

Autism Spectrum Disorders (ASD): The Basics

An OCALI Parent Package



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Welcome to the presentation on the basics of autism spectrum disorders or ASD. This presentation is part of the Ohio Center for Autism and Low Incidence's (OCALI) Parent Packaged materials series; materials designed to be used by parents and parent groups to increase knowledge about topics important to families of those with disabilities. These materials were developed by the expert staff at OCALI with funding from the Ohio Department of Education, Office for Exceptional Children. For further information on all the parent packaged materials please contact Donna Owens, family and adult services administrator at OCALI, 614-410-0381 or donna_owens@ocali.org

Objectives

- Participants will be able to describe the characteristics of autism spectrum disorders (ASD)
- Participants will gain knowledge of how the characteristics/differences may affect individuals with ASD

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The objectives for this training are listed here. We hope in your time spent today we can help participants become more aware of the characteristics of ASD, and how these differences impact them.



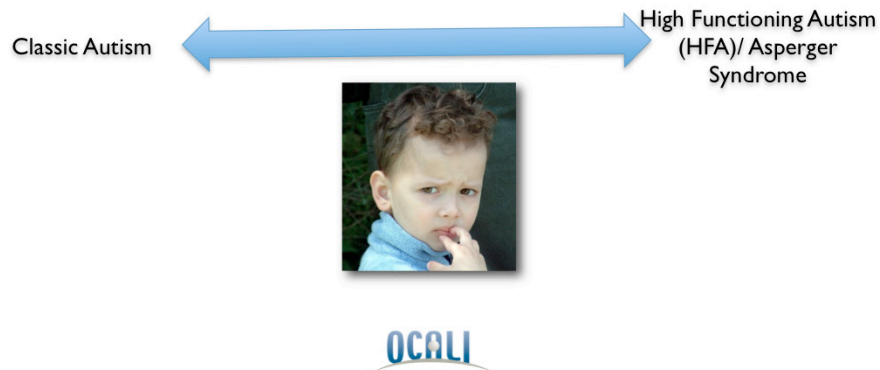
"This child has good eye contact and is so affectionate
He acts nothing like the character from the movie
Rainman. It can't be autism!"



The first exposure that many people have to autism is the movie "Rainman" that came out some years ago and starred Dustin Hoffman. Although the movie depicts some characteristics you may see in some people with an autism spectrum disorder, it does not give an overall view of how **every** individual with autism will appear. Typically individuals with ASD are described as not being affectionate or not maintaining eye contact. This is not the case, many individuals with ASD are affectionate and maintain eye contact. This training will provide information to dispel these "myths about autism" and others that you may have heard. You will hear today that there is more to autism spectrum disorders than what you saw in "Rainman".

Autism Spectrum Disorder

A neurobiological disorder that affects how a person thinks, communicates, and interacts with others



Autism is a neurological disorder. That means that the brain structure and functions are different from the typical population. These differences will affect how individuals with ASD communicate, how they interact socially, and how their patterns of behavior, interests, and activities are exhibited. Terms that are typically used to describe individuals with ASD are those who have “classic” autism or those who are characterized as having “high functioning autism” – and these differences and the continuum in between, make up the “AUTISM SPECTRUM”.

Those identified as “classic” typically are less verbal, might have lower cognitive functioning (intelligence), engage in more repetitive behaviors such as “flapping” or “spinning”, and might be described as being “in their own world”. Individuals described as higher functioning, might have average verbal abilities, but may not understand the rules of social interaction. These individuals may show difficulties with transitioning from desired tasks. They may demonstrate on grade level skills in more concrete tasks, but have difficulty with abstract concepts. Still others will be in between these extremes with varying strengths and challenges.

Autism Statistics

- Currently affects 1 in 110 (according to CDC)
- 1.5 million Americans have some form of ASD
- More prevalent in males

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The Centers for Disease Control and Prevention (or CDC) shares that: “Autism spectrum disorders are a group of developmental disabilities that can cause significant social, communication and behavioral challenges. CDC estimates that an average of 1 in 110 children in the U.S have an ASD. CDC is working to find out how many children have ASDs, discover the risk factors, and raise awareness of the signs”.

At this time there are at least 1.5 million Americans with an autism spectrum disorder. The incidence rate is greater in males than females, and is approximately 4 males to every one female affected. Individuals with autism typically live a normal life span. Autism occurs across all boundaries--race, income, level of education, and communities/localities.

Recognizing Autism

- Child displays characteristics prior to 36 months
- Average age of diagnosis is 4.5 to 5.5 years of age
- Typically, parents report concerns prior to age three
- 41% of identified children have an IQ of 70 or below and the range extends from average through gifted abilities

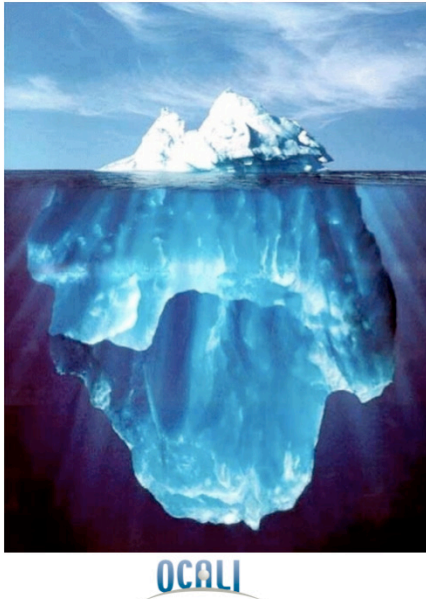


Autism isn't a disability that is "diagnosed" by your family doctor. Again, there are a spectrum of differences in individuals with ASD. To be identified with "autism", the more "classic" characterization of the disability, an individual must show characteristics before 3 years of age. As parents of unique children, know that what we are sharing today cannot possibly cover ALL the answers, or all the children with ASD. What we are sharing is a snapshot of information that will serve as a guide for you.

At this time, the Centers for Disease Control and Prevention (CDC) states that the average age for diagnosis of an autism spectrum disorder is 4 1/2 to 5 1/2 years of age, although the majority of parents had concerns about their child prior to 3 years of age. These diagnoses are usually done by a neuropsychologist at a place like the Nationwide Children's Hospital Autism Center. Cognitive skills or level of intelligence can range from below average intelligence to above average intelligence in individuals with ASD. The CDC reports that 41% of individuals with ASD have an intellectual disability which in technical terms is an intelligence quotient or IQ of 70 or below. The average IQ is 100 – so an IQ of 70 is well below average.

The importance of an IQ score is that it predicts how a child will function in comparison to his same age peers.... So an IQ of 70 lets us know that the child will probably not be able to keep up with peers in the classroom without supports and services from special education.

Underlying Characteristics



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When a child is diagnosed by a neuropsychologist or identified as eligible for special education services by the school, there are certain areas that show a delay. The DSM-IV-TR is the book – or reference – used to define the areas. Typically for autism, the delays are in Social skills, communication, and what are called restricted patterns of behavior.

This iceberg provides a visual of the challenge in understanding the characteristics of ASD. The little bit poking up out of the water is what we “see” of the child with ASD. We may see a tantrum, or that the child is not paying attention, or that he strips naked in the middle of gym class. We may see that he dumps over drinks or that he cries on the school bus. What we don’t see is the stuff below the surface of the water – the underlying characteristics of his autism spectrum disorder, that tell us “why” these things are happening. They explain and give us insight as to what is going on with the child and how we, as the parents and professionals, can help him.

Underlying Characteristics

- Social differences
- Communication differences
- Restricted patterns of behavior
- Sensory differences
- Cognitive differences
- Motor differences
- Emotional vulnerability
- Medical or biological differences



For further information about underlying characteristics see
[The Ziggurat Model, Aspy & Grossman, 2007](#)

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Dr. Ruth Aspy and Dr. Barry Grossman, in their book, *The Ziggurat Model*, tried to give us more information on ASD. They added some categories or domains to better explain the challenges individuals with ASD experience.

These are the eight domains, or areas, often associated with autism. All autism spectrum disorders share 3 common features of symptoms: social differences, communication differences, and restricted patterns of behavior, interests, and activities. When a child is identified as having ASD, these 3 areas of deficit are present. It doesn't matter if the child is more "classic" or "higher functioning". They may be expressed differently depending on individual characteristics of the child, but all 3 areas will be deficient in some way. The other five characteristics are associated features- meaning they are not necessary for diagnosis but are often present in individuals diagnosed with ASD. Let's talk a bit more about what we mean....

Social Differences

- Difficulty recognizing thoughts/ feelings of others
- Poor eye contact or fails to orient to others
- Difficulty maintaining personal space



We'll begin with the social skills deficits, or what we like to call social differences of individuals with ASD. These are some of the social challenges you may see in an individual with ASD. Not all will be present and the characteristics may vary in different individuals. Remember as we discuss these categories or domains, that there is a spectrum with all aspects of ASD. Individuals with more classic autism may be in their own world most of the time with very limited social interaction at all, and many individuals with ASD participate fully with just some minor social differences. Some characteristics are common though, and we will focus on those.

Some individuals may have difficulty recognizing the feelings and thoughts of others, which is also known as "mind blindness" or talked about as having impaired "theory of mind". We will talk about this in more depth in a minute.

But, not realizing others have thoughts about an interaction can make socializing difficult because when we socialize it is a two-way interaction. To socialize effectively we need to be aware of how what we are saying is effecting the people we are talking to. We have to be aware if we are standing too close, talking too loud, etc. that may cause difficulties for our "social partners". Having "mind blindness" makes the navigation of social situations extremely difficult for individuals with ASD.

Impaired Theory of Mind

- Inability to understand beliefs, thoughts, desires, perceptions, intentions and feelings
- Difficulty knowing what others are thinking



This limits the ability to explain and predict the behavior of others

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So let's talk a bit more about what Mind Blindness is.... As we have discussed, social difficulties are central to the challenges faced by those with ASD. Impairment in the ability to think about and understand thoughts and feelings of others is referred to as impaired theory of mind or "mind blindness".

Theory of Mind is what allows us to understand how to interact with others—for instance, a teenager knows that swearing around friends is probably okay while swearing in front of the principal or a teacher will get you in trouble. Individuals with autism spectrum disorder may need that rule taught because they won't necessarily pick it up on their own because of their impaired theory of mind.

Knowledge of mind blindness is critical for those who work and live with individuals with ASD. This impaired theory of Mind or Mind blindness limits the ability to understand and predict the behavior of others which makes it difficult to differentiate between accidental and intentional behaviors.

More Social Differences

- Difficulty joining activity
- Difficulty waiting
- Difficulty with nonverbal communication
- Naïve, may be bullied

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Individuals on the autism spectrum process faces and bodies with the same part of the brain that processes objects, so they don't catch the subtle changes that we use to interact socially. It makes it difficult for them to really understand what our body positioning means, or what facial expressions mean. These difficulties can make individuals with autism easy targets for teasing and bullying.

These are just the highlights though. Your child with ASD may have some similarities to what we have discussed here.

Communication Differences

- Has little or no speech
- Does not respond or shows delayed response when name is called
- Asks repetitive questions



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These are some of the communication differences you may see in an individual with ASD. Again as with most This domain has a great impact on these individuals. Communication differences are on a spectrum and vary with the uniqueness of this disability.

You may have someone with little or no speech who needs a communication system; some may not respond or will show a delayed response when their name is called; others may have an unusual rhythm to their speech or ask repetitive questions as they try to process information or relieve anxiety.

Communication Differences

- Fails to initiate or respond to greetings
- Has difficulty following instructions
- Has difficulty with rules of conversation
- Displays immediate or delayed echolalia



Some individuals may fail to initiate or respond to greetings. Following instructions can be a challenge unless the directions are supported with visuals.

Some individuals may display immediate or delayed echolalia, an example of this would be reciting lines from movies and TV shows or repeating another person's questions or statements.

Rules of conversation need to be taught to many individual with ASD – as we mentioned previously some may have difficulty waiting or taking turns. Individuals on the spectrum may interrupt others, have a difficult time maintaining conversation, or knowing when to start or end a conversation, or use poor eye contact. Communication cross into social difficulties at many levels so you can see some cross over here with what we talked about when we were talking about social differences.

Restricted Patterns of Behavior, Interests and Activities

- Strong need for routine or “sameness”
- Repetitive motor movements (e.g., flaps hands, paces, rocks)
- Difficulty engaging in activities other than intense special interests
- Difficulty with transitions



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There are a spectrum of restricted patterns of behavior.

Some individuals with ASD have a strong need for sameness. They tend to prefer things to be predictable and the same in their environment. Therefore, change from one activity to another, or from one person to another may cause distress. This change may be from one route to school to a new one, or having to change seats in a class as well.

Restricted behaviors tend to look different in individuals with ASD. With more classic forms of autism, you may see hand flapping, clapping, rocking or fascination with movement or parts of objects. In higher functioning autism, you may also see some of those behaviors but preoccupation with specific areas of interest tend to be the most dominant form of repetitive behavior. Often times these interests may be unusual or not shared with others of the same age.

Faced with unpredictable events, individuals with ASD may experience anxiety that could result in behaviors such as meltdowns, social withdrawal, and repetitive questions.

Restricted Patterns of Behavior, Interests and Activities

- Displays difficulty engaging in activities other than intense special interests
- Has difficulty transitioning from a preferred activity

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Individuals on the spectrum can have difficulty engaging in activities other than those of their special interest. Faced with unpredictable events, individuals with ASD may experience anxiety that could result in behaviors such as meltdowns, social withdrawal, and repetitive questions. This anxiety can also increase the intensity of repetitive behaviors.

Sensory Differences

- Responds in an unusual manner to sounds, pain, light or color, temperature and smells
- Seeks or avoids activities that provide movement, touch or pressure
- Makes noises such as humming or singing frequently



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For those who experience sensory processing difficulties, daily routines can be very challenging. In some individuals with ASD, the differences only affect one sensory area. In others, multiple senses may be impacted.

An individual with sensory differences can be over responsive or under responsive and may react in unexpected ways as they process sensory input. They may exhibit some of the following:

Sounds: Some may hold their ears to sounds that do not bother others (telephones ringing, vacuum cleaners, fire alarms going off, flushing toilets). Or, if an individual is under responsive they may seek loud sounds, putting their ear to toys that make loud noises

Pain: If a person is over responsive, for example, excessive crying or a meltdown after falling in something as soft as a sandbox may occur, or if under responsive, a person may have no idea they have a serious injury like a broken bone.

Taste: Some may prefer certain textures, brands or colors of foods; they may only eat foods that are white or are square or foods that are pureed. Someone who is under responsive may eat very spicy foods without a typical reaction of needing milk and eyes watering.

Cognitive Differences

- Has excellent memory for details
- Literal understanding of concepts
- Has poor organizational skills
- Has attention problems



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As autism is a spectrum disorder, cognitive differences are also on a spectrum. You can see individuals with ASD that are gifted, typical, or having delayed intelligence. Even with these identifications, they may learn differently from their neurotypical peers. You will most often see a strength in dealing with the concrete like remembering facts, lists, and details, but organization skills are probably going to be poor. The picture that comes to mind is the Charles Schultz's Pig Pen character. These are the kids who have the messiest desk and who have trouble remembering to take what they need for homework.

In addition to organizational issues, abstract thinking may be a challenge as well. Sometimes individuals with ASD will be found eligible for special education services in the 3rd or 4th grade when the curriculum requires more problem solving and abstract thought.

Knowing what to pay attention to can be tough, such as listening to the teacher talking when trying to finish reading a story.

Cognitive Differences

- Difficulty understanding the connection between behavior and consequences
- Demonstrates learned skills inconsistently
- Displays academic skill deficits
- Difficulty applying learned skills in new settings



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Individuals on the spectrum may show some unevenness in their cognitive abilities, such as being excellent at addition and subtraction but getting lost in story problem solving.

They may also have difficulty generalizing, or being able to carry over a skill to a different environment.

Executive Dysfunction

- Working memory
- Behavior inhibition
- Planning
- Mental flexibility
- Task initiation
- Performance monitoring
- Self regulation



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The term executive functioning refers to an individual's ability to manage other cognitive processes. The ability to process feedback, to interpret events, and then to react or respond appropriately. Individuals with ASD have "executive dysfunction" in many cases. They can have trouble processing information, completing tasks, and adjusting to change.

What you may see above the surface is difficulty regulating behavior in different situations or environments, such as laughing loudly and too long. Knowing how to plan and organize is difficult and then, once plans are set, being able to accept changes and adjusting the plans will be a challenge. Knowing how to set up materials for work, getting out the correct book, paper, writing instrument, and arranging them to work efficiently on the desk can be an impossible task without guidance and support.

Being able to problem solve can be tough for persons on the spectrum. An individual who can only remember one or two steps of a multi-step process or direction is likely to have problems with Executive Dysfunction.

Motor Differences

- Has atypical or weak grasp
- Poor motor coordination or is accident prone
- Displays atypical activity level (e.g., over-active/hyperactive, under-active/hypoactive)
- Displays an awkward gait
- Has difficulty starting or completing actions



Most individuals diagnosed with ASD have significant motor differences. They may have weak handwriting skills which come from difficulty holding writing utensils properly or being able to press hard enough or forming the letters. This can result in poor handwriting or refusal to write. We can provide alternative ways of producing written text, such as a word processing device and/or alternative activities. Individuals on the spectrum may show balance difficulties and could appear clumsy. They may show poor motor planning and become very frustrated in participating in athletic activities (this frustration also could be sensory or social related). These are the kids who run into desks and fall off their seats. They may show poor motor planning and are very frustrated in participating in athletic activities (this also could be sensory or social related). They may also display atypical activity levels and appear over-active or under-active. Some may walk with an awkward gait and may hold their body a certain way when they move. They may lean to one side when they walk or could walk on their toes. They may also have a difficult time starting and completing actions due to motor planning challenges.

Emotional Vulnerability

- Becomes stressed when presented with new task or novel situation
- Has unusual fear response
- Injures self
- Has low frustration tolerance



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The sum of the characteristics discussed so far can result in emotional vulnerability. Realizing that anxiety is a huge issue for persons with ASD and offering supports to address it can make a difference in their lives. New situations can raise levels of anxiety. These individuals may not be able to regulate themselves. This can lead to panic reactions which can then lead to aggression and even sometimes self injurious behaviors. Please remember all behavior is communication. The world of emotions can be challenging for those affected by ASD. Not only are they less able to understand verbal and nonverbal expressions in others, they may also have a hard time understanding and managing their own emotions

Emotional Vulnerability

- Has low frustration tolerance
- Has difficulty tolerating mistakes
- Exhibits rage reactions
- Has a limited understanding of own and others' emotional responses



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It may also be difficult for those who do not want to make mistakes. They may be easily stressed about things that do not turn out the way they want them to. Many people with autism realize they are not connecting with people in a typical way and it causes a heightened state of anxiety. This can also lead to depression. Stress from trying to communicate and socialize with everyone can be tiring and may finally leads to rages. At that point, we can offer safety and cool down time. Individuals with autism often have a limited understanding of their own emotional responses and, of course, have difficulty understanding the emotional responses of others.

Medical/Biological

Examples may include:

- Mood instability
- Eating/digestive issues
- Sleep challenges
- Attention difficulties
- Neurological disorders

These may contribute to emotional vulnerability

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Many of the individuals with ASD have issues with diet, and many are on medication. Many have difficulties with sleep, and some have sensory issues that impact their abilities to perform bodily functions resulting in stomach distress. All these things are underlying characteristics as well.

These all fall into the category of medical and biological characteristics of this population. There may be mood instability issues. The eating and digestive issues impact their ability to function and learn. Many individuals with ASD experience gastrointestinal difficulties ranging from serious constipation to frequent diarrhea. Sleep challenges are common and may include having trouble falling asleep and /or waking up frequently during the night . As parents, you should inform the pediatrician of these difficulties and together decide what interventions would work best for your child. Educators need to be aware of physical factors that can have a definite impact on the student in the classroom.

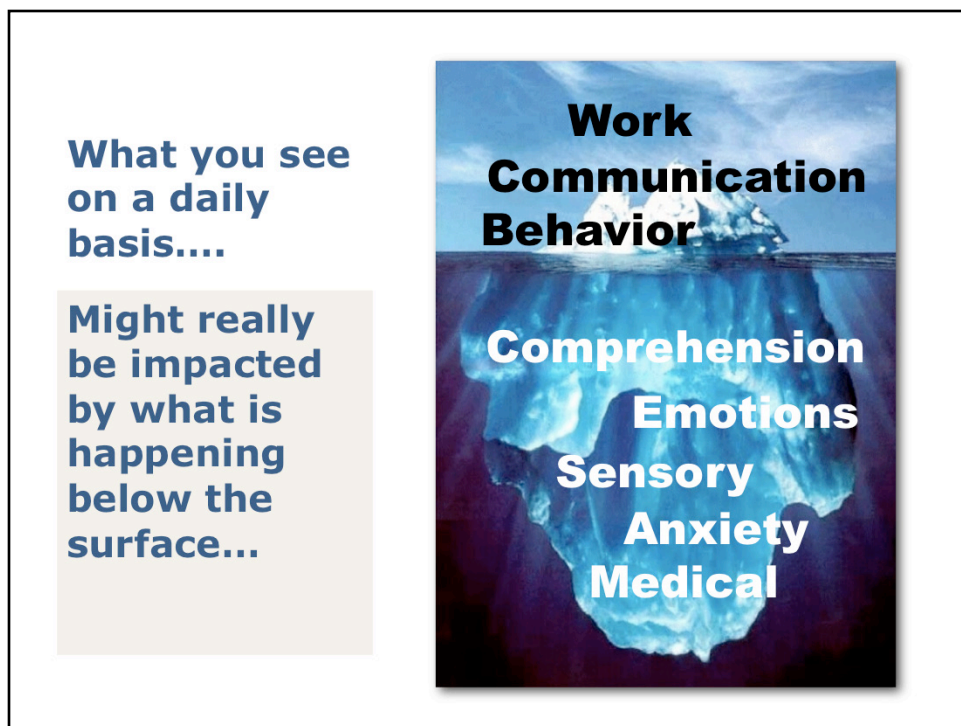
Medical/Biological

- Learn what issues exist and what supports are needed
- Communicate between home, school, and medical personnel
- Research medical/biological issues



Educators need to be aware of physical factors that can have a definite impact on the student in the classroom. A child who has not had bowel movements for days or who hasn't gotten much sleep at night could be very uncomfortable. They are very likely to have great learning or and to exhibit behavior problems in the classroom.

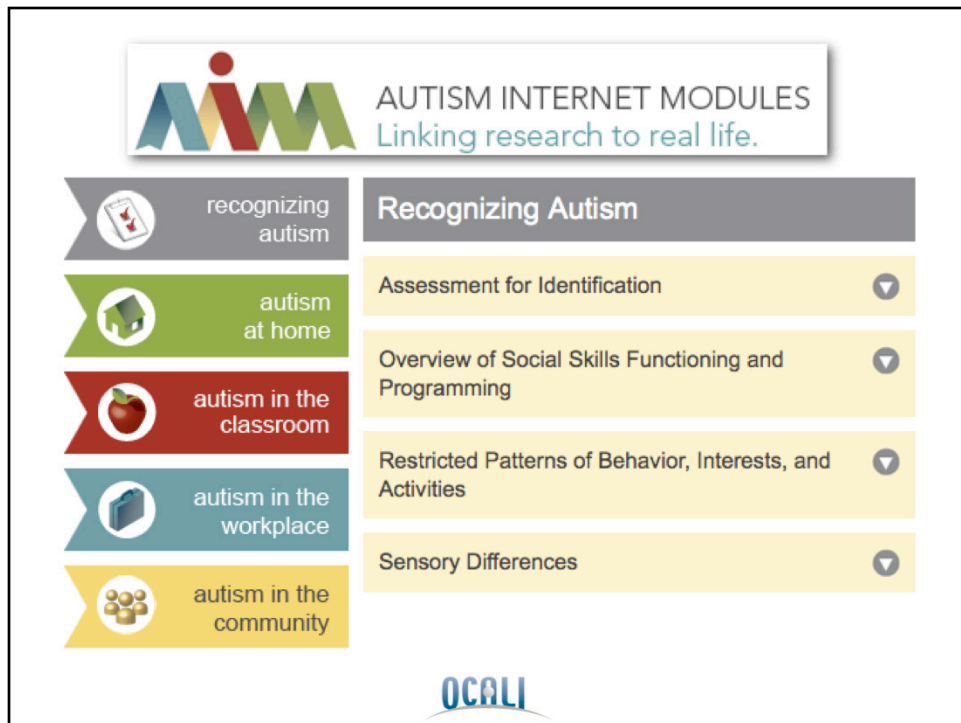
These are some of the possible biological and medical factors that may occur with ASD. If an individual is diagnosed with a medical condition, it needs to be considered as part of the total evaluation and in program planning for that individual.



As we finish up today, we should reconsider the iceberg and what lies underneath. Like the iceberg, we can observe a small amount above the surface—Work Skills, Communication Abilities, Behaviors. But beneath the surface are many factors prompting what we see above.

For individuals with ASD, the characteristics that make up their disability are really “underlying characteristics” - many are things we cannot see, but they have a great impact on what we do see in the classroom or at home.

Comprehension or level of understanding expectations, Emotions, Sensory issues, Anxiety, or Medical issues can be these underlying characteristics. When we take into consideration all of the underlying characteristics of the individual with autism, we can build a plan for education, transitions across the lifespan, and success at all ages.



OCALI has developed free online training that is available 24/7 and called the Autism Internet Modules or AIM. There are 33 modules available currently with a total of 80 in the works. You can see on this slide that there are modules on the characteristics we are covering today. They provide more in-depth information than we can cover here. Soon modules will be available on Communication and the remaining areas discussed today. Modules include videos, discussion questions, and extension activities. These are available by going to the OCALI website.



Parent Package Materials series were developed by the expert staff at OCALI, in collaboration with the Autism Society of Ohio, and funded by the Ohio Department of Education's Office for Exceptional Children

Thank you for your participation today. We hope you have enjoyed this presentation on the basics of ASD.