

Tourette's syndrome and tics

Motor and verbal tics occur in around 20% of children but are usually transient. In primary care, it is helpful to have a framework for assessing these presentations: to distinguish tics from other involuntary movements and to identify any comorbidities. Not all tics are Tourette's syndrome! (BMJ 2022;376:e069346, BMJ 2013;347:f4964)

Types of primary tic disorders

Transient tic disorder	Tics persisting less than 12 months
Chronic or persistent tic disorder	Multiple motor tics or vocal tics lasting longer than 12 months.
Tourette's syndrome	At least 2 motor and 1 vocal/phonic tics present for at least 12 months. (Tics may not occur at the same time so a detailed past history of previous tics is important.)

About tics

Tics are involuntary, sudden, rapid, recurrent, non-rhythmic movements or vocalisations.

Tics may be motor (resulting in sudden, involuntary movements) or vocal.

Tics may be simple or complex. Simple tics often involve a single muscle group. Complex tics resemble fully-formed gestures.

Ask about the type, nature, frequency and impact of any tics.

	Motor	Verbal
Simple	Twitching of nose or face, grimacing. Eye rolling, repeated blinking. Head nods, neck stretches. Shoulder shrug, arm or leg jerks.	Grunt, throat clear, cough, sniff, gulp, click, noisy breathing, animal sounds. High or low-pitched squeals or squeaks.
Complex	Tapping, licking, smelling, spitting, stamping, hopping, jumping, bending, kissing or touching others, unusual walking, kicking, hitting. Echopraxia: copying other people's actions. Needing to tic when talking about tics. Coprpraxia: involuntary obscene gesturing or inappropriate touching of genitals.	Echolalia: repeating words or phrases. Coprolalia: involuntary swearing. Non-obscene but socially inappropriate comments.

Differential diagnosis

- Myoclonic jerks.
- Mannerisms and stereotypies (especially with autism). Common stereotypies include thumb-sucking, rocking, head-banging, nail-biting, trichotillomania, bruxism (teeth-grinding).
- Hyperkinetic movement disorders.

Key features of Tourette's

- At least 2 motor and 1 vocal/phonic tics present for at least 12m
- (Tics may not occur at the same time so a detailed past history of previous tics is important)
- Almost always starts in childhood (average age 6y).
- Prevalence 0.3–1% among UK schoolchildren; two-thirds improve by adulthood (although this doesn't necessarily mean the tics completely disappear).
- All ethnicities affected.

- Four times more common in men than women.
- Tourette's is NOT associated with intellectual impairment (although see the section below on common comorbidities).
- The cause of Tourette's is not known. Several pathophysiological mechanisms have been suggested, including abnormalities in the dopamine pathways in the brain.

Tics in Tourette's syndrome

Tic frequency and severity vary through life but tend to peak in the early teenage years.

Tics are often exacerbated by stress and relieved by tasks that involve concentration (playing music, doing sport).

Tics are preceded by a feeling of mounting inner tension (premonitory urges), temporarily relieved by doing the tic. These premonitory urges distinguish Tourette's from other hyperkinetic movement disorders but are obviously difficult to identify in young children.

Tourette's tics can be suppressed for short periods (seconds to minutes) but result in mounting inner tension and then possibly a rebound increase in severity of the tic. This feature is often important to establish when making the diagnosis.

Coprolalia (swearing) and copropraxia (involuntary rude gestures) are a form of complex tics and are rare – occurring in about 10%.

Common comorbidities

- 10% with Tourette's have 'pure Tourette's'.
- Most, however, have an associated psychiatric comorbidity: 'Tourette's syndrome plus'.
- Obsessive compulsive disorder (OCD) and attention deficit hyperactivity disorder (ADHD) are the most common comorbidities (present in around 60%).
- Affective disorders, particularly depression, are also relatively common.
- Tourette's is more common in those with autistic spectrum disorders.
- There is also an association between Tourette's and impulse control disorders in adults.

Diagnosis

Simple tics causing no pain or distress may simply require advice (*see below*) and watchful waiting.

If you suspect Tourette's syndrome: refer. This would usually be to the child and adolescent mental health team, or, if you are concerned about development, the community paediatricians.

Refer to a neurologist if there is chorea, ataxia or dystonia.

Investigations are only needed to rule out other diagnoses or if presentation is atypical.

Sharing an explanation of the condition

Tourette's syndrome is a condition occurring within the brain, thought to be due to problems with brain development (a neurodevelopmental disorder). It causes the person to make repeated, abnormal body movements or sounds called 'tics' which they are not able to fully control, and which cause them distress or get in the way of their life. Tics can come and go. They shouldn't usually stop you from taking part in normal activities but can cause physical and social challenges. The good news is that very often you will grow out of them by early adulthood. Distracting your brain by focusing on hobbies and sport can reduce the intensity and frequency of your tics.

Management of Tourette's syndrome

- **Communication is crucial!** Tourette's can limit social, schooling and workplace choices, and careful communication with school/work is required. Sources of information for those with Tourette's, relatives, schools, etc. are given in the useful resources box, below.
- **Behavioural interventions are the mainstay of treatment, usually in the form of habit reversal training:** enabling patients to recognise the premonitory urges and modify their responses to these so that the tic is delayed and then eventually abolished.
- **CBT** may be offered to help with comorbidities such as OCD, depression or anxiety.

- **Drugs are only considered in severe disease**, or where there are comorbidities that might also be helped by treatment (such as clonidine for tics with ADHD). Alpha-adrenergic drugs such as clonidine or guanfacine, or atypical antipsychotics (because of their anti-dopaminergic action), are usually used first line. This is definitely something to be initiated and monitored by the specialist!
- Botox may be considered for isolated tics, including some vocal tics.
- Deep brain stimulation has occasionally been used but is considered a treatment of last resort.

Microskills

Relaxation techniques

Stress and anxiety can make tics more frequent or disruptive. Teaching simple mindfulness and relaxation techniques may help alleviate this.

Strategies to help at school/work

Proactive interventions by schools/education providers and employers, such as those below, can help:

- Predictable routines.
- Breaks with opportunities for movement.
- Designated safe place to go to when tics are severe, with a pre-agreed signal for time out.
- Preferential seating in classrooms/shared offices, possibly by the door or at the front of the class.
- Additional support for exams may be needed, e.g. a scribe, additional time.





Habit reversal training

Habit reversal therapy for Tourette's syndrome may be offered in one-to-one therapy sessions through the NHS, and clearly we cannot replicate this in our surgeries. However, we can teach some basic techniques to help patients cope with the uncomfortable urge they feel before a tic, which may help. These techniques can be found via the Tourette's action website listed below.

Step 1: Help the person to identify the 'warning sign' they feel just before a tic occurs. If they have multiple tics, ask them to choose the most annoying one to work on first. For some people, this might feel like a heat or a tingling at the site; for others, a build-up of tension more generally.

Step 2: Find a 'completing response': identify a movement or action which the person can carry out to stop their tic from occurring. For example: if the tic usually jerks their neck to the left, when they feel the movement building up, they can instead gently turn their head the opposite way, holding it in that position until the urge to tic has passed. If their tic makes them fling an arm out, they can press their hand into their leg or grasp the other hand in a fist. If the urge is still present after 30 seconds, they can intensify their 'completing response' if needed.

Step 3: Distraction: get on with something else!

	<p>Tourette's syndrome and tics</p> <ul style="list-style-type: none"> • Present in up to 1% of UK schoolchildren. The cause is not fully understood. • Look for a history of at least 2 motor and 1 vocal/phonic tics present for at least 12m, although do remember that the tics may not occur at the same time. • Premonitory urges are a key feature of Tourette's tics but are difficult to elicit in younger children. • Psychiatric comorbidity, but not intellectual impairment, often co-exist in those with Tourette's; in particular, OCD and ADHD are very common. • Diagnosis is by a specialist. Treatment is mainly through behavioural strategies to reduce and hopefully eliminate the tic.
	<p>Do you have a patient with known Tourette's? Have you ever talked to them about the impact the condition has on them? Have you recently seen a child you think might have Tourette's? You could write a reflective piece around the condition based on this patient. Remember to include reflections on your reactions rather than just a description of what happened.</p>
	<p>Useful resources for patients and families</p> <p><i>Websites (all resources are hyperlinked for the ease of use in Red Whale Knowledge)</i></p> <ul style="list-style-type: none"> • NHS - Tourette's • Tourette's Action (UK support group for those with an established diagnosis)
	

This article was published 13/09/2023. We make every effort to ensure the information in this article is accurate and/ correct at the date of publication, but it is of necessity of a brief and general nature, and this should not replace your own good clinical judgement, or be regarded as a substitute for taking professional advice in appropriate circumstances. In particular, check drug doses, side-effects and interactions with the British National Formulary. Save insofar as any such liability cannot be excluded at law, we do not accept any liability for loss of any type caused by reliance on the information in this article