

About the T.O.V.A.

Introducing the T.O.V.A., the Test Of Variables of Attention.

The T.O.V.A. uses geometric stimuli (to minimize the effects of cultural differences and learning problems), and contains two test conditions: target infrequent and target frequent. In the first half of the test (the target infrequent half), the target:non-target ratio is 1:3.5; i.e.: a target is presented (randomly) only once every 3.5 non-target presentations. In this half, which is similar to most of the other CPTs, the task is boring and fatiguing, and the subject must pay close attention to respond to the infrequent target correctly. When a subject does not respond to the target, it is called an error of omission and is a measure of inattention. In the second half of the test (target frequent half), the target:non-target ratio is 3.5:1; i.e: 3.5 targets are presented for every 1 non-target. In this half of the test, the subject expects to respond most of the time but occasionally must inhibit the tendency to respond.

When a subject responds to the non-target, it is called an error of commission and is a measure of impulsivity. Thus the ability to pay attention to a boring, repetitive task is best measured in the first half of the T.O.V.A. while the ability to inhibit oneself is best measured in the second half.

Like most CPTs, the T.O.V.A. uses a fixed, mid-range interstimulus interval (2secs) and visual stimuli. However, unlike most CPTs, the T.O.V.A. stimuli are non-sequential, simple geometric configurations and monochromatic. Since these features along with the use of a 2.5 minute practice, minimize practice effects, the T.O.V.A. can be used for serial measurements.

Mode of response is a particularly important variable that significantly affects test reliability. Unfortunately, since most CPTs use the keyboard to record responses, they have large inherent errors of measurement of time (up to +/-28 msec). However, the T.O.V.A. uses a specially designed microswitch with an insignificant error of measurement (+/- 1 msec) and which minimizes muscular fatigue.

Duration The duration of testing is a significant factor, since subjects who are older and more intelligent can compensate for mild or moderate attention problems for 5, 10, even 15 minutes. As a result, the T.O.V.A. is 21.8 minutes long for 6 year olds and older. An appropriately shorter version (10.9 minutes) is administered for 4-5 year olds.

Variables measured T.O.V.A. measures include variability of response time (consistency), response time, commission (impulsivity), errors of omission (inattention), post-commission response times, multiple and anticipatory responses, and an ADHD score, which is a comparison to an age/gender specific ADHD group.

The T.O.V.A. immediately analyzes the results quarter by quarter and provides written interpretation and graphics.

Advantages of Using The T.O.V.A.

1. Increases Diagnostic Accuracy

The T.O.V.A. promotes data based clinical decision making with its objective information about attention and impulsivity - information that clinicians do not obtain from behavior ratings and history. Alone, the T.O.V.A. correctly identifies over 86% of ADHD cases and the “hit” rate improves with the addition of other clinical information. However, as is true with all tests, the T.O.V.A. does not make a diagnosis - only a clinician does.

2. Improves Response to Treatment

The T.O.V.A. accurately predicts the effectiveness of medication by comparing T.O.V.A.s (with and without medication). By administering T.O.V.A.s on various doses one can titrate dose for best results. It titrates medication doses to obtain optimal clinical results and minimize sequelae without costly and long clinical trials. And it minimizes the need for treatment of overlying, prominent symptoms such as depression, anxiety, learning and conduct disorders that may “mask” ADHD.

3. Facilitates Case Management and Planning

The T.O.V.A. provides cost-effective monitoring of treatment over time with yearly retesting to insure continued optimal treatment results and to determine when treatment is no longer necessary. The School Intervention Report, which is easily edited, personalized and individualized, facilitates communications with the school, saving valuable professional time. And it is an asset when treating substance abuse, including nicotine dependence, recognizing that over 70% of chemical dependency treatment failures and many treatment resistant nicotine dependent cases have underlying, undiagnosed and untreated ADHD.

4. Promotes Cost Savings

The T.O.V.A. can be administered by easily trained assistants in the primary care physician’s office or in a clinic setting. Referrals to specialists such as neurologists, psychiatrists and psychologists can be more specific and cost effective. Successful treatment of ADHD reduces incidence of accidents and injuries. We now know that attentional problems can be treated with lower doses of medications rather than the higher doses needed to suppress behavioral problems. T.O.V.A. use significantly reduces the costs of medication that may be needed for many years. Teenagers, adults and older patients generally need much less (50%) rather than more medication. You can determine when trade name medications are necessary or generic medications are sufficient.