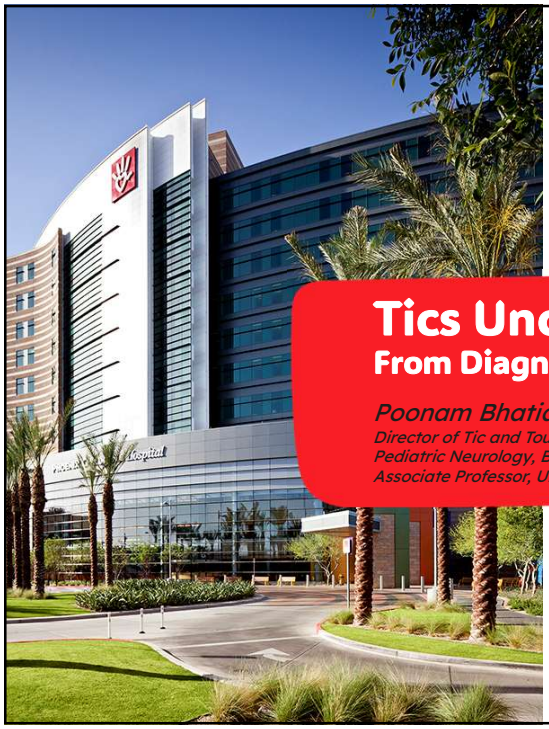

Phoenix Children's | Barrow Neurological Institute

Tics Uncovered:
From Diagnosis to Management in Everyday Practice

Poonam Bhatia, MBBS, MD, FAAN
Director of Tic and Tourette Program
Pediatric Neurology, Barrow Neurological Institute at Phoenix Children's
Associate Professor, University of Arizona

28th Children's Neuroscience symposium
April 10, 2026

Tourette Association CENTER OF EXCELLENCE | The University of Arizona College of Medicine Phoenix

1

NO DISCLOSURES

2

GOALS

A. Diagnosis
B. Treatment
C. Referral

3

Approach to Diagnosis

4

What is a tic?

Sudden, rapid, brief, non-rhythmic motor movements or vocalizations

MOTOR	PHONIC
SIMPLE: Ex: eye blink, head jerk, shoulder shrug **COMPLEX**: pattern of movement **Purposeful**: ex: touch, hit, smell, jump, copropraxia, echopraxia **Non-purposeful:** ex: body contortion	**SIMPLE**: Grunt, bark, hoot, throat clearing, sniff **COMPLEX**: Words, phrases Echolalia Palilalia Coprolalia

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Identifying features of Tics

- Rostro-caudal
- Simple motor first
- New and old
- Premonitory urge (37% children)
- Worse: stress/ anxiety/ excitement/ fatigue/ infection
- Reduction when engrossed
- "Do not occur in sleep"?
- Wide range in frequency and intensity
- Can briefly suppress but leads to mounting tension

Robertson MM. The prevalence and epidemiology of Gilles de la Tourette syndrome. Part 1: the epidemiological and prevalence studies. J Psychosom Res. 2008;65(5):461-472. doi:10.1016/j.jpsychores.2008.03.006 PMID: 18940377
Tourette.org

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TIC DISORDERS: DSM-5

1. **Provisional tic Disorder:** < 1 year duration
2. **Chronic motor/ vocal tic Disorder**: either motor or vocal tics, lasted > 1 year duration
3. **Tourette Disorder/ Tourette syndrome**: multiple motor and at least 1 vocal tic, lasted > 1 year

Mandatory:

- Onset before 18 years
- Not related to a substance use or an underlying general medical condition

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Tourette Syndrome (TS)

- Complex , childhood onset, **neuropsychiatric condition**
- Prior report of tics: witchcraft!!
- Original description in 1885: French physician Georges Gilles de la Tourette: “maladie of tics”

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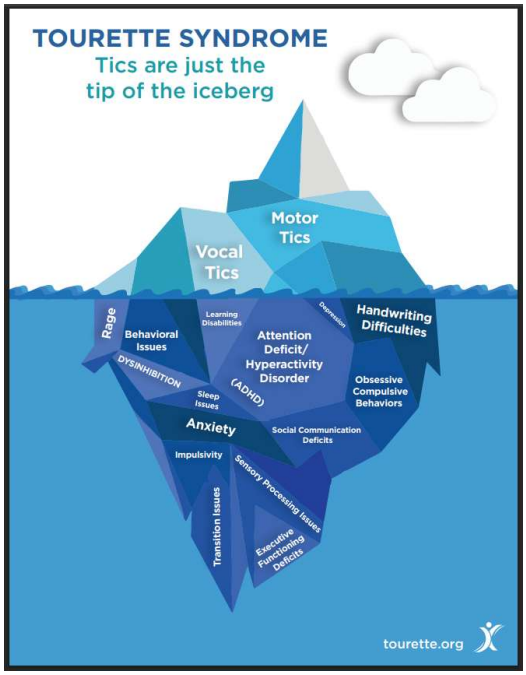


COMORBIDITIES

Data and Statistics on Tourette Syndrome. Center for Disease Control. https://www.cdc.gov/tourette-syndrome/data/index.html

9

Assess co-morbidities

86-90% with Tourette have at least one co-morbidity

Often needs involving psychology, OT, psychiatry

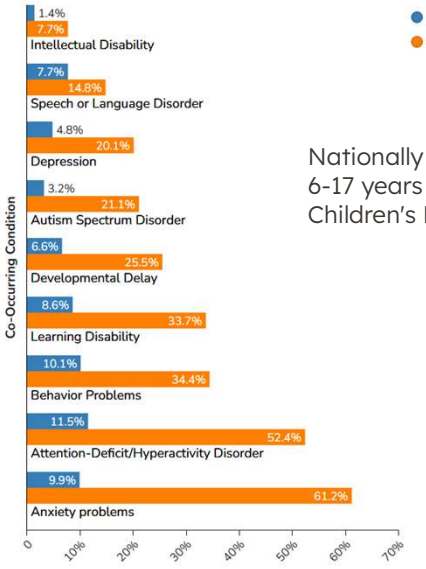
May affect outcome more than tic severity esp. ADHD, OCD and anxiety

- ADHD (21-90% with Tourette)
- OCD (50% with Tourette): tics have to be "just right"
- Anxiety and Mood (19-80% with Tourette have anxiety)
- Other behavioral (25-70% with Tourette have disruptive behavior)

Others: Poor self esteem, academic, sleep issues etc.

10

Percentage of children with and without Tourette syndrome and another mental, behavioral, or developmental disorder



Nationally representative data for US children aged 6-17 years from the 2016—2017 National Survey of Children's Health.

Data and Statistics on Tourette Syndrome. Center for Disease Control. https://www.cdc.gov/tourette-syndrome/data/index.html

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EPIDEMIOLOGY

Males > female 3:1 to 4:1

TS and Chronic Tic Disorders:

- 1.4 million people in US
- 1:50 (2%) children ages 5-14

TS :

- 1:160 (0.6%) children, ages 3-17 have a diagnosis of TS

- *Data and Statistics on Tourette Syndrome. Center for Disease Control.* https://www.cdc.gov/tourette-syndrome/data/index.html
- *Robertson MM. The prevalence and epidemiology of Gilles de la Tourette syndrome. Part 1: the epidemiological and prevalence studies. J Psychosom Res. 2008;65(5):461-472. doi:10.1016/j.jpsychores.2008.03.006PMID: 18940377*

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Etiology

- **Polygenic**
  - ❖ 15-fold high risk in siblings
  - ❖ Positive family history in 50%
  - ❖ Shared heritability with ADHD, OCD and migraine
- **Environment:** maternal smoking, LBW, maternal emotional stress

Robertson MM. The prevalence and epidemiology of Gilles de la Tourette syndrome. Part 1: the epidemiological and prevalence studies. J Psychosom Res. 2008;65(5):461-472. doi:10.1016/j.jpsychores.2008.03.006 PMID: 18940377

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PANDAS

(Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal infection)

- ❖ Controversial
- ❖ Originally described in late 1990s for a subset of children whose symptom of OCD and or tic disorder were exacerbated in the setting of group A strep(GAS) infection. **American J Psychiatry. 1998 (PMID: 9464208)**
- ❖ Prospective longitudinal studies: no relation with newly acquired strep infection: ***Pediatrics 2004 (PMID: 15173540), Neurology 2021 (PMID: 33568537)***

PCH Neurologists Do Not believe in PANDAS

Consensus:

- Treat GAS
- Treat OCD and or tics
- No role of steroids/ IVIG

*

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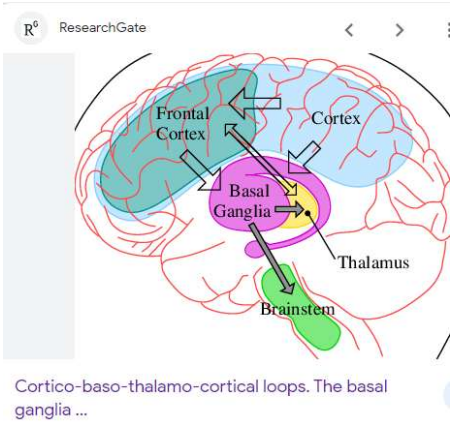

Cortico-baso-thalamo-cortical loops. The basal ganglia ...

Pathophysiology

Cortical-basal ganglia-thalamo-cortical circuit	• Direct pathway stimulates motor activity • Indirect pathway inhibits
Neurotransmitter	• **Dopamine**, glutamate, GABA, serotonin, acetylcholine

B. Girard, N. Tabareau, Q.C. Pham, A. Berthoz, J.-J. Slotine. Where neuroscience and dynamic system theory meet autonomous robotics: A contracting basal ganglia model for action selection. Neural Networks. Volume 21, Issue 4, 2008, Pages 628-641, ISSN 0893-6080, https://doi.org/10.1016/j.neunet.2008.03.009.

Johnson KA, Worbe Y, Foote KD, Butson CR, Gunduz A, Okun MS. Tourette syndrome: clinical features, pathophysiology, and treatment. Lancet Neurol. 2023;22(2):147-158. doi:10.1016/S1474-4422(22)00303-9 PMID: 36354027

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Diagnosis

- Clinical
- **No laboratory testing/ imaging**
- Scales: mostly for research:
  - YGTSS: Yale global tic severity scale: Number, frequency, intensity, complexity, functional impairment, rate from 0-50
  - CGI: clinical global impression scale

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Tourette's Disorder Scale (TODS)

Rated by:

Clinician Parent

IN THE PAST WEEK, how much has this patient been bothered by the following symptoms?

Not at all			*A little*			*Moderately*			*Markedly*		*Extremely*	
1	0	1	2	3	4	5	6	7	8	9	10	Irritable
2	0	1	2	3	4	5	6	7	8	9	10	Motor Tics
3	0	1	2	3	4	5	6	7	8	9	10	Argumentative
4	0	1	2	3	4	5	6	7	8	9	10	Sudden Mood Changes
5	0	1	2	3	4	5	6	7	8	9	10	Demands Attention
6	0	1	2	3	4	5	6	7	8	9	10	Hot Temper
7	0	1	2	3	4	5	6	7	8	9	10	Vocal Tics
8	0	1	2	3	4	5	6	7	8	9	10	Obsessions*
9	0	1	2	3	4	5	6	7	8	9	10	Inattention
10	0	1	2	3	4	5	6	7	8	9	10	Loud/talkative
11	0	1	2	3	4	5	6	7	8	9	10	Restless
12	0	1	2	3	4	5	6	7	8	9	10	Compulsions*
13	0	1	2	3	4	5	6	7	8	9	10	Tense, Anxious, Nervous
14	0	1	2	3	4	5	6	7	8	9	10	Depressed or uninterested in most things
15	0	1	2	3	4	5	6	7	8	9	10	Impulsive

Shytle RD, Silver AA, Sheehan KH, et al. The Tourette's Disorder Scale (TODS): development, reliability, and validity. Assessment. 2003;10(3):273-287. doi:10.1177/1073191103255497 PMID: 14503651

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DIFFERENTIAL

- **Stereotypies**:
- **Other hyperkinetic movement disorders** like dystonia, chorea, athetosis
- **Obsessive Compulsive Disorder**
- **Functional Neurologic Disorder**

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Complex Motor Stereotypy

- *earlier onset*
- *fixed pattern*
- *prolonged duration*
- *rhythmic*
- *no urge*
- *stop abruptly with distraction*

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Functional Tic

- *Multiple tics*
- *Complex movements*
- *Contextual and offensive words*
- *Worse during exam*

20

frontiers | Frontiers in Pediatrics

MINI REVIEW

The Rise of Functional Tic-Like Behaviors: What Do the COVID-19 Pandemic and Social Media Have to Do With It? A Narrative Review

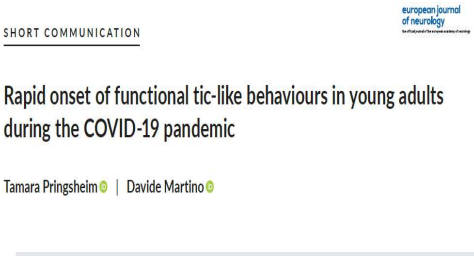
Jaclyn M. Martindale* and Jonathan W. Mink

ORIGINAL ARTICLE

european journal of neurology

New-onset functional tics during the COVID-19 pandemic: Clinical characteristics of 105 cases from a single centre

Andrea Eugenio Cavanna | Giulia Purpura | Anna Riva | Renata Nacinovich | Stefano Seri

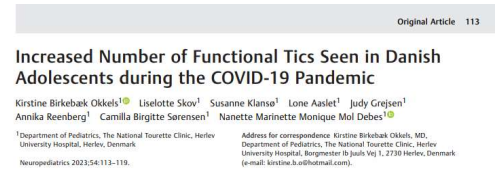


SHORT COMMUNICATION

european journal of neurology

Rapid onset of functional tic-like behaviours in young adults during the COVID-19 pandemic

Tamara Pringsheim | Davide Martino



Original Article 113

Increased Number of Functional Tics Seen in Danish Adolescents during the COVID-19 Pandemic

Kirstine Birkebæk Okkels, Liselotte Skov, Susanne Klansø, Lone Aaslet, Judy Grejsen, Annika Reenberg, Camilla Birgitte Sørensen, Nanette Marinette Monique Mol Debes

Department of Pediatrics, The National Tourette Clinic, Herlev University Hospital, Herlev, Denmark

Address for correspondence: Kirstine Birkebæk Okkels, MD, Department of Pediatrics, The National Tourette Clinic, Herlev University Hospital, Borgmester Ib Juuls Vej 1, 2730 Herlev, Denmark (e-mail: kirstine.b.o@hotmail.com).

Neuropediatrics 2023;54:113–119.

March 11, 2020: WHO declared global pandemic of SARS-CoV-2

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> Pediatr Neurol. 2022 Feb 26;130:14-20. doi: 10.1016/j.pediatrneurol.2022.02.003. Online ahead of print.

The Phenomenology of Tics and Tic-Like Behavior in TikTok

Alonso Zea Vera [1], Adrienne Bruce [2], Jordan Garris [3], Laura Tochen [4], Poonam Bhatia [5], Rebecca K Lehman [6], Wendi Lopez [7], Steve W Wu [8], Donald L Gilbert [8]

Affiliations + expand

PMID: 35303587 DOI: 10.1016/j.pediatrneurol.2022.02.003

- 100 top reviewed videos # Tourette were reviewed
- 3 primary reviewers, Five senior reviewers
- videos were reviewed on Likert scale: 1: all are typical of tics, 5: none
- **Primary behaviors:** Copro-phenomena, suggestible, aggression, throwing, self-injury, long phrases
- **Conclusions:** *TS symptom portrayals on highly viewed TikTok videos are predominantly not representative or typical of TS.*

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Received: 26 October 2022 | Accepted: 17 December 2022
DOI: 10.1111/ene.15672

ORIGINAL ARTICLE

european journal of neurology

European Society for the Study of Tourette Syndrome 2022 criteria for clinical diagnosis of functional tic-like behaviours: International consensus from experts in tic disorders

Proposed **three major criteria** and **two minor criteria** to support the clinical diagnosis of FTLBs (Differentiate from Tics)

A clinically **DEFINITE** diagnosis of FTLBs can be confirmed by the presence of **all 3 major criteria.**

A clinically **PROBABLE** diagnosis of FTLBs can be confirmed by the presence of **2 major criteria** and **1 minor criterion**

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Received: 26 October 2022 | Accepted: 17 December 2022
DOI: 10.1111/ene.15672

ORIGINAL ARTICLE

european journal of neurology

European Society for the Study of Tourette Syndrome 2022 criteria for clinical diagnosis of functional tic-like behaviours: International consensus from experts in tic disorders

3 Major criteria:

1. Age at symptom onset: 12 years and older
2. Rapid evolution: hours to days, increasing to peak severity over a period of a few weeks to few months; linear increase in symptoms overtime
3. Phenomenology: at least 4 of the 9

2 Minor criteria: do not differentiate FTLBs from Tics but differ in prevalence between the two conditions

1. Comorbidity profile: anxiety and depressive symptoms
2. Other FND

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Received: 26 October 2022 | Accepted: 17 December 2022
DOI: 10.1111/ene.15672

ORIGINAL ARTICLE

european journal of neurology

European Society for the Study of Tourette Syndrome 2022 criteria for clinical diagnosis of functional tic-like behaviours: International consensus from experts in tic disorders

1. Multiple tic-like movements and/or vocalizations occur, with a larger number of complex than simple tic-like behaviors
2. The same tic-like behavior is variably reproduced (FTLB is inconsistent rather than stereotyped)
3. Motor tic-like behaviors include complex arm and hand movements (banging chest/head, tapping, hitting others, sign language, throwing objects, offensive gestures, drop attacks, or freezing
4. Motor TLB do not follow the typical rostro-caudal progression in their 1st appearance
5. Vocal TLB include several words and statements including context-dependent and offensive words/statements
6. TLB resemble popular cultural influences/references or individuals in the patient's social environment (friends, family members, school acquaintances)
7. Patients experience a large variation in symptoms frequency and intensity over the course of a single day, with 100% symptom free activities for several hours and severe symptoms in specific contexts
8. TLB change rapidly, with the constant onset of new tic TLB on daily basis or every few days
9. The examining clinician observes an increase in FTLBs during the PE of the patient

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SECONDARY CAUSES: "TOURETTISM"

- **Drugs:** cocaine, antiseizure meds (lamotrigine, phenytoin, carbamazepine), levodopa, antipsychotics
- **Neurodegenerative conditions: ex:** Huntington, Wilson Disease
- **Infections:** Encephalitis
- **Toxins:** CO
- **Stroke**
- **Surgery**

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MISLABELED

- Ophthalmologic cause?:
- Eye blink
- Eye roll

- Allergy, sinusitis, lung disease?:
- Sniffing
- Throat clearing
- Coughing

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IMPACT OF TS/ PTD on daily living

- Education: IEP, school problems, not finishing homework
- Health: chronic pain, mental health, medication use
- Parenting: stress and frustration
- Social competence
- Bullying: victim and perpetrator

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- 50% children diagnosed within 1 year
- 72% have experienced physical pain due to tics
- 38% report being worried about social isolation
- 63% take prescription medications(11% have tried 6 or more meds)
- **23% have considered suicide(10% attempted in past 12 months)**
- 70% have experienced bullying

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- 15% parents had their jobs affected
- 6% cannot afford meds/ care
- 43% reports financial problem /5% moved due to financial strain
- 39% do not feel that their child's symptoms are adequately controlled
- 76% note: child has IEP/ 504
- **40% report child has disclosed intentions of self harm**

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Overview of Treatment

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EDUCATION: 1st Level Treatment

- Diagnosis and co-morbidities
- Nature: chronic, fluctuates
- Indication for therapy: if causing morbidity
- Teamwork: patient, family, **PCP,** neurology, psychology, psychiatry, OT, school

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Treatment

- **GOAL:**
  - ❖Tic reduction, not elimination
  - ❖Home should be a" **free zone, allowed to tic"**
- **TREATMENT OPTIONS for tics**
  - ❖Behavioral
  - ❖Pharmacologic: oral drugs, botulinum toxin
  - ❖Surgical: Deep Brain stimulation
- **TREATMENT of co-morbidities:** anxiety, OCD, ADHD(often needs other specialists)

Billnitzer A, Jankovic J. Current Management of Tics and Tourette Syndrome: Behavioral, Pharmacologic, and Surgical Treatments. Neurotherapeutics. 2020;17(4):1681-1693. doi:10.1007/s13311-020-00914-6 PMID: 32856174

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Behavioral Therapy

- **Comprehensive Behavior Intervention for Tics or CBIT**
- **Consider as 1st line**
  - ❖Shown success through randomized blinded studies
- 3 components:
  - ❖Awareness training for tics and premonitory urge
  - ❖Competing response to provide a substitute behavior
  - ❖Functional intervention: relaxation training, contingency management
- PROS: No side effects, lifelong skill
- CONS: Limited trained therapists, cost
- **Resource:**
  - ❖Online: tichelper.com
  - ❖TAA website

Piacentini J, Woods DW, Scahill L, et al. Behavior therapy for children with Tourette disorder: a randomized controlled trial. JAMA. 2010;303(19):1929-1937. doi:10.1001/jama.2010.607 PMID: 20483969

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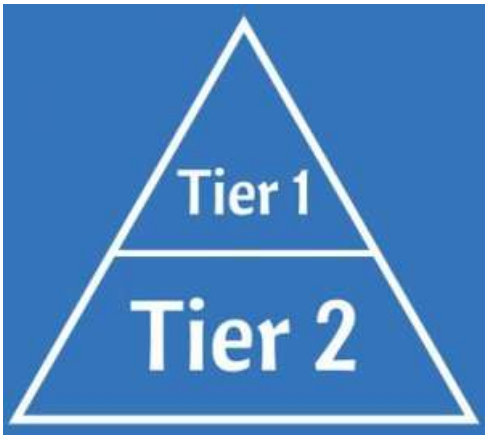
Medications

- Symptomatic
- Start with tier 1
- Lowest dose, periodic reevaluation
- FDA approved: (all Tier 2): Haloperidol, Pimozide, Aripiprazole



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TIER 1 Medications

- **Alpha adrenergic agonists:** Clonidine and Guanfacine:
  - Tics + ADHD
- **Topiramate** :
  - co-morbid headache

- **OTHERS:**
- **Clonazepam:** limited evidence:
  - consider in acute exacerbation
- **Baclofen:**
  - tics with spasms

Pringsheim T, Okun MS, Müller-Vahl K, et al. Practice guideline recommendations summary: Treatment of tics in people with Tourette syndrome and chronic tic disorders. Neurology. 2019;92(19):896-906. doi:10.1212/WNL.0000000000007466 PMID: 31061208

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Clonidine	>=7 years Initial: 0.025 to 0.05 mg/**day** in 1 to 2 divided doses gradual titration usual daily dose: 0.1 to 0.4 mg/**day**
Guanfacine	>6 years Initial: 0.5 to 1mg once daily at bedtime Max total 4 mg/day, 1-3 div doses Can also use ER(needs EKG)
Topiramate	25-50 mg/ day

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TIER 2 Medications

- More effective
- More side effects
- Dopamine receptor blocking agents
  - **D2 BLOCKER: FDA approved**
  - **D1 BLOCKER**: in pipeline
- Vesicular monoamine transporter-2 inhibitors(VMAT2 inhibitors)

Pringsheim T, Okun MS, Müller-Vahl K, et al. Practice guideline recommendations summary: Treatment of tics in people with Tourette syndrome and chronic tic disorders. Neurology. 2019;92(19):896-906. doi:10.1212/WNL.0000000000007466 PMID: 31061208

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Aripiprazole	Above 6 years, start at 2 mg daily Final dose 5-20 mg/ d
Pimozide	Above 2 years. Start at 0.05mg/kg OD(max 1 mg)>> 0.2mg/kg(max 10 mg)
Haloperidol	Above 3 years: start at 0.25 to 0.5 mg/day in 2 to 3 divided doses; range of 1 to 4 mg/day

Dopamine Receptor Blocking Agents (mostly D2)

Side effects: less with the Aripiprazole

Metabolic: weight gain, Diabetes, hyperlipidemia, hyperprolactinemia

Cardiac: prolonged QTC interval, orthostatic hypotension

Tardive dyskinesia

- Typical: Pimozide and Haloperidol
- Atypical: Aripiprazole

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D1 Selective Blocker: Ecopipam

- Does not have typical side effects of D2 blockers.
- Phase 3 DIAMOND study recently completed: 50% reduction in relapse risk in TS compared to placebo in a phase 3 trial.
- AE: somnolence (11.1%), anxiety (9.7%), headache (9.7%), insomnia (8.8%), worsening of tics (7.9%), and fatigue (6.5%). No serious safety concerns
- Soon towards FDA approval

Emalex Biosciences: https://emalexbiosciences.com//research-development/#clinical-trials

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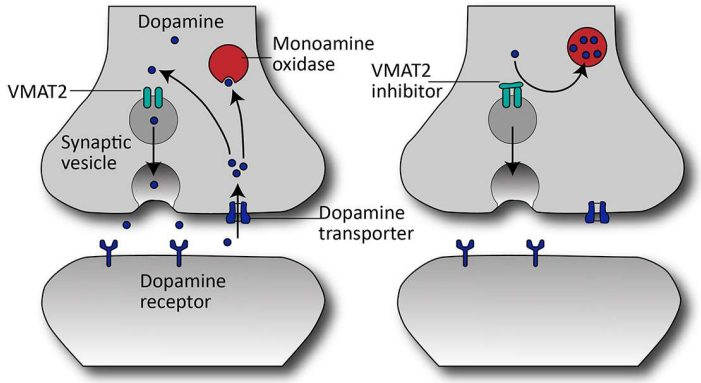
VMAT 2 Inhibitors



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VMAT 2 Inhibitors

- **Tetrabenazine:**
  - retrospective chart review of 77 patients: treatment over 2 years: significant benefit in > 80% (2008, PMID: 18544005)
- **Deutetrabenzine (Austedo):** RCT failed: ARTISTS1 and ARTISTS 2, 2021
- **Valbenazine (Ingrezza):** RCT failed

Porta M, Sassi M, Cavallazzi M, Fornari M, Brambilla A, Servello D. Tourette's syndrome and role of tetrabenazine: review and personal experience. Clin Drug Investig. 2008;28(7):443-459. doi:10.2165/00044011-200828070-00006 PMID: 18544005

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J Neurol. 2023 Sep;270(9):4518-4522. doi: 10.1007/s00415-023-11769-0. Epub 2023 Jun 11.

Real-world experience with VMAT2 inhibitors in Tourette syndrome

Karim Makhoul [1], Joseph Jankovic [2]

- 164 patients treated with the various VMAT2 inhibitors
  - ❖Tetrabenazine, n = 135
  - ❖Deutetrabenazine, n = 71
  - ❖Valbenazine, n = 20
- Effective and safe(depression as major but no suicidality)
- But are not readily accessible by patients in the United States, partly because of lack of approval by the Food and Drug Administration.

43

Cannabinoids

- No evidence in pediatrics
- Should avoid use due to potentially harmful affective and cognitive outcomes

Levine A, Clemenza K, Rynn M, Lieberman J. Evidence for the Risks and Consequences of Adolescent Cannabis Exposure. J Am Acad Child Adolesc Psychiatry. 2017;56(3):214-225. doi:10.1016/j.jaac.2016.12.014

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Botulinum Toxin for Tics

- Not many high-quality studies till date
- **Cochrane review 2018:**
  Only 1 RCT: 20 patients: effect was uncertain, need more studies
- **AAN recommendation 2025:**
  Low evidence that it can help

J Child Neurol. 2025 Aug 6:8830738251360210. doi: 10.1177/08830738251360210.
Online ahead of print.

Botulinum Toxin for the Treatment of Motor Tics in Children: A Case Series

Ethan Edmondson [1], Mariam Hull [1], Sukru Aras [2], Mered Parnes [1]

50 children
Ages 7-18
2019-2024
64% showed improvement

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Deep Brain Stimulation

- For severe self injurious tics
- Failed multiple groups of medicines
- Confirm diagnosis
- Exclude other movements
- Multidisciplinary evaluation(psychiatry, neurology, neurosurgery, neuropsychology)
- Not FDA approved

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MOVEMENT DISORDERS CLINICAL PRACTICE 2025.

Complementary and Integrative Medicine for the Treatment of Tourette's Syndrome

Tamara Pringsheim, MD,[1,*] Catherine Deans, BSc,[1] Saar Anis, MD,[2] Poonam Bhatia, MD,[3] Kevin Black, MD, PhD,[4] Yildiz Degirmenci, MD, PhD,[5] Donald Gilbert, MD,[6] Andreas Hartmann, MD,[7] Mariam Hull, MD,[8] Irene Malaty, MD,[9] Davide Martino, MD,[1] Alex Medina Escobar, MD,[10] Pablo Mir, MD, PhD,[11] Christelle Nilles, MD,[12] Marianna Sarchioto, MD,[13] Jibrin Sammani Usman, PhD,[14] Harini Sarva, MD,[15] Katarzyna Smilowksa, MD,[16] Natalia Szejko, MD, PhD,[17] Kinga Tomczak, MD, PhD,[18] Daniel van Wamelen, MD, PhD,[19] and Yulia Worbe, MD, PhD[20]

Most studies were low quality thus weak evidence

Class I & II studies from Chinese literature on acupuncture, supplements (5-Ling granule, Ningdong granule), massage but poor methodology

Magnesium : one Class IV study

47

ADHD treatment and Tics

Cochrane Library

Cochrane Database of Systematic Reviews

Pharmacological treatment for attention deficit hyperactivity disorder (ADHD) in children with comorbid tic disorders (Review)

Osland ST, Steeves TDL, Pringsheim T

2018
Included 8RCTs and 510 participants

- Although stimulants have not been shown to worsen tics in most people with tic disorders, they may, nonetheless, exacerbate tics in individual cases.
- In these instances, treatment with alpha agonists or atomoxetine may be an alternative.

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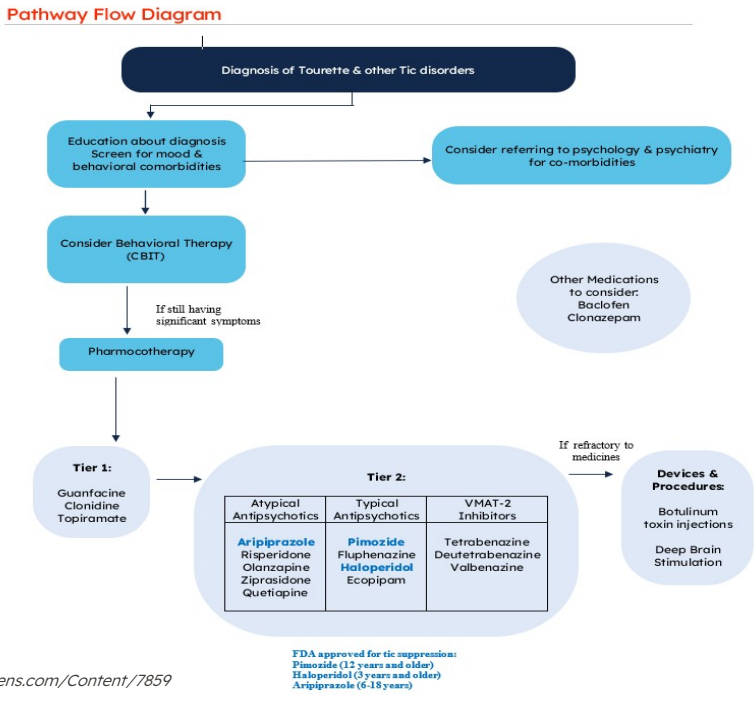

https://index.phoenixchildrens.com/Content/7859

Tourette treatment pathway at PCH:
Dr. Isabel Abbott
Dr. Simran Kahlon
Dr. Poonam Bhatia

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When to Refer

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Referral by PCP/ Pediatrics

- **To neurology:**
- - Confirming the diagnosis (Think Stereotypy/ Functional Tics)
- - Failure of response to CBIT and or first-line medical treatment

- **To mental health specialists:**
- - for anxiety/ ADHD/ OCD/ other mood or behavior disorders

- **To CBIT providers:**
- - PCH OT
- - PCH psychology
- - Can search on TAA website

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Our Team

Phoenix Children's: We are Center of Excellence with TAA

- ❖ Neurology: general + movement
- ❖ Psychology : Dr. Alicia Goodman
- ❖ OT: Sarah Cunningham
- ❖ Program coordinator : Nicole De Col

Community:

- ❖ Psychology + Psychiatry ex: De Nova Health care
- ❖ OT ex: Spotlight Pediatric Therapy

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Tourette Association of America

Awareness. Research. Support.

Mission & History

Founded in 1972, the Tourette Association of America (formerly known as the Tourette Syndrome Association) is the only national organization serving the community, and works to raise awareness, advance research, and provide ongoing support to patients and families impacted by Tourette Syndrome and Tic Disorders. To this end, the TAA directs a network chapters, support groups, and Centers of Excellence across the country. The TAA is a nonprofit 501(c)(3) organization.

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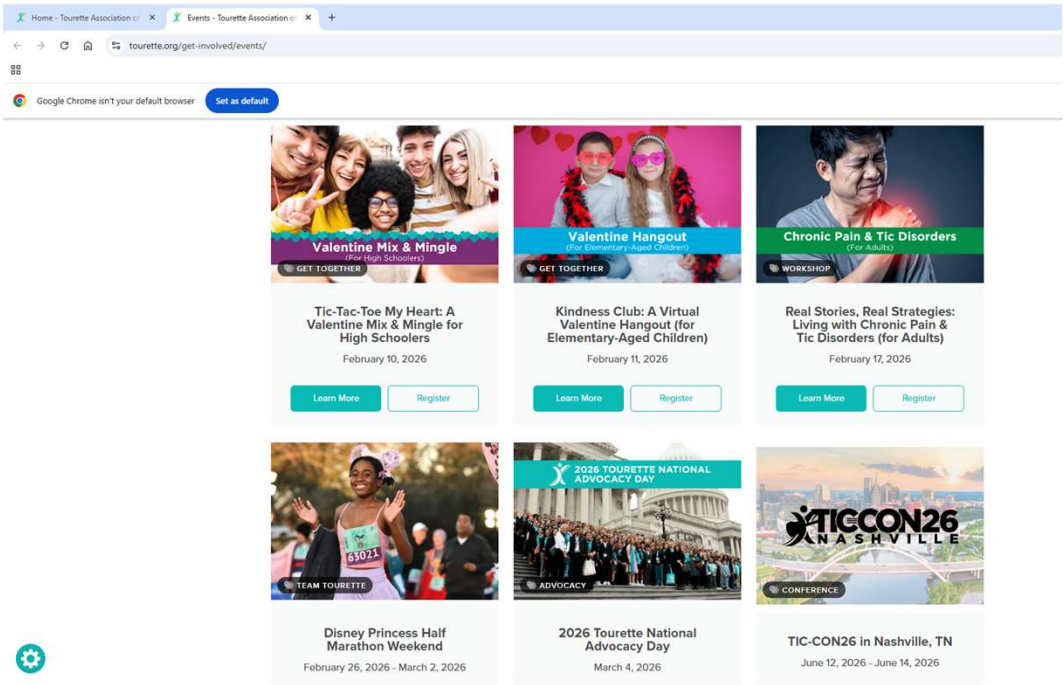

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Resources for families

- Tourette Association of America Website: https://Tourette.org
- TAA of Arizona Website: https://Tourette.org/chapter/az/ : downgraded to a chapter now
- CDC: https://www.cdc.gov/tourette-syndrome/index.html

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Key Points

1. Treatment begins with education: Tourette Association of America
2. Not all tics require treatment
3. Important to address co-morbidities
4. It often require multispecialty approach
5. Tourette and ADHD:
   a. Clonidine/ Guanfacine can help both
   b. Stimulants may worsen tics: case by case
6. PANDAS: controversial/ No role of immune therapy

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