

Newly Diagnosed TOURETTE SYNDROME

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This 3 hour presentation is an abbreviated version of an all-day seminar presented at the Tourette Syndrome Association, Inc. National Conference held April 2006 in Alexandria Virginia. In attendance at the live seminar were newly diagnosed adults, professionals, parents, family members, and friends of persons with Tourette Syndrome. Filming and presentation of this electronic version was made possible through the continuing partnership of the Tourette Syndrome Association and the U.S. Centers for Disease Control and Prevention (CDC).

We urge family viewers to share this presentation with medical and allied professionals.

The Medical and Allied Professional Survey form has been requested by the CDC; completion of the Survey will help us to continue to present and enhance resources available to the TS community.

Newly Diagnosed TOURETTE SYNDROME

Part I

- History
- Genetics
- Course of Tourette Syndrome
- Co-occurring problems
- Complex Clinical Presentations

(viewing time approximately 1 hour, 2 minutes)

Newly Diagnosed TOURETTE SYNDROME


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Introduction

- What is in a name?
- Diagnosis
- History
- Epidemiology
- Genetics
- Course of Illness
- Comorbidity
- Treatment

What is in a Name?

- Gilles de la Tourette Syndrome
- Tourette Syndrome
- Tourette's Syndrome
- Tourette's disorder (DSM-IV)



TS Diagnosis

- Motor and Vocal tics
- For 1 year
- ± Impairment
- 2/3 Self-diagnosed

History

- Childhood chorea (Sydenham's chorea)
- Charcot and Freud, and Tourette
- Psychology
- Neurology
- Neurobehavioral
 - Neurological
 - Behavioral and psychological
 - Genetics
 - Environment

PROs and CONs of "Neurbiologicalization"

- PROs
 - Affirms central role of brain in behavior
 - Decreases stigma by explanation
 - Allows for rights of patienthood
- CONS
 - Minimizes role of environment and experience in behavior
 - May lead to passivity in managing problems
 - May increase stigma if seen as an excuse
 - Many mysteries remain

How Many People Have TS?

- In the mid 1960's <100 cases in the world literature
- 1/100 to 1/10,000
- Tics in 25% school age children
- What has changed
 - Awareness
 - Assessment
 - Diagnosis

What do we need to know?

- How many children with transient tics have other problems (tics as a marker)?
- How many children require medication for tic suppression at some point in childhood?
- How many children with severe tics have marked improvement in adolescence?
- How many children with tics are impaired by what other conditions?
- How many adults with tics need tic suppressing medication?

What do you say to patients and families?

- "What is our risk for having children with TS?"
- The answer to this specific question misses a very important point
- Provide information to answer this question:
- "What info can you give me that prepares me for having a child with TS?"
- The following is not meant as genetic counseling info, rather it is information important to consider with a trained genetics counselor

What do you say to patients and families?

- Most kids with tics do well tic-wise by the time they are in their 20s
- Genetic risks for TS is not the same as the risk for poor life long outcome
- What are the IMPORTANT risks?
 - Tics
 - Comorbid conditions
 - Poor outcome

Risks with Comorbid Conditions

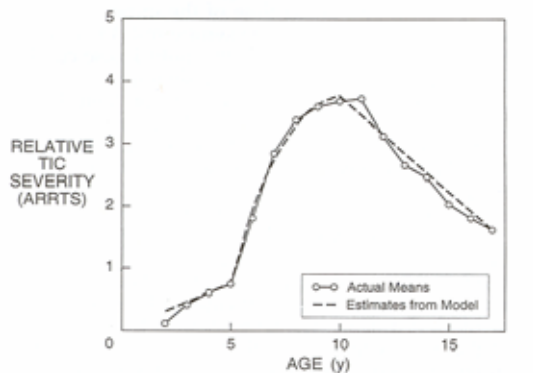
- Genetic risks for ADHD/LD and OCD + Mood Disorders, Anxiety Disorders, Substance Abuse and other behavioral problems
- Genetic risks - childhood only vs. lifelong disability
- For children environmental risks associated with poor parenting and untreated parental psychopathology

Risk for Lifelong Poor Outcome

- Severe and protracted TS – low
- Risk for comorbid conditions and their association with life long disability – higher
- Most with good coping and self control skills can manage their illnesses well
 - Mild/moderate illness - no problem
 - Severe illness with good coping = heroes and heroines
- Poor coping and self control skills are a risk factor for lifelong disability regardless of severity of illness

Course of Tourette Syndrome

- Starts in young children
- Starts with motor tics, then vocal
- Starts in the head and face, then in the body
- Starts with simple tics, then more complex tics
- Peak severity is in early to mid teens
- Development of comorbid conditions is usually later except for ADHD
- Small percentage have a poor outcome from tics



Leckman et al., 1998

Course of Tourette Syndrome

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Potential for Evolution of Symptoms Over Time

- ADHD-type symptoms
- Tics
 - Motor to vocal
 - Simple to complex
 - Head to toe
- OCD and Anxiety problems
- Mood problems
- Behavioral and coping problems

Disorders Commonly Seen in TS

- Depends on where you are
 - Community samples
 - Neurology clinic
 - Pediatric Neurology clinic
 - Psychiatric clinics
 - Child Psychiatry clinics
 - Expert clinics

Co-occurring Problems

- Disorders
 - Obsessive compulsive disorder
 - ADHD
 - Anxiety
 - Depression
 - Disruptive behavioral disorders
- Difficulties
 - Anxiety
 - Mood
 - Impulse and behavior control
 - Problems with learning

Differential Diagnosis of Repetitive Behaviors

- | | |
|--------------------------|----------------------------|
| ■ Neurological Disorders | ■ Psychiatric Disorders |
| ■ Sydenham's chorea | ■ Compulsions |
| ■ Myoclonus | ■ Stereotypies |
| ■ Tremor | ■ Perseverative behaviors |
| ■ Dystonia | ■ Self-injurious behaviors |
| ■ Athetosis | ■ Addictive behaviors |
| ■ Spasms | ■ Habits |
| ■ Dyskinesias | ■ Mannerisms |

Sorting Out Clinically Complex Cases

- What do complex cases look like?
 - **TS Plus** = TS and related conditions (ADHD & OCD)
- Symptom confusion
- Family History
- Time course of symptom development
- Common things being common
- Inaccurate assumptions
- The most difficult cases

Complex Clinical Presentations

- **Tics Plus** and separation anxiety disorder
- **Tics Plus** and other anxiety disorders
- **Tics Plus** and pervasive developmental disorders
- **Tics Plus** and disruptive behavioral disorders
- **Tics Plus** and major depression
- **Tics Plus** and bipolar disorder
- **Tics Plus** and substance abuse
- **Tics Plus** and personality disorders

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End of Part I

Please click on the link below to continue to Part II

Newly Diagnosed TOURETTE SYNDROME

Part II

- Complex Presentations (continued)
- Time Course of Symptom Development
- Problems Living with TS
- Tic Suppression
- Treatment of Co-Occurring Conditions

(viewing time approximately 1 hour, 12 minutes)

Complex Clinical Presentations

- **Tics Plus** and separation anxiety disorder
- **Tics Plus** and other anxiety disorders
- **Tics Plus** and pervasive developmental disorders
- **Tics Plus** and disruptive behavioral disorders
- **Tics Plus** and major depression
- **Tics Plus** and bipolar disorder
- **Tics Plus** and substance abuse
- **Tics Plus** and personality disorders

Symptom Confusion

- Repetitive behaviors
- Repetitive thoughts

Repetitive Behaviors

- Compulsions
- Tics
- Stereotypies
- Perseverative behaviors
- Addictive behaviors
- Habits

Repetitive Thoughts

- Obsessions
- Ruminations
- Delusions
- Perseverative thoughts
- Cravings
- Over-valued ideas
- Flash-backs

Family History

- Genetic contributions
 - Anxiety disorders
 - Mood disorders
 - Etc.
- How families live

ADHD Confusion

Time Course of Symptom Development

Common Things Being Common

- Maladaptive behaviors
- Family Problems
- Depression
- Anxiety
- PDD

Problematic Assumptions

- He can't control it
- I can't set limits on him
- He has a tough life, I want it easy for him
- He needs special accommodations
- Medication is the answer
- What you see of TS on TV is representative
- It is all TS related

Problems Living with TS

- Secondary behavioral problems
 - Children with TS are more difficult to parent
 - Parents are uncertain
 - Children less responsive to routine parenting interventions
 - "He can't control himself " is a common misconception
- TS as a lifestyle
 - Emphasis on TS as central identity
 - De-emphasis on traditional identity development

Problems Living with TS

- Historical cohorts of people with TS
 - Undiagnosed and/or stigmatized adults with TS
 - Persons with TS from the neuroleptic era
 - Persons with TS who were told they could not control themselves
 - It may be TS, but the tics are not the problem
 - Outcome is associated with severity of comorbid conditions and self control, and the courage to overcome adversity.

Explosive Anger

- Easily conditioned behavior
- Associated with mood and anxiety disorders and cognitive/CNS dysfunction
- Cultural factors

Tic Suppression

- Small
- Medium
- Large
- Extra-large

Tic Suppression - Small, Medium and Large

- Small – Commonly used
 - Clonidine - short acting
 - Guanfacine - longer acting
- Medium – Not commonly used
 - TCAs
 - Benzodiazepines

Tic Suppression - Large

- | | |
|----------------------------|----------------------------|
| ■ Old neuroleptics | ■ New neuroleptics |
| ■ Pimozide (Orap®) | ■ Clozapine (Clozaril®) |
| ■ Fluphenazine (Prolixin®) | ■ Risperidone (Risperdal®) |
| ■ Haloperidol (Haldol®) | ■ Olanzapine (Zyprexa®) |
| | ■ Quetiapine (Seroquel®) |
| | ■ Ziprasidone (Geodon®) |
| | ■ Others |

Tic Suppression - Larger Botulinum Toxin

- Single muscle
- Long acting
- Reversible

Tic Suppression - Largest Behavioral Neurosurgery

- Neurosurgery
 - Few cases
 - Most cases have been very complex
 - Results for tics are mixed
- Deep Brain Stimulation
 - A few dramatic cases
 - 10-15 patients
 - 30-40 cases worldwide
 - Learn from our experience with neurosurgery

Comprehensive Behavioral Intervention for Tics

- Relaxation training
- Awareness training
- Competing response training
- Behavioral analysis

Treatment of OCD

- Cognitive-behavioral treatment
- Medication – Serotonin Reuptake Inhibitors
 - Clomipramine (Anafranil)
 - Fluvoxamine (Luvox)
 - Paroxetine (Paxil)
 - Sertraline (Zoloft)
 - Fluoxetine (Prozac)
 - Citalopram (Celexa)
 - Escitalopram (Lexapro)
 - Venlafaxine (Effexor)
- All permutations

Treatment with SRIs

- Short Term Treatment 6-10 weeks
 - 25-30%
- Long term treatment 18-24 weeks
 - 40-50%
- Over one year
 - >50% ?

Treatment of OCD

- Cognitive-behavioral treatment
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SSRIs: Complications of Treatment

- Activation
- Bipolar switching
- Celebration
- Dimensional issues and comorbid Disorders
- Evolving psychopathology
- Frontal lobe symptoms—apathy
- Gastrointestinal symptoms
- Hematological
- Inhibited growth

Activation

- Many other terms
- Activation implies no specific etiology
- Range of severity
 - Mental restlessness
 - Physical restlessness
 - Hyperactivity
 - Disinhibition (complex and goal directed behaviors)

Activation

- Many medications cause activation
 - Stimulants
 - During treatment and withdrawal
 - In certain patients – developmentally disabled
 - Sedatives
 - Benzodiazepines
 - Antihistamines
 - Tricyclic antidepressants
 - SSRIs

Activation

- Clinical Implications
 - Common problem
 - Shortly after starting meds or a dose increase
 - Dose related
 - Reversible
 - **NO** long term prognostic implications
 - Differential diagnosis only an issue when activation becomes disinhibition
 - Younger children with minimal brain dysfunction?
 - Unknown relationship to suicidal ideation/behavior

Bipolar Switching

- Much more rare
 - Longitudinal studies
 - Large clinical trials
- Much more specific
 - Euphoria and grandiosity
 - Not just irritability
- Probably greater prognostic significance
 - First episode of bipolar disorder

Manic Episode: Hallmark Symptoms

- Distinct period of **abnormal elevated, expansive** or irritable mood lasting > 7 days
- Three of the following if euphoric, four if irritable
 - 1) **grandiosity**
 - 2) **decreased need for sleep**
 - 3) distractibility
 - 4) pressured speech
 - 5) flight of ideas/ racing thoughts
 - 6) **increased goal-directed activity** or psychomotor agitation
 - 7) increased involvement in pleasurable activities with potential for painful consequences

Leibenluft et al., 2003

Bipolar Switching

- Patient related, not drug related
 - High risk patients for bipolar disorder
 - Positive family history
 - Polysymptomatic and evolving presentations
- Not dose related, but duration of exposure
 - 2-4 weeks on stable dose
 - After a period of improvement
 - ? Association with receptor change
- Not so reversible with discontinuation

Bipolar Switching

- Critical to differentiate from activation
- Children with depression and anxiety will not get treatment (antidepressants)
- Children will get only palliative care (neuroleptics, mood stabilizers ± stimulants)

Celebration

- Children constrained by depression and anxiety
- Children who improve celebrate
- Same time course as manic reaction
- **NO** euphoria or grandiosity
- Occasional bad judgment

Dimensional Issues and Comorbid Disorders

- Sometimes so ill with anxiety and depression cannot identify other issues
- When well issues present as if for the first time
 - ADHD
 - Poor self-control skills
 - Conduct or character disorder
- Same time course as celebration and manic reactions

Evolving Psychopathology

- Evolving anxiety disorders
 - SAD
 - OCD
 - GAD
 - SoP
- Evolving mood disorders
 - MDD
 - Recurrent MDD
 - MDD + comorbidity
 - Bipolar disorder
- Mixed anxiety and mood disorders

Frontal Lobe Symptoms: Apathy

- Hoehn-Saric et al., 1990, 91
- Apathy, not depression
- Apathy, not sedation
 - Disinterest
 - Lack of motivation
 - Not caring about consequences
 - Blase', Numb, Lack of emotional responsiveness
 - "Poop out"

Hematological

- Hematological
 - Easy bruising - rare

Inhibited Growth

- Weintraub et al., 2002
 - 4 Case Reports
 - Decreased growth not associated with loss of weight
 - ? Mediated by serotonin induced growth hormone suppression
- Nilson et al., 2004
 - Fluoxetine vs placebo
 - 19 weeks

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End of Part II

Please click on the link below to continue to Part III

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Part III

- Treatment of Co-Occurring Conditions (continued)
- PANDAS
- Parenting and Problem Behaviors

(viewing time approximately 54 minutes)

Treatment of ADHD and Tics

- Big Issue – Do stimulants cause tics *de novo* or permanently increase tic severity?
- Bottom Line
 - No
 - Some will start having tics or increase in severity during stimulant treatment, but not permanent
 - But natural course + stimulant treatment can appear to cause tics *de novo* or permanent increase in severity

Informed Consent*

- Parent education about the complexity of presentation and relevant information about each disorder
- Tics go up and down, usually tics increase with excitement and stress and go down with calm focused activity.
- Predictable exacerbation each year – starting and ending school, Winter holidays, vacations, parties etc.
- Over the lifetime tics tend to decrease in mid to late teens. ? Risk of stimulants - less than 13 years > 14 and older
- Controlled trials - tics go up(20-30%), go down or stay the same with stimulant treatment
- When tics increase on stimulants there is a reasonable chance they are reversible with discontinuation.
- "If you are willing, you need to understand that your kids tics may go up and not come down. Or if there are no tics now that tics may start and continue – very unfortunate and unlucky, it might have been his time for such a change." **Parents really have to understand this.**

* This is not a complete list, rather a list of important issues to be considered by all

PANDAS

- Pediatric
- Autoimmune
- Neuropsychiatry
- Disorders (Tics/OCD)
- Associated with
 - Streptococcal infections
 - And perhaps other bacterial or viral infections

Treatment for PANDAS

- Immunological
 - Steroids
 - Plasmapheresis
 - Intravenous immunoglobulin
- Pharmacological
 - Antibiotic prophylaxis
 - Anti-obsessional agents

Plasma Exchange and Intravenous Immunoglobulin Lack Proven Benefit and Carry Risk for Children with PANDAS, Tourette's Syndrome, or OCD

Publicity surrounding small experimental trials at NIMH has caused parents to seek unproven interventions in treating children with pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections (PANDAS). **NIMH advises that these patients should not be treated outside of clinical research protocols.**

NIMH is studying the effects of plasma exchange, also known as plasmapheresis, and intravenous immunoglobulin (IVIG) on clinical symptoms in PANDAS. NIMH views these interventions as experimental. But some parents are seeking plasma exchange or IVIG as treatment for children with PANDAS, Tourette's syndrome (TS) or obsessive-compulsive disorder (OCD).

NIMH data provide no evidence of benefits for either plasmapheresis or IVIG in children who lack streptococcal-triggered symptoms. Even in children with streptococcal-triggered symptoms, the effectiveness of these interventions is not proven at this time. More importantly, both **plasmapheresis and IVIG are considered to be serious medical interventions that carry a potential for significant adverse reactions that is not fully understood in children with either TS or OCD.** Furthermore, the use of IVIG resources for non-approved indications such as TS or OCD can have significant adverse public health consequences.

Parents and clinicians are urged to be aware of the experimental nature of these interventions, the lack of evidence for their utility in the treatment of TS or OCD, and their potential for risks in children with these disorders. Caution dictates that these interventions should be used only in the setting of NIH-approved clinical research protocols. Parents of children with streptococcal-triggered neuropsychiatric symptoms who want to consider these experimental treatments are encouraged to enroll in ongoing NIMH or other clinical studies. Further information regarding those studies is available at: <http://intramural.nimh.nih.gov/research/pdn/web.htm>.

PANDAS Treatment

- Send patients with PANDAS to a center for the PANDAS Syndrome that is conducting clinical trials
- Don't treat elevated antibody titers?
- Don't treat exacerbations of tics/OCD with anti bx or immune treatments?
- Use conventional treatment – Medication and CBT

Parenting and Problem Behaviors

- Monitoring deficits
- Reciprocal, coercive interactions

G. R. Patterson et al., 1989

Coercive Interactions

- "Power struggles"
- Negative reinforcement paradigm
- Reciprocal interactions
- Methods of coercion escalate over time

Negative Reinforcement

- When a behavior is successful in decreasing a noxious stimuli, it is more likely to re-occur next time the noxious stimuli is presented.

Positive Reinforcement

- When a behavior is followed by an experience that makes it more likely that the behavior will recur
- Reward is in the eye of the beholder
 - A reinforcer can be anything
 - A reinforcer is person specific

Reciprocal Interactions

- Each child behavior elicits a parental response
- Each parent behavior elicits a child's response
- "Tit for tat"

Escalation of Behaviors

- Coercive behaviors are not 100% effective over time
- Parents and children get frightened when they do not feel in control
- Try new intervention when old interventions does not work
- Parents and children experience of "learned helplessness"

Coercive Interactions and Pathologic Behaviors

- For parents, physical and emotional abuse can be considered "end stage" coercive behaviors
- For children, suicide gestures and running away can be considered "end stage" coercive behaviors
- Children have the "trump cards"
- But children always lose

Coercive Interactions and Positive Reinforcement

- Attending to maladaptive behaviors increases the likelihood that they will recur
- Engaging a maladaptive behavior will increase the likelihood that it will recur
- Sometimes parents and children inadvertently reward each others inappropriate behaviors

Monitoring

- Supervision
- Knowing where the child is
- Knowing what the child is doing
- Knowing who the child is with
- Attending to the details

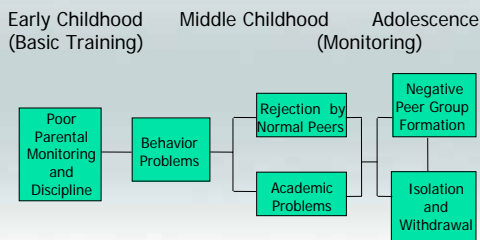
Supervision

- Effective supervision leads to knowledge of child and parental self-awareness
- Recognizing *patterns* of behavior and interaction

Power struggles and the Lack of Supervision

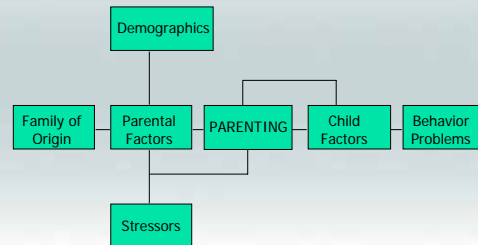
- Usually are independent
- A parents behavioral style may lead to problems with either coercive interaction or monitoring
- Too many power struggles can lead to poor parental supervision
- "Learned helplessness" vs. Denial

Parenting and Behavior Problems



adapted from Patterson et al., 1989

Parenting and Behavior Problems



Patterson et al., 1989

How Children Develop Behavior Problems

- Power struggles and the lack of supervision facilitate the development of maladaptive behavior
- Neither parent nor child are aware of the powerful behavioral forces shaping their interaction
- Decreasing or preventing problem behaviors in children is dependent upon decreasing power struggles and increasing effective supervision

Behavior Programs for Children

- Structure (Child's Daily Schedule)
- Structure + Specific Rewards
- Structure + Specific Rewards + Punishments
- Relapse prevention

Goals for Behavior Program

- Parents experience what it *feels* like to be successful and in charge
- Parents experience what it *feels* like to
 - 'ignore behavior'
 - 'set firm limits'
 - 'be consistent' etc.
- Decrease in verbal interactions
- Increase predictability
- Parents increase awareness

Benefits of Improved Parenting

- Child feels competent
- Parents less involved in details of routine
- Decreased verbal interactions
- Child experiences task-reward sequence
 - Rewards are more regular and predictable
- Child generalizes organizational principles to other situations.

Summary

- Power struggles
- Poor supervision
- What to do? -Parent Behavioral Management Training

Books for Families

- **The Explosive Child** by Ross W. Greene, Ph.D.
- **The Out-of-Sync Child** by Carol Stock Kranowitz, M.A.
- **Parenting the Strong-Willed Child** by Rex Forehand, Ph.D. and Nicholas Long, Ph.D.
- **1-2-3 MAGIC** by Thomas W. Phelan, Ph.D.
- **Taking Charge of ADHD** by Russell A. Barkley, Ph.D.
- **Straight Talk about Psychiatric Medication for Kids** by Timothy E. Wilens, M.D.
- **Skills Training for Children with Behavioral Disorders** by Michael L. Bloomquist
- **Defiant Teens** by Russell A. Barkley, Ph.D., Gwenth H. Edwards, Ph.D., and Arthur L. Robin, Ph.D.

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End of Program

Thank you for viewing this presentation.
For more information, view the TSA website at
<http://tsa-usa.org>

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