

# Tourette Syndrome

## Examples of Common Symptoms (not a complete list)

<b>Vocal Tics</b>		<b>Motor Tics</b>	
<u><b>Simple Vocal Tics</b></u>	<u><b>Complex Vocal Tics</b></u>	<u><b>Simple Motor Tics</b></u>	<u><b>Complex Motor Tics</b></u>
Throat clearing	Repeating words	Blinking eyes	Pinching/Poking
Grunting	Repeating phrases	Facial grimacing	Pulling clothes up
Sniffing	Repeating parts of words	Rolling eyes	Fiddling with clothes
Spitting	Animal sounds—dog, cow, rooster, etc	Squinting	Jumping/hopping
Coughing	Stuttering	Smacking/licking lips	Kissing self or others
Humming	Change in voice:	Sticking out tongue	Freezing motion
Snorting	High/low pitch	Sucking thumb/fingers	Multiple tics in sequence
Yelling	Rate of speech	Flipping hair out of face	Thrusting arm, leg, groin, etc
Squeaking	Forced speech	Head turning	Tearing things into tiny pieces
Exaggerated breath sounds	Barely audible muttering	Arm movements	Tics of bladder/bowel
Whistling	Talking to oneself in multiple characters	Chin on chest	
Belching	Calling out random words	Tensing muscles	<u><b>Self-harming Tics</b></u>
Popping noises	Imitating noises (car engine, horn, etc)	Drumming fingers	Picking at skin/scabs
Clicking tongue	Mumbling	Flapping arms	Hitting self
Droning-continued tone	Singing	Kicking	Throwing self on ground
	Growling	Tapping toes	Putting items in ear/nosstrils
	Gagging	Cracking-jaw, ankle, neck etc	Trichotillomania—pulling out hair, eyelashes, etc.
		Grinding teeth/clenching jaw	
<u><b>Mental Tics</b></u>		<u><b>Possible Characteristics</b></u>	
Intrusive words, thoughts, ideas or images (pleasant or scary)		Quick temper/overreaction	Rigid thinking
Fears/Phobias		Perception problems	Impaired attention
Thoughts constantly going to certain topics/one track mind		Mood fluctuations	Handwriting issues
Perseverating—obsessing on same topic		Problems with organization	Over-activity
Negative thinking		Need to have last word	Argumentative
Thoughts of morbid, violent or sexual images—may be expressed verbally, written or depicted in artwork or doodles		Lack mental brakes	Difficulty with transition
		Sensitive to noises/light/touch/feel of clothing—or may crave these	

## Other Symptoms

<u><b>Coprolalia (5-15%)</b></u>	<u><b>Copropraxia</b></u>	<u><b>Obsessive Thoughts &amp; Rituals</b></u>	
Obscene words/phrases	Inappropriate touching self/others	Concerns with health of self	Rechecking
Racial slurs	Touching private areas self/others	Concerns with welfare of loved ones	Perfectionism
Derogatory statements	Giving “the finger”	Focus on forbidden actions—stand on desk, kissing teacher, touch stove/hot items	Placing items just right
Socially inappropriate speech	Hugging/kissing	Washing hands repeatedly	Touching items just so
Yelling “Fire” in public place	Bumping into people	Touching things in sequence	Erasing
	Invading personal space	Focus on patterns—may make patterns instead of answering bubble sheets	Twisting hair
<u><b>Echolalia</b></u>	<u><b>Coprographia</b></u>		
Echoing others’ words or phrases	Socially inappropriate writing or drawing		
<u><b>Palilalia</b></u>			
Echoing one’s own words or phrases			

## Associated Disorders

Attention Deficit Disorder (ADD)	Anxiety Disorders	Sleep Disorders
Attention Deficit Hyperactivity Disorder (ADHD)	Learning Disabilities	Social Skills Deficit
Obsessive-Compulsive Disorder (OCD)	Mood Disorders/Depression	Rage Attacks
Oppositional Defiant Disorder (ODD)	Executive Dysfunction	Migraines
Slow Processing Speed	Sensory Integration Dysfunction—	Panic Attacks
Dysgraphia-handwriting disorder	—hyper or hypo sensitive to sensory input	Phobias
Autism Spectrum Disorder	—may need to smell, lick or touch	Eye tracking Problems

PA TSA, Inc.  
P.O. Box 148  
McSherrystown, PA 17344



Phone: 1-800-990-3300  
Local: 717-337-1134  
www.patsainc.org

## **TOURETTE SYNDROME:           What Happens in the Brain?**

The human brain is composed of some ten billion cells, called neurons, which maintain life support systems and regulate thoughts, emotions, and movements. Signals are transmitted throughout the body by way of a small electrical impulse that travels across each neuron and then is transmitted between each neuron through a microscopic space called the “synapse”. The electrical signal is able to leap the synapse with the help of brain chemicals known as “neurotransmitters”.

Tourette Syndrome is a neurological condition that causes involuntary vocalizations and movements. The exact cause has yet to be established however it is believed to be caused by an imbalance in the neurotransmitters within the brain. The two main neurotransmitters that are thought to be implicated in the expression of Tourette Syndrome are dopamine and serotonin. Research has yet to determine if these chemicals are truly out of balance or if the individual with TS is more or less sensitive to the effects of either of these neurotransmitters. For example, an underabundance or lower than normal sensitivity to dopamine is believed to cause Parkinson’s Disease, which can be somewhat controlled by increasing the amount of dopamine in the brain through the use of medications. If TS is caused by an overabundance of dopamine, it is important to note that there are no medications which can lower the amount of dopamine in the brain.

Some medications which are used to control Tourette Syndrome’s physical symptoms are commonly known as “dopamine blockers” and include such drugs as Orap (pimozide) and Haldol (haloperidol). These drugs are powerful tranquilizers, and in some cases the sedative effects can be more debilitating than the disorder itself. These drugs also have a number of side effects and have not been well studied for use on children or for long-term use.

Serotonin is the other neurotransmitter that has been linked to Tourette Syndrome. It is believed that either a lower than usual amount or an under-sensitivity to serotonin is responsible for the mood swings, impulsivity, and ritualistic behavior often associated with Tourette Syndrome. In recent years, drugs known as “selective serotonin reuptake inhibitors” or “SSRI’s” have been found to be helpful for some individuals with TS. Some examples of these are: Prozac (fluoxetine), Zoloft (sertraline), Paxil (paroxetine), and Geodon (ziprasidone).

Although there are a variety of medications that neurologists and psychiatrists can select from in order to attempt to alleviate the symptoms of Tourette Syndrome, there is no one “magic remedy” that will help every individual. Nor is it necessary to use medications to control symptoms in every case. The selection and use of medication is best addressed by the individual and their treating physician.

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*The Pennsylvania Tourette Syndrome Alliance is a non-profit organization that promotes awareness and acceptance, provides education, and assists families, schools and communities while advocating for individuals with TS.*