AUTISM SPECTRUM DISORDERS

Facts, Interventions, and Resources

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HISTORY

Once thought to be a rare mental illness caused by faulty parenting skills, today we know that autism spectrum disorders (ASDs) include a group of developmental disorders including: autistic disorder; Asperger’s Syndrome; Rett Syndrome; childhood disintegrative disorder; and pervasive developmental disorder-not otherwise specified (PDD-NOS).

CAUSE & DIAGNOSIS

Scientists believe that both genetic and environmental factors contribute to ASDs. Other causes being studied include premature birth or low birth rate; infection or illness in during pregnancy; older parental age; obesity; immune disorder; air and water pollution and environmental toxins such as pesticides. Symptoms of autism usually can be seen in a child between 12 and 18 months of age. Some children begin to develop normally and start to lose skills and develop autism during their second year of life.

People with ASDs show a wide range of ability to talk to, interact with other people, or control their emotions and behavior. Some may have other medical illnesses such as seizures, deafness, sleeping problems or digestion problems.

Identifying ASDs requires a complete clinical exam by a trained and skilled professional. The exam should include:

- Medical observation
- Development and health history
- Speech and language testing
- Psychological analysis
- Use ASD measurement tool with proven soundness

Source: Centers for Disease Control and Prevention, 2012a
TREATMENT
ASD is a lifelong condition with no known cure. However, there are treatments and medication available that can help with some symptoms. Research shows that most people diagnosed with ASDs have normal to above normal intelligence, can live ordinary adult lives when treatment begins early in life.

IMPACT ON FAMILIES
ASDs can be very hard for the diagnosed individual and his/her entire family. There are monetary, emotional, and, social consequences that come with this diagnosis. Psychological suffering, loneliness, and low quality of life for family members are linked to an autism diagnosis. Families may also have a low quality of life when parents leave their jobs to care for their child full time.

DEMOGRAPHICS
Research shows autism spectrum disorders occur in about 1% of persons under age 21. It is five times more likely to affect males than females. We know that If one child in a family has with ASDs, other children in the same family are at much higher risk of having an ASD.

Studies in the United States have shown that the majority of children diagnosed with ASDs do not have intellectual disabilities, sometimes known as mental retardation. Despite this, ASDs do experience a wide range of problems during their lives.

Today, scientists are very worried about the alarming increase in ASDs diagnoses. Between 2000 and 2006, there was a 57% increase in ASDs diagnoses. Improved diagnoses and increased awareness of ASDs may be the reason for this trend, however many questions regarding the cause and growing number of diagnoses is the focus of researchers in the US, Canada, and Western Europe.
Children progress through a series of important milestones during childhood. A child grows, develops, and learns starting at birth through playing, singing, and interacting with others. Children develop through stages that follow the chart below. Doctors should examine any children who lose skills they previously had, or whose development is very different from children the same age. Use the information listed below that shows normal milestones from age six months through five years, to tell if children are learning basic skills and advancing normally.

### Normal Developmental Milestones

#### 6 Months
- Copies sounds
- Begins to sit without support
- Likes to play with others, especially parents
- Responds to own name
- Strings vowels together when babbling: "ah," "eh," "oh"

#### 12 Months
- Uses simple gestures such as shaking head for "no" or waving "bye bye"
- Copies gestures
- Responds to spoken requests
- Says "mama" and "baba"
- Pulls up to stand

#### 18 Months
- Says several single words
- Walks alone
- Knows what ordinary things are for: for example; telephone, brush, spoon
- Plays simple pretend such as feeding a doll
- Points to show others something interesting
2 Years
• Says sentences with two to four words
• Gets excited when with other children
• Follows simple instructions
• Kicks a ball
• Points to things or pictures when they are named

3 Years
• Copies adults and friends (like running when other children run)
• Carries on a conversation using 2 to 3 sentences
• Climbs well
• Plays make believe with dolls, animals and people
• Shows affection for friends without prompting

4 Years
• Hops and stands on one foot for up to 2 seconds
• Would rather play with other children than alone
• Tells stories
• Draws a person with 2 to 4 body parts
• Plays cooperatively

Source: Centers for Disease Control and Prevention, 2012
ASD SYMPTOMS & DIAGNOSIS

Visual examination and a complete understanding of the disorder, as well as advanced education and therapeutic skills are required for correct diagnosis of ASDs. There is currently no blood or biological test for ASDs. Symptoms can range from mild to severe, and normally include one or more of the following symptoms:

- Does not respond to their name, or seems not to hear when spoken to by age 12 months
- Does not point at objects to show awareness by the age of 14 months
- Lost skills they once had, such as the ability to say a word they once knew
- Unable to play pretend games
- Repeats words, phrases, or sentences over and over again
- Avoids eye contact
- Has trouble understanding how others feel, or are unable to talk about their own feelings
• Unable to relate to other people, or uninterested in other people

• Likes to be alone

• Speech and language skills do not match children the same age

• Does not like to be cuddled or touched, or may only allow touching when he/she initiates it

• Upset by small changes in routine like using new gloves

• Has obsessive thoughts and ideas

• Flapping of hands

• Appears to be unaware when others are talking to them, but are highly reactive to other sounds

• Has strange reaction to the way that things sound, smell, taste, look, or feel
Each case of diagnosed with a ASDs is unique. People diagnosed with ASDs usually have a range of ability on a scale from high to low. Some have excellent music skills. Others do well in academics. Some may have above average intelligence, while others may be intellectually handicapped. Some cannot speak but can learn to connect other ways. The illustration shows how ASDs ability can range.

Source: Centers for Disease Control and Prevention, 2013
# Evidence Based Treatments

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<th>TREATMENT</th>
<th>PURPOSE/PROCESS</th>
<th>MORE INFO</th>
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| Applied Behavioral Analysis (ABA)| ABA, which research shows is the most effective treatment for ASDs, focuses on the child’s good behaviors, discourages negative behaviors, and teaches ASDs individuals important life skills such as how to cope with change in routine. | Autism Speaks, 2013.  
http://www.autismspeaks.org/what-autism/treatment/applied-behavior-analysis-aba  
Email: familyservices@autismspeaks.org                                                                 |
| Discrete Trial Training (DTT)    | ABA based treatment that uses lessons and skill testing to teach each step of a required behavior. Lessons are simple with correct behavior rewarded and incorrect answers ignored. | Autism Speaks, 2010.  
http://www.autismspeaks.org/docs/family_services_docs/100day2/Treatment_Version_2_0.pdf  
Email: familyservices@autismspeaks.org                                                                 |
| Early Intensive Behavioral Interven- | Effective ABA based treatment for children aged two and older that is personalized to meet each child’s needs. Plan focuses on social contact, toy play, motor skills, imitation, language, and improved behavior with treatment beginning in the home and slowly progressing to group work, and finally mainstreaming to public school. | National Institute of Mental Health, 2011  
Email: nimhinfo@nih.gov                                                                 |
| tion (EIBI)                      | The goal of PRT is to increase a child’s desire to learn, observe his own behavior, and begin conversations with others. Positive changes in these behaviors should improve other negative behaviors. | Autism Speaks, 2013  
http://www.autismspeaks.org/what-autism/treatment/pivotal-response-therapy-prt  
Email: familyservices@autismspeaks.org                                                                 |
| Pivotal Response Training (PRT)  | VBI is a type of ABA that focuses on teaching verbal skills.                                                                                                                                                  | Autism Speaks, 2013  
http://www.autismspeaks.org/what-autism/treatment/verbal-behavior-therapy  
Email: familyservices@autismspeaks.org                                                                 |
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<th><strong>Cognitive Behavioral Therapy (CBT)</strong></th>
<th>Individual CBT focuses on social skills, flexibility, and behavior management training with treatment lasting for six weeks, six hours a day, five days a week. After six weeks of treatment the child begins group work with other children diagnosed with ASDs and together they focus on improving social skills, three hours a week, for seven months.</th>
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<td><strong>Sensory Integration (SI)</strong></td>
<td>Individuals diagnosed with ASDs may be very sensitive to sensory information such as noise, smell, and sound. Sensory Integration (SI) therapy helps children understand and respond in a better way to sensory information. The goal is to improve the child’s balance, concentration, and impulse control.</td>
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<td><strong>Speech Therapy</strong></td>
<td>Effective and research proven communication treatment that helps the person diagnosed with ASDs learn communication skills. Children who cannot speak may learn how to use gestures or picture boards to communicate</td>
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<td><strong>Picture Exchange Communication System (PECS)</strong></td>
<td>Uses picture symbols to teach communication skills. The ASDs child is taught to use picture symbols to ask and answer questions and have a conversation</td>
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<td><strong>Video modeling (VM)</strong></td>
<td>This therapy helps children diagnosed with ASDs observe others displaying good behavior on a television or computer, and teaches them new skills. VM has shown very promising results when used to teach ASDs children how to behave in social situations, speak to others, and other day-to-day skills</td>
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| Social Stories™ | This new social skill focused treatment provides a way of describing a particular event, such as a birthday party, to children with ASDs. It breaks down the event step-by-step and focuses on social cues, expectations, and correct responses to the scenario. There is currently limited research on the effectiveness of this treatment. | National Institute of Mental Health, 2011  
Email: nimhinfo@nih.gov |
|---|---|---|
| Floortime™ | Floortime™ focuses on emotional and social development (feelings, relationship with caregivers) by helping the child diagnosed with ASDs deal with sights, sounds, and smells. Play activities on the floor with the child are based on speech and cognitive skill building and emotional development. Floortime™ can be an alternative to behavioral therapies or combined with ABA. | Autism Speaks, 2013  
http://www.autismspeaks.org/what-autism/treatment/floortime  
Email: familyservices@autismspeaks.org |
| TEAACH™ | TEAACH™ uses visual cues to teach skills. One example of how the program works is to use picture cards to help teach a child how to get dressed by breaking information down into small steps. | Autism Speaks, 2013.  
Email: familyservices@autismspeaks.org |
| Medication: Risperdal (risperidone) | There is no cure for ASDs, however, an antipsychotic medication called risperidone can help ease some negative ASDs behaviors such as extreme anger, temper tantrums, grumpiness or self-harm in children from 5 to 16 diagnosed with ASDs. Risperdal is one of only two medications approved in the United States for children diagnosed with ASDs. | NIMH, 2011  
Email: nimhinfo@nih.gov |
| Medication: Abilify (aripiprazole) | Aripiprazole is approved in the United States to help relieve ASDs related negative behaviors. | NIMH, 2011  
Email: nimhinfo@nih.gov |
ASD Resources

General Information Sites:

AMERICAN ACADEMY OF PEDIATRICS
www.aap.org/healthtopics/autism.cfm

AUTISM SOCIETY
www.autism-society.org

AUTISM SPEAKS
www.autismspeaks.org

CDC – AUTISM INFORMATION CENTER
www.cdc.gov/autism

NATIONAL INSTITUTES OF MENTAL HEALTH

PEDIATRICIANS ROLE IN DIAGNOSIS & MANAGEMENT OF ASD IN CHILDREN
http://pediatrics.aappublications.org/cgi/content/full/107/5/e85

Autism Spectrum Disorders Research

THE AUTISM SCIENCE FOUNDATION (ASF)
www.autismafoundation.org

CDC STUDY TO EXPLORE EARLY DEVELOPMENT (SEED)
www.cdc.gov/nchddd/autism/seed.html

CLINICAL TRIALS
www.clinicaltrials.gov

INTERAGENCY AUTISM COORDINATING COMMITTEE (IACC)
www.iacc.hhs.gov

NATIONAL DISSEMINATION CENTER FOR CHILDREN WITH DISABILITIES
www.nichcy.org

NATIONAL INSTITUTE OF NEUROLOGICAL DISORDERS AND STROKE

ORGANIZATION FOR AUTISM RESEARCH (OAR)
www.ResearchAutism.org

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS)
www.hhs.gov/autism

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