Does Music Effect your Heart Rate?

By: Carson Buss and Breylin Soto
Our project that me and Breylin are doing are “Does Music Effect Your Heart Rate?” Which we want to figure out does certain music effect your heart rate and does it relax you or keeps your heart going.

Questions:

• What is Stress
• What are 3 emotional symptoms of stress
• What are 3 physical symptoms of stress
• What are 3 behavioral symptoms of stress
• What are four ways your heart is affected by stress? Provide a example.
Answers to Questions

1.) Stress is a cause that happens in your nervous system and circulatory system it effects basically everything from heart rate to hormones. You could be caused from stress from school or mostly everything can be stressful.

2.) 3 emotional stresses you could have is it could be from Anxiety which goes with motivation and accomplishment. Another emotional stress you could have is anger which goes with bad behavior and school or at home. Also stress could come from Fear which is avoiding the situation because it could be scary to you and others.

3.) 3 physical symptoms to stress could be from Sleeping too much or not sleeping at all it could give you anger or sadness when you get up early if you do this. Another symptom is Eating disorders because it can make you very weak and stressful if you have a body disorder. You can also be stressed by high blood pressure cause it can cause you to be really stressed.

4.) 3 behavioral symptoms of stress could be from moodiness which you could be really angry or sad or even happy which can cause lots of stress. Another is if your not being social it can cause problems when you go outside by others. Lastly you could have bad procrastinating with homework or with work that you needed to get done it can be very stressful.

5.) 4 ways your heart can be effected by stress is your heart rate might increase which can make you be very stressful to your heart and your body. You can also have stress because the rate of your blood could increase and it could cause high blood pressure.
Independent, Dependent and Constant Variable

Independent Variable:
The Speed of the music

Constant Variable:
The Volume of the Music

Dependent Variable:
Heart Rate
We contacted Appleton Medical Center (AMC) and asked them some questions about your heart rate and music affecting your body. Here are some answers that they have given us.
Live Expert Questions

1. Is it unhealthy to listen to fast music at a high volume?
2. Does slower music have an effect on your heart rate going slower or faster?
3. Is it unhealthy to listen to slow music at a high volume?
4. Is listening to music healthy or unhealthy to listen to?
5. What will happen to your heart if you listen to loud or fast music?
Live Expert Answers

1. It’s very unhealthy to listen to fast music at a high volume.
2. It is better for you to listen to slower music.
3. Listening to music doesn’t damage your heart rate but it does damage your hearing.
4. Listening to fast music doesn’t effect you it’s like listening to slow music.
5. It is very unhealthy to listen to fast and loud music all the time.
Step by Step Instructions

1. Take the heart rate sensor pro
2. Locate it into the lab quest sensor
3. Make sure the sensor pro works when plugged in
4. Switch the seconds on the lab quest to 600 seconds
5. Have subject put their fingers on the heart rate pro in the right place
6. Have subject have a device that plays music and choose a slow song
7. Start song first
8. Start graph
9. Run in place while holding the heart rate sensor
10. Stop the graph after 90 seconds
11. Save your graph on a flash drive
12. Make a new graph and start the steps all over again
13. Instead of a slow song find a fast song and start graph
14. Save that graph onto your flash drive
Materials

• Heart rate sensor pro
• Lab quest sensor data logger
• A devise that plays different types of music (iPod, mp3, iPad)
• Flash Drive to collect data on the experiment
Hypothesis

We predict that slower music will make your heart rate lower in comparison to faster music.
Breylin’s Heart Rate

First we tested Breylin’s heart rate, and are results came out confirmed that the different speeds of music you listen to result in how your heart beat is.
Listening to Fast Music - Breylin

Heart Rate
87 bpm
### Listening to Slow Music - Breylin

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<th>Heart Rate (bpm)</th>
<th>Signal (V)</th>
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#### Heart Rate
- **87 bpm**
- **80 bpm**
- **73 bpm**
- **67 bpm**
- **72 bpm**

#### Time (s) vs. Heart Rate (bpm) Graph
Resting Heart Rate - Breylin

Heart Rate: 28 bpm
Jakobs Heart Rate

Then we tested Jakob and we found out at the end that we accidently used a different volume when we tested him so it came out with bad results.
Listening to Fast Music - Jakob

Heart Rate
14 bpm
Listening to Slow Music - Jakob

Heart Rate
60 bpm
Resting Heart Rate - Jakob

Heart Rate
44 bpm
Our investigation showed by our results that the different speed of music does effect your heart beat. This could be useful for others because if they needed to learn or investigate in heart rates comparing to music, it would be a great investigation.
Conclusion

Our conclusion for our Hypothesis is that different speeds of music do effect your heart rate.
Pictures during Experiment

PHEOCS Observations
Pictures during Experiment
Pictures during Experiment
Resources

http://sportsmedicine.about.com/od/sampleworkouts/a/RestandRecovery.htm


http://www.active.com/women/Articles/How_to_Use_a_Heart_Rate_Monitor

http://www.hpb.gov.sg/HOPPortal/article?id=4004

PHEOCS Cite resources