Practice Parameter for the Assessment and Treatment of Children and Adolescents With Tic Disorders

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Tic disorders, including Tourette's disorder, present with a wide range of symptom severity and associated comorbidity. This Practice Parameter reviews the evidence from research and clinical experience in the evaluation and treatment of pediatric tic disorders. Recommendations are provided for a comprehensive evaluation to include common comorbid disorders and for a hierarchical approach to multimodal interventions. J. Am. Acad. Child Adolesc. Psychiatry, 2013;52(12):1341–1359. **Key Words:** tic disorders, Tourette's disorder, treatment, Practice Parameter

This Parameter is intended to guide the practice of medical and mental health professionals that assess and treat youth with tic disorders including Tourette's disorder. Child and adolescent psychiatrists are often not the first point of contact for the assessment and treatment of tic disorders, but more often are involved when comorbid conditions arise or when tics develop while treating another neurodevelopmental disorder. Given the increased complexity in assessing the medical and psychiatric well-being of children presenting with these tic disorders and related comorbid conditions, as well as recent developments in evidence-based pharmacologic and behavioral treatments, a comprehensive and developmentally sensitive Practice Parameter is needed. The recommendations in this Parameter are applicable to children, adolescents, and young adults.

METHODOLOGY

Information and treatment recommendations used in this Parameter were obtained by using the terms *Tourette's Disorder*, *Tourette syndrome*, or *Tic Disorder*, *English Language*, and *Human Studies* to search *Medline, PubMed, PsycINFO,* and *Cochrane Library* databases and by iterative bibliographic exploration of articles and reviews. Beginning with more inclusive and sensitive searches using the search terms noted above, multiple free text and relevant medical subject headings (MeSH terms), and the time period from January 1, 1965 to March 29, 2013, yielded 3,764 citations in Medline, 3,172 in PsycINFO, and 3 reviews in the Cochrane Library. The search was narrowed to the following designations: *Meta-Analysis* (11 all, 2 child), *Practice Guideline* (5 all), *Review* (811 all, 296 child). The original search was also narrowed to the following designations: *Treatment and 0-18* (1206), and *Treatment and 0-18 and RCT* (87). We selected 149 publications and 25 RCTs that enrolled pediatric subjects with an effective N $\geq$ 20 for careful examination based on their weight in the hierarchy of evidence, the quality of individual studies, and their relevance to clinical practice. This Practice Parameter has been reviewed by acknowledged experts in the field, and their comments and suggestions are included.

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CLINICAL PRESENTATION AND COURSE

A tic is a sudden, rapid, recurrent, nonrhythmic movement or vocalization. Tics can be simple (rapid, meaningless) or complex (more purposeful, elaborate, or orchestrated), and transient or chronic. Chronic tic disorders (CTD), including Tourette's disorder (TD) and persistent motor or

vocal tic disorder, are long-lasting neuropsychiatric disorders, typically of childhood onset (<18 years). They are characterized by multiple motor and/or vocal/phonic tics that wax and wane in severity and are often accompanied by an array of behavioral problems, including symptoms of attention-deficit/hyperactivity disorder (ADHD) and obsessive compulsive disorder (OCD). *Persistent motor or vocal tic disorder* has tics limited to each of those domains whereas TD has both motor and vocal tics at some point in the illness.[1] For either diagnosis, however, tics need to be present for at least one year. For tics present for less than 1 year, *provisional tic disorder* (formerly transient tic disorder) is used. *Other specified tic disorder or unspecified tic disorder* diagnoses are used for tic disorders that do not meet full criteria for TD, persistent tic disorder, or provisional tic disorder. In the case of the other specified tic disorder, clinicians specify the reason the full criteria were not met (e.g., atypical clinical presentation or age of onset).[1]

The clinical manifestations of CTD[2] may involve varying combinations of fluctuating tics. Simple motor tics are fast, brief movements involving 1 or a few muscle groups, such as eye blinking, shoulder shrugs, head jerks, or facial grimaces. Complex motor tics are sequentially and/or simultaneously produced relatively coordinated movements that can seem purposeful, such as tapping the bottom of the foot. Simple vocal/phonic tics are solitary, meaningless sounds and noises such as grunting, sniffing, snorting, throat clearing, humming, coughing, barking, or screaming. Complex vocal/phonic tics are linguistically meaningful utterances and verbalizations such as partial words (syllables), words out of context (Oh boy!), repeated sentences, coprolalia, palilalia, or echolalia. Sensory phenomena that precede and trigger the urge to tic have been described and are referred to as *premonitory urges*.[2] Patients with CTD can volitionally suppress tics for varying periods of time, particularly when external demands (e.g., social pressure) exert their influence or when deeply engaged in a focused task or activity. For this reason, teachers and family often perceive that when the child is not suppressing his/her tics that they are "choosing" to tic, that tics are intentional or are habits that can be easily stopped. Although parents may describe a rebound effect of increased frequency of tics at the end of the school day,

TABLE 1 Repetitive Movements of Childhood

	Description	Typical Disorders Where Present
Tics	Sudden rapid, recurrent, nonrhythmic vocalization or motor movement	Transient tics, TD, CTD
Dystonia	Involuntary, sustained, or intermittent muscle contractions that cause twisting and repetitive movements, abnormal postures, or both	DYT1 gene, Wilson's, myoclonic dystonia, extrapyramidal symptoms due to dopamine blocking agents,
Chorea	Involuntary, random, quick, jerking movements, most often of the proximal extremities, that flow from joint to joint. Movements are abrupt, nonrepetitive, and arrhythmic and have variable frequency and intensity	Sydenham's chorea, Huntington's chorea
Stereotypies	Stereotyped, rhythmic, repetitive movements or patterns of speech, with lack of variation over time	Autism, stereotypic movement disorder, intellectual disability
Compulsions	A repetitive, excessive, meaningless activity or mental exercise that a person performs in an attempt to avoid distress or worry	OCD, anorexia, body dysmorphic disorder, hoarding disorder, trichotillomania, excoriation disorder
Myoclonus	Shock-like involuntary muscle jerk that may affect a single body region, 1 side of the body, or the entire body; may occur as a single jerk or repetitive jerks	Hiccups, hypnic jerks, Lennox-Gastaut syndrome, juvenile myoclonic epilepsy, mitochondrial encephalopathies, metabolic disorders
Habits	Action or pattern of behavior that is repeated often	Onchophagia
Akathisia	Unpleasant sensations of "inner" restlessness, often prompting movements in an effort to reduce the sensations	Extrapyramidal adverse effects from dopamine blocking agents; anxiety
Volitional behaviors	Behavior that may be impulsive or due to boredom like tapping peers, making sounds (animal noises)	ADHD, ODD, sensory integration disorders

Note: ADHD = attention-deficit/hyperactivity disorder; CTD = chronic tic disorders; OCD = obsessive-compulsive disorder; ODD = oppositional defiant disorder; TD = Tourette's disorder.