Tic Disorders

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Tics :

Tic: A sudden, rapid, recurrent, non-rhythmic movement or vocalization.

- Premonitory urge: sensory phenomena (itch, tingle, vague discomfort) that precede and trigger the urge to tic
- Suggestible and suppressible
- Exacerbating factors: psychosocial stress, temperature changes, illness, fatigue
- Rarely occur during sleep
- Natural course: waxing and waning symptoms.
- Genetic: first degree relative with TD = 5-15x increased risk. Can also be sporadic

Types of Tics

- Simple motor tics
- Fast, brief, involving 1-2 muscle groups
- Eye blinking, shoulder shrugs, head jerks, facial grimaces, abdominal tensing
- Complex motor tics
- Larger muscle groups, last longer, Sequentially and/or simultaneously produced, coordinated

- Simple vocal tics
- Solitary, meaningless sounds and noises
- Grunting, sniffing, snorting, throat clearing, humming, coughing, barking or screaming.
- Complex vocal tics
- Linguistically meaningful utterances
- hand gestures, jumping, touching,

pressing, repeatedly smelling an object.

- Partial words, words out of context (oh boy!),

repeated sentences, coprolalia, palilalia or echolalia

Tic Disorders DSM 5 :

Tourette's Disorder

- Both multiple motor and one or more vocal tics present at some time during the illness
- May wax and wane in frequency but persist at least a year since first tic onset
- Not attributable to effects of a substance or another medical condition.
- Onset before age 18
- Provisional tic disorder
- Persistent (Chronic) Motor or Vocal Tic Disorder

Chronic Tic Disorders :

- Average age of onset: 7 years
- Prevalence/severity peak: 9-12 years
- Remission/marked attenuation: 65% by 18-20 years • Male-female ratio of 2:1—4:1
- Prevalence • CTD: 1-3%, TD: 1% • Transient tic disorders: 20% life time prevalence

Co-morbidities

- Obsessive-Compulsive Disorder :20%-60%
- Attention-Deficit/Hyperactivity Disorder : Up to 50%
- Learning disabilities : 23%
- Male gender and history of perinatal problems increase risk
- Autism Spectrum Disorder

- Co-occurrence = disruptive behaviors, learning disorders and academic difficulties (4x)
- ADHD diagnosis often precedes onset of tics.
- Anxiety and Depression : Especially if tics persist into adulthood

Medical Work-up

- Organic process: sudden onset of severe tics, atypical tics, mental status change
- Consider CO poisoning, stroke, CNS infection, PANDAS/PANS
- Labs: Hemoglobin, renal/hepatic function, thyroid panel, ferritin, UDS
- If indicated, tests for co-occurring infection: culture, rapid viral tests
- EEG and brain imaging NOT routinely recommended unless neurological findings.

Differential Diagnosis :

- Stereotypies : Rhythmic, no change over time, no premonitory urge
- Myoclonus
- Dystonia
- Chorea
- Substances: Stimulants , cocaine ,…
- Developmental/benign movement disorders
- Neurological diseases
- Wilson’s disease
- Neurocanthocytosis
- Huntington’s syndrome
- Tumor, trauma, anoxia, stroke, frontal-subcortical brain lesions

Treatment :

- Decision to treat based on level of impairment and distress caused by tics
- Often comorbid condition causes more functional impairment/impacts quality of life
- Behavioral interventions
- Habit Reversal Training (HRT)
- C-BIT
- Medications
- Not many rigorous studies in children
- Considered for moderate to severe tics causing severe impairment in quality of life or when medications target both tics and co-morbidities.

Behavior therapy :

- Comprehensive Behavioral Intervention for Tics (CBIT): evidenced-based behavioral intervention for diagnosis of tics or Tourette's Disorder

- Adults and children studied 30+ years

- highly effective
- quick response rate.
- Superior in comparison to Supportive Therapy and psychoeducation
- CBIT/HR considered first line of non-pharmaceutical treatment for TS.

Habit reversal Training/CBIT: a multicomponent treatment

- HABIT REVERSAL
- Psychoeducation
- Creating a Tic Hierarchy and Inconvenience Review
- Motivation -developing a behavioral reward program for the client
- Social Support

- Functional-Based Assessment/Interventions
- HR (Awareness/Competing Response)
- Relaxation Techniques
- Relapse Prevention

Psychoeducation : Teaching the patient and family more about tic disorders, including the following:

- What are tics and what is a tic disorder?
- How common are they and what contributes to their
- How do we treat tic disorders (CBIT)?
- What are common social struggles and comorbidities

Tic hierarchy

- The tic hierarchy is based on the client's view point due to it being a self management intervention. It is important to have the client motivated and identify the tic that is most bothersome to them.
- The clinician will want to start with the most bothersome tic and work down the client's list. The clinician can be flexible on the list with the client's wishes. This will also help the client be motivated in therapy to decrease their tics.
- When explaining to parents, it is important for them to be aware that what tic is most important or impairing to their child may not be the same tic for the parent and that is ok.

Functional-based Assessment/Interventions

- The purpose of the FBA is to identify the internal and external environmental variables that may be increasing or maintaining the client's tics.

Habit Reversal addresses internal environments and Functional Assessment/Interventions address external environments.

- These environments or factors are individualized for each client.
- Internal factors: premonitory urge, anxiety, or boredom
- It is important to address both of these environments for treatment to be effective.
- External Factors: loud noises, social bullying, bright lights, chaos, etc.
- The client's reactions to the variables are also modified to reduce tics.

Relaxation

- Diaphragmatic Breathing
- Client learns to breathe from their diaphragm, rather from their chest. The training does include awareness of inhaling and exhaling slowly.
- Progressive Muscle Relaxation
- The client's body is divided up into a series of large muscle groups, each group is tensed and then relaxed. This method usually starts with the head and ends with the feel (not mandatory). Tension usually is maintained for 5 seconds and relaxation for about 10-15 seconds.

Awareness Training

- The purpose of awareness training is to get the client to verbally acknowledge when their tics are happening and when they are about to happen. This is considered one of the most important processes of HRT.
- Parents should be informed that this can cause stress within their relationship with their child. The child may not want to be made aware of their tics, but it is important to continue with th

Medications

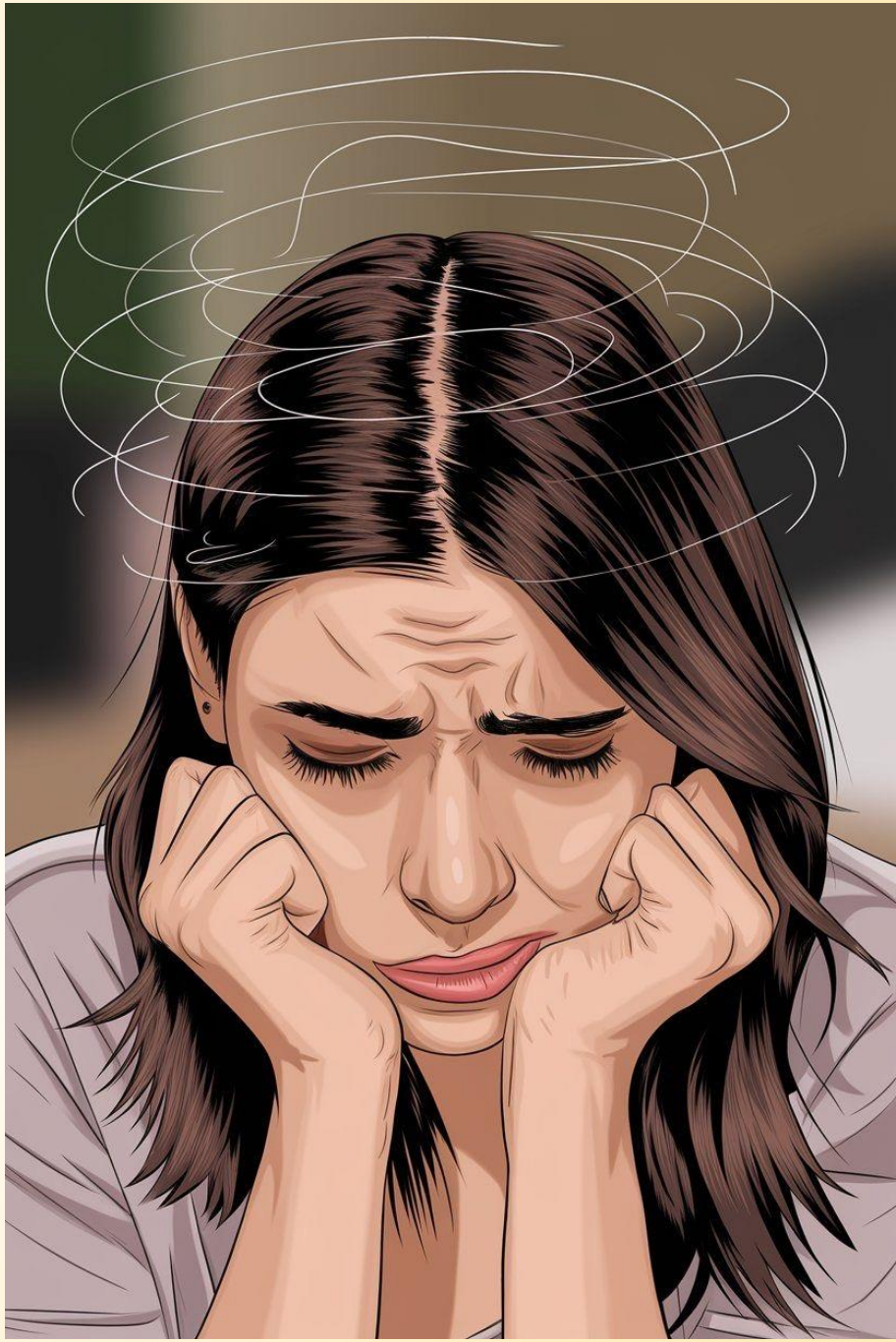
- Typical antipsychotics :
- FDA-approved medications: haloperidol and pimozide
- Pimozide better than haloperidol—more effective, better tolerated
- Lower doses required (compared to assessment psychosis). Careful risk/benefit
- Haloperidol (Haldol)
- Starting dose: 0.25-0.5 mg
- Range: 1-4 mg
- Side effects: extrapyramidal symptoms (EPS), anxiety flares
- Pimozide (Orap)
- Starting dose: 0.5-1 mg
- Range: 2-8 mg
- Side effects/considerations: EPS, EKG monitoring, 2D6 interaction

- Atypical antipsychotics :
- Fewer extrapyramidal effects.
- More common: Metabolic syndrome- weight gain, dyslipidemia. Sedation. Akathesia
- Risperidone (Risperdal) clonidine.
- Staring dose: 0.125-0.5 mg
- Dose range: 0.75-3.5 mg
- Considerations: prolactin elevation/gynecomastia
- Aripiprazole (Abilify)
- Starting dose: 1.0-2.5 mg
- Dose range: 2.5-15 mg

- Alpha-2 Agonists
- More favorable side effect profile compared to antipsychotics • Effect size 0.5 (medium)
- Works better when co-morbid ADHD
- Side effects: sedation, hypotention, bradycardia, rebound effects if discontinued abruptly
- Guanfacine (Tenex)
- Starting dose: 0.5-1 mg
- Dose range: 1-4 mg
- Guanfacine ER (Intuniv)
- Starting dose: 1 mg; dose range: 1-4 mg
- Clonidine
- Starting dose: 0.5 mg
- Dose range: 0.1-0.4 mg
- Clonidine ER (Kapvay)
- Starting dose: 0.1 mg; dose range: 0.1-0.4 mg

NOT RECOMMENDED

- Deep brain stimulation
- Repetitive magnetic stimulation
- Special diets
- Dietary supplements
- Antibiotics or immunomodulatory treatments



Developmental Coordination Disorder Presenter

- What is Developmental Coordination Disorder? DCD is a neurodevelopmental disorder characterized by difficulties with motor coordination. It affects a child's ability to perform everyday tasks that require movement

- What is Developmental Coordination Disorder? DCD is not caused by any underlying medical condition, but rather a difference in brain development.

- Recognizing Early Signs of DCD Newborns: Difficulty sucking and swallowing milk.
- Toddlers:Delays in rolling over, sitting, crawling, walking, and talking.
- Preschoolers: Clumsiness, difficulty with fine motor skills (e.g., drawing), and problems with balance.
- School-Aged Children Unsteady walk Difficulty going down stairs Dropping objects Running into others Frequent Tripping

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- Difficulty with self-care activities (e.g., tying shoes, putting on clothes) Difficulty with school activities (e.g., writing, coloring, using scissors)

The Impact of DCD on Children Social isolation and low self-esteem due to difficulties with physical activities. Challenges with academic performance due to difficulties with writing and other fine motor tasks. Physical health concerns due to limited

- Assessing and Diagnosing DCD A comprehensive assessment is conducted by a specialist, typically a developmental pediatrician, physical therapist, or occupational therapist. The assessment includes a review of the child's developmental history , intellectual ability , gross and fine motor skills

- Understanding Gross and Fine Motor Skills Gross Motor Skills: Involve the use of large muscle groups for movements like walking, running, jumping, and throwing. Fine Motor Skills: Involve the use of small muscle groups for tasks like writing, drawing, buttoning, and tying shoelaces

- Components of a DCD Assessment Strength and Flexibility: Assessing muscle bulk, joint flexibility, and grasp strength. Motor Planning: Observing functional fine and gross motor skills and determining hand dominance.

- Oral Motor Coordination: Assessing the child's ability to perform tasks like blowing kisses or blowing out candles.

Early Intervention and Support Early identification and intervention are crucial for improving outcomes for children with DCD. Therapies such as physical therapy, occupational therapy, and speech therapy can help children develop their motor skills.

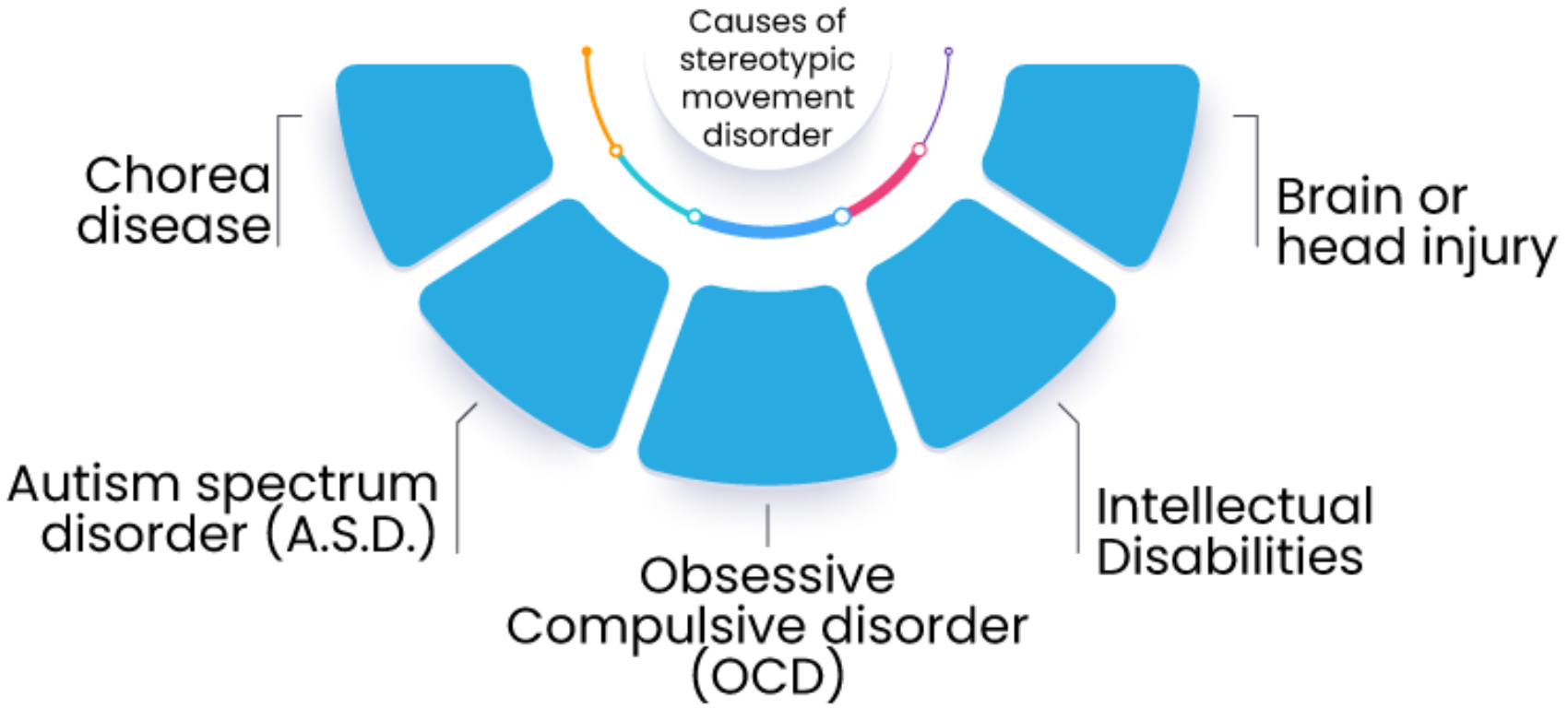
- Support from families, educators, and healthcare professionals is essential for children with DCD. Early Intervention and Support

Stereotypic movements disorder

- Stereotypic Movement Disorder (SMD) SMD :

  repetitive and purposeless movements that happen in a specific pattern, like head banging and body rocking. The movements interfere with regular activity and/or may cause bodily harm.
- According to the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*), stereotypic movement disorder happens when the behavior can't be better explained by another diagnosis or the effects of substances
- or medications.
- SMD typically begins before 3 years of

age and continues into adulthood

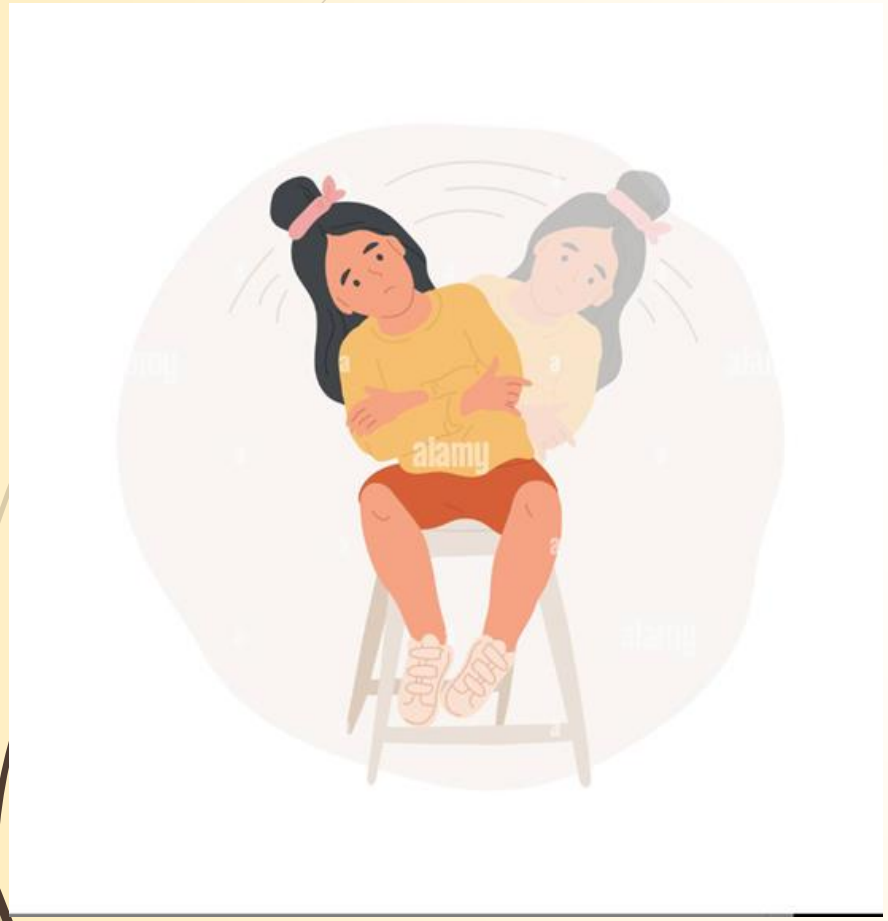

Causes of stereotypic movement disorder
Chorea disease
Brain or head injury
Autism spectrum disorder (A.S.D.)
Obsessive Compulsive disorder (OCD)
Intellectual Disabilities

- primary or secondary:
- Primary motor stereotypies happen without an underlying cause or neurodevelopmental disorder.
- Secondary motor stereotypies develop as part of a condition or neurodevelopmental disorder, like autism spectrum disorder (ASD) or a developmental delay.

- Stereotypic movement disorder involves motor (movement) stereotypies that affect your child's ability to function or cause harm. Examples include:

- Hand flapping
- Body rocking
- Head banging
- Finger or arm wiggling
- Mouth and face movements (orofacial movements)
- Severe nail biting

- These behaviors tend to happen more at times of:
- Increased stress
- Anxiety
- Excitement



- Distraction typically reduces or stops the behaviors.

  This is different from obsessive-compulsive behaviors, for example, in which you feel like you must do repetitive behaviors to get rid of obsessive thoughts. When someone tries to suppress or stop a child with SMD from doing the behaviors, the child often expresses frustration or irritation.

- **What causes stereotypic movement disorder?**
- Researchers don't know the exact cause of stereotypic movement disorder.
- But in general, researchers : an imbalance in certain brain chemicals (neurotransmitters), like dopamine, acetylcholine and GABA.
- genetic link with complex motor stereotypies.

- **How is stereotypic movement disorder diagnosed?**
- The repetitive movements exist for at least four weeks.
- The movements interfere with your child's social, academic or other activities or cause self-injury.
- There's no other medical explanation for the movements.
- To start, your child's healthcare provider will do a physical exam and ask you about your child's medical history. They'll ask about your child's symptoms, like:
- When they started
- How often they happen
- If certain situations or environments trigger them
- How they affect your child's daily functions
- They'll have to rule out other common causes of complex motor stereotypies, like autism spectrum disorder. This may involve various assessments and screenings.
- Your child's provider may also recommend some laboratory tests, like blood tests, to check if a physical condition is causing the movements

- **What is the treatment for stereotypic movement disorder?**

  Stereotypic movement disorder doesn't require treatment. But if your child wants help in reducing their movements — or the behaviors are causing self-injury — habit reversal training (HRT) can be effective. It can help reduce the severity and frequency of the movements.

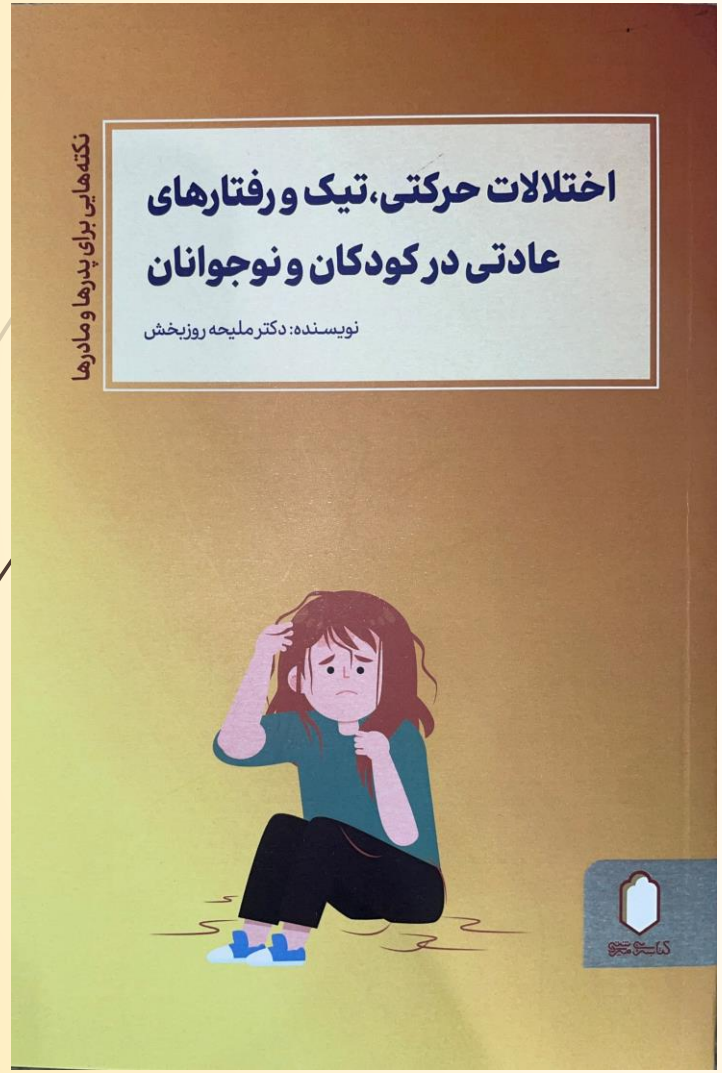
- Your child will use these strategies to self-manage the behaviors. In the classroom and at home, your child's teacher and caregivers can also interrupt and redirect the behaviors.

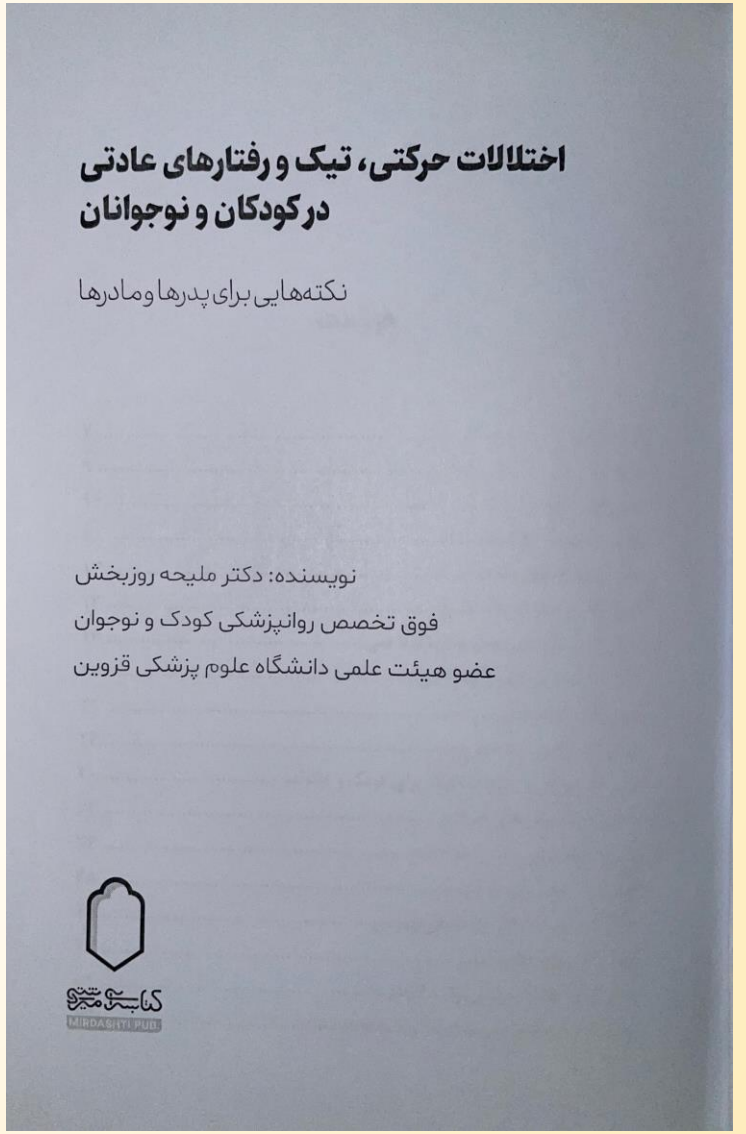
- If the motor stereotypies involve self-injury, like head banging or self-scratching, you may need to use interventions to protect your child. This could involve measures like having your child wear a helmet or having them wear gloves to reduce scratch injuries.

- Your child's healthcare provider or an occupational therapist can help you come up with specific strategies unique to your child's behaviors.

- Studies show that medications may help manage complex motor stereotypies in children with autism and other neurodevelopmental diagnoses.
- **Outlook / Prognosis**
- **What can I expect if my child has stereotypic movement disorder?**
- The behaviors of SMD typically persist throughout adolescence and adulthood. As long as the movements aren't causing self-injury, they're not harmful. It may help to see your child's behaviors simply as their way of interacting with the world. Sure, the behaviors may be different. But they're not "wrong."
- If your child wants help with the movements, reach out to their healthcare provider or an occupational therapist. Giving your child a say in their own care can help them feel more in control of their body and have positive effects on their mental health.

Thank you for your attention





اختلالات حرکتی

- اختلال تیک -اختلالات حرکت کلیشه ای - اختلال هماهنگی نکاملی

تیک یعنی : عامل با میل یا حس درونی در ایجاد آن نقش دارد

عوامل ماشه چکان تیک

* اتفاقات و هیجانات خوشایند * کم خواب * اضطراب امتحان

اولین درمان انتخابی دارویی در اختلال تیک صوتی قرص هالوپریدول است

اختلال توره یعنی : بروز تیک های حرکتی قبل از سن ۱۸ سالگی و یکسال طول کشیده

اختلال تیک فراوانی این اختلال ۲۴-۵ درصد و در پسرها ۳ برابر دخترهاست.

در خانم ۲۸ ساله ی که اختلال تیک که از ۲ ماه قبل مراجعه کردند بررسی.تست Ivaz ضروری است.

اختلال هماهنکی حرکتی موجب می شود کودک ٦ ساله نتواند بند کفش هایش را بندد

حرکات کلیشه ای در ASDوجود دارد

در درمان کودکی ٤ ساله که با حرکات تکراری بال بال زدن و گهواره ای بدن مراجعه کردند کاردرمانی حسی-ذهنی و جسمی اولویت دارد

کودکی ٤ ساله با تاخیر گفتار و عدم تماس چشمی و بی قراری و حرکات تکراری کوبیدن سربه دیوار و دست دست زدن تشخیص . ASD است.

دختر خانم ١٥ ساله با وزن ٦٣ کیلو و اختلال تیک حرکتی قرص هالوپریدول نیم میلی گرم اولویت دارد

در روش درمانی در اختلال تیک وارانه سازی رفتار متوسط اولویت دارد

ایجاد امنیت برای ایراد هیجانات و احساسات در اختلال تیک روش والدین در مشکلات حهت افزایش بهبودی صحیح می باشد.

اختلال ADHDهمرا با DCD بیشتر دیده می شود.