CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY

Name(s)

Charles D. Dewey

Project Number

S1105

Project Title

The Ramifications of Sound Stimuli on the Human Autonomic Nervous System

Abstract

Objectives/Goals

By using different tones to cause differing effects in people I found whether or not people#s heart rates are changed by the tones I can find which tones soothe and calm people, and which tones cause the opposite response.

Methods/Materials

By using speakers to project different sounds produced through a media player, I record the information gained by heart rate monitors onto data sheets.

Results

The Ocean Waves sample on average lowered the heart rate, followed by the Thunderstorm sample. The Fast Tempo music increased the heart rate the greatest, followed by the Babbling Brook sample, then the Slow Tempo music sample.

Conclusions/Discussion

My hypothisis was partially correct, the Fast Tempo music sample did increase the heart beat, although the Thunderstorm lowered the heart beat instead of raising it. The Ocean Waves sample was the stimuli that lowered the heart beat the most, followed by the Thunderstorm, while the Babbling Brook stimuli increased the heart beat.

Summary Statement

I tested whether audio stimuli whould change a subjects heart rate, and if so which sounds were the most effective.

Help Received

Richard Conlan allowed me use of his osciliscope, Micheal Talley helped build the finger photoplethysmography board.