درمان هم ابتلایی اختلال بیش فعالی - کم توجهی با اختلالات تیک و وسواس

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سومین همایش تازه های دارو درمانی
در اختلالات روانپزشکی کودک و نوجوان

Introductions: who is this random person talking you…

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Attention Deficit Hyperactivity Disorder

(ADHD)

Attention Deficit Hyperactivity Disorder (ADHD)

ADHD "is a condition that makes it unusually difficult for children to concentrate, pay attention, to sit still, to follow directions and to control impulsive behaviour" (Child Mind Institute, 2016, p. 2.)

Types of ADHD

- Combined type: characterised by impulsive and hyperactive behaviours as well as inattention and distractibility
- Impulsive/hyperactive type: characterised by impulsive and hyperactive behaviour without inattention and distractibility
- Inattention/distractibility type: characterised predominately by inattention and distractibility without hyperactivity

Symptoms:

- Inattentive symptoms:
  - Easily distracted
  - Makes a lot of mistakes
  - Appears not to be listening
  - Difficulty following instructions
  - Has trouble arranging/organising belongings/task requirements
  - Finds sustained effort challenging
  - Can be very forgetful, loses items

Attention Deficit Hyperactivity Disorder (ADHD)

Symptoms:

- Hyperactive & impulsive symptoms:
  - Restlessness, fidgeting
  - Difficulty waiting for turns
  - Trouble staying still
  - Difficulty playing quietly
  - Calling out
  - Extreme impatience
  - Always on the go
  - Excessive talking, interrupting
  - Difficulty not getting own way

Assessment:

- Pathway through Mental Health Services
- Psychometric testing:
  - Child behaviour checklist can provide a screen
  - Conners 3rd Edition:
    - Questionnaire of about 100 questions relating to the child's behaviour and functioning across the main ADHD traits. Also screens for associated disorders such as Oppositional defiance Disorder and Conduct Disorder
    - School, home and self report

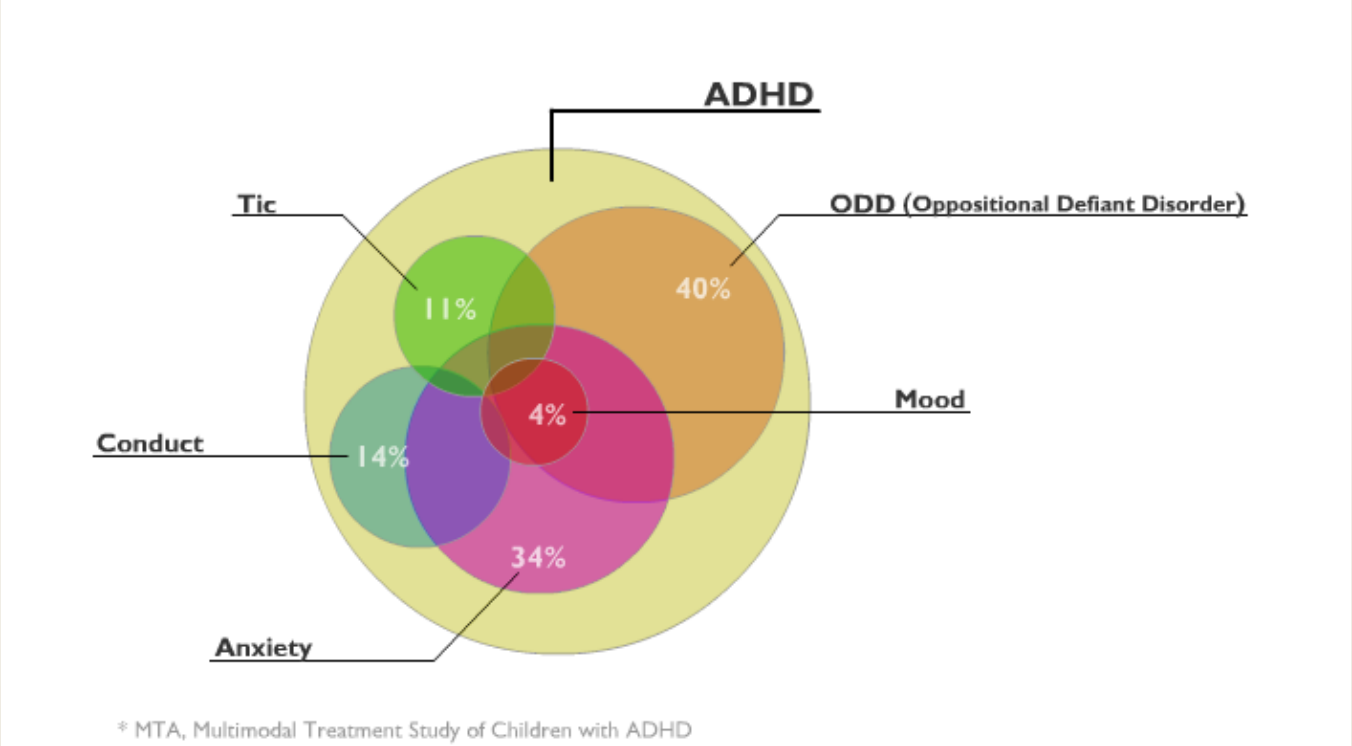
Attention Deficit Hyperactivity Disorder (ADHD)

Prevalence & Genetics:

- 7-9% of children; 4.4% of adults
- Male-female: 6:1, 3:1, 1:1
- All levels of IQ
- All levels of socioeconomic status
- Family genetic transmission: 0.75-0.8
- Inheritance not specific to subtype

Other Psychiatric Disorders Often Accompany ADHD

Other Psychiatric Disorders Often Accompany ADHD



- 70% of children with ADHD had <u>at least</u> one psychiatric disorder in addition to ADHD.

Tic Disorders

Tics are sudden, abrupt, fast movements comprising various muscle groups, with or without vocal utterances, which occur involuntarily. Tics are brief but repetitive – though not rhythmic – and usually appear in short bursts or even series. They may be classified according to the degree of complexity (simple, complex) as well as their quality (motor, vocal) (Rothenberger et al, 2007).

By the age of 10 or 11 years, children begin to report a premonitory urge. This can be any kind of sensation, typically a tickling, itching or prickling feeling, in the area of the muscle groups involved, announcing the imminent occurrence of a tic (Steinberg et al, 2010).

The Basics : Definition of a Tic

Tics may range from a discrete, hardly noticeable flinching of the eye to a painful, socially incapacitating and subjectively shameful phenomena involving several muscle groups. Those afflicted by tics, as well as their family, may experience substantial suffering due to the symptoms, be it through bullying or to inappropriate response by caregivers resulting in a dysfunctional parent-child relationship.

Motor movement or vocalization that is:

- Involuntary
- Sudden
- Rapid
- Recurrent/Repetitive
- Non-rhythmic
- Short bursts or series
- Various muscle groups
- Simple or complex
- Transient or chronic
- Premonitory urge

Tic Disorders: Multiple types

Table H.2.1 Classification of tic disorders according to ICD-10 and DSM-IV

ICD- 10		DSM - IV	
F95.0	Transient tic disorder	307.21	Transient tic disorder
F95.1	Chronic motor or vocal tic disorder	307.22	Chronic motor or vocal tic disorder
F95.2	Combined vocal and multiple motor tic disorder (Gilles-de-la-Tourette syndrome)	307.23	Tourette's disorder
F95.8	Other tic disorder	307.20	Tic disorder NOS (not otherwise specified)
F95.9	Unspecified		

Tic Disorders: Motor and Vocal Tics

Motor Tics

- Range
- Simple & sudden
  - Eye blink
  - Grimace
- Complex behavioral patterns
  - Crouching or hopping
  - Copropraxia
  - Echopraxia
  - Self harm

Vocal / Phonic Tics

- Involuntary utterances
- Sounds, noises, sentences, or words
  - Simple
  - Complex
    - Coprolalia
    - Echolalia
    - Palilalia

Tic Disorders: Common Motor and Vocal Tics

Motor Tics	Vocal Tics
• Eye blinking	• Coughing
• Rolling of eyes	• Throat clearing
• Grimacing	• Sniffing
• Shaking of head	• Whistling
• Twitching of shoulders	• Grunting
• Twitching of torso and pelvis	• Animal sounds
• Twitching of abdomen	• Uttering of syllables
• Movements of the hands and arms	• Uttering of words
• Movements of the feet and legs	• Shouting

Transient* Tic Disorders

- Symptoms less than 12 months
- Mostly school age
- Usually no specific treatment

*** Provisional" in DSM-5**

Whether a transient or a chronic tic disorder is present depends on the duration of symptoms: in the case of a transient tic disorder, symptoms last less than 12 months. Transient tic disorders mostly occur in school age children and usually do not require specific treatment.

Tourette Syndrome (TS)

Tourette Syndrome(TS)

A physical disorder of the brain which causes:

involuntary movements (motor tics)

and involuntary vocalizations (vocal tics)

Children report uncomfortable nervous feelings
Like they are going to explore just prior to tics. (Walter & Carter, 1997)

Tourette Syndrome(TS)

MOST develop

- eye tic first
- facial tics or involuntary sounds
- others within weeks or months
  - common examples: head jerks, grimaces, hand-to-face movements

Symptoms can:

- change over time
- vary (frequency, type, location, or intensity)
- increase in intensity during early adolescence (12-15)
- improve in less extreme cases during adulthood

Prevalence

- **1 in 1000 children**
- Boys outnumber girls 3 to 1
- **50-70% of diagnoses have hereditary bases**
- Symptoms visible by 7, but signs as early as 5 years (Crawford et al., 2005)

Tourette Syndrome(TS)

Examples of Tics:

VOCAL: **Simple:**

- throat-clearing
- sniffing
- coughing
- grunting
- spitting
- yelling
- belching

VOCAL: **Complex:**

- animal sounds
- repeating words or phrases out of context
- coprolalia
- palilalia
- echolalia

MOTOR: **Simple:**

- blinking eyes
- jerking neck
- shrugging shoulders
- flipping head
- kicking
- tensing muscles
- sticking tongue out
- finger movements

MOTOR: **Complex:**

- facial gestures (eye rolling)
- grooming behaviors
- smelling things
- touching
- jumping
- hitting
- biting
- echopraxia
- copropraxia
- self-injurious behaviors

Tourette Syndrome(TS)

DSM-V

- Onset before age 18 (typically around age 7 and lasts a lifetime)
- person has both multiple motor and one or more verbal tics
- tics occur many times a day (usually in clusters), nearly every day or intermittently for more than a year

Diagnostic Pathway

- Currently no set pathway for diagnosing
- Does not meet criteria for developmental pathways
- Does not meet criteria for Mental Health pathways

Limitations of the current pathway

- Given that TS is classed as a neurological disorder it doesn't fall into any of the well established diagnostic pathways.
- This presents difficulties not only with diagnostics but also for accessing further supports

Combined Treatment for ADHD and Tics

- When a child has both ADHD and tics, the healthcare provider evaluates which symptoms are causing the **most difficulties** for the child. The condition that is causing the most distress or impairment is generally **treated first**. Treatment for the second condition often begins after the first condition starts to **improve**.

- Sometimes it is necessary to start treatment for **both conditions** at the same time. Medication may be needed for children with ADHD and Tourette Syndrome. The provider may decide to treat **mild symptoms** of both ADHD and tics with an alpha agonist, a nonstimulant medication such as **clonidine or guanfacine**, which can reduce both symptoms. Their most common side effects are **tiredness and fatigue**.

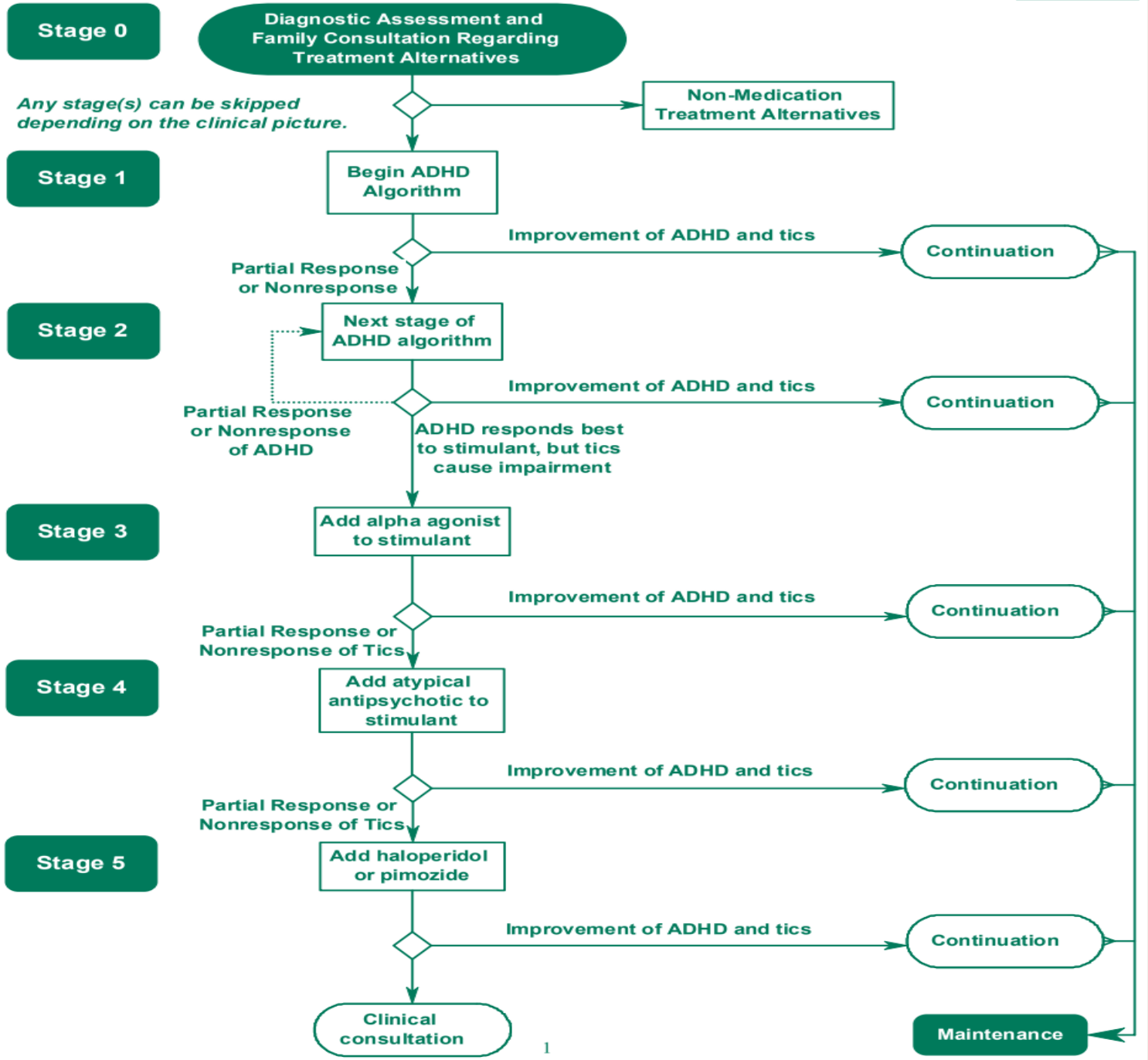
Combined Treatment for ADHD and Tics

- If ADHD symptoms are the most problematic, then treatment with a **stimulant medication** is generally recommended.
- Stimulants are highly effective for all ADHD symptoms, including in children with ADHD and tics. Although there is no scientific evidence that stimulants increase tics in children with ADHD and tic disorders, some children may experience a temporary increase when stimulants are started or doses are increased.
- Recent studies report that short-term stimulant medication, especially **methylphenidate** (Ritalin, Concerta, Metadate), seems to be **safe** and **well tolerated** in children who have chronic tics or TS and co-occurring ADHD. Children who were given methylphenidate did not develop more frequent tics when compared with those who were not given the medication.
- Tics may be more likely to **increase** with the **dextroamphetamines (Dexedrine, Adderall, Vyvanse, ProCentra)** compared to **methylphenidate**.
- In the long run, **ADHD symptoms** can potentially cause more difficulty than tics in children with both conditions, so it is important to make sure that the **ADHD** is adequately treated.

Combined Treatment for ADHD and Tics

- **Behavior therapy**, including **parent training**, can address both types of symptoms.
- **CBIT training** components that teach children about managing **stress and anxiety**, such as relaxation and mindfulness, can also help with ADHD symptoms.
- **Parent training** in behavior management focuses on **positive communication**, **supportive routines and structures, and consistent positive discipline**.
- The therapist can help parents understand how to best support the specific needs of their child, including the treatment of **other behavioral**, **emotional**, or **learning disorders** that may occur along with both **ADHD and tic disorders**.

Algorithm for the Pharmacological Treatment of ADHD with Comorbid Tic Disorder



Obsessive Compulsive Disorder (OCD)

What is OCD?

"Children with obsessive-compulsive disorder have intrusive thoughts and worries that make them extremely anxious, and they develop rituals they feel compelled to perform to keep those anxieties at bay" (Child Mind Institute, 2016, p.2).

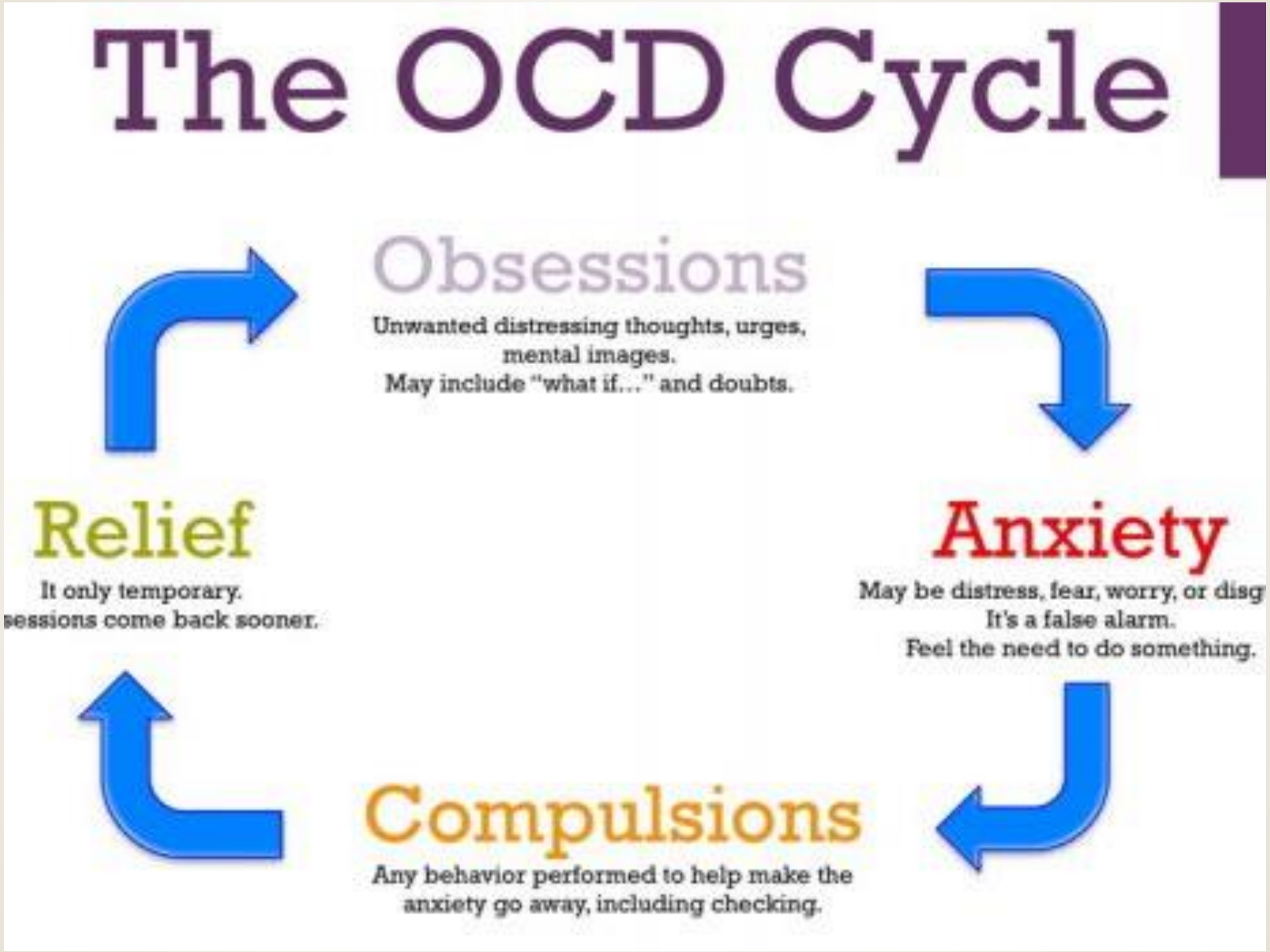
- OCD is a medical brain disorder that causes problems in information processing
- When worries, doubts, and superstitions are excessive
- The brain gets stuck on a particular thought and cannot let it go

Compulsions

- "Repetition of certain behaviours or actions with the aim of alleviating the fear or anxiety resulting from the obsessive thoughts"
- "The compulsive behaviour neutralises the distressing obsessions"

Common compulsions include:

- Repetitive hand washing
- Repeatedly checking locked doors
- Counting, ordering, arranging


The OCD Cycle
Obsessions
Unwanted distressing thoughts, urges, mental images.
May include "what if..." and doubts.
Anxiety
May be distress, fear, worry, or disg
It's a false alarm.
Feel the need to do something.
Compulsions
Any behavior performed to help make the anxiety go away, including checking.
Relief
It only temporary.
sessions come back sooner.

How can we support OCD?

- Cognitive-Behavioral Therapy
- Psychosurgery
- Deep Brain Stimulation
- Pharmacotherapy
- **SSRI's**
  - First line, no major difference in class
  - Higher doses than for MDD (ex. 80 mg fluoxetine)
  - 10-12 weeks before switching
- **Clomipramine**
  - first FDA approved, most serotonin specific of TCA's, side effects
  - Augmentation, no to Li, atypical antipsychotics, e.g. risperidone (5HT2A blockade suggests there's more to it than just "low serotonin")

Treatment Implications for Co-Morbid OCD–ADHD

- Based on current neurobiological knowledge, **OCD** and **ADHD** appear to have **different** and **apparently opposing deficits** in the **frontostriatal** and related areas. This may have treatment implications in co-morbid OCD–ADHD.

- The effectiveness of selective serotonin reuptake inhibitors **(SSRIs)** in the treatment of OCD has been well established . These agents regulate **hyperactivity** in the **frontostriatal** region of the brain .

- In cases of **OCD** patients who exhibit only **partial response** to **SSRIs**, **antipsychotics** with dopamine blocking properties appear to have a useful effect in **augmenting serotonin reuptake inhibition** .

Treatment Implications for Co-Morbid OCD–ADHD

- On the other hand, **first line treatment** for **ADHD** has been methylphenidate or dexamphetamine for several decades. **Stimulant medication** increases **prefrontal activation** and significantly improves **both** clinical symptomology and neurocognitive processes through modulation of dopamine reuptake.

- In addition, **ADHD**-tailored **CBT** which address **academic** and **organizational skills** training, **problem-solving** and **prioritizing tasks**, as well as managing unhelpful thinking and behavioral patterns, demonstrate encouraging improvements in adolescents and adults.

- Some literature suggests that **stimulants** can **exacerbate** and **provoke OCD** symptoms. While this may be consistent with the theoretical understanding of dopaminergic prefrontal hyperactivity, this evidence is mostly anecdotal and remains limited .

Treatment Implications for Co-Morbid OCD–ADHD

- In terms of **co-morbid OCD–ADHD**, there is evidence to support that treating OCD with **SSRIs** and **cognitive behavior therapy** with **exposure response prevention (CBT+ERP)** improves **attentional symptoms** . This may be mediated through SSRI activation of BDNF and other neurotrophic factors that lead to neuronal growth in networks responsible for **working memory** and **processing speed** .

- There is also evidence that **treating ADHD** with stimulants **improves co-morbid obsessive–compulsive symptoms**. **CBT+ERP** has demonstrated efficacy for children and adults with OCD, but **untreated co-morbid ADHD diminishes treatment response** on the **OCD**.

- **Stimulant** treatment **improves attention**, **conscious learning** and **retention** of **CBT skills** and allows patients to apply skills when obsessive thoughts **recur**.

Treatment Implications for Co-Morbid OCD–ADHD

- Limiting **treatment** to **only one disorder** when both are present appears to be associated with **poorer outcomes**. A study investigating the use of **paroxetine** in patients with **co-morbid ADHD** found that the **OCD response** rates were significantly **less** than in patients with **OCD alone**.

- The presence of **ADHD co-morbidity** was also associated with a **greater rate** of **OCD relapse** .

- Conversely, case studies suggest that **treating both disorders** concurrently can be **beneficial** for **both disorders** .

- It would therefore seem prudent to treat **both conditions concurrently** when they are both present and severe enough to warrant biological and psychological treatments.

Treatment Implications for Co-Morbid OCD–ADHD

- Additionally, screening for **disorders of addiction** is important due to the heightened cumulative risk in these individuals. Despite the lack of randomized controlled trials in clinical populations, it would be reasonable **to start with standard treatments for both**, such as **SSRIs** for **OCD** and psychostimulants such as **methylphenidate** and dexamphetamine for **ADHD**.

- Pharmacological treatments should be introduced **one at a time** to **avoid confusion** around **treatment** response and **side-effects**. This is especially relevant given the possibility of **worsening OCD** with **stimulants**.

- Monitoring progress through routine use of established instruments such as the **Yale Brown Obsessive Compulsive Scale** for OCD and ADHD Rating Scale 5 or similar is appropriate.

Treatment Implications for Co-Morbid OCD–ADHD

- **Transcranial magnetic stimulation (TMS)** has a limited but growing body of evidence for its efficacy in both ADHD and OCD Combined with its relative safety.

- Additionally, where symptoms remain resistant to both pharmacological and psychological approaches and OCD symptoms significantly disrupt **daily functioning**, **intensive residential treatment** may be considered if available .

- **Conclusion**

The treatment of OCD–ADHD co-morbidity in children, and to an even greater extent in adults, remains **challenging**.

ADHD and OCD are not mutually exclusive and do co-exist . They share dysfunction in **impulsivity**, **inattention**, and **executive function** while appearing to have opposing pathophysiology and phenomenology.

Treating one without the other leads to **poorer outcomes** in both, while **treating both simultaneously** is associated with **better outcomes**.

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