

Appendix II: TOVA™

The **T.O.V.A.™** process highlights a physiological problem located just above the left eye at Fp1 in most all brains. Working memory also resides very near this area and is likely also impaired. If working memory, most important for problem solving, is impaired and T.O.V.A.™ shows more than nine total impulsive errors that occur primarily in the last half when used as follows then training at Fp1 and F7 is indicated.

In studying (T.O.V.A.™) I found that Variability, one of the most useful scores reported by (T.O.V.A.™) resulted from the natural need to make the best score possible. One takes time to try to be right. The extra time is the source of the variable part of the reaction time. If the client responds to instructions to press the button as quickly as possible because I want to study how fast he can make decisions, Variability scores improve dramatically and Impulsivity scores become much worse.

There are two brain pathways from the decision making part of the frontal cortex to the motor strip where the finger action impulse occurs. There is a fast pathway from decision making frontal cortex area through the basal ganglia to the motor strip. A slower pathway from cortex, basal ganglia to thalamus then up to the motor strip carries inhibitory information. In the last half of (T.O.V.A.™) the target is common, a button pressing habit is formed. If the inhibitory information reaches the motor strip too late the button has been pressed in error, the client immediately knows a mistake has occurred.

In general, those brain difficulties that have physical etiology such as developmental, hereditary, or injury yield best to HEG. Among these are ADD/ADHD, Traumatic Brain injury, Toxic Encephalopathy, Endogenous Depression, Ageing Dementia, Autism, Aspergers Syndrome, and perhaps Alzheimers Disease.