

What you need to know about Tourette syndrome and tic disorders

A Primer

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Objectives of this Primer

- To define and characterize tics
- To discuss tics in relation to Tourette syndrome
- To describe co-occurring disorders
- To outline the recommended treatment for tic disorders

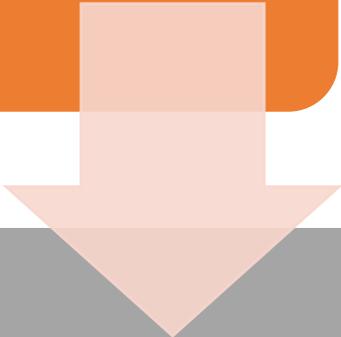


The image features a landscape of snow-capped mountains under a bright sky. A prominent, dark blue horizontal band stretches across the middle of the frame, serving as a background for the text. The text is centered within this band.

What are tics?

How is a tic defined?

A sudden, rapid recurrent and non rhythmic **motor** movement or **vocalization**



These are seen as normal motor movements or vocalizations that are out of their normal or usual context

Tics are distinguished by type

Motor (simple) – physical movement
blinking



Vocal (simple) - audible noise
coughing



Simple Motor Tics

- Sudden, brief, meaningless movements
 - Eye blinking
 - Eye movements
 - Grimacing
 - Nose twitching
 - Mouth movements
 - Head jerks
 - Shoulder shrugs
 - Abdominal tensing

Simple Vocal Tics

- Sudden, meaningless sounds or noises
 - Throat clearing
 - Coughing
 - Sniffing
 - Screeching
 - Barking
 - Grunting

They are also distinguished by complexity

Motor (complex) – running hands through hair



Vocal (complex) - inappropriate/aggressive words



Complex Motor Tics

Slower, longer, more “purposeful” movements

Rarely seen in absence of simple motor tics

Touching objects or self

Gestures with hands

Holding and twisting limbs

Obscene gestures

Complex Vocal Tics

Syllables, words, phrases or statements

Odd patterns of speech

Repetition of another person's spoken words

Obscene, inappropriate and aggressive words or statements

Characteristics of tics

Suppressibility

Distractibility

Suggestibility

Variability

- Character of tics
- Frequency of tics – waxing and waning

Exacerbation with stress or excitement

Premonitory urge

The causes of tics

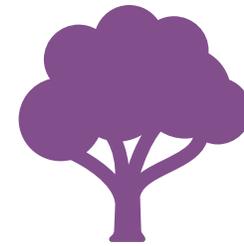
Research suggests there are a number of factors that contribute to tics and how they express themselves



Genetic: heritable

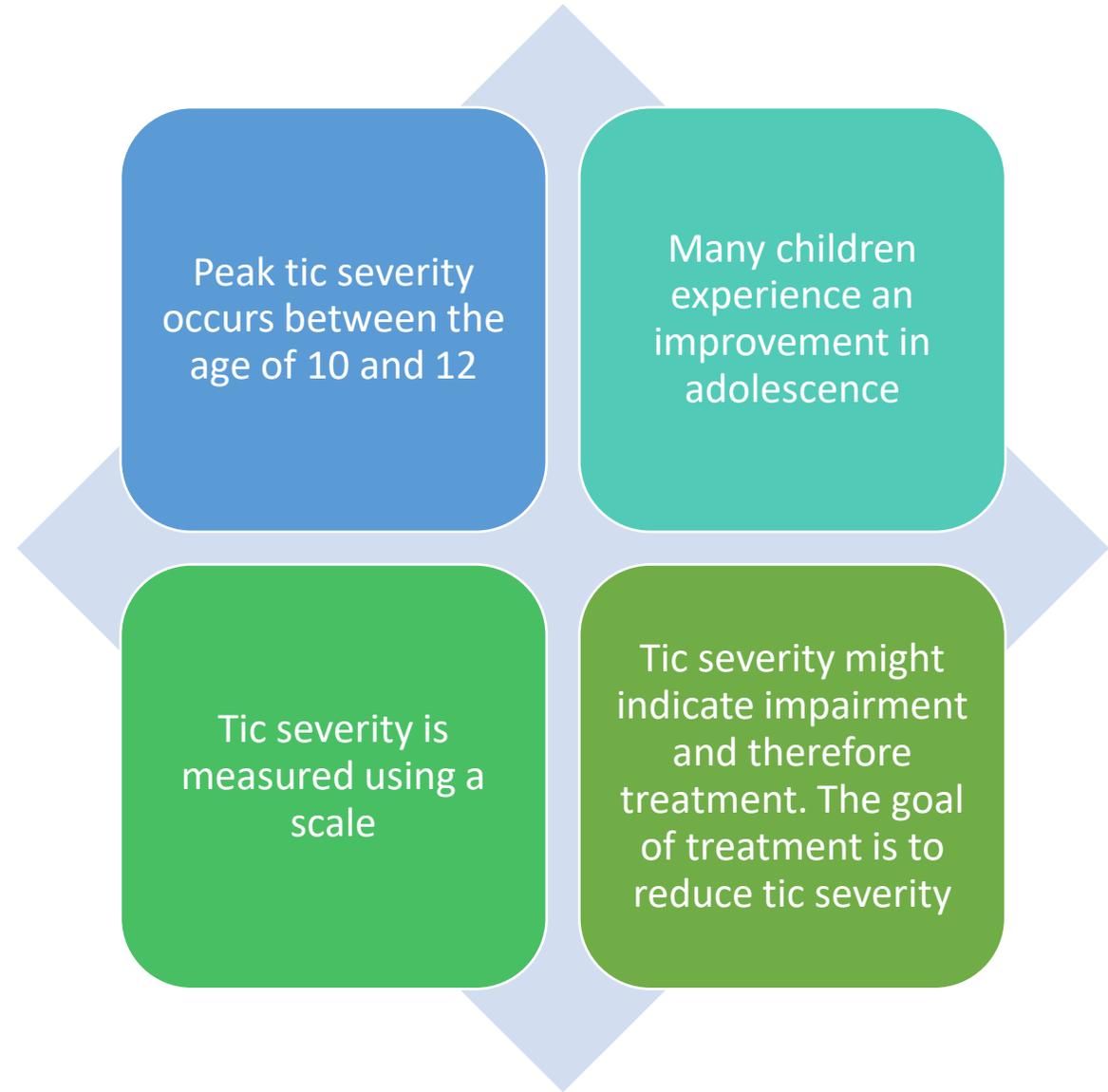


Neurobiological:
neurochemical/neurotransmitters



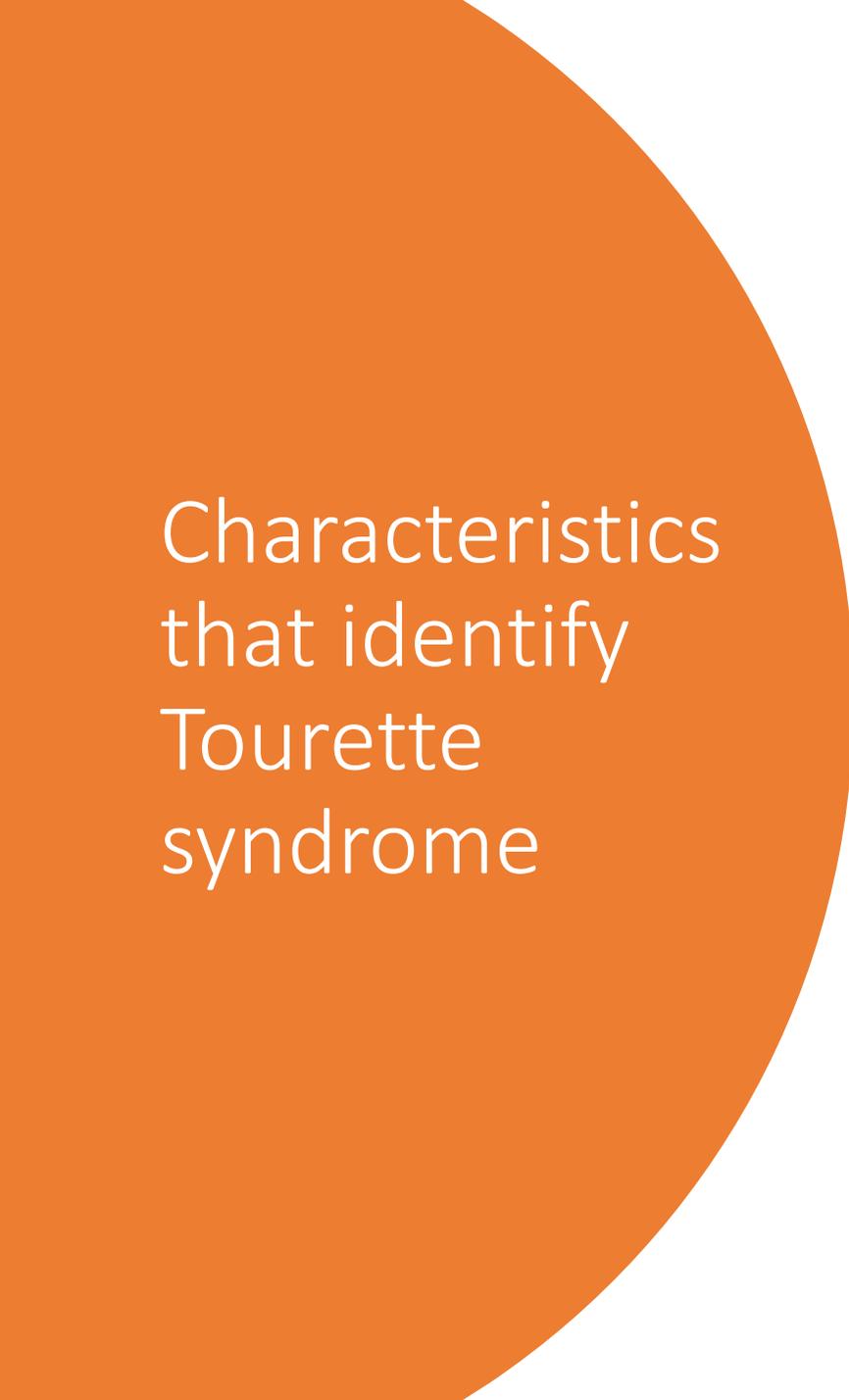
Environmental factors

Tic Severity



Tourette Syndrome

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A large orange circle on the left side of the slide, partially cut off by the edge.

Characteristics that identify Tourette syndrome

- Both motor and vocal tics are present for at least one year
 - 1 year since first tic onset - waxing and waning
 - Onset of tics is before the age of 18
 - Tics are not attributable to the effects of a substance or another medical condition.
- 
- A decorative graphic in the bottom right corner consisting of several short, thick, yellow dashed lines arranged in a curved, upward-sloping pattern.

The natural course of Tourette syndrome

- Mean onset of motor tics at age 6
- Begin with simple tics of face
- Vocal tics appear after motor tics
- Tic severity peaks in pre-adolescence and declines in late adolescence
- High rate of natural remission between age 14 and 17 years of age
- Monitoring of tic-related impairment essential for making treatment decisions

Common problems associated with tics and Tourette Syndrome

Tics are often the behavioural symptoms that are noticed.

Psychiatric comorbidities include:

- ADHD – 54%
- OCD – 50%
- Anxiety disorders 36%
- Disruptive Behaviour Disorders 30%
- Eating disorders 2%
- Psychotic disorders 1%
- Substance use 6%

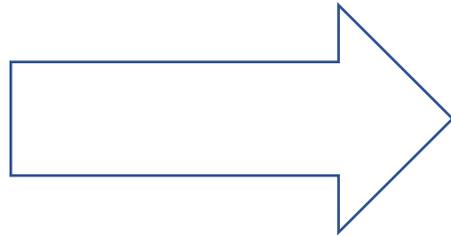
The background of the slide features silhouettes of a child on the left and an adult on the right, both with their arms raised in a gesture of joy or triumph. They are set against a warm, orange-hued sunset sky. The bottom of the image shows the dark silhouettes of grass or reeds.

Quality of Life

- Quality of life is impacted more by comorbidity than tic severity
- In children, the severity of ADHD has greatest impact
- In adults, anxiety and depression have greatest impact
- Improving quality of life is paramount in treatment of tics

Predictors how Tourettes might develop

The strongest predictors of high tic scores and OCD and ADHD diagnoses in adulthood



Corresponding tic, OCD and ADHD severity scores in childhood

Being female and ADHD severity predict future emotional disorders

How common is diagnosed Tourette syndrome in Canada?

- Data from Canadian Community Health Survey 2010/2011
- Population-based survey of Canadians age 12+
- Prevalence of diagnosed Tourettes in adolescents was 3.33 per 1000
 - Male 6.03 per 1000
 - Female 0.48 per 1000
- Prevalence of diagnosed Tourettes in adults was 0.66 per 1000
 - Male 0.89 per 1000
 - Female 0.44 per 1000



How are tics
assessed?

Clinical Assessment of People with Tics

Family history

Medication use

Developmental
history

Past medical
history

History of tics

Neurological
exam

Assessment of
tic severity

Imperative to screen for comorbidities



ADHD

OCD

Other psychiatric
conditions

In people with tics clinicians assess for OCD, ADHD and other psychiatric conditions to ensure appropriate treatment is provided for the different conditions.

Disorders
commonly
occurring with
Tourettes

Females	more likely to have depression, anxiety and eating disorders
Males	more likely to have ADHD and disruptive behaviour disorders
Adults and Adolescents	more likely to have OCD, mood, anxiety, eating and substance use disorders
Children	more likely to have ADHD

ADHD and people with tics

It is vitally important for clinicians to assess the impact on the lives of ADHD symptoms in people with tics

Individuals with both TS and ADHD are at a much greater risk for a variety of poor outcomes including greater academic and social impairment

Social difficulties – more aggressive and withdrawn - are amplified in a child with TS who also has ADHD

OCD in people with tics

It is vitally important for clinicians to assess the impact on the lives of OCD symptoms in people with tics

The most common obsessive-compulsive symptoms encountered in TS patients are obsessions concerning a need for symmetry or exactness, repeating rituals, counting compulsions, and ordering/arranging compulsions

Obsessive-compulsive symptoms, when present, in children with TS, appear more likely to persist into adulthood than the tics themselves



Treatment of tics

When should tics be treated?

No fixed symptom severity threshold to determine when we should treat

An individual choice

Recommend that the decision be based on disability

- Physical
- Social
- Emotional

Decision is made collaboratively between patient and doctor

The course of treatment

- It is vitally important to understand the typical course of treatment
- Psychoeducation

Treatment is individualized, and the two main treatments are:

Behaviour therapy

Pharmacotherapy

Psychoeducation

- This webinar and Tourette OCD Alberta Network are examples of psychoeducation
- touretteocdalbertanetwork.ca
- Psychoeducation provides resources and encourages families to accept and cope with challenging conditions
- Psychoeducation promotes family well-being – normalizes the difficulties families experience
- Improves quality of life



Psychoeducation: in the classroom

- Psychoeducation about TS with fellow students results in positive attitudes towards students with TS
- Psychoeducation about TS with teachers improves knowledge, making classroom more inclusive for a person with TS

Psychoeducation: Educational Outreach

The Tourette OCD Alberta Network CUMMING SCHOOL OF MEDICINE

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Educational Outreach Program for Schools

The prevalence of Tourette Syndrome (TS) is approximately 1% of the student population, indicating that it is highly likely someone in your school will have the disorder. To complicate matters, most students with the diagnosis of TS also have co-occurring disorders such as ADHD and OCD.

We provide customized presentations for:

- Grade specific issues.
- Teacher, parent, and student specific presentations.
- Information on Tourette Syndrome (TS) and Obsessive-Compulsive Disorder (OCD).
- Information of what TS and OCD look like in the classroom.
- Strategies for the classroom.
- Short films to illustrate TS and OCD.
- Empathy exercises to help people of all ages understand what it feels like to live with TS and OCD.

All the presentations have been vetted by a team of neurologists, psychologists, and teachers to come up with the most current information available - and they range in length from 30 minutes to 2 or 3 hours.



Treatment options

The two primary evidence-based treatment options for tic disorders are:

- Cognitive Behavioral Therapy – 1st line
- Pharmacotherapy



Treatment Expectations

Treatment may result in a range of reduction in tic severity

Evidence has shown that a treatment response among youth with tic disorders corresponds with 25%-35% reduction in tic symptom severity

Treatment rarely results in tics completely stopping

Behavioural Treatments: CBIT

Behaviour based therapies teach people with TS how to manage their tics, with the aim of reducing tic severity.

CBIT – Comprehensive Behavioural Intervention for Tics

Many people with TS use CBIT successfully – evidence shows over 50% experience tic reductions

A management strategy, not a cure

promotes awareness of tics and the urge to tic

Foregrounds competing behaviour when the urge is felt. This component of CBIT is known as HRT

Behavioural Therapy - caveats

- There are limitations to behavioural therapy, specifically CBIT, with regard to minimum age criteria
- Awareness of when tics are about to happen – awareness of the premonitory urge – requires a relative maturity found in children over 9 years old
- CBIT is not effective for children with severe ADHD or children with severe intellectual deficit
- Paucity of availability of CBIT therapists
- Locating them can be difficult – one of the aims of TS OCD Alberta Network to compile a directory of certified therapists

Components of Comprehensive Behavioural Intervention for Tics

- CBIT: Tic awareness training, self-monitoring, relaxation techniques, behavioural rewards
- HRT (Habit Reversal Training) - competing response: people learn to do a new behaviour that cannot happen at the same time as the tic
- It does not mean that it is possible for anyone to control them just by behavioral therapy, but 50% do experience tic reduction



Pharmacotherapy treatments

- Currently no preventative pharmacological therapies for tic disorder
- If tics do not cause significant functional impairment, non-pharmacological treatments are preferred
- Alpha- agonists –
 - clonidine, guanfacine
 - clonidine and guanfacine have demonstrated beneficial effects on both tics and ADHD symptoms
- Anti-psychotics drugs –
 - aripiprazole, risperidone
 - used to reduce tic symptom severity

Treatment recommendations



- The decision to use medication and the monitoring of its impact require careful assessment of the child's overall development and not only the presence of tic symptoms
- Clinicians should prescribe medications for the treatment of people with tics when the benefits of treatment outweigh the risks



Summary

- Tourette syndrome is a common neurological disorder
- Tic severity will improve for most children in late adolescence
- Quality of life is impacted more by comorbidity than tic severity
- Behavioural therapies are first line for tics which cause functional impairment
- There are medications which can help decrease tic severity