

Tic/Tourette's Psychoeducation

Diagnostic Criteria

- **Tourette Syndrome (TS):** 1) Both multiple motor and 1 or more vocal tics have been present at some time during the disorder, although not necessarily concurrently. 2) Tics may wax and wane in frequency but have persisted for more than 1 year since first tic onset. 3) Onset is before age 18 years. 4) The disturbance is not attributable to the physiological effects of a substance or another medical condition.
- **Persistent (Chronic) Motor or Vocal Tic Disorders:** Single or multiple motor OR vocal tics have been present, but not both.
- **Provisional Tic Disorders:** Single or multiple motor and/or vocal tics. Tics have been present for less than 1 year, and criteria have not been met for TS or persistent (chronic) motor or vocal tic disorder.

Natural History of Tics: The age of onset for tics is usually quite young, around 4-7 years old. Tics tend to peak during early adolescence, around ages 10-13, and decrease in intensity thereafter. Approximately $\frac{1}{3}$ of adults report near total tic resolution, while another $\frac{1}{3}$ report tics as "substantially less severe." In the remainder of cases, Tourette's Disorder is a lifelong condition. These adults may have a more chronic form of the disorder.

Causes & Comorbidities: Tics and Tourette's are neurological disorders, not learned. They are influenced by surroundings, however, and can contribute to social, academic, and occupational problems. Comorbidities such as ADHD, OCD, and GAD are common.

Genetics: The causes of TS and other Tic Disorders remain unknown. These conditions tend to occur in families, and numerous studies have confirmed that there is a genetic link. Males are more likely to develop tics disorders than females.

Neurological Basis: The basal ganglia controls signals that your brain sends out to muscles to move. In the case of tics, the basal ganglia incorrectly allows these signals through to your body, rather than blocking them. Every time you engage in the tic, the feedback to the brain and the basal ganglia is that this signal was correct, and it reinforces the likelihood of sending the same signal again. Studies have shown that people with tic disorders tend to have less volume of the basal ganglia. During habit reversal training, you will be essentially rewiring this faulty connection so that the basal ganglia doesn't let the tic slip through anymore.

CBIT Rationale: There are two main parts to CBIT. First we will figure out any situational triggers that make your tics worse, and decide on possible functional interventions to remove or lessen exposure to these triggers. Second, we will use habit reversal techniques to find some ways to manage your tics better so they don't bother you as much. It sounds simple, but will require you to be diligent and focused on your tics for the duration of CBIT, both during and between our sessions together.

CBIT Trials: The effectiveness of CBIT is well established. The strongest evidence comes from two large, randomized, controlled trials (an adult trial and a child trial) comparing CBIT to supportive psychotherapy. Results from both trials showed that CBIT was associated with a significantly greater decrease in tic severity at post-treatment relative to the control group. In the child trial, 53% of children receiving CBIT were rated as treatment responders versus 19% in the control group; 87% of responders maintained treatment gains in a 6-month follow-up. In the adult trial, 38% of patients receiving CBIT were rated as treatment responders versus 6% in the control group; 80% of participants receiving CBIT maintained treatment gains in a 6-month post-treatment follow-up. The degree of symptom reduction was similar to what has been reported in medication trials.