Statistics

1. 10 years ago autism was considered a rare disorder affecting 1 in 10k children – now it’s estimated to affect 1 in 150 (1 in 58 in the UK).
2. Recent studies have estimated that the lifetime cost to care for an individual with an ASD is $3.2 million.
3. ASDs are reported to occur in all racial, ethnic and socioeconomic groups, yet are on average 4 to 5 times more likely to occur in boys than in girls.
4. In comparing autism to Asperger’s in terms of prevalence, the ratio is about 5:1.
5. 10 – 17% annual growth
6. The cost of lifelong care can be reduced by 2/3 with early diagnosis and intervention.

Autism Myths & Truths

Myths

- Most autistic people are like the movie character Raymond Babbott (Dustin Hoffman) in the movie Rain Man.
- Autistic persons cannot show love or empathy towards others.
- Children with autism can’t make friends.
- Autistic persons are dangerous.
- All autistic are savants.
- Autistic people are nonverbal.

Truths

- All autistic people are very different from one another, and autistic people have strengths, and difficulties, with social communication, learning, etc.
- Many autistic people have very strong and empathy skills.
- Many autistic people can learn many skills.
- Many autistic people can act out in angry ways due to sensory overload/frustration, etc., but not out of malice.
- Majority of autistics have average to ordinary skill sets. Only 10 known savants in the world today.
- Classic autism is a very rare condition. Many traits can be diagnosed at much faster rate than classic autism.
- Children with autism have exceptional innate abilities but many others have exceptional language abilities. This type of autism is being diagnosed at much faster rate than classic autism.
Autism Defined (DSM-4)

Autism – Autism Spectrum Disorders (ASD’s) → Range of neurological/neurodevelopmental disorders characterized primarily by:

1. Social Impairments:
   - Misperceive nonverbal body cues from others, i.e., poor eye contact
   - Failure to respond to name
   - Poor empathy can’t extrapolate what others are thinking because they don’t look or understand others’ facial cues.

2. Communication Difficulties:
   - Also varies in severity from nonverbal to milder impairments
   - May refer to self in third person
   - Speech delay

3. Restricted, Repetitive & Stereotyped Patterns of Behavior: Vary in severity from repetitive obsessive play to head banging, rocking, bittling etc.

**Insight:** Under DSM-4 diagnosis required 6/12 traits in categories 1-3.

Autism Defined (DSM-5)

Criteria have been reduced to 2 Categories: Basically 1 & 2 on DSM-4 combined

1. Social Communication Impairment: Shows deficits in:
   - Social-emotional reciprocity (approach/sharing/back & forth conversation)
   - Nonverbal communication (eye contact, gestures)
   - Developing, maintaining & understanding relationships (friend making, adjusting to new social contexts, absence of interest in peers.)

2. Restrictive /Repetitive Patterns of Behavior, Interests & Activities:
   - Stereotyped or repetitive motor movements
   - Insistence on sameness, inflexibility to change in routines
   - Highly restricted, focused interests
   - (NEW) Hyper or hypo-sensitivity to sensory input: indifference to pain, cold, sound, touch

3. Early neurodevelopmental etiology but may not manifest until demands exceed capacities

4. Marked disturbance in social, emotional & occupational functioning

5. Levels of Severity:
   - Mild (requiring support)
   - Moderate (substantial support)
   - High (very substantial support)

**Insight:** Under DSM-5 diagnosis requires 2 traits of #1 and 2/4 for #2.

Other Changes in DSM-5

- Symptoms from current & past history
- Additional evaluation for genetic causes, i.e. Fragile X Syndrome, Rett Syndrome
  - Level of language and intellectual disability
  - Presence of medical conditions, i.e. seizures, anxiety, depression, GI problems
- Social Communication Disorder: If there is no repetitive/restrictive behaviors (not part of ASD’s group)
- PDD-NOS, Childhood Disintegrative Disorder blended into ASD as well
- Rationale for Change: Same symptoms scored in different categories → overdiagnosing

(www.autismspeaks.org)
Other Autism Characteristics

- Boys 4x as likely to have autism
- Rise in incidence debate?
  - The rise is due to greater public awareness of the diagnosis, greater funding opportunities for kids with diagnosis and a widening of criteria, i.e. ASD’s 1990.
  - Many scholars caution that within the above finding, a true smaller increase may exist in the incidence of autism

Autism Symptoms

<table>
<thead>
<tr>
<th>Early Childhood</th>
<th>Later Childhood</th>
</tr>
</thead>
<tbody>
<tr>
<td>No babbling or pointing by age 1</td>
<td>Impaired ability to make friends</td>
</tr>
<tr>
<td>No single words by 16 months or 2 word phrases by age 2</td>
<td>Impaired ability to initiate or sustain conversation</td>
</tr>
<tr>
<td>No response to name</td>
<td>Absence or impairment of social or imaginative play</td>
</tr>
<tr>
<td>Loss of language (which may be linked to neurological slow down)</td>
<td>Stereotyped, repetitive or use of unusual language</td>
</tr>
<tr>
<td>Poor eye contact</td>
<td>Restricted areas of interest/abnormal intensity or focus</td>
</tr>
<tr>
<td>Excessive lining up of toys or objects</td>
<td>Preoccupation with certain objects or subjects</td>
</tr>
<tr>
<td>No smiling or social responsiveness</td>
<td>Inflexibility with regard to routine change</td>
</tr>
</tbody>
</table>

Asperger’s Disorder

- Former subset of Autism (DSM-4) and those who were given diagnosis pre DSM-5 (May 2013) will keep it – no reevaluation
- Language impairment less or non existent – other 2 traits are
- May have high IQ
- Specific traits like memory for certain things may be accentuated or superior
Famous People Who May Have Had Asperger’s

Organization Of Autism (DSM-4)

Persisute Developmental Disorders

Autism

Asperger’s

PDD-NOS

Childhood Disintegrative Disorder

Rett Syndrome

Organization Of Autism (DSM-5)

Autism Spectrum Disorders

Include traits for PDD, Asperger’s, Childhood Disintegrative Disorder, but they are no longer diagnostic sub-categories

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Neurological Implications

- Brain growth increases rapidly in first year then decreases significantly (Brains are average size or larger after major areas of development occur.)
- Changes in brain don’t arise after birth but rather the developmental template is being set neurologically in 1st two trimesters in life.

Major Impacted Areas:
- Forebrain/Frontal Lobe: Atypical development (clusters of more white matter/clusters of less)
- Limbic System: Actually larger but nerve cells smaller
- Larger amygdala but less white matter between this and frontal lobe = more hyperarousal but less connection to forebrain to shut down system
- Cellular irregularities in cerebellum (posture/locomotion/smaller cerebellar vermis), language center
- Impaired connection between right and left hemisphere

White and Dark Matter?

Suspected Causes

- Genetic predisposition
- Environmental factors (epigenetics)
- Combination of genetic and environmental factors
- Vaccines, pesticides, chemicals, diet
- Increasingly stressful world and exposure to it: How does stress affect neurological development?
- Functional Disconnection Syndrome: One side matures slower than the other causing imbalances and thus poor communication neurologically.
- Prenatal environment
- Infectious processes: Maternal Antibody Theory
Sensory Processing Disorder

- Definition: Dysynchronous action of nervous system (road highway analogy) Not in DSM-5.
- Ability to attend to, discriminate and filter out sensory information of the 5 (7) senses (touch, taste, vision, hearing, smell) plus movement/position in space – proprioception
- Hyper/Hypo → Sensory Seeker/Avoider
- Sensory integration refers to ability to take info from environment, interpret it in brain and formulate a plan of action (Kerstein 2008)
- High Co-morbidity with ADHD

Sensory Processing Disorder

Nerves Fire (Hyper/Hypo)

Sensory Info In

Child Acts Out

Amygdala Processing

Lack Of Engagement Forebrain

High Co-morbidity with ADHD

Sensory Processing Disorder

<table>
<thead>
<tr>
<th>Sense</th>
<th>Hyper</th>
<th>Hypo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tactile (touch) → Skin</td>
<td>Dislikes getting hands dirty/certain clothes</td>
<td>Messy, T-shirts in Winter, touches everything</td>
</tr>
<tr>
<td>Taste → Tongue (Smell)</td>
<td>Picky eater</td>
<td>Licks/tastes/chews inedible objects</td>
</tr>
<tr>
<td>Smell → Nose</td>
<td>Pregnancy Effect</td>
<td>Drinks old milk</td>
</tr>
<tr>
<td>Auditory → Ears</td>
<td>Headphones (cover ears)</td>
<td>Makes noise for noise’s sake, does not respond to name</td>
</tr>
<tr>
<td>Vision → Eyes</td>
<td>Light sensitivity, frequent headaches</td>
<td>Difficulty locating items, loses place when reading</td>
</tr>
<tr>
<td>Vestibular (Balance) → Inner ear</td>
<td>Avoids playground, sedentary</td>
<td>Constant motion, risk taker</td>
</tr>
<tr>
<td>Proprioception (Body awareness) → Muscles/joints</td>
<td>Uncomfortable with certain movements, can’t calm easily after exercise</td>
<td>Stomps feet when walking, frequent falls on floor, hits/pushes other kids</td>
</tr>
</tbody>
</table>
Autism and Sensory Processing Disorders (SPD)

- SPD doesn’t typically have social delays, repetitive movements, language issues outside of what’s created from their behaviors in handling sensory information.
- DSM-5 for ASD’s has some sensory processing criteria included.

Trauma and Sensory Processing Disorders

- PTSD hyperarousal (on alert) related to non-declarative element of trauma (sensory template)
- Avoidant element similar to sensory avoider
- PTSD symptom is often SPD issue
- Most with PTSD have SPD but may not be true in the opposite direction

ASD’s & SPD’s Treatment

- Beliefs/Guilt/Depression/Loss
- Early Intervention & Detection
- Genetics
- Systemic Treatment
- Environment
To Treat or Not to Treat?

- Before we get to "treatment", a question must be asked as to what is normal versus abnormal and therefore warrants treatment.
- Are we not all in need of treatment in some form or another? Social, emotional, marital, parental, behavioral, linguistic, motor, cognitive, intellectual, etc.
- Does it impair social, emotional, vocational or school life?
- Treatment should be least restrictive.
- Sometimes the impairment comes from the system’s inability to understand the problem (Bias, prejudice, cultural norms, systemic entrenchment).

What is NEUROTYPICAL?

Systemic Treatment

- Family
- Legal
- School
- Funding
- Therapy

ASD’s & SPD’s Treatment

<table>
<thead>
<tr>
<th>Notes</th>
<th>Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early intervention improves prognosis dramatically. Responds well to highly structured programs. On the whole, visual cuing is very helpful in most contexts. Important not to enable victim side of person. Balance is crucial.</td>
<td>Speech/OT/PT/Sensory Diet Medication Mental Health (CBT/Neuro/EMO Reg/BX Mod Experiential)</td>
</tr>
</tbody>
</table>
ASD’s & SPD’s Treatment

1. Applied Behavioral Analysis: Structured, intensive program that uses principles of learning theory, i.e. reinforcement, to reduce behavioral impediments and increase use of desirable behaviors.
   - Most people have distorted view of learning theory, i.e. “Whining Billy.”
   - In schools, ratio affects results.
   - Intensity of parents’ participation and follow-through affects results.
   - Funding issues?

2) Dietary: Theory that food allergies, vitamin deficiencies can cause symptoms of autism, i.e. cases (Corn, gluten, casein/gluten-free diet, Vitamin B6/B12 supplements taken with magnesium. Some parents feel it has positive results. Results of research studies are mixed.

3) Medications: Meant to reduce symptoms that interfere with learning
   - Relationship between psychiatric doctor and parents
   - Side effects
   - Least Restrictive

4) Neuro-Based Treatments
   - Brain-Balance
   - Brain-Gym

5) Experiential Therapy

6) Other Therapy
   - Occupational therapy
   - Physical therapy
   - Speech therapy
   - Emotional regulation
   - Nonverbal body awareness
   - Sensory integration therapy

School Adaptations

A) Orderly Task Presentation
   - Implement predictable daily schedule & routine.
   - Teach tasks as series of simple steps.
   - Actively engage child attention in highly structured tasks, avoid asking child to multi-task (or make it visual).
   - Make beginning and end points clear (prompting, Time Timer).
   - Make it visual: Display model or visual of final goal as guide to what is expected (www.joeschedule.com).
   - Do2learn.com: Free picture cards and visual teaching strategies

B) Careful Communication of Instructions
   - Avoid long sequence of instruction, give step-by-step, using concrete language.
   - Speak clearly and concisely allowing child time to respond to questions.
   - Don’t reword repeated instructions.
   - Code word: “I don’t understand.”
   - Use statements rather than questions to teach whenever possible.
School Adaptations

C) Minimal Distraction
- Arranged room/furnishing to be minimally distracting
- Advance notice of changes and transitions
- Consistent visual cue for changing activities (lights)
- Provide clear visual boundaries segmenting work space into recognizable parts

D) Social & Self-Care Competence
- Good info on circle time and games for children: www.badghill.pair.com/circtime/
- Activity-based learning
- Recruit classmates as occasional partners for activities
- Encourage peer interaction but allow down-time and solitude.
- Address child by name and encourage eye-to-eye contact.
- “Scientific observer” approach to dealing with behaviors (reduce emotional reactivity but stay present)

Autism, Asperger’s, SPD & ADHD – John F. Taylor, PhD  www.ADD-Plus.com

Important Note!!!!

CAUTION: Here’s a checklist to help figure out if an autism treatment, or indeed any medical treatment, is probably too good to be true:
- It treats more than one condition.
- It provides dramatic, miraculous results.
- Anecdotes are offered as proof of its effectiveness, rather than scientific results in large, peer-reviewed journals.
- Specific treatment goals are not identified. The treatment is said to have no risks or side effects (All treatments do).
- It’s the only treatment that’s effective and doesn’t mention the need for systemic treatment in some context.

Sensory Processing Disorders

- Multidisciplinary team
- Family Centered
- Experiential
- Predominant goal is to create through play and activity a more synchronous experiencing neurologically of sensory information and its subsequent behavioral response.
Sensory Processing Disorders

- Occupational Therapy (with Sensory Integration approach): Occupational therapists (OTs) who are trained in sensory techniques will engage a child in playful activities designed to help him/her process the information he receives from his senses in a more typical manner.
- Sensory Diet: “Menu” of activities to do with child

Treatment Tool Box

- My Feelings Workbook: Teaching Nonverbal Body Awareness
  - www.youthlight.com
Tool Box: SPD’s Plus (Kerstein 2011)

1. Have mints and gum with you. These can provide input as well as assist a person who is sensitive to smells.
2. Put a hand towel in the bath or shower instead of a wash cloth. A wet hand towel can be heavy and provide proprioceptive input.
3. Have your child help transfer the wet laundry from the washing machine to the dryer. Again, wet laundry is a nice, natural way to get input.
4. Assign your child the task of removing the jug of milk or juice from the refrigerator each morning. This can provide some “heavy work” in a quick, easy way.
5. Give your younger children access to sand and buckets they can fill and lift.

6. Provide access to Play-Doh.
7. Take family walks each day for about 10 minutes or so.
8. Drop everything and do wall push-ups 1-2 times per day. Make it fun and do it together.
9. Have your child help you water the outside plants. Heavy watering cans provide wonderful input.
10. Give lots and lots of hugs if your child likes them or have a cool high five “hug” you do throughout the day.
11. Create a box of “fidgets” and keep it in a prominent location in your house. Your child can play with those fidgets to get input.
12. Provide crunchy or chewy snacks. Input into the jaw can be very powerful.

13. Offer a quiet place for your child to go if he/she seems over-stimulated. You can decide on this place together and give it a special name such as a “tree house”.
14. If your child enjoys his/her “tree house”, it would be helpful to establish a “tree house” everywhere you go. If you go to your child’s grandparents’ house, for example, you can look around the house together for a special “tree house” in case your child needs to take a break.
15. Carry an MP3 player with you or just headphones. Your child can put the headphones in his/her ears if he/she is distressed by sounds. If you have an MP3 player with you, your child can listen to that as a way to regulate his/her body.

Sources, Resources & Recommended Books

**Autism**
- www.autismspeaks.org

**Asperger’s**

**Sensory Integration**
- http://www.spdfoundation.net
- http://www.sensory-processing-disorder.com

**Recommended Books**
1. *101 Games and Activities for Children With Autism, Asperger’s, and Sensory Processing Disorders*
   - The Complete Guide toADHD, Hyperactive, & Asperger’s by Tony Attwood
   - Out of Sync Child by Carol Stock Kranowitz
   - My Sensory Book by Lauren Kamien
   - My Feelings Workbook by Aaron Wiemeier

**Sources**
- My Sensory Workbook by Kamien 2008
- Disconnected Kids, Stibbe, Robert (2009)
- Developmental Resources Presents

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Presented by: Aaron Wiemeier, MS, LPC

Please Ask Questions Via Chat!

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