

Tourette Syndrome

Common Names

- Chronic Motor and Vocal Tic Disorder
- Tourette Disorder
- Gilles de la Tourette Syndrome

Causes/Etiology

- The cause for Tourette Syndrome (TS) is unknown
- Current research shows possible abnormalities in certain brain regions, the circuits that interconnect these regions, and neurotransmitters

Incidence

- Based on evidence from twin/family studies, it suggests TS is an inherited disorder
- TS can be a chronic condition with symptoms lasting a lifetime
- Average onset of TS is between the ages of 7-10
- TS occurs in individuals from all ethnic groups
- Males are 3-4x more likely than females to develop TS
- Around 200,000 Americans have most severe form of TS and as many as 1/100 show milder symptoms
- Most have worst symptoms of TS in early teens, with improvement in late teens and into adulthood

Characteristics

- Tourette Syndrome (TS) is a neurobiological disorder characterized by tics-involuntary, rapid, sudden movements and/or vocal outbursts that occur repeatedly
- Tics come and go over time and vary in frequency, type, location, and severity
- Tics are classified as either **simple** or **complex** and are often worse with excitement or anxiety
- Most disabling tics include motor movements resulting in self-harm or vocal tics including uttering swear words or echolalia (repeating words or phrases)

Simple	Complex
<ul style="list-style-type: none">-Motor tics are sudden, brief, repetitive movements with a limited number of muscle groups-Includes eye blinking, facial grimacing, shoulder shrugging, head/shoulder jerking-Simple vocalizations include repetitive throat clearing, sniffing, or grunting sounds	<ul style="list-style-type: none">-Distinct, coordinated patterns of movements involving several muscle groups-Motor tics are facial grimacing combined with a head twist and shoulder shrug, sniffing, touching objects, hopping, jumping, bending, or twisting-Vocal tics include words or phrases

- Motor tics usually precede vocal tics and simple tics usually precede complex tics

IDEA Category

- Tourette Syndrome is classified as “Other Health Impairment” (OHI)

DSM-IV Category

- Tourette Syndrome has a DSM-IV diagnosis of 307.23
- Criteria include:
 - both multiple motor and one or more vocal tics must be present at the same time, although not necessarily concurrently;
 - the tics must occur many times a day (usually in bouts) nearly every day or intermittently over more than 1 year, during which time there must not have been a tic-free period of more than 3 consecutive months;
 - the age at onset is before 18 years;
 - the disturbance is not due to the direct physiological effects of a substance (e.g. stimulants) or a general medical condition (e.g. Huntington's disease or postviral encephalitis)
- TS has an ICD-10 code of F95.2

Deficits

- Many with TS experience ADHD, related problems with reading and arithmetic, obsessive-compulsive symptoms, depression, and anxiety disorders
- Some may have Sensory Defensiveness, where they might not be able to tolerate loud noises (auditory), cannot stand to wear certain fabrics/hate tags in clothes (tactile), or might find it over stimulating to be in a crowded hallway, etc.
- Some children with TS have fine motor and visual motor impairments, where their hands can cramp easily when writing and after a couple of sentences their handwriting deteriorates where it is illegible (esp. difficult with cursive writing)

Long-Term Developmental Outcomes

- Even though TS is generally lifelong and chronic, it's not a degenerative condition
- Generally, people with TS lead productive lives and many reach high levels of achievement- individuals have a normal life expectancy and it does not impair intelligence
- While most experience their worst symptoms in their early teens, improvement usually begins in late teens and into adulthood
- Around 10% of those with TS have a progressive course lasting into adulthood

Assessment Approaches

- Doctors/Primary Care Physicians can screen and diagnosis for TS in the following ways:
 - Diagnosis is made after verifying the patient had had both motor and vocal tics for at least 1 year
 - Existence of additional neurological and/or psychiatric conditions aide doctors in this diagnosis
 - There are no blood or laboratory tests needed for diagnosis
 - Neuroimaging studies, such as Magnetic Resonance Imaging (MRI), Computerized Tomography (CT), and Electroencephalogram Scans (EEG) may be used to rule out other possible conditions often confused with TS

Interventions & Treatments

- **Medications**-Majority of people with TS don't need medication because tic symptoms usually don't cause impairment
 - Neuroleptics (haloperidol and pimozide) are most consistently used for tic suppression
 - There isn't one useful medication helpful to all with TS, nor does any medication completely eliminate the symptoms
 - All medications have side effects, including sedation, weight gain, and cognitive dulling, as well as neurological side effects such as tremors
 - There are medications to treat the associated neurobehavioral disorders that can occur alongside TS, such as those with ADHD and OCD, but more studies/research is needed
- **Psychotherapy**-Useful because it can help the person cope with TS and all of the social and emotional problems that sometimes can occur

Contributions of the SP

- Even though many students with TS function well in the regular classroom, they should be given a comprehensive assessment to determine the best educational setting that will meet their needs
- Collaboration with parents and an OT is strongly encouraged so that the student can have a sensory integration evaluation
- It's important that teachers and other school staff are informed about the student's condition, especially if taking medications, and are aware of those medication's side effects that could have an impact on their work potential
- Students with TS need a tolerant and compassionate setting where they can work to their full potential and in which it has flexibility for accommodating their special needs
- Some students with TS may need tutoring, untimed testing, a private study area, exams outside the regular classroom, or oral exams when their symptoms interfere with their ability to write
- There needs to be an awareness that students with TS are easy targets for bullying because of their symptoms and other behaviors that are co-morbid with TS, such as compulsive behaviors, as well as social skills deficits, their own ignorance of TS, and also a fear of the unknown

Additional Resources

- <http://www.tsa-usa.org>
- <http://www.tourettesyndrome.net>
- http://www.ninds.nih.gov/disorders/tourette/detail_tourette.htm
- <http://www.mayoclinic.org/tourette-syndrome/>
- <http://www.nasponline.org/resources/principals/tourettesprimer.pdf>