

Persistent (Chronic) Motor or Vocal Tic Disorder

DSM-5-TR 307.22 | ICD-10-CM F95.1

Single or multiple motor tics or vocal tics, but never both, persisting more than one year since first tic onset before age 18.

PREVALENCE
~1-2% of children

TYPICAL ONSET
Ages 4-6; worst at 10-12

SEX RATIO
~3-4:1 male:female

COURSE
Waxes/wanes; most improve by 18

CLINICAL PICTURE

- Sudden, rapid, recurrent, nonrhythmic movements or vocalizations that wax and wane in type, frequency, and anatomic location.
- Simple motor tics include eye blinking, grimacing, head jerks, and shoulder shrugs; vocal tics include sniffing, throat clearing, and grunting.
- A premonitory urge, described as building tension or an itch, precedes the tic and is transiently relieved by performing it.
- Tics are suppressible for minutes to hours at the cost of mounting discomfort, then rebound in a burst once attention shifts.
- Stress, fatigue, excitement, and talking about tics increase frequency; absorbing focused activity usually reduces them.
- Impairment more often stems from comorbid **ADHD** and **OCD**, pain from forceful tics, and teasing than from tics themselves.

DIAGNOSTIC CRITERIA AT A GLANCE

- One or more motor tics or vocal tics have been present, but never both motor and vocal tics across the illness course.
- Tics may wax and wane in frequency but have persisted for more than one year since the first tic appeared.
- Onset must occur before age 18; later onset requires evaluation for secondary or functional tic-like behaviors instead.
- Not attributable to a substance such as stimulants or cocaine, or a medical condition such as Huntington disease or postviral encephalitis.
- Criteria for **Tourette's disorder** have never been met; specify with motor tics only or with vocal tics only.

NEUROBIOLOGY & PHYSIOLOGY

- Cortico-striato-thalamo-cortical dysfunction with failure of striatal inhibition allows unwanted motor programs to release.
- Excess dopaminergic tone in the striatum underlies the benefit of dopamine receptor blockers and VMAT2 inhibitors.
- Reduced GABAergic interneuron density in caudate and putamen is a replicated postmortem finding in severe tic disorders.
- Heritability approximates **0.6-0.8**; rare variants in NRXN1, CNTN6, and CELSR3 have been implicated in tic disorders.
- Sensorimotor cortical thinning and impaired short-interval intracortical inhibition on TMS index the motor control deficit.
- The premonitory urge maps onto insula and supplementary motor area activity, framing tics as urge-driven rather than purely involuntary.

PSYCHOLOGICAL MECHANISMS

- Tics are negatively reinforced: performing the tic terminates the aversive premonitory urge, strengthening the habit loop.
- Contextual cues become conditioned triggers, explaining why tics cluster in particular settings and with particular people.
- Habit reversal exploits that learning by pairing urge awareness with a physically incompatible competing response.
- Attempted suppression demanded by parents and teachers raises anxiety and tic burden, and reprimand is counterproductive.
- Self-consciousness and anticipated ridicule drive social avoidance that outlasts objectively measured tic severity.

DIFFERENTIAL & COMORBIDITY

- Differentiate from **Tourette's disorder**, requiring multiple motor plus at least one vocal tic, and provisional tic disorder under one year.
- Exclude stereotypies, myoclonus, chorea, dystonia, seizures, and compulsions; tics are suppressible and urge-preceded.
- Rapid adolescent onset of complex tic-like behaviors, often in girls after social media exposure, suggests a functional disorder.
- ADHD** co-occurs in 50-60% and **OCD** in 30-50%; both typically cause more impairment than the tics themselves do.
- Screen for anxiety, mood disorder, rage attacks, learning disorder, and self-injurious tics at every clinical visit.

Treatment EVIDENCE-BASED MANAGEMENT

PHARMACOLOGIC

- Treat only when tics cause pain, impairment, or distress; watchful waiting plus education is appropriate for mild tics.
- Alpha-2 agonists** are first-line: **guanfacine ER 1-4 mg/day** or **clonidine 0.05-0.4 mg/day**, especially with comorbid ADHD.
- Antipsychotics are most effective: **aripiprazole 2-20 mg/day**, risperidone, haloperidol, or pimozide, with metabolic and EPS monitoring.
- VMAT2 inhibitors** and topiramate are alternatives; botulinum toxin targets a single focal disabling motor or vocal tic.
- Stimulants for comorbid ADHD do not meaningfully worsen tics in most children and should not be withheld reflexively.

PSYCHOTHERAPY

- CBIT** is first-line behavioral treatment: 8 sessions over 10 weeks combining habit reversal with function-based interventions.
- The pivotal randomized trial found roughly 53% much or very much improved with CBIT versus 19% with supportive therapy.
- Exposure and response prevention** for tics trains urge tolerance without performing the tic and rivals habit reversal training.
- Treating comorbid **OCD** and anxiety with **ERP** or **CBT** often produces more functional gain than reducing tic counts.
- Psychoeducation for family and school reframes tics as involuntary, immediately lowering blame and suppression demands.

ADJUNCT & SUPPORTIVE

- Rate severity with the **YGSS** and premonitory urge with the **PUTS** to track response objectively across visits.
- School plans allow a tic break, discreet exits, testing in a separate room, and scribing when tics impair written work.
- Sleep regulation, exercise, and stress reduction modestly lower tic burden and improve comorbid ADHD and anxiety.
- Deep brain stimulation of thalamic or pallidal targets is reserved for severe, refractory, malignant tic disorders in adults.
- Connect families to the Tourette Association of America for advocacy, school toolkits, and peer support networks.

- ☆ **CLINICAL PEARLS**
- If tics are both motor and vocal, the diagnosis is Tourette's, not persistent tic disorder.
 - Treat the ADHD and OCD first; they usually cause more impairment than the tics.
 - Stimulants do not cause tics; withholding them costs the child more than it saves.

References

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NOTE

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