

ABSTRACT NO.: 532

TITLE: The Analysis and Comparison of the Electroencephalogram (EEG) Data of Alcoholics and Non-alcoholics.

AUTHORS: Avinash Boodram
Naveen Ratan

SUPERVISORS: Professor Ramsey Saunders
Mr. Oba Ranu

Our research in this project dealt with us performing an electroencephalogram (EEG) test on alcoholic and non-alcoholic patients and making comparisons from the results to see the effects alcohol has on the brain. An EEG is a test used to detect abnormalities related to electrical activity of the brain, which is produced by the firing of neurons. In performing the test on the respective patients we adopted the international 10-20 system of electrode placement. We obtained EEG waveforms for each patient for three different stages which includes; resting, flashing and counting. Various analytical methods were used as a comparative tool in observing the major differences between the two groups. The results revealed that non-alcoholic volunteers had a greater power over all frequencies for each stage of examination and most notably from the O1 and O2 electrodes. From the coherence analysis it was seen that alcoholics generally possessed a greater coherence, meaning the joint variation in electrical activity between homologous electrode pairs were greater. The data indicates that the distinctions in the EEG can be used as a clinical tool for evaluating alcoholism, with the most clear indication coming from the power spectral analysis.