How Environmental Changes Impact Sleep

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Purpose: The reason I did this project was because over 70% of teenagers don't get enough sleep at night and 23.8% of teenagers have insomnia. The project was created to help provide insight on why adolescents are having problems with sleeping and way to improve it. Procedure: I took Neulog sensors (Temperature, humidity, Light and Sound) and put them on my nightstand which is right next to my bed for the most accurate result. I also had a watch which measured my heart rate, stress levels, and sleep cycle throughout the night. I changed my environment by adding humidity, using a night light, fan, my overhead light, adding heat, and having white noise playing. I tested each environment change for 10 days and also had a controlled environment for 10 days. Right before I went to bed, I turned the Neulog sensors on and put on my watch. Then I went to sleep. The next morning, I took my watch off and turned off the Neulog sensors. I then put all of my data on an Excel spreadsheet. I continued this process for all 70 days. Conclusion: I found that my stress levels and heart rate are correlated. I also found that when the environment changes (ex. there is a loud noise) my heart rate and stress levels rise. The environmental change that had the most positive impact was the fan. The environmental change that had the most negative impact was the night light.

Awards Won: