Distinguishing Tourette's and Tic Disorders from Repetitive Behavior Associated with Autism Spectrum Disorder

The NM START Program Learning Forum

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START Model

The START (**S**ystemic-**T**herapeutic-**A**ssessment-**R**esources-**T**reatment) model is an evidence-informed model of integrated community crisis prevention & intervention services for individuals ages 6 and older with intellectual and developmental disabilities and mental health needs.

START was first developed in 1988 by Dr. Joan B. Beasley and was cited as a best practice in the 2002 US Surgeon General's report and by the National Academy of Sciences in 2016.

The **National Center for START Services** at the UNH Institute on Disability oversees the development, measurement and quality of START programs across the country.

Objectives

1. Define “Tic Disorders” and common diagnoses associated
2. Discuss side effects of medications that can affect motor movements
3. Describe the unique presentation in ASD/IDD population and differential diagnostic process.

Video

What are Tic Disorders?

- A neurological condition characterized by
  - sudden, repetitive, and nonrhythmic movements (motor tics)
  - or sounds (vocal tics)
  - that are difficult to control.
- Range from simple, like blinking, to complex, like repeating words or making noises.
- Tics are the primary symptoms of a group of childhood-onset neurological conditions known collectively as Tic Disorders and individually as
  - Tourette Syndrome (TS),
  - Persistent (Chronic) Motor or Vocal Tic Disorder
  - Provisional Tic Disorder.

Tourette's Syndrome (TS)

- Tourette Syndrome is one type of Tic Disorder.
- Must have:
  - 1) At least 2 motor tics and at least 1 vocal (phonic) tic have been present, not necessarily at the same time.
  - 2) Tics may wax and wane in frequency but have occurred for more than 1 year.
  - 3) Tics started to appear before the age of 18.
  - 4) Tics are not caused by the use of a substance or other medical condition.

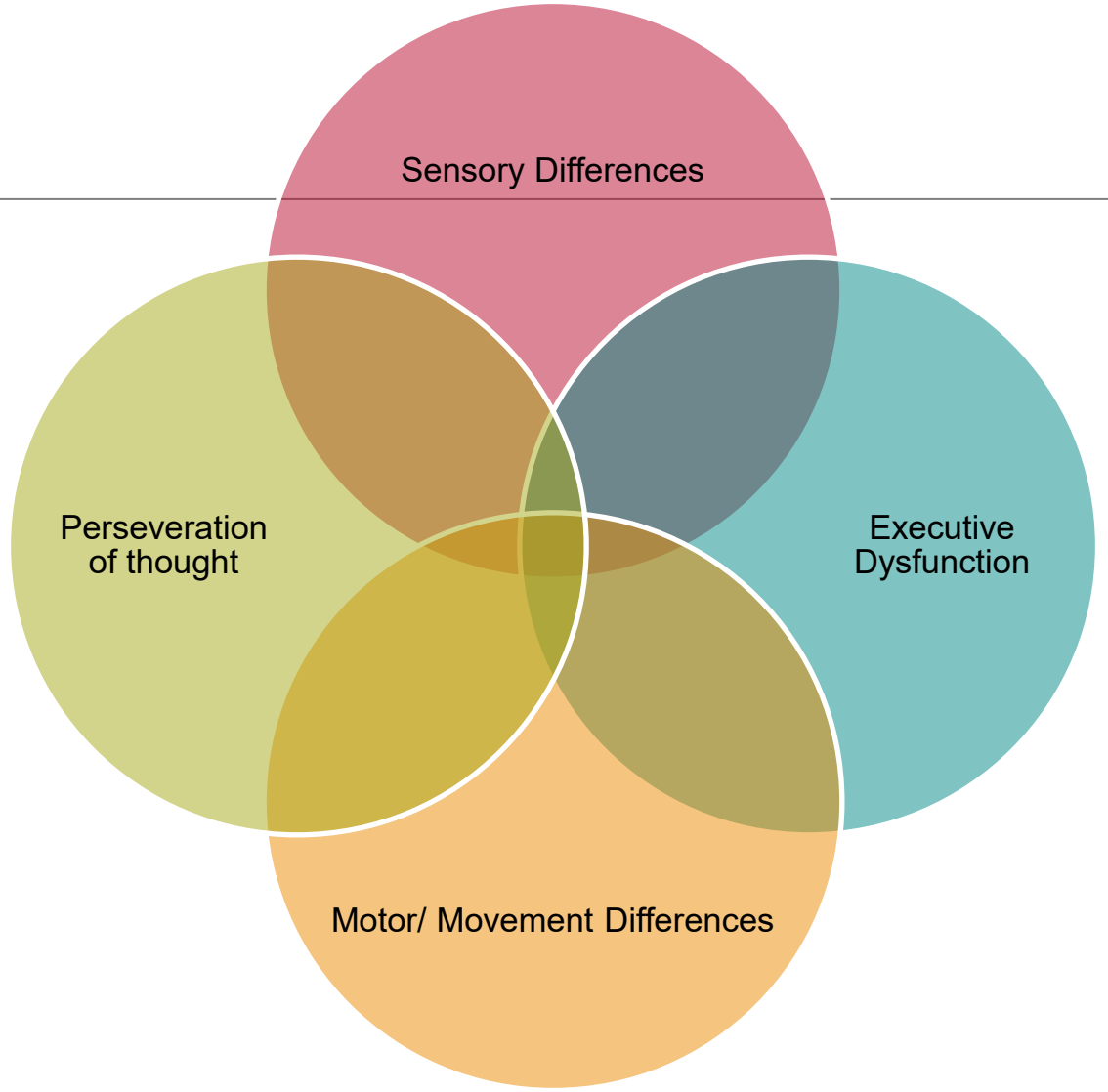
Types of Tics

Motor Tics

Verbal Tics

Tic Disorders/ TS and Other Conditions

- ADHD
  - Have a high rate of co-occurrence, but with distinct features.
  - Fifty percent of children diagnosed with ADHD have comorbid tic disorder. ADHD related symptoms have been reported in 35% to 90% of children with TS (Olowabusi, et al., 2016).
- OCD
  - Around 25% to 50% of those with TS/CT also have OCD, and up to 80% may exhibit obsessive-compulsive behaviors.
  - Additionally, 60% of TS patients have been reported to have OCD symptoms, and about 50% of children with OCD may have had tics.
- ASD
  - Estimated prevalence of tics among individuals with ASD ranges from 22 to 34% depending on the sample population and administered assessment tools


Sensory Differences
Perseveration of thought
Executive Dysfunction
Motor/ Movement Differences

Tic disorders	ADHD
Fragments of normal movements	Generally increased motor activity
Circumscribed functional muscle groups	General motor hyperactivity
Suddenly occurring (independent of waiting situation)	Slowly increasing (intensified by waiting situation)
Fixed pattern of quick actions	Disorganised, tempo change
Badly modulated	Badly modulated
Uniformly repeated (often in bouts)	Temporally irregular-intermittent (changing intensity)

Feature	Tics	Stereotypies
Usual age at onset (years)	5–7	<2
Patterns	Variable	Fixed, identical, foreseeable
Movement	Blinking, grimacing, warping, jerking	Arm or hands: wavelike, posturing, jiggling
Rhythm	Quick, sudden, aimless	Rhythmic
Duration	Intermittent, short, abrupt	Intermittent, repeated, prolonged
Pre-movement sensorimotor phenomena	Yes	No
Trigger	Excitement, stress	Excitement, stress, also in case of demands
Suppressibility	Self-directed, short- often associated with distress or discomfort	By external distraction, seldom conscious effort Often appear enjoyable
Family history	Often positive	Maybe positive on detailed questioning for OCB
Treatment	Primarily neuroleptics	Rarely responsive to medication

(Mills & Hedderly, 2014)

Medications and Movements

- A critical review of the literature reported that group data analysis showed **no significant increase in tics when stimulants are used** in patients with tics as compared with controls (Ehrenberg, 2005)
- Tourette Syndrome Study Group in a multicenter, randomized, double-blind 16 wk clinical trial in which 136 children with ADHD and a chronic tic disorder were randomly administered clonidine, methylphenidate, combined clonidine and methylphenidate, or placebo. The group concluded that the combination of methylphenidate and clonidine is effective for ADHD in children with comorbid tics and that prior recommendations to avoid methylphenidate because of concerns of worsening tics are unsupported by the trial (Tourettes Syndrome Study Group, 2002).

Meds and Movements Continued

- Studies have shown that the motor and behavioral symptoms associated with TS respond well to most typical and atypical antipsychotic medications.
- The typical antipsychotic drugs, such as haloperidol, fluphenazine and pimozide, with a high tendency to block postsynaptic dopamine (D2 receptors) are the treatment of choice due to their greater effectiveness
- Typical antipsychotics remain a second-line treatment option because of side effects including extrapyramidal side-effects (EPSE) and tardive dyskinesia (TD) for haloperidol, and cardiotoxicity for pimozide

Selected References

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