Understanding Autism
Spectrum Disorder

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What is Autism?

• Autism spectrum disorder (ASD) and autism are both general terms for a group of complex disorders of brain development.

• These disorders are characterized, in varying degrees, by difficulties in social interaction, verbal and nonverbal communication and repetitive behaviors.

• ASD can be associated with intellectual disability, difficulties in motor coordination and attention and physical health issues such as sleep and gastrointestinal disturbances.
Classifying Autism Disorders

• Up until May 2013, autism disorders were recognized by sub categories including autistic disorder, childhood disintegrative disorder, pervasive developmental disorder-not otherwise specified (PDD-NOS) and Asperger syndrome.

• Now, all autism disorders are classified as autism spectrum disorder (ASD).
How Common is Autism?

- ASD affects over 2 million individuals in the U.S. and tens of millions worldwide.
- Autism statistics from the U.S. Centers for Disease Control and Prevention (CDC) identify around 1 in 88 American children as on the autism spectrum.
- Studies show that autism is four to five times more common among boys than girls. An estimated 1 out of 54 boys and 1 in 252 girls are diagnosed with autism in the United States.
- Government autism statistics suggest that the number of people being diagnosed with ASD have increased 10 to 17 percent annually in recent years. There is no established explanation for this continuing increase, although improved diagnosis and environmental influences are two reasons often considered.
What Causes Autism?

- Up until recently, the common answer to this question was “no one knows”. Now, we know that there is no one cause of autism just as there is no one type of autism.

- Over the last five years, scientists have identified a number of rare gene changes, or mutations, associated with autism. A small number of these are sufficient to cause autism by themselves. Most cases of autism, however, appear to be caused by a combination of autism risk genes and environmental factors influencing early brain development.
Causes of Autism Con’t...

- Non-genetic, or “environmental,” stresses that appear to further increase a child’s risk of ASD:
  - Advanced parental age at time of conception (both mom and dad)
  - Maternal illness during pregnancy
  - Certain difficulties during birth, particularly those involving periods of oxygen deprivation to the baby’s brain.

- A growing body of research suggests that a woman can reduce her risk of having a child with autism by taking prenatal vitamins containing folic acid and/or eating a diet rich in folic acid (at least 600 mcg a day) during the months before and after conception.
Healthy Control vs Autism FFA activation

Healthy Control

Person with Autism

Notes.
1. Areas in red show where brain areas that are significantly more active during perception of faces; areas in blue show where brain was more active during perception of nonface objects.
2. The right side of the brain is shown on the left side of the image, as if you were looking at the person face on.
When Are People Diagnosed?

- Autism appears to begin in very early brain development. However, the most obvious signs of autism and symptoms of autism tend to emerge between 2 and 3 years of age.

- Recent research confirms that appropriate screening can determine whether a child is at risk for autism as young as one year.
How is Autism Diagnosed?

- Presently, there is no medical test that can diagnose autism. Instead, specially trained physicians and psychologists administer autism-specific behavioral evaluations.

- Often parents are the first to notice that their child is showing unusual behaviors such as failing to make eye contact, not responding to his or her name or playing with toys in unusual, repetitive ways.

- A typical diagnostic evaluation involves a multi-disciplinary team of doctors including a pediatrician, psychologist, speech and language pathologist and occupational therapist. Genetic testing may likewise be recommended, as well as screening for related medical issues such as sleep difficulties.
Diagnosing Autism Con’t…

- Sometimes an autism spectrum disorder is diagnosed later in life, often in relation to learning, social or emotional difficulties. As with young children, diagnosis of adolescents and adults involves personal observation and interview by a trained specialist.

- One of the most important things you can do as a parent/guardian is to learn the early signs of autism and become familiar with the typical developmental milestones that your child should be reaching.

- If a parent/guardian suspects that their child is displaying signs of ASD, they can take the M-CHAT (Modified Checklist for Autism in Toddlers) to help them determine if a professional should evaluate your child.

- Click [HERE](#) to view the M-CHAT to see what it looks like!
Recognizing the Signs and Symptoms of Autism

- Common “red flags” that may indicate that a child is at risk for an autism spectrum disorder:
  - No big smiles or other warm, joyful expressions by six months or thereafter
  - No back-and-forth sharing of sounds, smiles or other facial expressions by nine months
  - No babbling by 12 months
  - No back-and-forth gestures such as pointing, showing, reaching or waving by 12 months
  - No words by 16 months
  - No meaningful, two-word phrases
  - Any loss of speech, babbling or social skills at any age
Social Challenges

• Most children who develop autism have difficulty engaging in the give-and-take of everyday human interactions.

• By 8 to 10 months of age, many infants who go on to develop autism are showing some symptoms such as failure to respond to their names, reduced interest in people and delayed babbling.

• By toddlerhood, many children with autism have difficulty playing social games, don’t imitate the actions of others and prefer to play alone. They may fail to seek comfort or respond to parents’ displays of anger or affection in typical ways.

• Subtle social cues such as a smile, wave or grimace may convey little meaning to young children with ASD. Without the ability to interpret gestures and facial expressions, the social world can seem bewildering.
Social Challenges Con’t…

- Many persons with autism have similar difficulty seeing things from another person's perspective. Most five year olds understand that other people have different thoughts, feelings and goals than they have. A person with autism may lack such understanding. This, in turn, can interfere with the ability to predict or understand another person’s actions.

- It is common – but not universal – for those with autism to have difficulty regulating emotions. This can take the form of seemingly “immature” behavior such as crying or having outbursts in inappropriate situations. It can also lead to disruptive and physically aggressive behavior. The tendency to “lose control” may be particularly pronounced in unfamiliar, overwhelming or frustrating situations. Frustration can also result in self-injurious behaviors such as head banging, hair pulling or self-biting.
Communication Difficulties

• Young children with autism tend to be delayed in babbling and speaking and learning to use gestures. Some infants who later develop autism coo and babble during the first few months of life before losing these communicative behaviors. Others experience significant language delays and don’t begin to speak until much later.

When language begins to develop, a person with autism may use speech in unusual ways including:
  • Difficulty with combining words into meaningful sentences
  • Speaking by only using single words or repeat the same phrase over and over
  • Repeating what they hear verbatim (echolalia)
  • Have difficulty sustaining a conversation

Children with mild language delays may do the following:
  • Carry on monologues on a favorite subject, giving others little chance to comment
  • Fail do not pick up on “kid speak” that’s common among their peers and will speak with superior language and unusually large vocabularies.

• Another common difficulty is the inability to understand body language, tone of voice and expressions that aren’t meant to be taken literally. Facial expressions, movements and gestures may not match what they are saying. Their tone of voice may fail to reflect their feelings. Some use a high-pitched sing-song or a flat, robot-like voice.

• These challenges with communication can lead to frustration and inappropriate behavior (such as screaming or grabbing) on the part of the person with autism. As the person with autism learns to communicate what he or she wants, challenging behaviors often subside.
Another symptom of ASD is unusual repetitive behaviors and/or a tendency to engage in a restricted range of activities.

Common repetitive behaviors include:
- hand-flapping
- rocking
- jumping and twirling
- arranging and rearranging objects
- repeating sounds, words, or phrases
- wiggling fingers in front of the eyes

Repetitive behaviors can take the form of intense preoccupations, or obsessions. These extreme interests can prove all the more unusual for their content (e.g. fans, vacuum cleaners or toilets) or depth of knowledge (e.g. knowing and repeating astonishingly detailed information about Thomas the Tank Engine or astronomy). Older children and adults with autism may develop tremendous interest in numbers, symbols, dates or science topics.
Some children with autism may have other medical conditions associated with ASD. These include:

- Genetic disorders such as Fragile X syndrome, Angelman syndrome, tuberous sclerosis and chromosome 15 duplication syndrome and other single-gene and chromosomal disorders. Genetic disorders appear to affect 15 to 20 percent of those with ASD.
- Gastrointestinal Disorders that can range in severity from a tendency for chronic constipation or diarrhea to inflammatory bowel disease.
- Seizure disorders including epilepsy, occur in as many as 39 percent of those with autism.
- Sleep dysfunction.
- Sensory processing problems.
- Pica - the tendency to eat things that are not food.
How is Autism Treated?

• Each child or adult with autism is unique and, so, each autism intervention plan should be tailored to address specific needs.

• Intervention can involve behavioral treatments, medicines or both. Since some people with autism may have other medical conditions, they may take medicine for those as well.

• Early intensive behavioral intervention involves a child's entire family, working closely with a team of professionals. In some early intervention programs, therapists come into the home to deliver services. Other programs deliver therapy in a specialized center, classroom or preschool.

• Typically, different interventions and supports become appropriate as a child develops and acquires social and learning skills. As children with autism enter school, for example, they may benefit from targeted social skills training and specialized approaches to teaching.

• Adolescents with autism can benefit from transition services that promote a successful maturation into independence and employment opportunities of adulthood.
Other Facts about Autism

- Autism is the fastest-growing serious developmental disability in the U.S.
- Autism costs a family $60,000 a year on average
- Autism receives less than 5% of the research funding of many less prevalent childhood diseases.
- There is no medical detection or cure for autism
Frequently Asked Questions About ASD

• Are vaccines to blame?
  It is a common myth that vaccines may cause ASD. Many studies have been conducted to determine if a link exists between immunization and increased prevalence of autism. Fortunately, these studies have found NO link between vaccines and autism. What may be possible however is that, in rare cases, immunization might trigger the onset of autism symptoms in a child with an underlying medical or genetic condition.

• Can someone with ASD attend school?
  Absolutely! In fact, it's a child’s right: According to the Individuals with Disabilities Act of 1990, your child deserves access to a “free and appropriate” education funded by the government, whether it be in a mainstream or special education classroom.
FAQ Con’t...

• What does it mean to “be on the spectrum”? Each individual with autism is unique. Many of those on the autism spectrum have exceptional abilities in visual skills, music and academic skills. About 40 percent have intellectual disability (IQ less than 70), and many have normal to above average intelligence. Indeed, many persons on the spectrum take deserved pride in their distinctive abilities and “atypical” ways of viewing the world. Others with autism have significant disability and are unable to live independently. About 25 percent of individuals with ASD are nonverbal but can learn to communicate using other means.

• What should parents do if they suspect their child has ASD? Don't wait. Talk to your doctor or contact your state’s Early Intervention Services department about getting your child screened for autism. Research has consistently shown that early diagnosis and intervention offer the best chance for improving function and maximizing a child’s progress and outcomes.
How do parents deal with their child being diagnosed with ASD? The first months after learning that their child has a developmental disorder can be emotional, confusing and challenging. It’s particularly important that parents not blame themselves. The next step is to become educated about ASD. It’s also important for parents to give themselves a “break” from autism when they are tired or overwhelmed. And if they find that they are unable to get past the emotional upheaval of their child’s diagnosis, they can talk with a counselor or therapist.
Resource

The information in this presentation is brought to you by: http://www.autismspeaks.org.

Visit their website for even information on this now common disorder.
The End!