# Asperger's Disorder: Diagnosis and Treatment

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# Learning Objectives

- Review Asperger's criteria and diagnostic tools
- Review what you can do in your office
- Discuss non-medical treatments for Asperger's
- Review medical treatments for Asperger's





# What does Asperger's Look Like in Your Office?

- Inconsistent eye contact
- Monotone or preachy voice, often loud
- Talks too much & on own agenda
- Limited facial expressions
- Reduced or awkward gestures
- Restricted interests
- Great rote memory
- Clumsy?



## DSM IV: Asperger's Disorder

- Qualitative impairment in **social interaction** (at least 2 of following):
- Impairment in multiple non-verbal behaviors (eye-eye gaze, facial expression, body postures, and gestures to regulate social interaction)
- 2. Failure to develop peer relationships appropriate to developmental level
- 3. Lack of spontaneous sharing of enjoyment or interests with others
- 4. Lack of social or emotional reciprocity



### DSM IV: Asperger's Disorder

- Restricted repetitive & stereotyped beh, interests, activities (1 or more of following):
- 1. preoccupation/interest that is too intense or focused
- 2. Inflexible adherence to nonfunctional routine or ritual
- 3. Stereotyped & repetitive motor mannerisms
- 4. Persistent preoccupation with parts of objects



### **DSM IV: Asperger's Disorder**

- Clinically significant impairment in social, occupational or other areas
- No clinically significant language delay
- No clinically significant cognitive or selfhelp delay
- Not other form of specific PDD



# Difference between Asperger's and HFA?

- Unclear if there is a difference
- HFA: VIQ < PIQ versus A.D.: VIQ> PIQ
- Both often have sensory issues

Kasari et al (2005). *Curr Opinion Psychiatry*. 18(8): 497-50 Witwer et al (2008). *JADD* 38. 38 (9): 1611-24 Sanders (2009). *JADD* 39 (11): 1560-7.



# **DSM V**

- "Autism Spectrum Disorders"
- Combine social-communicative, and restrictive/repetitive interests and behaviors (*includes specific mention of sensory issues*)
- Plus severity level
- Level 1= requiring support
- Level 2= requiring substantial support
- Level 3= requiring very substantial support

www.dsm5.org



# Controversy over DSM V

- Fewer may meet diagnostic criteria?? (Volkmar study-controversial)
- Thus, fewer may qualify for services
- Politically motivated?
- Effect on research

Volkmar (2012 expected). J of Am Acad Child & Adolescent Psychiatry



## How Common are ASDs?

- Prevalence of 1:91 (parent survey)
  - 2007 National Survey of Children's Health Kogan (2009). *Pediatrics*. 124: 109.
- CDC updated estimate from 2004 & 2006 1:110 (Morbidity & Mortality Weekly, 2009)
- 57% increase compared to CDC 2001 & 2002 studies which showed 1:150 using identical research methods (*Morbidity & Mortality Weekly*, 2007)



# Why Is the Prevalence Increasing?

- Broader definition
- Better detection (better tools, more places to get dx)
- Increased community, provider awareness, and acceptance
- Real phenomenon?



## **Diagnostic Shift?**

Prevalence Rates for Mental Retardation, Developmental Delay and Autism for Eight Year Olds for the Years 1993-2007 (Birth Years 1985-1999), from U.S. Dept of Education (IDEA) and CDC (birth) Data



# Actual Phenomena as Explanation for Increased Prevalence?

- California studies 1990s-2006 data shows 7-8 fold increase in prevalence\*
- Including milder cases and earlier diagnosis explains 2.2 fold increase\*
- Diagnostic shift from MR to ASD explains 25% of increase King (2009). *Int J Epidemiol.* 2009 October; 38(5): 1224–1234.
- Effects of increased awareness leading to increase in seeking dx not studied\*
- Concluded environmental factors may be responsible for increase\*

\*Hertz-Picciotti & Delwiche (2009). Epidemiology, 20 (1): 84-90



### Does Autism "run in families"?

- Siblings of ASD have 19 % risk of also having ASD (26% boys, 9% girls regardless of gender or severity of older sib with ASD)
- If 2 sibs in family with ASD, 32% risk additional sib will have ASD
- 15-20% of sibs have milder impairment (like language delays)

Ozonoff et al (2011). Pediatrics, Aug 15 (epub)



# **Twin Studies**

- If identical twin has ASD, 77% male also ASD, 50% female also ASD
- If fraternal twin has ASD, 31% male twin also ASD, 36% female twin also ASD
- If include related cognitive or social delays, risk rises
- Since risk is not 100% in identical twins, suggests environmental factors other than genetics play role in cause of ASD

Hallmayer et al (2011). Arch Gen Psychiatry, 68: 1095-1102.



# What Causes Autism

- Probably no single cause
- Genetic component
  - some genes may make person more likely to have ASD
  - some genes may make person more vulnerable to environmental trigger (traffic pollution? chemicals?)
- Role of parental age?



### Etiologic Model of ASD Including Gene-Environment Interaction



# What Does NOT Cause Autism?

- Vaccines
- Parenting style



# American Academy of Neurology\*

- Level One
- Routine Developmental Surveillance
- ALL well visits from infancy through school age
- Use developmental screening tools
- PEDS; CDI; ASQ; Brigance Screens

\*Filipek et al (2000). *Neurology*, 55:468-479



AAN: Absolute indications for immediate evaluation\*

- No babbling by 12 months
- No gesturing by 12 months
- No single words by 16 months
- No 2 word phrases by 24 months
- Loss of language at any age

But kids with A.D. have normal early language!

Filipek et al (2000). *Neurology*, 55:468-479



### Tools You Can Use: general ASD

- Level 1 screen MCHAT 16-30 months, parent report
- Level 2 screen Screening Tool for Autism in Toddlers (24 – 48 months), interactive, @15 minutes



# Tools You Can Use: Asperger's specific

- Australian Scale for Asperger's Syndrome (parent or teacher report, grades 3-8)\*
- Gilliam Asperger's Disorder Scale (parent report, ages 3-22)
- Children's Asperger Syndrome Test-CAST (parent or teacher report, ages 5-18)\*

Free, downloadable



# Australian Scale for Asperger's Syndrome (sample questions)

- 1. Does the child lack an understanding of how to play with other children? For example, unaware of the unwritten rules of social play?
- 11. Does the child take a literal interpretation of comments? For example, is confused by phrases such as "pull your socks up," "looks can kill" or "hop on the scales."
- 17. Does the child read books primarily for information, not seeming to be interested in fictional works? For example, being an avid reader of encyclopaedias and science books but not keen on adventure stories.
- 21. Does the child become unduly upset by changes in routine or expectation? For example, is distressed by going to school by a different route.

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# "Gold Standard" Tools for ASD

- Autism Diagnostic Interview-Revised (ADI-R)- structured caregiver interview. Takes 1 hr + to administer/score
- Autism Diagnostic Observation Schedule (ADOS, ADOS-2)-interactive, ages 12 months-adult. Takes approximately 45-60 minutes



# Simple Activities in Your Office

- Sound-producing toy
- Bubbles
- Pretend play
- Conversation
- Watch for joint attention, requesting, reciprocity, use of gestures, functional play, imaginative play



### Videos

- www.autismspeaks.org
- Video glossary



### Psychological Measures Often Used in Dx of ASD

#### Autism measures:

- ADI-R
- ADOS

#### **Checklists:**

- Social Responsiveness Scale
- Social Communication Questionnaire
- CBCL or BASC

#### Adaptive behavior:

• Vineland-II

#### **Cognitive measures:**

- Differential Abilities Scales (DAS)
- Mullen Scales of Early Development

#### Language and other measures:

- Communication and Symbolic Behavior Scales (CSBS)
- CELF-4, CELF-P2
- Sequenced Inventory of Communication Development (SICD)
- PPVT
- Preschool Language Scales
  (PLS)
  Children's

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# Asperger's: What is it Like?

- "Monkey in the Middle" and you are always the monkey
- Anthropologist from Mars
- Everyone knows rules of game but you





- Some describe regression in skills occurring between 18-24 months (13-48% of cases)
- Typically, social impairment, sensory issues continue lifelong (stereotypical and aberrant behs may get better\_
- Some 3-25% lose diagnosis & function WNL for cognitive, adaptive, social and class placement
- Most kids with ASD improve functioning, especially with intense intervention

Helt et al (2008). *Neuropsychol Rev*; 18 (4): 339-66 Billstedt et al (2007). *J of Child Psychol & Psychiatry*, 48 (11): 1102-1110

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### Residual Issues after "Recovery"

- ADHD
- Subtle language issues
- Tics
- Anxiety

Helt et al (2008). Neuropsychol Rev; 18 (4): 339-66



# **Mental Health Co-Morbidities**

- Anxiety 54-55%
- NVLD 51%
- AD/HD 44-48%
- Mood/Depression 12-37%
- Tic disorder 15%
- OCD 6%

de Bruin et al (2006). *JADD*, 37 (5): 877-886 Mukaddes et al (2010). *World J of British Psychiatry*, 11(2): 486-492



## **Medical Co-Morbidities**

- Seizures
- Gastro-intestinal
- Sleep



# Epilepsy and ASD

- Risk of epilepsy among those with ASD, largely a function of intellectual disability (21.5% of ASD with I.D.; 8% of ASD w/o I.D.) \*
- Risk of ASD among those with epilepsy, 32% based on parent response to ASD screening questionnaire \*\*

\*Amiet et al (2008). *Biological Psychiatry*, 64 (7): 577-582. \*\*Clarke et al (2005). *Epilepsia*, 46 (12): 1970-1977.



### **GI** Issues and Autism

- Higher incidence of constipation (33.9% vs. 17.6%) and feeding issues (24.5% vs. 16.1%) but no difference for other GI issues
- Common for both ASD and non-ASD (>70% by age 18)
- Constipation and feeding likely due to behavioral issues, not "leaky gut"???
- Special diets, anti-fungal meds not indicated for every person with ASD
- Consider GI issues, especially for non-verbal

Ibrahim et al (2009). *Pediatrics,* 124(2): 680-686. Gorrindo et al (2011). *Autism Research*. (Jan 2012, epub)



# Sleep and ASD

- 44-83% of those with ASD versus @ 30% of non-ASD
- Insomnia, delayed onset, night waking, early waking, decreased need for sleep
- Causes include:
  - differences in neurotransmitters (GABA, serotonin, melatonin)
  - -ASD symptomatology (anxiety, sensitivity to stimuli)

Effects of poor sleep: irritability, fatigue

Malow et al (2006). Sleep, 29 (12): 1563-1571.


## But, Can't Just Diagnose!

• Must link to intervention and resources ......which interventions are best?



## **Sleep Interventions**

- Routines 20-30 minutes
- Avoid stimulation 1 hr before sleep
- Adequate exercise during day
- Regular sleep time
- Teach to fall asleep independently
- Sleep environment (night light? door open?)
- Back to bed if night-waking
- Reward in a.m. for staying in room at night
- Melatonin can be helpful



## Being an Educated Consumer of ASD Services

- Hundreds of interventions
- What is the evidence?
- How will we know if it is helping?



#### Beware!



- What is popular may not be effective
- What is effective may not be popular
- No treatment is really "benign" (if it does not work, it has wasted child and family's time and money)



#### **Non-Biological Interventions**



National Autism Standards, 2009; Association for Science in Autism Treatment (ASAT)



#### Non-Biological Interventions: Green Light (Probably Efficacious)

- Applied Behavioral Analysis (ABA) programs
- Joint Attention Intervention
- Modeling
- Naturalistic Teaching Strategies
- Peer Training Package
- Pivotal Response Treatment
- Visual Schedules
- Self-management programs
- Story-based Intervention Package

National Autism Standards project (2009)



## Non-Biological Treatments: Yellow light (Possibly Efficacious)

- Augmentative and Alternative Communication
- Cognitive Behavioral Intervention
- Developmental Relationship-based Treatment (DIR, RDI)
- Exercise
- Imitation-based InteractionLanguage Training (Production)
- Massage/Touch Therapy
- Music Therapy
- Peer-mediated Instructional Arrangement

National Autism Standards project (2009)



Non-Biological Treatments: Yellow light (Possibly Efficacious) cont.

- Picture Exchange Communication System
- Scripting
- Sign Instruction
- Social Communication Intervention
- Social Skills Package
- Structured Teaching
- Technology-based Treatment
- Theory of Mind Training National Autism Standards project (2009)



## Non-Biological Treatments: Red light

- Facilitated communication
- Secretin
- Psychoanalysis
- Auditory Integration Training
- Gluten- and Casein-Free Diet
- Sensory Integrative Package\*
- "unestablished treatments"

National Autism Standards project (2009)



## Components of Effective Interventions for ASD

- Key components of effective treatment likely to include:
  - careful behavioral observations
  - data collection
  - parent education and involvement
  - program for generalization
  - social skills and communication focus!!!!!



#### **Behavioral Treatment**



# Basic Principles of Managing Behavior

- A behavior that is reinforced is likely to happen again
- 2. A behavior that is not reinforced is not likely to happen again

If we like the consequences, we will repeat the behavior; if we don't like the consequences, we won't repeat the behavior



#### The ABCs of Behavior Management

**A** = Antecedent

What happens before the behavior occurred?

- **B** = Behavior itself
- **C** = Consequence What happens immediately after the behavior occurs?

In order to modify behavior, change the A or the C



#### 3 Reasons Why Behavior Occurs

- 1. Self-Stimulatory/Repetitive/Compulsive Behaviors
  - These are internally reinforced
  - They provide sensory-input
  - May occur more when under stress
    e.g. spinning, hand movements



#### 3 Reasons Why Behavior Occurs

- 2. Want something: Attention, Tangible object
  - Positive or negative behavior can attract attention
  - When preferred object is removed, the behavior occurs
  - Often occurs when a specific person is present



#### 3 Reasons Why Behavior Occurs

#### 3. Escaping a Situation or Avoiding a Situation

- From a demand
- From a difficult task
- From a person who challenges the child



#### **Preventing Behavior Problems**

- The best way to manage problem behavior is to prevent it from happening
- Know the child's limits and triggers
  - Sounds, lights, new situations, time of day
  - If these situations can't be avoided, can you reduce the stress?
    - Ear plugs, hats, sunglasses
    - Do errands when there are few crowds
- Assume that a change may need to occur and prepare child (have a back-up plan)

#### **Preventing Behavior Problems**

- Differentiate between "inappropriate" behavior and "unusual" or "embarrassing" behavior
- Consider whether the behavior has to be changed
  - Is someone at risk? Is property being damaged? Does the behavior occur infrequently?
  - If child is spinning something in public, is this the behavior to target?



#### **Preventing Behavior Problems**

- Provide structure, routine, and predictable results whenever possible
- Rehearse appropriate behavior and have child repeat appropriate comments
- Communicate with child about instructions when he or she is free from distractions
- Watch for too much talk, too much emotions



#### Identifying Positive Reinforcers

- Not simply something tangible
- Can be time spent with parent, extra time on a preferred task, a special opportunity
- Gradually increase the number of appropriate responses to earn the same reinforcer



Behavior	Consequence	did child learn?
	Behavior	Behavior    Consequence



## **Social Treatments**

- Why are social situations challenging for kids with Asperger's?
- Not necessarily true that they don't want interactions
- Difficulty reading social overtures
- Trouble participating in give and take of conversation
- Not sure how to make small talk



## **Social Interventions**

- Social Skills Groups
  - Pros: teach specific skills, such as eye contact or waiting one's turn
  - Cons: not real-life
- Exposure, exposure, exposure!
- Formal:
  - Clubs, religious groups, Y, classes
- Informal:
  - Library, playground, diner





## **Social Interventions**

- Arrange playdates
  - Brief, structured, provide lunch, outche neutral place
  - Plan a craft, bake cookies a coope
- Social Stories, Comic Book Conversati
- Training peers (FLYFLM)
- Teach child how to play
- Cool clothes, cool toys
- TELL





## Hidden Curriculum

- What teachers like and don't like
- Relationships
- How to dress
- Bathroom rules
- Eating
- Cursing
- Community activities (library, etc)
- On the job behaviors
- Interacting with police



#### Sample Hidden Curriculum for Bathroom Rules

- For boys:
- -don't choose urinal next to someone else
- -don't make sustained eye contact
- -don't pull your pants down (unzip, etc)
- -don't talk to others around you



## Relationships

- Steps of relationship
- Don't be a stalker
- Can't get away with things "cooler" people can
- Absolute rule: "Stop" means "stop"

"No" means "no"

- Signals of romantic interest (flirting is mostly nonverbal)
- Internet (Face book, Match.com, etc) & safety



#### **Advocacy Issues**

- Autistic Self-Advocacy Network
- Nothing about me, without me
- Neuro-typicals, Aspies
- Ari Ne'eman



#### **Biomedical Interventions**

- Pharmacological treatments
- Complementary/Alternative approaches
- Dietary approaches



#### Pharmacologic Treatment Goals

- Maximize functional independence
- Improve quality of life
- Alleviate family distress
- Facilitate development and learning
- Promote socialization
- Reduce interfering maladaptive behaviors



Pharmacological Interventions in ASD (Medicaid study)

- 56% use at least 1 medication
- Medication used to treat symptoms (no "Autism medication")
- Most commonly prescribed meds:
  - -Neuroleptics 31%
  - -Antidepressants 25%
  - -Stimulants 22%

Mandell et al (2008). Pediatrics, 12 (3): 441-448



# Pharmacological Interventions in ASD- Medicaid study (cont)

- Most likely to be prescribed when: -male
  - -increased age
  - -white
  - -in foster care
  - -has additional psychiatric diagnosis
  - -using more ASD services

Mandell et al (2008). Pediatrics, 12 (3): 441-448



## **Common Target Symptoms**

- Irritability, agitation, aggression, self-injurious behavior
- Obsessive-compulsive symptoms
- Mood instability
- Insomnia
- Inattention, Hyperactivity, Impulsivity
- Social Anxiety



#### Psychotropic Medications Used for ASD

- Atypical Neuroleptics (Risperdol, Abilify, Zyprexa, etc)
- SSRIs (Prozac, Lexapro, Celexa, Paxil, etc)
- Stimulants (Ritalin, Adderall XR, Concerta, etc)
- Mood stabilizers (Depakote, Lithium, Tegretol, Topamax, etc)
- Other (Strattera, Clonidine, Clonopin, etc)
- Namenda?

Cartwright (2008), YAI conference



## **Cautions re: Medications**

- Medication may reduce problem behaviors but does not teach skills!
- Need to collect data to determine effectiveness
- Side effects:
  - Atypical antipsychotics-weight gain, extrapyramidal symptoms
  - Antidepressants-drowsiness, dry mouth, insomnia, sexual side-effects, less appetite

- Mood stabilizers-drowsiness, dizziness, g.i. problems, less appetite

-Stimulants- less appetite, insomnia, irritability, tics?



#### The Pharmacologic Treatment Dilemma: To treat or not to treat?

- Risk of behavior/medical condition
- Potential benefits of medication
- Behavioral strategies tried

- Potential risks of medication
- No behavioral strategies tried
  - School modifications?

Target symptoms: sleep, aggression, anxiety, SIB, depression, inattention, hyperactivity, impulsivity, tics


## Weigh the risks

Johnnie is 4 years old. He engages in many self injurious behaviors such as head banging and slapping himself. He takes over 1 hr to initiate sleep, and frequently awakens overnight. Many behavioral strategies have been attempted. Would you medicate?

#### Why or why not?



Dora is a 7 year old child diagnosed with Asperger's. She is in a mainstream class. Teacher complains she is often off-task, blurts out answers and makes inappropriate statements. She suggests parent speak with physician regarding ADHD meds.

#### Would you medicate?



Autism Treatment Network Medication Decision aid

- www.autismspeaks.org/science/programs
- Interactional tools
- Behaviors that may be helped by meds
- Behaviors unlikely to be helped by meds
- Conversations with parents



### **Gluten-Free/Casein-Free Diet**

- Casein is mostly found in milk products
- Gluten is in wheat, rye, barley, oats
- Studies of effectiveness are mixed (effective for casein/gluten allergies versus effective for autism?)
- Cons: expensive, time-consuming, at risk for nutritional deficiencies (calcium), taste?
- If going to try it, get nutritional guidance to do safely, 3 month trial



#### Nutritional Intervention Recommendations

- Multi-vitamin & mineral supplement
- Foods high in omega-3 fatty acids or fish oils
- Avoid hydrogenated oils
- Foods high in magnesium & anti-oxidants such as vitamins A, C & E
- Any dietary treatment needs careful monitoring to insure child is getting proper nutrition



### **Educational Strategies**

- Use areas of interest for assignments, gradually broaden to related area
- Consider shortening homework/classwork tasks
- Limit perseverative questions to specific time
- Provide safe place/person for child to go to preventively
- Focus on comprehension not rote memorization



## **Visual Motor Strategies**

- Occupational therapy, adaptive p.e.
- Limit unnecessary copying/writing
- Provide large enough space to write
- Assistive tech; laptops,tape recorders
  Phone "aps" for organization
- Allow more time for writing tasks
- Use graph paper for lining up math problems



# Driving

- Challenges: spatial difficulties, impulsivity, reduced judgment, need for multi-tasking
- May take longer to learn
- Country roads, empty parking lots, private lessons
- Over-learn before drive in traffic
- GPS= friend



## College

- Is it for everyone?
- Compared to high school: less structure, less teacher-student contact, more responsibility
- Community college versus 4 year
- Small versus large college/class sizes
- Supports
- Dorms (single room? space? bathrooms)
- Money management
- Academic majors
- Role of the parent



## **College Supports**

- Disability office (self-disclosure, mentor?)
- Accommodations (tutoring, extended time, notetaking, reduced course load, quiet test room, etc)
- Counseling Office
- Knowing when/how/what to say in class
- Colleges with special ASD programs (Fairleigh Dickenson, Dowling College in LI, etc)
- Volunteer!
- Special interest clubs
- Tendency to be "perpetual student"



#### Resources

Clinical services:

The Autism Center-UMDNJ (973) 972-8930 (evaluations, SW, workshops, ABA, etc) Children's Specialized Hospital (888) CHILDREN (dev screening clinic, evaluations, therapies, ABA, underserved project)

> Websites:

www.Aspennj.org

www.Autismnj.org

www.Aspergersyndrome.or

Book: Romanowski, P. (2011). The Parents Guide to Teaching Kids with Asperger Syndrome and Similiar ASD's: Real-life Skills for Independence



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