



Tourette's Syndrome:

Characteristics and Interventions

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Children and youth with Tourette's syndrome present with many complex characteristics that are often poorly understood by special and general educators. This article overviews the characteristics of children and youth with Tourette's syndrome and provides helpful suggestions that can be used in school settings.

Students who have Tourette's syndrome (TS) have unique academic, social-emotional, and physical needs in the classroom. Educators who foster openness and understanding can help these students feel included and academically adept by applying simple interventions.

According to the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association [APA], 2000), Tourette's syndrome is a neurobiological disorder marked by involuntary motor and vocal movements and sounds, called tics. These tics are the defining feature of the disorder and can cause significant academic, social-

emotional, and physical challenges, such as difficulty attending to and completing work and social isolation. Approximately 1 in every 2,500 individuals have TS, with boys diagnosed more frequently than girls (LinguSystems, 1999).

Tics are commonly noticed in early elementary-age children (Bronheim, 1991). On average, TS occurs at 6 or 7 years of age (APA, 2000). Common motor and vocal tics involve eye blinking, head or arm jerking, throat clearing, or sniffing (Dornbush & Pruitt, 1995). As the child develops and matures, tics may become more complex and may appear in facial gestures or movements that im-

itate others (LinguiSystems, 1999), or completely different tics may appear. Tics may also seem to “disappear” during a brief remission period or in early adulthood; however, TS is a lifelong disorder with an unpredictable course (APA, 2000). That is, observable symptoms and behaviors will persist throughout the individual’s life but may change often, causing the person to act and appear different. Although tics are involuntary due to their neurological basis, some individuals can “hold in” their need to release tics until the tics can be released at an appropriate time or place. This is extremely difficult, however, and may cause the tics to intensify when they are released. For example, a student may hold in motor tics during classroom activities, only to exhibit a more intense tic release during recess or after getting home late in the day. As with other neurological disorders, individuals with TS exhibit different tics and the severity of symptoms will differ (Ottinger, 2003).

Many individuals with TS have comorbid diagnoses, such as learning disabilities, obsessive-compulsive disorder, attention-deficit/hyperactive disorder, or Asperger syndrome (Dornbush & Pruitt, 1995; Marriage, Miles, Stokes, & Davey, 1993; Ottinger, 2003). In some cases, these exceptionalities are more challenging for students than the actual symptoms of TS and should therefore be addressed as well. Although these associated disorders may have an effect on the individual’s measurable intelligence (IQ score), TS does not directly affect intelligence, and many students with TS have average or above average IQs. Regardless of whether the individual has TS alone or with another condition, school accommodations are most likely required to ensure that the student can meet his or her potential. Likely difficulties that the student with TS may face along with suggested interventions are presented under three categories: academic, social-emotional, and physical.

Academic Concerns and Interventions

Approximately 40% of individuals with TS are reported to have learning problems (LinguiSystems, 1999). As a result, these students may experience any or all of the following difficulties that impair their academic performance:

- incomplete work,
- illegible or poor quality of written work,
- inattentive and/or distractible in class,
- disorganization of work and work space, or
- difficulty obtaining and understanding verbal instruction.

When learning problems are identified, an Individualized Education Program (IEP) is developed by a multidisciplinary team to address all aspects of the student’s learning and daily functioning to improve performance.

Students who may not qualify for special education services but who continue to struggle with academics or other school-related tasks may receive assistance through a 504 Plan. If students do not qualify for special education services or a 504 Plan, classroom teachers can create successful intervention plans using available resources, such as special education and related service staff within their building or district, practitioner-oriented articles, and their own knowledge and professional experience. The National Tourette Syndrome Association Web site (www.tsa-usa.org) provides general information about TS, a list of frequently asked questions, and multiple resources and upcoming conferences on TS. Some academic and classroom interventions that teachers may apply for a student with TS include the following:

- Refer the student for screening and assessment in any areas he or she is struggling with if a current IEP or 504 Plan is not in place. Inform the multidisciplinary team of any specific needs the student may have to obtain accurate performance scores, such as the need for multiple breaks, a quiet space during testing, or familiarity with the examiner prior to testing.
- Break down assignments and give the student work in smaller sections, such as one row of math problems at a time or one page of text at a time. Many assignments are incomplete because students feel overwhelmed or are not sure where or how to start.
- If handwriting is challenging for students with TS, allow alternatives, such as answering test questions orally, using multiple-choice instead of a short-answer format, or allowing the student to dictate responses into a tape recorder.
- Allow the student to use a computer or word processor to complete written work. This eliminates the frustration the student may experience with handwriting and allows the student to focus on the content and quality of his or her work.
- Give the student preferential seating near the front of the class or near the teacher’s desk so he or she may be subtly redirected when off task.
- Minimize extraneous distractions in the environment by creating student or subject workstations within the classroom.
- Use grid paper to assist the student in vertically aligning math problems.
- Use a notebook with contrasting colored lines (usually light blue and white or gray and white) when handwriting is necessary, to assist with spacing, alignment, and overall organization.
- Pair verbal instruction with visuals, such as overheads, demonstrations, or samples of completed work, to enhance the student’s understanding. Many students are more likely to remember what they see and do rather than what they only hear.
- Set reasonable time limits for assignments. For example,

allow assignments not completed during the allotted class time to be completed during a predetermined time or activity, such as after lunch or during computer time. Do not take recess or other activities away from the student when schoolwork is not completed.

- Consider reducing the number of problems based on the student's rate of task completion if the student requires more time than peers to do work. This shifts the focus of the assignment for the student to quality and understanding rather than quantity.
- Allow the student to take tests in a quiet room or area away from others. Whenever possible, eliminate timed tests, as they may cause excess stress and worry for the student, thereby increasing the incidence of tics.

Social-Emotional Concerns and Interventions

Our best academic efforts and interventions will not suffice unless we also pay attention to the social-emotional well-being of students with TS, who, like many others with neurological disorders, tend to have problems interacting with and being accepted by peers. They may also experience embarrassment and anxiety due to lack of understanding and acceptance of their tics by others. Thus, students with TS may isolate themselves or withdraw from peers to protect themselves from teasing or bullying. For these reasons, many students with TS are at risk for developing poor self-esteem and self-confidence, in some cases, leading to depression.

As educators, it is our responsibility to promote acceptance and understanding of students with disabilities through our own actions and by providing accurate information about TS to all students in "kid-friendly" terminology. Only through acceptance and understanding can we appreciate and value the differences in everyone. The following interventions encourage a cooperative environment:

- Inform peers and school personnel about TS. Helping others to understand the characteristics and neurological basis of the disorder can promote acceptance. It is important to make sure that you have consent from the student with TS, as well as his or her parents, before conducting such an informative lecture. Helpful information can be found on the Tourette Syndrome Association (TSA) Web site (www.tsa.com).
- Use the student's strengths to facilitate a connection with peers. Students with TS may have strengths in a specific subject, such as math, or a strong interest and knowledge in history, sports, or computers. Grouping or pairing students for class assignments and activities according to their strengths or interests can help

peers begin to value the substance of the student with TS and develop a more spontaneous relationship.

- Advocate for all students who have difficulty creating friendships. Ask a school counselor or psychologist if a "friendship group" exists at your school. If not, talk with other staff and administrators about the need for such a program in your building.
- Diffuse and prevent confrontations among students by providing explanations and information, rather than judgment. For example, ask the students involved specific questions about the incident, how they felt before and after the confrontation, and why they reacted in such a way. Students with neurological disorders often become targets for bullying because of differences in behavior and social interaction skills (Heinrichs, 2003). When teasing or intentional isolation of students with TS occurs, talk with the students to find the source of the confrontation and provide guidance to help the students resolve the situation. The book *Perfect Targets: Asperger Syndrome and Bullying* by Rebekah Heinrichs (2003) provides excellent interventions for how to protect a child with neurological disabilities from bullying and teach him or her ways to deal with bullying.
- Create a predictable, daily routine that is incorporated into a visual schedule posted where it is visible to the student with TS and to all students. When unexpected events occur (fire drills, school assemblies), notify the students as soon as possible. A predictable schedule can alleviate anxiety, reduce tics, and allow the student to focus on the information being presented.
- Praise all positive behaviors and efforts of students to encourage independence, develop self-confidence, and promote self-esteem.
- Incorporate direct teaching of basic social skills into the weekly curriculum plan. By choosing one skill per week, such as starting a conversation with a new friend or knowing the difference between a friend and someone who is not your friend, students can have daily practice and instruction in the skill. The topic of the week can be posted and announced at the beginning of the week, and a brief 5-minute teaching session can take place at any time throughout the school day. *Navigating the Social World* by Jeanette McAfee (2002) and the *Skillstreaming* series by Ellen McGinnis and Arnold P. Goldstein (1997, 2003) provide guidelines for addressing social skills and classroom interventions.

Physical Concerns and Interventions

The defining and most visibly noticeable feature of TS is tics; however, the underlying physical problems that ac-

company the disorder often go unaddressed in school. Motor and vocal tics can cause excess wear and tear on the individual's body, causing damage to organs, muscles, and joints. In addition, depending on the nature of the tic, the student may injure him- or herself on objects during a tic release. For example, during a more complex tic release, such as arm jerking, the student may hit a nearby bookshelf or coat rack and become injured.

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Many challenges related to tics can be accommodated or alleviated in the school setting. Self-care tasks, such as toileting, eating lunch, or putting on a jacket, may require physical assistance due to the interference of tics. Neurological impairments in sensory processing, motor planning, and visual perception may also affect the individual's ability to successfully complete physical tasks at school. Navigating through crowded hallways, balancing a lunch tray, or tolerating a noisy lunchroom or playground are just a few of the nonacademic tasks that a student with TS may struggle through every day as a result of impairments in sensory processing or motor planning.

It is important that all activities that offer challenges to the student during the school day be addressed. Through observation of the student in settings and activities that may pose problems and by talking with students and their parents about students' experiences and feelings in those situations, areas of challenge and interventions can be identified and addressed accordingly (Dornbush & Pruitt, 1995; Ottinger, 2003). Physical interventions may include some of the following:

- Encourage students with vocal tics to drink water throughout the day to prevent throat dryness. All students in the class can have a water bottle or cup at their work area so as not to accentuate a difference in the student with TS.
- Create a home base or safe area free from objects and away from others where the student can release tics. This home base or safe area may be an out-of-the-way place within the classroom or another room. It is important that the space is private and that the stu-

dent has input about the location and contents of the space so she or he is comfortable. The teacher, student, and parents should decide when the home base should be used for a tic release based on the individual characteristics of the student with TS. Team members should be aware of behaviors that may precede a tic release and be able to identify these behaviors as accompanying a tic release. If a tic release is anticipated, the student should be allowed to go to the home base and return to the class activity when the release is finished.

- If a student exhibits tics that are self-injurious or that can hurt others, such as head slapping or scratching, the educational team (parents, student, teachers, and other school staff involved) should work closely with physicians to determine whether medical intervention is needed. In addition, the student may need to learn a physical alternative to the injurious tics, such as hitting a safer object (e.g., a pillow), or safer place on the body (e.g., clapping or hitting the thighs).
- Ask an occupational therapist for ideas to facilitate independence in self-care skills that are challenging for the student. The use of Velcro® to replace difficult buttons or zippers, alternative shoe-tying techniques, or specialized bowls, plates, and cups are just a few adaptive equipment ideas and strategies that may allow the student to be more independent.
- Ask the occupational therapist or special education team to complete a *Sensory Profile* (Dunn, 1999) on the individual with TS who may display behaviors related to sensory processing difficulty. Such behaviors could include avoiding or strongly preferring certain textures, foods, sounds, or activities. This assessment can provide valuable information on how the student receives, organizes, and responds to information from the environment. Results can subsequently assist in developing interventions, setting up the student's environment, and making accommodations for the student. For example, the environment or activities within the student's day can be modified to reduce or increase the sensations identified on the *Sensory Profile*.
- If necessary, obtain a comprehensive evaluation of the student's motor skills (with written parental permission). For example, a physical therapist, occupational therapist, and adapted physical education teacher may be consulted to determine the student's motor strengths and areas of need.

The academic and social success of students with neurological disorders is interdependent: Each has a direct effect on the other. Academic performance can decline when the social-emotional needs of acceptance and friendship are not being met. Conversely, social relationships can be negatively affected when academic demands are



overwhelming. Identifying challenges, developing interventions that use the student's strengths, and promoting an environment that values diversity and acceptance of others are key components to unlocking the potential of students with TS. With carefully planned interventions and adaptations, the success of students with TS in the school setting can be enhanced.

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