

# Tourettes syndrome in children

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Tourette's syndrome, also called Tourette's disorder is named after the neurologist, Gilles de la Tourette. Sometimes it is referred to as GTS but more often it is simply called Tourette's or 'TS'. It is an inherited neurological disorder marked by movement-based (motor) tics which are abrupt, repetitive, stereotyped, non-rhythmic movements, as well as vocal (verbal or phonic) tics which are involuntary sounds produced by moving air through the nose, mouth, or throat. Tourette's is defined as part of a spectrum of tic disorders, which includes transient and chronic tics.

This disorder may appear in multiple family members, and often appears (co-morbid) with other behavioral disorders, in particular - "obsessive-compulsive disorder (OCD) and attention deficit hyperactivity disorder (ADHD)" (Hawley 2008). People with this disorder have normal life expectancy and intelligence, but symptoms can lead to decrease in normal activities (Walkup, Mink & Hollenbeck 2006). Tourette's syndrome, as described in the psychiatric diagnostic tool DSM-IV-TR criteria is "associated with distress or social or functional impairment" (Hawley 2008). Onset and Diagnosis.

The most common first sign to alert people to visit the doctor for a possible presence of Tourette's is a facial tic such as "rapidly blinking eyes or twitches of the mouth" (NTSA 2009). Unintended, involuntary sounds such as throat clearing, shrugging or tics of the limbs may be initial signs but in certain case, although rare, the symptoms become abruptly with multiple symptoms of movements and sounds. Chronic tic disorder is diagnosed with the presence of single or multiple tics, and the presence of motor or phonic tics (but not both) which is present for a year or more.

On the other hand, Tourette's which falls under the category of above is diagnosed when there are multiple motor tics occurring at the same time with one phonic tic and is manifested for more than a year. As a general rule, simple motor tics like blinking are first noticed on the child at around 5-10 years old, while vocal tics start manifesting after 8 years old but before the child is 15 years old. Symptoms of the disorder can be seen in infancy but this is a rarity. As a rule, the symptoms may come and go and children show identifiable signs at round 7 years old (Hawley 2008), and before 18-21years old (Black 2007).

Studies found the most onset was between 9-14 years of age (Leckman 2003, Black 2007). Another study showed that tics started below 18 years, but 5 relatives had an onset after the age of 21 years. Affected persons will “blink, jerk, grunt, clear their throats, swing their arms, grasp or clasp others, have obsessive-compulsive behaviors or use verbal expletives (coprolalia) uncontrollably” (Tabers 2001, 2207). In some cases, people suffering from Tourette's can control the verbal expletives in public but they will express it vigorously once they are in private.

Coprolalia, “the uncontrollable utterance of socially objectionable or taboo words or phrases” is the most popular symptom of Tourette's but it is not required for a diagnosis hence about 90% of patients afflicted with it only Tourette's does not have coprolalia. The most common, initially noticed motor tic is eye blinking and the vocal tic is repetitive throat clearing (Black 2007). The disorder often persists throughout the individual's life but severity peaks in adolescence and thereafter decreases to a point that it is almost not bothersome to the person.

This average though can be very misleading because some form of fluctuation or recurrence have been documented although it is not severe. There have also been rare cases that reported a recurrence of tics that is bothersome enough to seek medical attention, and have had to maintain lifelong treatment due to progressively worsening of tic activity (Black 2007). Prevalence. Tourette's syndrome used to be known as a rare condition but it is now contended by doctors and psychologists that it may be more common but misdiagnosed because some cases are so mild that patients and their families discard it as being an oddity rather than Tourette's.

Most children with TS have mild, barely bothersome, non-disabling symptoms, and it is difficult to distinguish the signs of the disorder as opposed to a child acting out such as Mimicking others, blinking being viewed as tormenting someone who may have done so because they wear glasses, or by doing things that others would view as the child just trying to get attention, therefore, medical attention is not a thought to the parents of the child who is doing these things.

In some patients the tics improve and disappear as they grow older; hence, they never seek medical attention. The estimated prevalence is 0.7-4.2% (Hawley 2008) based on children checked in public schools. Tourette's is known to be familial and its prevalence rate in first-degree relatives is 5-15% (about 10 times the prevalence rate in the general population). Chronic motor tics occurring, without vocal tics has also been documented as being common in relatives (Black 2007).

In special education programs, 26% of students identified tics, as compared to 6% of students in mainstream classrooms led to identification of co-

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morbidity with having symptoms of TS included ADHD and OCD (Hawley 2008), impulse control disorders, anxiety and mood disorders, as well as difficulties with living and adaptation (Walkup, Mink & Hollenbeck 2006). It is estimated that 1 in 10 children per 1,000 have Tourette's disorder, and as many as 1 per 100 people may have tic disorders.

In children, male to female ratio varies from 2-10: 1 (Hawley 2008), boys have an increased prevalence for chronic tics compared to girls in exhibiting 5: 1 ratio, although some studies show between 2: 1 and 10: 1 ratios (Black 2007). If OCD data is included as a variant of Tourette's, their quantities added to the total, the ratio between boys and girls become equal (Hawley 2008). Causes. Environmental factors may contribute to the cause but up to now exact causes of the disorder is still are not known.

The clinical phenomenon are very similar across social classes, ethnicity and culture which suggests a genetic basis and the disorder has been reported globally (Hawley 2008). As children pass through adolescence, the tics decrease in severity and it is extremely rare for Tourette's to persist in adulthood. Whether the resolution is a compensation of the neuro system or a resolution of the underlying pathology is unclear (Hawley 2008).

Adults who show signs of the disorder are likely to have shown symptoms since childhood, although these may have been so mild that they were generally unnoticed and undiagnosed. In the US though, most diagnosed patients being examined at research centers and affiliated with lay organizations are white. But this does not necessarily mean that Caucasians have a predisposition, it may merely be due to differences healthcare-

seeking behaviors. A non-genetic cause may also exist and is still under research and investigation.

Additional evidence is being gathered regarding the differences in severity between affected twins with the twin having experienced peri-natal complications experiencing increased symptom severity (Hyde 1992, Black 2007). Also garnering much attention is the theory that Tourette's syndrome may be caused by an abnormal immune response to streptococcal infection. In several documented cases, tics began suddenly after a streptococcal infection. As a result of this the case definition for a " post-streptococcal autoimmune neuro-psychiatric disorders" came into being (Snider 2003, Black 2007).

The difference between other movement disorders such as choreas, dystonias, and dyskinesias and that of Tourette's - these are " temporarily suppressible, non-rhythmic and more often than not are preceded by a premonitory urge" (Black 2007). Just before an onset, an afflicted individual feels an urge that is similar to one felt before a sneeze or an itch that needs scratching. This is often pictured as a buildup of tension and energy which they are then able to consciously release so the sensation is relieved.

It is further described as " something stuck in one's throat, a localized discomfort in the shoulders that leads to the need to clear one's throat or shrug the shoulders" (Hawley 2008). The actual tic is eventually felt as relieving this tension or sensation, similar to clearing the throat or shrugging the shoulder. This is how " premonitory sensory phenomena" or premonitory urges are described by sufferers. Medication and Treatment. Often,

medication is unnecessary and a safe and effective medication for each and every case of tic is yet to be introduced.

There have been medications as well as therapies that help to reduce certain types of tics, but not cure it. In general, the medical management of Tourette's is the treatment of coexisting behavior symptoms, change in diet, patient and family education. The patient and family are educated regarding how to effectively handle the manifestations of the disorder, and if an effective adaptation is made, they can avoid the use of medications. Medication is only considered when there is substantial interference with social and academic performance, as well as activities of daily living.

The target is not for completely eliminating the symptoms but merely to alleviate the social embarrassment and discomfort so as to improve the social and academics life of the child. Various pharmacological agents are used to reduce the symptoms' severity but it only treats the symptom and often the medications have neurological effects whereas it has been argued that the disorder is a neurobiological condition. No curative or preventive treatments are still available for this neurobiological or even biological aspect.

There is a growing movement to go against medications because this being a chronic disorder, the goal should be long-term benefit rather than quick improvement at any cost. Families are also getting increasingly worried that the medications might have a detrimental effect in their children, that perhaps in the end, it 'damages' them rather than helping. It has been Resources for the child and families are available in several ways which include educating students and school personnel regarding the nature the

syndrome as well as improving the school environment will help the patient to avoid pharmacotherapy.

Parents and families members of a child who has TS can turn to agencies such as the National Tourettes Association, counseling with the doctor's, videos, and self help books. Reference List Black, Kevin J. , Webb, Heather. Neurology: Pediatric Neurology: Tourette Syndrome and Other Tic Disorders. Mar 30, 2007. Available from eMedicine Specialties at <http://emedicine.medscape.com/article/1182258-overview> Hawley, Jason S. , Darnall, Carl R. , Gray, Sharette K. Pediatrics: Developmental and Behavioral - Tourette Syndrome. 23 June 2008.

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