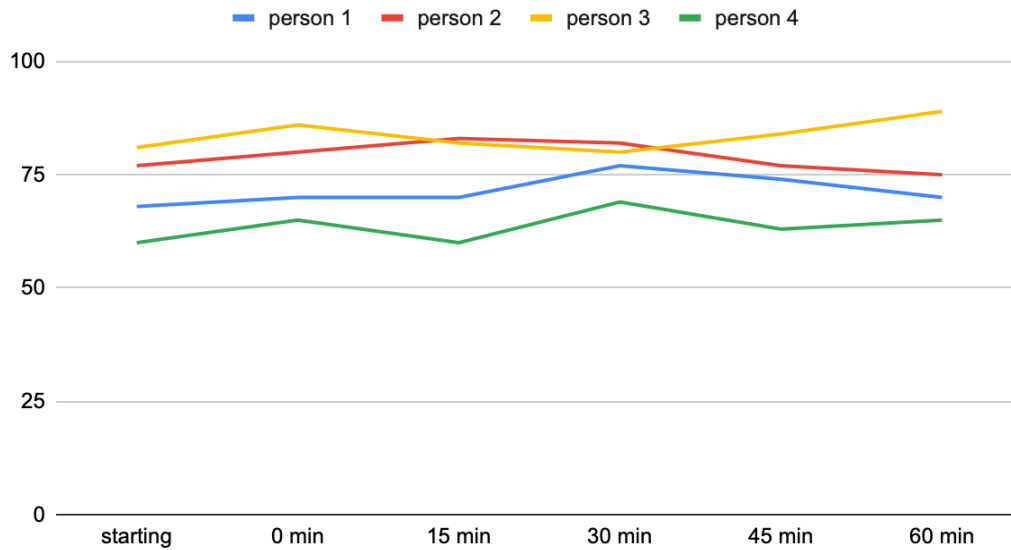
4. Experiment Procedure:

- Select a group of participants, I chose two guys and two girls.
- Record the baseline resting heart rate for each participant (making sure they have refrained from caffeine consumption 10 hours prior as that's about the time it will take for caffeine to leave the body.)
- Each individual will consume 100mg of caffeine and then have their heart rate measured right after and then at specific time intervals of 15 minutes, 30 minutes, 45 minutes, 60 minutes after consumption. Make sure that the heart rate is taken under consistent conditions.
- Analyze and compare the heart rate measurements over time for the experimental group.

5. Results:

	starting	0 min	15 min	30 min	45 min	60 min
person 1(boy)	68	70	70	77	74	70
person 2(boy)	77	80	83	82	77	75
person 3(girl)	81	86	82	80	84	89
person 4(girl)	60	65	60	69	63	65

Heart rate after caffeine consumption



6. Conclusion:

The hypothesis was semi correct. The heart rate did rise for the first 30 min but for some it went back down to starting rest point or even lower. I didn't see much difference between the boys and girls.

7. Discussion:

A person's sensitivity or tolerance to caffeine might affect the results. For instance someone who is used to taking caffeine such as before the gym might have a higher tolerance for it. And for someone who rarely or never drinks caffeine might feel it a lot more than the others. Sex or age might also affect the rate at which the body metabolizes caffeine. Being that the heart rate was measured through an apple watch it could have had some mistakes or not be as accurate as manually checking the heart rate.