The Synapse

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Video Games and the Brain by Brian Sanders

A recent study has finally proven the much anticipated theory of violent video games inducing violent behavior. Dr. Vincent Matthews, a professor of radiology at Indiana University, was able to isolate the area of the brain most involved in violent video game activity. Children ranging from age 13 to 17 were studied using fMRI directly after playing a violent video game. The gamers showed increased activity in the amygdala, an area of the brain primarily involved in the processing and storage of emotional reactions. Thus, the participants involved in the study were emotionally stimulated by the violent actions of the game, stored the memories, and had lingering stimulation in the amygdala for a considerable time period. Specifically, the fight or flight response was aroused in the kids, which is the typical response when placed in a violent environment. This study provides a concrete stepping stone for those disgusted with the violent video game fad.

The fMRI technique is a monumental breakthrough in neuroscience. By combining the best spatial resolution in brain imaging to date and a respectable temporal resolution, the fMRI is the first brain imaging method that is able to process data both spatially and temporally in the brain. fMRI's temporal resolution is not superior to that of the EEG, partially due to the kinds of data the two imaging devices measure. The fMRI focuses on oxygenation of cells in the brain, while the EEG puts electrical/neural activity at the center of attention. From diagnosis of brain disorders to mapping one's brain during neurosurgery to measuring the effects of external stimuli such as therapy, fMRI has a great deal of promise for clinical use in the near future.

Upcoming Events in Spring 2007!

- Speakers on the Clinical Aspects of working with Autism
- T Shirts (coming in January!)
- New Volunteer Opportunities
- Summer Internships Session
- Fun Social Events and movies
- And Much More!

The Greener the Better!

by Vijeth Iyengar

Recent studies that have appeared in the journal, *Archives of Neurology*, have suggested that a diet rich in Mediterranean staples such as fruits, vegetables, and olive oil may be a preventive measure against Alzheimer's disease. Researchers at Columbia University led by researcher Dr. Nikolaos Scarmeas in a study, collected data from 2,000 people with an average age of 76 years. Of the close to 2,000 people that were studied, 194 people developed Alzheimer's disease. In his study, Dr. Scarmeas, studied and analyzed the diets of each of the persons involved in the study for the previous year of the study and assigned a correlating number to their diet. The number represented the closeness of the person's diet to that of a typical Mediterranean diet. The scale was from 0-9 and they observed that those persons whose diet resembled the Mediterranean were at a lower risk of being susceptible to Alzheimer's disease than those whose diet was not as similar. In addition, "people in the top one-third of diet scores had 68 percent lower risk of developing Alzheimer's disease, compared with people in the bottom third." Furthermore, "people in the middle third had a 53 percent lower risk of developing the disease." These observations and statistical results are due to the diet's ability to fight increased inflammation in the brain and in regions harboring Alzheimer's. This is a critical step and facet in the fight against the early onset and devastating impact of Alzheimer's.

Forensics Internship

by Anonymous

While attending a small state college near my home during the fall of 2005, I decided to pursue an internship opportunity that I had been thinking about for years. Forensic pathology is what first got me interested in going to medical school (I would like to point out that this was before we were overcome by popular television shows on the topic) and I've always looked to it as a career that would remain interesting. So I began to make phone calls and ended up with an internship in the pathology department of the Department of Forensic Science lab near to where I live. It was everything that I could have hoped for. It started with a tour of the lab where the director and I walked though the different departments: ballistics/firearms, drug chemistry, DNA, and death investigation. It turns out that I found my home in the latter and spent my time assisting the pathologists and path techs with autopsies. It was morbid at times and made me remember to buckle my seatbelt, but it was also fascinating to see the steps towards solving the mystery surrounding each death. During my time at the lab, I have done almost everything that the path techs normally do during autopsies from weighing organs to evidence entry and body retrieval at crime scenes. On top of everything that I've learned, getting to know the people that I work with has been just as rewarding as gaining experience in a field that I may enter. In the end, all it took was a little curiosity and a phone call.