CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY

Name(s)

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Project Number

S1109

Project Title

EEG Patterns of Video Game Players

Abstract

Objectives/Goals

In June, 2007 the American Medical Association (AMA) met to discuss the issue of video game addiction. The AMA stated that more research on this topic would be needed in order to determine whether or not video game addiction could be a given diagnosis. The purpose of this experiment was so study the effects video game playing has on the brain.

Methods/Materials

I chose a control group of casual video game players and a group of excessive video game players to test using the BrainMaster 2E by evaluating the data I collected from the surveys I issued. Each test session was 240 seconds long with electrodes placed at the Ten20 standard reference locations A1, A2, and C4. Three sessions were conducted; the first one resting, the second one playing video games, and the last one resting again immediately after playing.

Results

While the subjects played video games the data shows an increase in theta microvolts by 42% in casual gamers compared to the 19% increase in excessive gamers. After playing video games excessive gamers show an 8% increase in Alpha activity. However, statistical analysis shows that with p-values of 0.11 for theta and 0.42 for alpha respectively, there is no significant difference between the casual and excessive gamers

Conclusions/Discussion

My data showed slight differences in the brain activity of casual and excessive gamers but these differences are not significant. Other studies have shown that changes in brain activity do occur while playing video games but the extent of these changes and their long term effect is yet to be determined.

Summary Statement

My project observes EEG activity of 2 groups of video game players; casual and excessive.

Help Received

School provided EEG, Parents helped with board, Larry Kuhn answered a few questions i had related to an EEG