Exposure and response prevention for Tourette syndrome, part 1 of 2

Lecturer:

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Practical information

- The slides will be available
- 50 minutes presentation
- 10 minutes for questions, please send questions in the chat

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Programme part 1

- Diagnostic criteria and characteristics
- Treatment guidelines
- Exposure and response prevention (ERP), part 1 of 2
- Questions

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Diagnostic criteria (DSM-5)

- A sudden, rapid, recurrent, non-rhythmic motor movement or vocalization
- Onset is before 18 years
- Persisted for more than 1 year since first tic onset

- Diagnoses:
  - Provisional Tic Disorder (<1 year)
  - Persistent (Chronic) Motor or Vocal Tic Disorder (>1 year)
  - Tourette's Disorder (>1 year since onset, >1 motor tics and at least 1 vocal tic)

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Characteristics

- Motor tics: eye movements, nose twitching, facial grimacing, head jerking, jumping, touching objects

- Vocal tics: coughing, throat clearing, sniffing, grunting, echolalia, coprolalia

- Simple tics: brief, involve a limited number of muscle groups

- Complex tics: prolonged duration, coordinated patterns, involve several muscle groups, could appear bizarre

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Premonitory urges (tic alerts, tic signals)

- Sensations preceding tics
  - For most, but not all, patients
  - Awareness seems to increase with age
  - Usually bothersome
- An urge to perform tics
- Examples of how premonitory urges can be experienced:
  - A tension, pressure or energy inside the body
  - An itch
  - Like one is about to sneeze
  - Small insects crawling inside the skin
  - A volcano that is about to erupt

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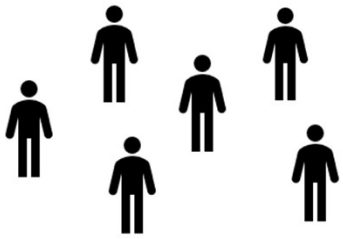
Prevalence

- Tourette syndrome: Approx. 1% of the population
- Persistent (Chronic) Motor or Vocal Tic Disorder: 0,5-3%
- Provisional Tic Disorder: 20%



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Development and course

- Onset typically between ages 4 and 6 years
- Peak tic severity between ages 10 and 12 years
- Tics wax and wane in presentation and severity over time
- Most common in boys (4:1 ratio)
- Tic severity usually decreases during late adolescence

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Risk and prognostic factors

- Tic increase by anxiety, excitement, exhaustion, stressful events
- Tic decrease during calm and focused activities
- Genetic and environmental factors play a role
  - Increased tic severity associated with older paternal age, lower birth weight, maternal smoking during pregnancy, obstetrical complications

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Functional consequences of tic disorders

- Psychological distress
- Physical pain and/or injury
- Attention difficulties
- Sleep difficulties
- Social isolation, interpersonal conflicts and peer victimization
- Social avoidance

- Associations with limited academic prosperity
- Associations with higher suicide risk

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Treatment guidelines

SPECIAL ARTICLE

Practice guideline recommendations summary: Treatment of tics in people with Tourette syndrome and chronic tic disorders

Tamara Pringsheim, MD, MSc, Michael S. Okun, MD, Kirsten Müller-Vahl, MD, Davide Martino, MD, PhD, Joseph Jankovic, MD, Andrea E. Cavanna, MD, PhD, Douglas W. Woods, PhD, Michael Robinson, Elizabeth Jarvie, MSW, LCSW, Veit Roessner, MD, Maryam Oskoui, MD, Yolanda Holler-Managan, MD, and John Piacentini, PhD

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American Academy of Neurology
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Neurology® 2019;92:896-906. doi:10.1212/WNL.0000000000007466

Abstract

Objective
To make recommendations on the assessment and management of tics in people with Tourette syndrome and chronic tic disorders.

RELATED ARTICLE

Comprehensive systematic review summary: Treatment of tics in people with Tourette syndrome

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Treatment guidelines

European Child & Adolescent Psychiatry
https://doi.org/10.1007/s00787-021-01845-z

REVIEW

European clinical guidelines for Tourette syndrome and other tic disorders—version 2.0. Part II: psychological interventions

Per Andrén[1] · Ewgeni Jakubovski[2] · Tara L. Murphy[3] · Katrin Woitecki[4] · Zsanett Tarnok[5] · Sharon Zimmerman-Brenner[6] · Jolande van de Griendt[7] · Nanette Mol Debes[8] · Paula Viefhaus[4] · Sally Robinson[9] · Veit Roessner[10] · Christos Ganos[11] · Natalia Szejko[12,13,14] · Kirsten R. Müller-Vahl[2] · Danielle Cath[15] · Andreas Hartmann[16] · Cara Verdellen[17]

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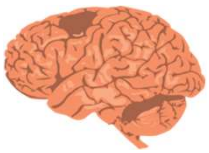
Treatment guidelines

- Psychoeducation is recommended as a first intervention for all patients regardless of symptom severity
- When psychoeducation is not enough, behavior therapy (BT) is recommended
  - Fewer side effects compared to medication
- Medication is also an evidence-based treatment option
- Many factors contribute to the treatment decision (to offer BT or medication to a specific patient) such as age, symptom severity, comorbidity, tolerance of side effects, patient preferences and availability

Behavior therapy (BT)



- BT is based on the assumption that tics have a neurobiological origin, but that their expression is influenced by environmental factors
- The goal is to change the symptom expression by using different behavioral strategies
- Out of such behavioral strategies (i.e., BT), there are most evidence for the two modalities habit reversal training (HRT) and exposure and response prevention (ERP)

Evidence for BT

- Two large randomized controlled trials (RCTs) support the use of HRT (sometimes referred to as CBIT) for both children and adults (medium sized effects: 0.57-0.68, compared with a psychoeducational treatment [control condition])
- Only one RCT of face-to-face ERP has been published, where ERP was compared to HRT in a sample of both children and adults. Both groups improved.
- Two large RCTs of internet-delivered ERP have been published. The first RCT (from the UK) showed ERP to be superior to the internet-delivered psychoeducational comparator (small effect size: 0.31). The second RCT (from Sweden) found no difference in effects between the same two interventions.

Piacentini et al. (2010); Wilhelm et al. (2012); Verdellen et al. (2004); Hollis et al. (2021); Andrén et al. (2022)

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HRT/CBIT or ERP?

- American treatment guidelines mainly recommend HRT/CBIT, while European guidelines recommend both HRT/CBIT and ERP. The recommendations are based on the same clinical trials, only the interpretation of the significance of the study results differ.
- There are several similarities between HRT/CBIT and ERP, mainly that both treatments instruct the patients to suppress/resist/stop their tics. In addition, the patients are also instructed to focus on their premonitory urges while suppressing the tics.
- The strategies for how the patient should suppress their tics differ (partially).
  - HRT/CBIT: Practice suppressing one tic at a time using a competing response.
  - ERP: Practice suppressing all tics at the same time without the help of a competing response.

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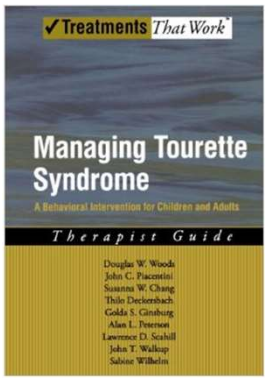
Treatment manuals



HRT/CBIT: Woods, D. W. *Managing Tourette Syndrome: A Behavioral Intervention for Children and Adults Therapist Guide*. New York: Oxford University Press, 2008.

HRT and ERP: Verdellen, C., van de Griendt, J., Kriens, S., & van Oostrum, I. *Tics: Therapist Manual*. Amsterdam: Boom Cure & Care, 2011

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Programme part 1

- Diagnostic criteria and characteristics
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- **Exposure and response prevention (ERP), part 1 of 2**
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Exposure and response prevention (ERP)

- Two main components
  - Response prevention
  - Exposure

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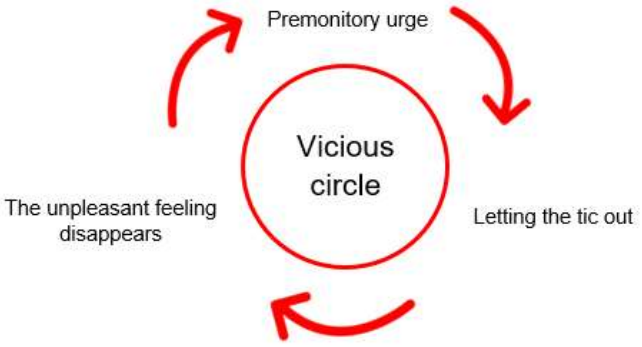
ERP: Rationale



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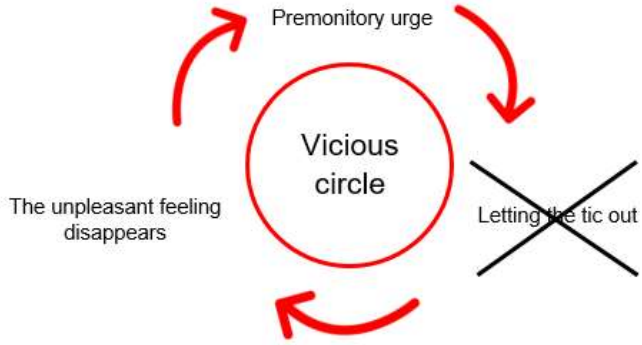
ERP: Rationale



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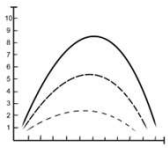
ERP: Rationale



- Most patients can already suppress their tics for at least a short period of time
- It is not certain whether patients habituate to the unpleasant premonitory urges when performing ERP
  - Possible to show a traditional SUDS exposure curve to the patient, it may be a good way to get the patient started with ERP
  - Important to mention that habituation will not occur as linear for everyone, some will become better at suppressing tics while still experiencing the premonitory urges

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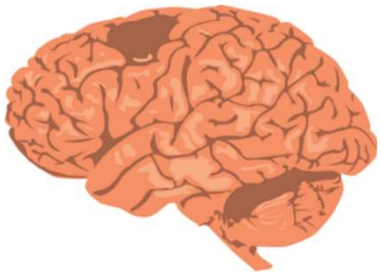
ERP: Rationale

- For children: Use the **brain brakes** to stop the tics!
- More ERP practice makes the brain brakes stronger (draw a parallel to physical workout)



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ERP: Rationale

- The goal of ERP is to learn to suppress the tics:
  - For longer and longer periods of time
  - When the premonitory urges are at their strongest
  - In various situations

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Response prevention

- No specific instruction other than trying to suppress the tics
  - Mentally rather than with a competing response (as in HRT)
- Suppress all tics at once
- Use a stop watch (phone)
- Write down high score times!
- Continue until the patient is able to suppress the tics during e.g., 15 minutes

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Exposure

Exposure = Make the practice more difficult by suppressing tics when premonitory urges are intensified and/or by suppressing the tics in various situations

- Provoke the premonitory urges (exposure to premonitory urges) and then practice to suppress the tics (response prevention)
- Suppress the tics in various environments/situations, for example situations where the tics are especially difficult to suppress, or the patient is especially motivated to refrain from ticcing

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Example: Exposure to premonitory urges

- The patient focuses on their premonitory urges and where they are sensed in the body
- Someone asks the patient about their premonitory urges and tics
- Someone provokes the patient's premonitory urges
- Someone imitates the patient's tics
- The patient looks in a mirror and focuses on their premonitory urges

Ask the patient for more suggestions, s/he will probably know how to increase the intensity of the premonitory urge ☺

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Example: Exposure to situations

- Watch TV, play video games/mobile games
- Listen to loud music, dance to music
- Do something exciting
- Cook, bake
- Use public transportation (bus, train, metro)
- Be in school or at work
- Do homework, clean, do the dishes, go shopping
- Eat in the cafeteria, at a restaurant
- Do sports, yoga, take a walk
- Be at home with a friend, go on a date
- Go to the cinema or a swimming pool

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Difficult exposures

- Do “half” of the tic - start doing the tic on purpose and then stop halfway
- Change activity during ERP practice, vary between active/passive (circle training)
- Do cognitively challenging activities (e.g. reading backwards or math)
- Do activities that creates excitement (e.g. play card games like "Hi Jack" where it is important to have quick reactivity)

Exposure hierarchy (ladder)

Treatment overview

- 8-10 sessions
- In the beginning every week, later more spread out
- Homework assignments
- Follow-up, booster-sessions if needed

More details will follow in part 2.

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Session overview

- Homework follow-up
- **In-session ERP practice**
- New homework assignments

More details will follow in part 2.

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Social support

- The role of parents (relatives/partners)
  - Encourage work with the treatment
  - Remind about practicing ERP
  - Participate in ERP exercises
  - Participate in exercises based on functional analysis, i.e. functional interventions

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Myths about BT for tics

- "If you suppress tics from coming, it leads to more and stronger tics later on“
- "If you treat a tic, then it will move to another place of the body“ (Like in Whac-A-Mole)
- “Suppressing some tics makes other tics worse“
- “Competing responses become new tics“
- "Focusing on tics in treatment makes tics worse“
- “BT only works for mild tics“
- “BT makes other problems worse"

Studies have shown that the statements above are just myths.

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Summary ERP part 1

- Tics are common and often impairing
- Tics are usually preceded by unpleasant premonitory urges
- Psychoeducation should be provided to every patient that is diagnosed
- There are several evidence-based treatment options, such as HRT, ERP and medication
- ERP = Exposure (to the premonitory urges) + response prevention (suppressing the tics)

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Please write your questions in the chat

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Thank you for participating!

Contact: per.andren@med.lu.se

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