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## Autism Spectrum Disorders

The autism spectrum disorders (ASD) are comprised of:

- ❖ autism
- ❖ Asperger's
- ❖ Rett's
- ❖ Childhood disintegrative disorder

However, the diagnostic labels have changed in recent years, and all of these are now referred to as 'autism spectrum disorder' (ASD).

Just how common autism is as a diagnosis is open to speculation. As a group of diagnoses ASD is frequently missed. In past years, the rate was thought to be around 1:1000-2000 people. As of 2018 the CDC is putting the prevalence rate at 1 in 59 kids (with 1:37 boys, and 1:151 girls). There are pockets, such as the industrial section of NJ, where autism frequency is estimated at 1:45 people, which is the highest in the country.

Definitive causes of ASD are unknown. It appears to be like cancer, where multiple causes can be responsible. Genetics is one possibility. Other potential causes are thought to include:

- ❖ There is some speculation that we as a society may be poisoning ourselves with water, land and air pollution, and that it is taking a toll on prenatal development of infants who end up being diagnosed with ASD after birth. e.g. Heavily industrialized areas such as parts of NJ as noted above have a higher rate of ASD. Pesticides are another suspected culprit.
- ❖ There is also an elevated rate of Asperger's in Silicon Valley. One theory, as yet unproven, is that it may be due to 'geek marrying geek.'
- ❖ Vaccinations preserved with a mercury compound were thought to be a possible cause of autism, but that was found to be based on fraudulent research. There has been the suggestion that just the vaccination such as for rubella, or pertussis (in DPT shots) could be a factor.
- ❖ A mother being exposed to rubella during the first trimester jacks up the risk of autism.
- ❖ Fetal testosterone levels may also be involved, given the prevalence of boys having it over girls. Some research has found that higher levels of testosterone in the fetus leads to less eye contact at 12 months, slower language development at 18 months, and less social skills and more 'narrow interest' at 4 years.

- ❖ Premature birth is also suspected of increasing autism spectrum problems. The theory is that oxytocin, a female hormone that spikes shortly before birth in the mother, is crossing into the fetus as well. Like any hormone, oxytocin has many purposes, but one is that it increases social and emotional bonding. So the thinking is that when the fetus is exposed to it shortly before birth it affects the brain and makes the infant more social. By being born premature the infant is not being exposed to the hormone as much, and so it does not develop that emotional attachment. In my experience, there is a continuum, with greater deficits in social skills with births that are more premature. e.g. Being born a week or two premature may only cause very mild problems. Being born a month or more premature exacts a bigger toll on social and emotional development.
- ❖ c-section with use of a general anesthetic (epidurals do not seem to cause the problem) may be another potential cause.
- ❖ maternal use of antidepressant (SSRI) medication during pregnancy such as Prozac, especially the first trimester, is thought to cause a mild increased risk of autism spectrum as well.
- ❖ possibly excessive amounts of vitamin B-12 or folate during pregnancy, and having both in excess may have a much greater risk associated with it.
- ❖ low levels of vitamin D in the mother during pregnancy may also be a factor
- ❖ distress in the gastrointestinal system along with immune dysfunction can be involved
- ❖ maternal use of acetaminophen (Tylenol) during pregnancy may be a factor. A 2018 study involving over 132,000 mother/child pairs and followed for 3-11 years found that a 20% increased risk of autism spectrum disorder arose from “prolonged exposure to acetaminophen during pregnancy.” (There was a 30% increased risk for ADHD from it as well.)
- ❖ research also suggests that older fathers can contribute to its presence, in that DNA mutations start to occur with age.

### Diagnosis & Treatment

ASD's primary feature is a lack of social skill. It may be reflected in various names and descriptors that are used with such individuals (socially inept, geeky, nerdy, socially aloof, socially indifferent, asocial). Such folks lack a lot of social awareness and have weak social skills. They have difficulty with:

- ❖ being socially indifferent, and often do not show evidence of wanting to be with other people. e.g. They are very content to stay by themselves in solitary pursuits such as playing video games for hours or days at a time, and do not feel lonely. Others, girls more commonly probably, will say they are interested in having friends, but are clueless how to go about making any. So, they are socially isolated but are not socially indifferent.
- ❖ being able to read silent body language, e.g. facial expression
- ❖ being able to understand the meaning of a person's tone of voice (e.g. 'I think you're great' might be said sarcastically, or as a compliment, with the difference being made only by tone of voice)

- ❖ similarly, problems exist with being able to differentiate between tongue in cheek humor, or getting the punch line of a joke, or understanding something said in jest, etc.
- ❖ being able to understand and live by social conventions, e.g. invading other people's 'personal space' by standing too close as an example
- ❖ dealing with parts of people, rather than people as a whole person. e.g. An adolescent, teen, or grown child may play with his mother's hair for a half hour or more, and be totally oblivious that it is upsetting to her, rude, socially maladroit, and otherwise inappropriate.
- ❖ a stilted quality to language, which lacks fluid and casual qualities (e.g. 'I am very pleased to meet your acquaintance' vs. 'Hi, nice to meet ya!'). Or, as I heard from one adult Asperger's patient, phrasing may be too intellectual, such as "an estrogen delivery device" used as a phrase to mean 'woman.'
- ❖ making friends, and if any are made, keeping them. With younger kids they tend to be ridiculed, rejected, and otherwise kept on the 'outs' in settings like schools
- ❖ difficulties with math
- ❖ ADHD-like symptoms. A high proportion of Asperger's have been diagnosed and/or treated for ADHD. They may have all the symptoms, or just look like ADHD, but not quite meet all the criteria.
- ❖ minimal to no eye contact being made
- ❖ not knowing the limits of what to say, and how to say it in an interesting way. e.g. They can obsess to an extreme degree on certain topics, and often may be 'experts' in odd trivia. For instance, one adolescent boy I saw had memorized the entire interstate highway system. (Look at the map of the system, and try to memorize it yourself). A fascination with travel themes, and dinosaurs, are common, but is not an exclusive list of their obsessive abilities. They typically talk the ears off people who have no interest in the topic or at least lose interest very quickly, such as a kid going on ad nauseum about a particular video game. They often talk in what I refer to as being like 'a little professor.' That is, they are overly pedantic, scholarly, dry, factual, and lecture people in monologues rather than engage in dialogue/conversations.
- ❖ motor difficulties. One of the more common illustrations of this is being very late in learning how to ride a 2 wheel bike. Some never do. Others do so, with limited success, at perhaps 14. Some never want to learn. Disinterest, and lack of ability, for team sports (i.e. poor coordination) is also frequently heard. General clumsiness, such as for simple running is also a common complaint of parents.
- ❖ over sensitivity to stimuli. Common complaints are the tags in back of shirts, or seams on socks. Such individuals often fuss with such issues to an extreme degree, such as taking 45 minutes to get socks to feel right on their feet, or ripping the tags out, or wearing shirts inside out as a way to avoid having them touch their skin. Others may be overly sensitive to sound, such as being able to hear a siren or train whistle long before others like their parents can detect such noises. Having a very narrow range of foods that will be eaten is pretty common as well.

Strengths can include their being above average in intelligence quite often. Many are relatively artistic, or they at least have decent skill and an interest in art.

One term which is not official but fairly common, is 'high functioning autism' (HFA). Some who use it think that HFA is synonymous with Asperger's. Others say they are different.

Treatment of ASD might be reduced to just a few issues:

- ❖ if ADHD symptoms exist, treat them with that class of medication
- ❖ social skills can only be learned by doing. i.e. There is no pill that will make a person social. Practice, practice, practice is the reality they are faced with. Ultimately, the Asperger's individual still has to get out and make an effort to be social. What I tell parents is 'keep looking to find something they enjoy and feel interested in.' Various sports (soccer, baseball, football, lacrosse, hockey, basketball) can each be tried. Non-team sports (e.g. track, swimming, golf) may be easier for kids who have a great deal of social discomfort. Church youth groups, Boy/Girl Scouts, Mensa clubs, chess clubs, etc. are another approach. The 'Dreams' art program in downtown Wilmington works with these kids (ages 12-17) for free.
- ❖ therapy can be helpful in teaching kids to be more socially aware, and to help them deal with feelings of rejection, depression, etc. that arise from poor social skills.
- ❖ approach them by 'playing to their strength.' They tend to be very verbal, and so can be taught what to say when e.g. they first meet a new person. "Look a person in the eye, extend your right hand, and say 'Nice to meet you...'" That is, anticipate different areas of daily life the person comes up against (what to do at recess, what to do at lunch, on the school bus, on a playground, in class,...) and offer them canned means of dealing with each that they can practice over and over until it is done more fluently, comfortably and effectively.
- ❖ group therapy, such as through TEACCH, or a program like Dreams, can also be helpful as a way to learn social skills. Ultimately, what someone with Asperger's has to do is mimic the behavior of others who are normal. 'Look at other people, and do as they do.'
- ❖ medication. It may be the fastest and easiest way to get behavioral change, and some peace in the family's life. If there is underlying depression, or high levels of anxiety that inhibit social functioning, meds might be used to treat those issues. However, I no longer recommend either antidepressants or anti-anxiety drugs because the research behind them shows how ineffective they are plus having numerous bad side effects. In my experience, the anti-psychotic meds are most commonly prescribed. They quiet down the extreme outbursts of yelling and other disruptive behavior that arises at home or in other settings like school. However, they are not really curing or treating anything and mostly just sedating the kid. And there are some powerful side effects, and as a result I never recommend them either. Meds for ADHD-like symptoms are also commonly given.
- ❖ there is some fascinating research which suggests that dietary changes and nutritional supplements may be helpful and in particular that milk and gluten products may not be properly metabolized. Removing them from the diets – under medical supervision such as

by a doctor or nutritionist – might be helpful. Kids with autism spectrum often have GI problems like irritable bowel syndrome (IBS). They are also found to have an elevated number of pathogenic bacteria called clostridia and another named sutterrella. A number of studies have found that probiotic organisms can have positive effects on autism symptoms along with ADHD. The U.S. Government's NIH (National Institute of Health) has claimed that gut health and autism are inter-related. Some people have suggested avoiding milk (casein) and gluten rich foods, along with insoluble fibers, fats, carbonated products, coffee & alcohol, and artificial sweeteners. Recommended foods include those with soluble fibers, along with stuff like root vegetables (carrots, sweet potatoes, etc.), oatmeal, bananas, mangoes, and those foods rich in probiotics such as yogurt, kefir, and fermented vegetables like kimchi. Increasing broccoli and especially broccoli sprout consumption may also help. Vitamins including the B's may also be helpful. For more information look at some brief videos on [www.nutritionfacts.org](http://www.nutritionfacts.org)

- ❖ various behavioral approaches (ABA – applied behavior analysis), TEACCH's model (working on improving communication, social and coping skills) so that fewer negative behaviors are made, such as screaming, and more positive ones are done (such as saying, 'Please don't touch me'). Art therapy can help express feelings in means beyond words. Music therapy may help, such as by teaching language through songs.
- ❖ there is some experimental research which suggests that autism can be due to an auto immune disorder, meaning that the body is attacking itself, and the brain in particular. There has been some work done where a harmless parasitic egg is introduced into the person's body, and the immune system attacks it for awhile rather than the brain, and so the theory goes the ASD symptoms are reduced. The egg is passed out of the body eventually, and another has to be ingested.
- ❖ there also has been some experimental research done on injecting oxytocin in to autistic individuals to increase social and emotional bonding. Results are not clear at this time, and risks are thought to include an increased risk of seizures.
- ❖ use of neurofeedback (EEG biofeedback is another name for it) has been found to be helpful in treatment of ASD. One study involved 24 autistic kids who were divided into two groups (receiving vs not receiving neurofeedback). Using the Autism Treatment Evaluation Checklists (ATEC) neurofeedback resulted in a 26% reduction in the total score vs. 3% for the control group. Parental assessments showed improvement in all behavioral categories: socialization, vocalization, anxiety, school work, tantrums and sleep compared to minimal changes in the control group. Skills that improved included attention, executive functions, language, social, verbal inhibition, and visual-spatial. Another study found that autistic kids treated with 40 sessions of neurofeedback maintained their improvement for twelve months after the treatment ended.
- ❖ another experimental approach which has a little research to back it up is hyperbaric oxygen therapy (HBOT) which is a scaled down version of decompression chambers that scuba divers use when they get 'the bends.' One study had 62 autistic kids (52 being boys) ranging from 2-7 years old who were either given HBOT at 1.3 atmospheres or slightly pressurized room air (1.03 atmosphere) that were a control group. After 40 hourly sessions the HBOT group had significant improvements in overall functioning, receptive language, social interaction, eye contact, and sensory/cognitive awareness

compared to the control group. Another study had 18 autistic kids ranging in age from 3-16 years old who received 40 HBOT sessions at either 1.3 atmosphere and 24% oxygen, or 1.5 atmosphere at 100% oxygen. There was no control group so there is the possibility of a placebo effect. Some autistic kids are known to have neuro- and gastric inflammation and HBOT is known to be anti-inflammatory. Results of the study included a significant improvement on inflammation (measured through c-reactive protein), along with improvements in irritability, social withdrawal, hyperactivity, motivation, speech, and sensory/cognitive awareness. The researchers thought these findings might be explained by the fact that many autistic kids have cerebral hypoperfusion and HBOT can provide more oxygen to the brain and cause increased blood vessel formation over time.

One good book I've found on Asperger's is "Asperger's Syndrome: a guide for parents and professionals" by Tony Attwood. Another is "The Asperger's Answer Book: professional answers to 275 of the top questions parents ask" by Susan Ashley.

### Teaching Friendship Skills

Some basic rules of how to make and keep friends can be taught to kids. These include:

- ❖ Your friend goes first. Let your friend go first in everything. Avoid saying 'Me first.'
- ❖ Talk about your friend. The best topic of conversation is about your friend. People like to talk about themselves, and there is no safer topic to enter a conversation with. Say something about what your friend is doing, or wearing. 'That's a really pretty dress you have on' would be one example.
- ❖ Your friend chooses. Let your friend be the one who decides what you will do together, such as which toy to play with. If you want to do something else, let your friend make the first decision, and then you can switch to something else later on.
- ❖ Talk about your friend's topics. If your friend likes baseball, asking a question or say something nice about that. Avoid forcing your friend to talk about stuff they aren't interested in.
- ❖ Take turns. Even if you didn't do well on your turn, or if you want to continue, stop and let your friend have a turn. Don't 'hog the ball' when playing a sport like basketball. Pass the ball to teammates so they can take some shots too. Say something like, 'Now it's your turn.'
- ❖ Show that you care. If your friend is happy, show that you're happy about it. If your friend is sad, show some concern. "I'm sorry you're having problems today..."
- ❖ Let your friend control half. If you're doing something like playing a board game, let your friend choose which token or marker they use, along with inviting them to go first. Don't try to be the boss.
- ❖ Be a friendly host. Make sure your friend is comfortable, such as offering water if they're thirsty, or offering them a chair. Ask them if they need anything.
- ❖ Use the magic words. 'Please' and 'Thank you' get friends to like you more. Use them as you ask or receive from a friend.

- ❖ Have kitchen fun. Friends like being offered food. If you are hosting friends at your home, ask for your parents' permission and offer a snack. Be sure to clean up afterward. Say something like, 'Would you like a cookie.'
- ❖ Share. Nobody likes people who are selfish. Share what you have with a friend, such as if you have candy, or a toy to play with.
- ❖ Your friend says when. Don't continue to play a game if your friend is tired of it. Let your friend decide when to stop. Let your friend decide when it's time to leave for home.
- ❖ Do small favors. Fetch something your friends needs, or do an errand so your friend can remain comfortable and not have to get up to do it. 'I can do that for you!'

#### Support for families

You can go to my web site ([www.ILMpsychtesting.com](http://www.ILMpsychtesting.com)) and click on the Resource link for the Autism Society for NC, and go to the page which offers 'advocates.' There are also summer camps, near Asheville and Chapel Hill, which are available on a sliding-fee scale. The Autism Society web page has links to this as well.

The local TEACCH in Wilmington also has a free lending library of books available, as well as offering therapy. They also do diagnoses of autism, but the waiting list is often 6-9 months long.