Tourette Syndrome and tics: What are they and what can we do?

Hugh Rickards 2018

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- Clinical characteristics
  - What are tics?
  - Clinical course of symptoms
  - What other symptoms are there?
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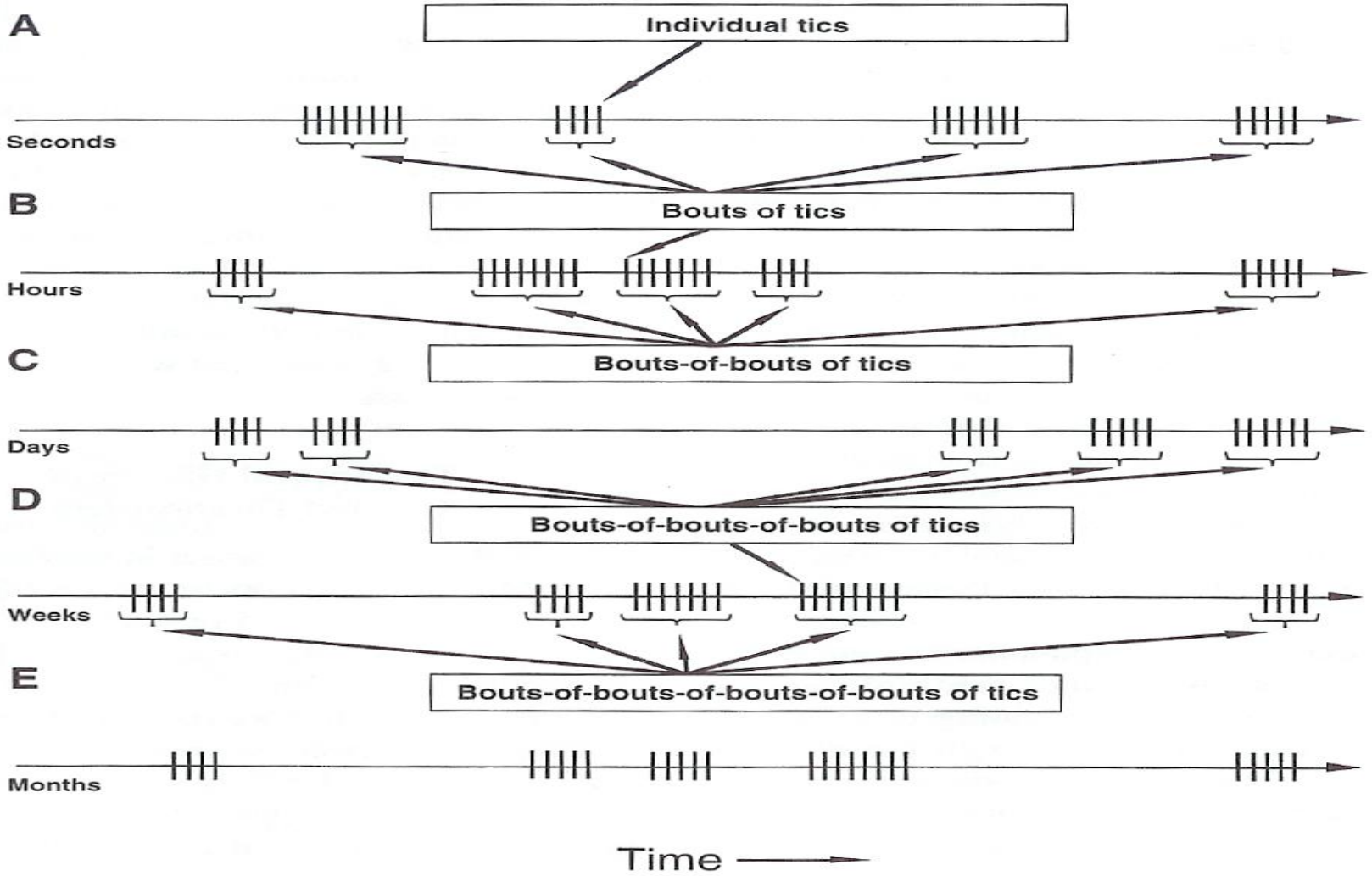
DSM-IV 307.23 Tourette syndrome

- Multiple motor plus one or more vocal tics
- “Nearly every day” (no tic free period of longer than 3 months)
- Impairment in function
- Onset before 18 years
- Not due to substance intoxication or general medical condition

What is a tic?

- Stereotyped
- Occur in bouts
- Usually sudden
- Can be simple or complex
- Semi-voluntary

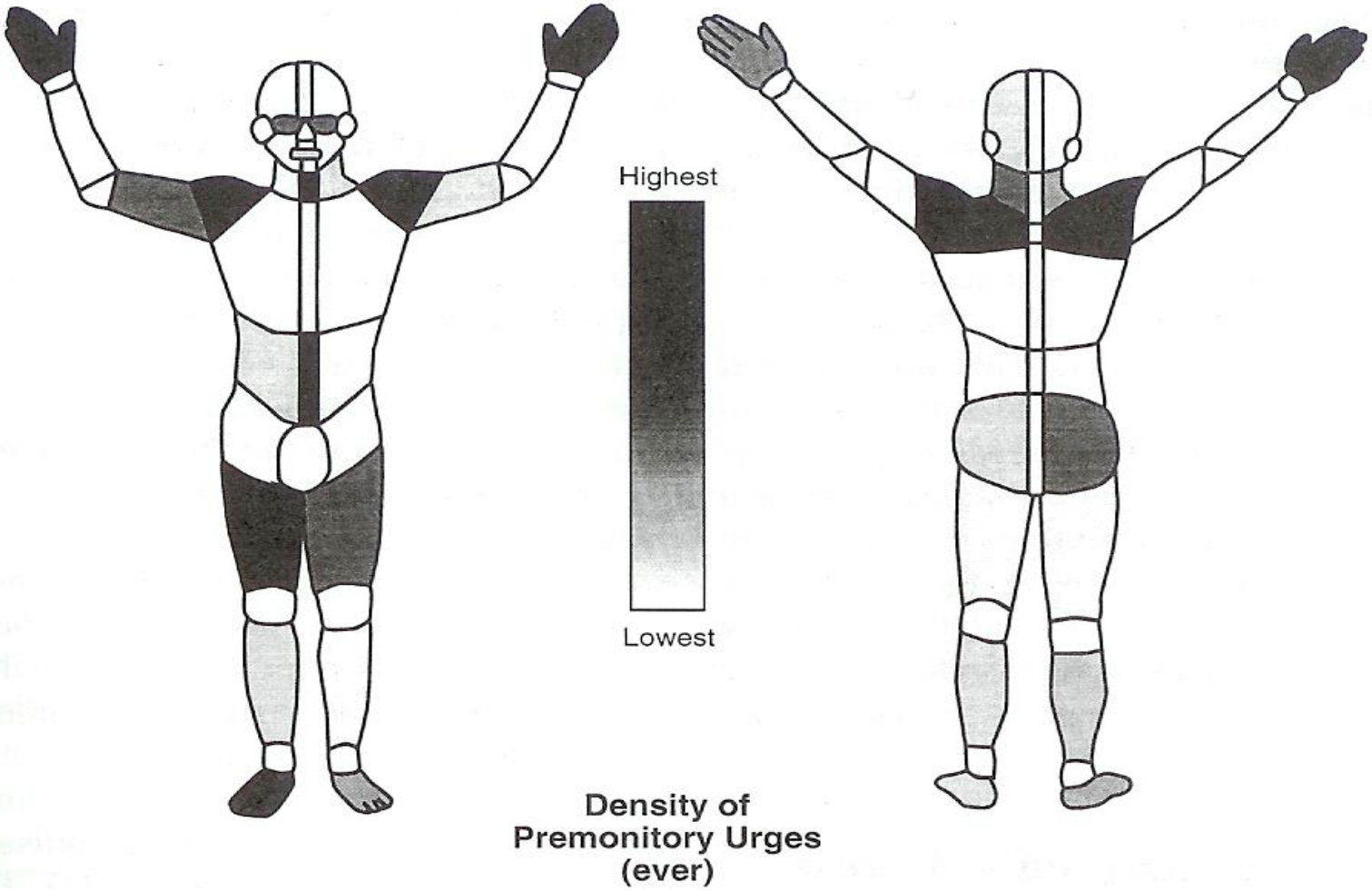
The fractal nature of tics

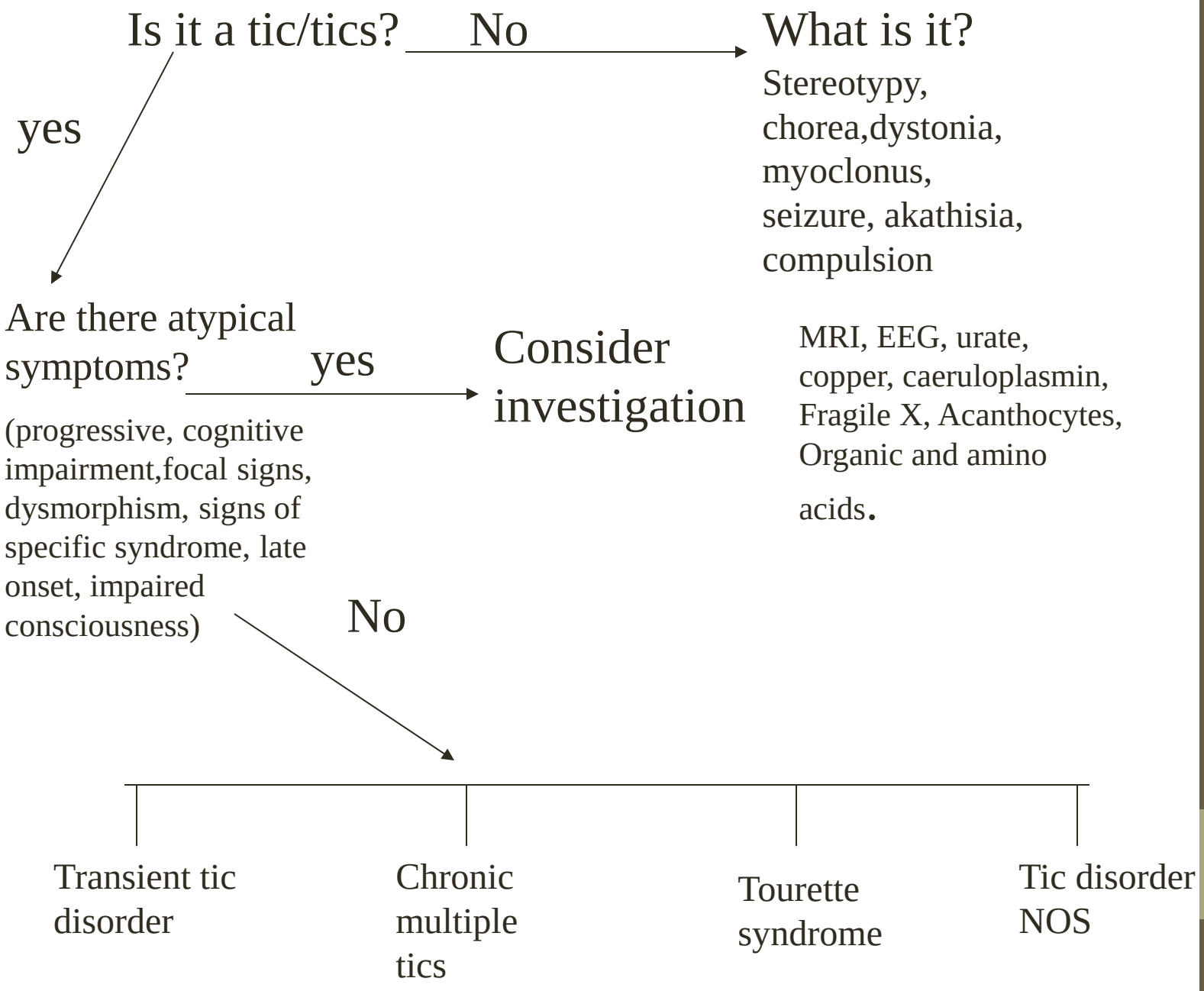


Sensory/Cognitive symptoms.

- Premonitory sensation.
- Relief after movement.
- Movement suppressible.
- Rebound after suppression.

PHENOMENOLOGY OF TICS AND NATURAL HISTORY OF TIC DISORDERS




Is it a tic/tics?
No
What is it?
Stereotypy, chorea,dystonia, myoclonus, seizure, akathisia, compulsion
yes
Are there atypical symptoms?
yes
Consider investigation
MRI, EEG, urate, copper, caeruloplasmin, Fragile X, Acanthocytes, Organic and amino acids.
(progressive, cognitive impairment,focal signs, dysmorphism, signs of specific syndrome, late onset, impaired consciousness)
No
Transient tic disorder
Chronic multiple tics
Tourette syndrome
Tic disorder NOS

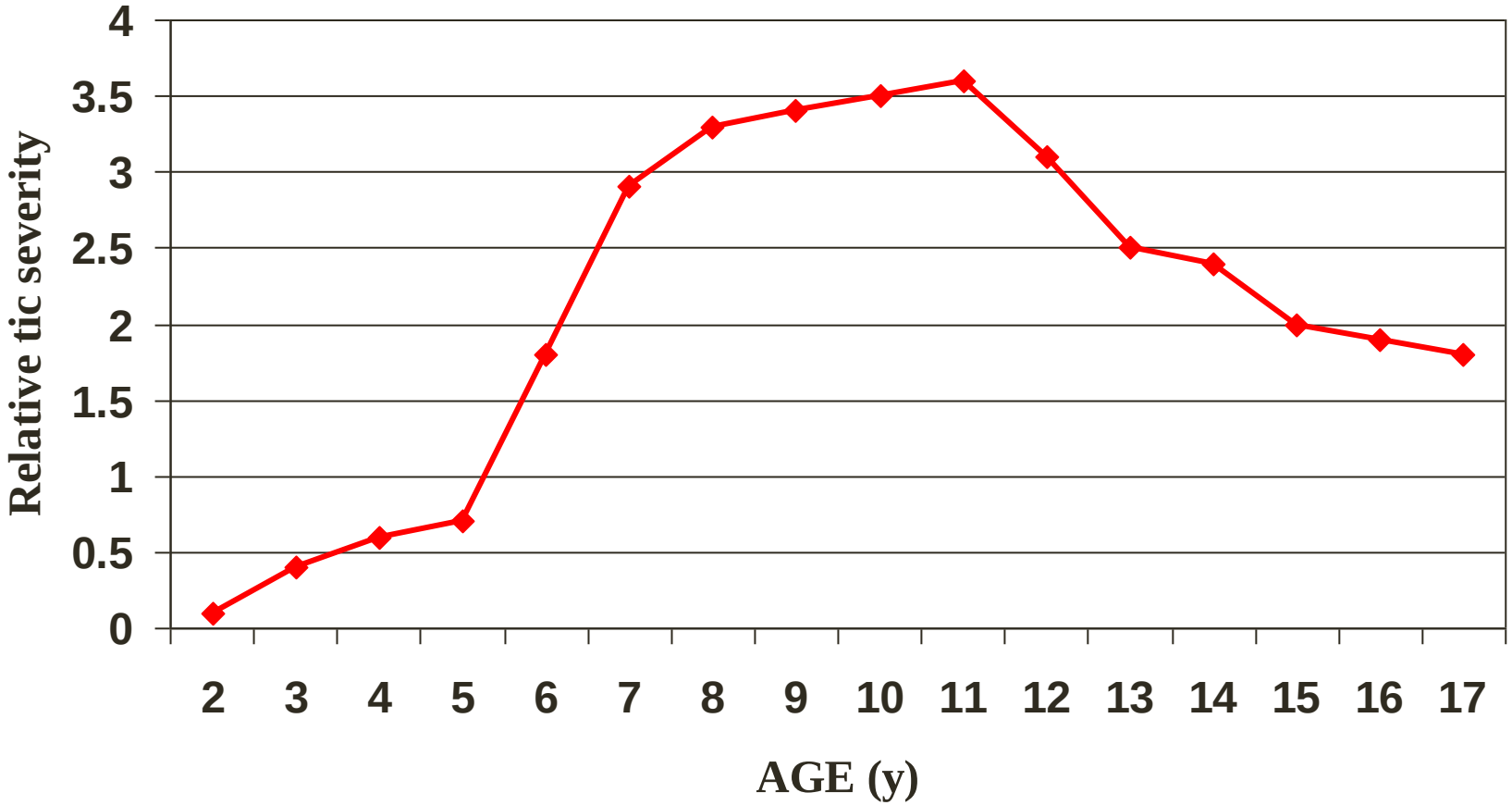
Other disorders presenting with tics

- Huntington's disease
- Down's, tuberose sclerosis, NFT, Willson's
- Acanthocytosis
- PANK deficiency
- Ferritinopathy
- X-chromosome disorders (including Lesch-Nyhan,Frag.X,)
- Post-encephalitis
- Drugs of abuse (eg. Cocaine)
- Traumatic brain injury, CVA
- Psychogenic tic disorder

Natural history of TS

- Mean onset around 6 years
- “Fractal” occurrence of tic symptoms
- Typically start simple and get more complex
- Phonic tics start at 8-15 years
- Worst between 12-14 years and then improve
  - Repertoire of tics gets more stable
  - Tic-free periods longer
- Rarely go away completely

Mean tic severity in TS (N=42)



Leckman et al. Pediatrics 1998

Tics often improve but rarely go completely.

Epidemiology

Author	Date	Prev.	N	Comments
Khalifa	2005	0.6% TS 1.3% CMT 4.8% TT	4479	Community survey of children in Norway
Rong	2005	0.43% TS	9742	Community survey in China M;F 10;1
Shyong	2003	0.56% TS	2000	Community survey in Taiwan, M:F 4.5/1
Chummun	2013	0.5% TS	1000	Community study in Mauritius.

Associated symptoms

- Echolalia/Echopraxia
- Coprolalia/copropraxia
- Palilalia/palipraxia
- Self-injurious behaviours
- Obsessive compulsive behaviours (OCB)

Co-morbid disorders

- Obsessive-compulsive disorder
- Attention deficit hyperactivity disorder
- Depression
- Anxiety
- “Oppositional Defiant Disorder”

Models for TS aetiology

- Need to be temporally dynamic
  - Worse with default
  - Fractal nature of tics
- Need to understand the nature of volition
- Need to be non-dualistic

Management

- Education about TS
  - Patient / family / teachers
  - Collaboration with TSA
  - ?genetic counselling
- Biological treatments
- Psychological treatments
  - Counselling
  - Family therapy
  - Behaviour therapy
- Social interventions
  - Schools/exams
  - Courts
  - Respite
- What is really causing the disability or preventing development?

WHY AM I GIVING THIS PERSON MEDICATION??

Therapeutic trials in GTS

- “In any trial, if you do nothing, a third of people will get worse, a third will stay the same and a third get better”

Medical treatments

- Clonidine/guanfacine
- Risperidone. Sulpiride.
- Aripiprazole
- Botox for single tics/coprolalia
- SSRI's or CBT for OCD
- ?methylphenidate/atomoxetine for ADHD

Adverse effects of medical treatments

- Sedation
- Weight gain
- Loss of volition
- Depression
- School refusal
- Acute dystonias
- Tardive dyskinesia
- ? glucose intolerance

CBIT/ERP

- Behavioural technique
- Teach tic awareness and triggers
- Hold a competing posture until the urge diminishes.
- 3 RCT’s support its use.

DBS in GTS

- 150 cases worldwide
- 9 different brain targets
- No convincing logic for either
- Generally good results

Conclusion

- A neurodevelopmental syndrome which can lead to significant social disability
- Accurate diagnosis through holistic assessment
- Management focussing on causes of disability and fostering development.

Tourette and “neurodiversity”

- Differences in brain function compared to “normal”
- Most of the disability is purely social
- ? A pathologisation of a normal variant on human behaviour.
- Treatment should be aimed at others’ intolerance.