



1



2

- Crosses all racial, ethnic, and social lines
- Current statistic (2020): occurs in 1 out of 54 births (CDC)
 - 1999: 1 in 500
 - 2001: 1 in 125
 - 2014: 1 in 68
- Can co-exist with other conditions
 - ADHD, Intellectual Disability, Anxiety, Obsessive Compulsive Disorder, Emotional Disturbance

3

- 33% of individuals with autism also have an intellectual disability (IQ < 70), 23 % fall in the borderline range (IQ 71-85)
- 4 times more common in boys
- Affects over 2 million individuals in the US
- No one cause of autism
- Know more now that we did even 10 years ago
- Autism effect the way an individual perceives the world and makes communication and social interaction difficult

4

- Developmental patterns are uneven
- Strengths in areas of rote memory and visual processing
- Generalization of knowledge and skills presents difficulty
- Skills may occur spontaneously but not upon request
- Sensory processing differences

5

Causes of Autism

- Finding that genetics and environment both play a role as these are 2 factors that effect early brain development
- Over the last 5 years scientists have identified a number of rare gene changes or mutations associated with autism
- Environmental influences include: advanced parental age at time of conception, maternal illness during pregnancy, low birth weight, deprivation of oxygen to baby during birth, mothers exposed to high levels of pesticides during pregnancy
- These factors, by themselves, do not cause autism. However in combination with genetic risk factors, they appear to modestly increase the risk

6

- Not caused by poor parenting
- Dr. Leo Kanner (1943) was a psychiatrist who first described autism as a unique condition
- He believed it was caused by cold, unloving mothers (“refrigerator mothers”)

7

Impairment in Social Communication

Typical Language Development

Approximate Age	Expressive Language	Auditory Comprehension
2 to 4 months	Verbal play through cooing, gooing and laughing. Vowel sounds heard such as oohh, eee, and ahhh.	Turns head toward sounds and can begin to discriminate one sound from another.
4 to 8 months	Babbling begins. Some consonant sounds can be heard.	Anticipates an event (e.g. peek-a-boo) and follows a line of regard (e.g. visually follows toy moving across floor) as well as joint attention (i.e. is capable of visually attending to object with caregiver).
8 to 12 months	Syllable variation (e.g. badagatadadah). First word approximations (e.g. dada for daddy). Non-verbal communication. Jargon (i.e. unintelligible speech) is present.	Relates words with physical objects (e.g. understands that the word “ball” actually means the object ball). Responds to simple phrases such as “no”.
1 to 2 years	10-15 words at 18 months, 40-50 words at 24 months. Uses mostly nouns and pronoun me/mine. Jargon (i.e. unintelligible speech) still present.	Increased attention to toys. Changes behavior in response to comments made to him/her. Knows a few simple commands with gestures needed at times. Understands simple questions. Points to simple pictures.
2 to 3 years	150 words at age 2; 300-400 at age 3 years. Uses two-three word phrases frequently. Asks simple questions. Fluency can be poor. Jargon (unintelligible speech) mostly gone. Vowel sounds intact.	Comprehension shows rapid increase. Responds to more 2-step commands with prepositions (e.g. Pick up the ball and put it on the table).
3 to 4 years	Uses 600-1000 words and 3-4 word sentences. Pronouns and adjectives are used as well as some adverbs, prepositions, past tense and plurals. Answers what, where and when questions.	Understands 1500 words. Recognizes gender differences, plurals, pronouns, adjectives, and colors.
4 to 5 years	Vocabulary increases to 1000-1600 words and 4-6 word sentences. 3-4 syllable words are being used. Articles appear. Uses more adjectives, adverbs and conjunctions. Fluency improving.	Comprehends 1500-2000 words. Understands if, because, why and when. Follows complex directions.
5 to 6 years	Vocabulary of 1500-2100 words. Uses complete 5-6 word sentences. Fluent speech. Many multi-syllabic words are used.	Understands 2500-2800 words. Understands more complicated sentences.

8

Speech, Language and Communication Development Chart						
Age	Attention and Listening	Understanding (Receptive language)	Communicating (Expressive Language)	Social Communication and use of language	Speech Sounds	Play
0-11 months	<ul style="list-style-type: none"> Turns towards sounds and locates a range of sounds accurately By 6m can pay fleeting attention but easily distracted by new event Stops and looks when hears own name Is intrigued by new events and actions Listens to, distinguishes, and responds to intonations and the sounds of voices 	<ul style="list-style-type: none"> By 6m responds to different tones of voice Recognises parent's voice By 10m stops and looks when hears own name By end of 1st year, begins to understand frequently used words such as "all gone", "bye bye", "no" Understands single signs 	<ul style="list-style-type: none"> Communicates in a variety of ways including smiling, gurgling, crying, making sounds By 6m will engage in sound play with familiar adult Babbling in strings of connected but different sounds, e.g. 'ba-da-ga' By 12m, may hear "word" like utterances e.g. "dada", "mama", "gogo" Can point to object or activity to express wants and needs May have 1-5 "words" by 12m, related to child's own world and functional needs 	<ul style="list-style-type: none"> Gazes at faces and copies facial movements e.g. sticking out tongue Makes sounds with their voice for social interaction By 12m uses voice, gesture, eye contact & facial expression to make contact with people and keep their attention Initiates an interaction with adult 	<ul style="list-style-type: none"> Babbles with range of sound combinations By 12m consonants such as "b, d, g, m, n, w" predominate 	<ul style="list-style-type: none"> Exploratory play; mouths, bangs, shakes objects By 12m, relates 2 objects, e.g. spoon in cup Plays alone with toys
8-20 months	<ul style="list-style-type: none"> Likes to listen to a wide variety of sounds By 12m concentrates on most powerful stimulus, difficult to re-focus Is easily distracted by noises or other people talking By 18m will attend to own choice of activity, tolerates limited intervention 	<ul style="list-style-type: none"> By 12m understands key words in phrase e.g. "Where's your nose?" By 12m recognises photos of familiar people and objects Understands simple words in context and understands more than they can say Understands naming words e.g. shoe, ball 	<ul style="list-style-type: none"> Creates personal words as begins to develop language Uses around 10-20 single words although these may not be clear Beginning to use words for a range of purposes 	<ul style="list-style-type: none"> Likes being with familiar adults and watches and copies their body language including gesture and pointing Realises that their voice and actions have an effect on others Use pointing with eye gaze to share an interest and make a request 	<ul style="list-style-type: none"> Speech consists of mix of "jargon" and some real words May be difficult to understand 	<ul style="list-style-type: none"> Repeats actions that were enjoyed Begins "pretend" play with toys e.g. gives doll a drink Involves others in pretend play
16-36 months	<ul style="list-style-type: none"> Listens to and enjoys rhythmic patterns in rhymes and stories Starts to focus on an activity of own choice Responds to own name and can move attention briefly and then re-focus Single channelled attention 	<ul style="list-style-type: none"> Understands action words e.g. "sleep", "jump" By 2y, understands simple instructions/phrases when context apparent, e.g. "get mummy's shoes" Understands instructions with 2 key words (or signs) e.g. "make teddy jump" 	<ul style="list-style-type: none"> By 24m beginning to put 2 words (or signs) together e.g. "Mummy's car", "more juice" Uses different types of everyday words, nouns, adjectives, verbs Uses up to 50 words Asks questions e.g. "where drink?" 	<ul style="list-style-type: none"> Interested in stories, songs and rhymes Begins to express feelings 	<ul style="list-style-type: none"> By 2y6m starting to use "f, s, sh" Immaturities heard e.g. "car" for "car", "pu" for "spoon" 	<ul style="list-style-type: none"> Starts to demonstrate 2 part play sequence e.g. drives car to petrol station + fills petrol Beginning to play with miniature toys e.g. small world

9

Language Development of Child with ASD	
<ul style="list-style-type: none"> Non specific cries Delayed or atypical use and understanding of gestures and facial expressions May develop a few words and then stop using them Echoes words and phrases and may use them out of context (idiosyncratic language) Uses words and phrases in unusual ways May develop oddities in inflection and volume May be verbal or non-verbal Challenges with pragmatics No or limited joint attention skills (ability to share interest about an outside object or event with communicative partner) 	

10

Impairment in Social Interaction

Typical Development of Play Skills

Types of play	Activities
Unoccupied play (sensorimotor play): birth-12months- A baby begins to explore materials around them in a scattered organisation. At this stage, children begin to manipulate materials, practice self control and learn about the world around them.	<ul style="list-style-type: none"> • Soft toys • Animal toys • Story books
Solitary play: birth- 2years- At this stage, children are able to entertain themselves without social interaction. They may not acknowledge adults or spectators in play, and are able to freely explore new skills and abilities.	<ul style="list-style-type: none"> • Musical instruments i.e. drum/tambourine • Dolls • Toy hammer
Onlooker play: 1-2years- When a child watches other children play, but may not engage in play. At this stage, children learn about social rules, relationships and game play through watching others.	<ul style="list-style-type: none"> • Building blocks • Lego • Doll houses
Parallel Play: 2-4years- This occurs when children play next to each other, but do not interact. Here, children have limited social interaction skills, however will mirror and learn skills, behaviours and methods whilst completing the same activity side by side.	<ul style="list-style-type: none"> • Colouring • Painting • Water and sand play • Play dough • Puzzles
Associative play: 4-7 years- This stage represents a shift in a child, whereabouts a child becomes more interested and willing to engage with others in play. They begin to put into practice skills observed in onlooker and parallel play, and use newfound social skills to engage.	<ul style="list-style-type: none"> • Dress ups • Chalk board • Connect Four • Twister • Card games
Cooperative play: 7-16 years- This stage requires cooperative efforts between players. These include establish rules and goals for play. It commonly involves a lot of conflict associated with sharing, turn taking, winning and losing. Problem solving and self-control are developed when solving conflict and regulating emotions.	<ul style="list-style-type: none"> • Computer games • Relay races • Simple science experiments • Painting • Dress ups/ pretend play

11

Age	Skills
0-12 months	<ul style="list-style-type: none"> • Smiles • Responds to strangers differently than familiar people • Pays attention to own name • Responds to 'no' • Copies simple actions of others • Responds to other people's emotions
13-24 months	<ul style="list-style-type: none"> • Recognizes self in mirror or picture • Refers to self by name or pointing • Plays by self/initiates the play • Imitates adult behavior in play • Helps adult (i.e., cleans up)
25-36 months	<ul style="list-style-type: none"> • Plays near others • Defends own possessions • Symbolically uses objects • Participates in simple group activities
37-48 months	<ul style="list-style-type: none"> • Joins play with others, begins to interact • Shares and take turns, with or without adult facilitation • Engages in dramatic play • Shows concern and affection for others
4-6 years old	<ul style="list-style-type: none"> • More interaction with others • Begins to enjoy new things • Dramatic play becomes more sophisticated and complex • Chooses friends • Wants to please others • Plays competitive games • Engages in cooperative play • Group decisions, role assignments, fairness • Negotiates • Would rather play with others than alone

12

Social Skills Development of a Child with ASD

- May not respond to name
- May show reduced interest in people
- Difficulty playing social games
- Difficulty interacting with others
- Prefer to be alone
- May fail to seek comfort from adults
- Respond to parent's displays of anger or frustration inappropriately
- Unusual type of attachment to parent
- Difficulty interpreting what others are thinking and feeling
- Subtle social cues may have no meaning
- Difficulty interpreting gestures and facial expressions
- Difficulty seeing something from another's perspective
- May have difficulty regulating emotions

13

Impairment in Behavior

- Engage in unusual repetitive behaviors (i.e., hand flapping, rocking)
- Restrictive range of interests
- May engage in self stimulatory behaviors (i.e., wiggling fingers in front of eyes)
- Can be rigid, demand consistency/sameness
- Preoccupations or obsessions with things
- Difficulty with self regulation (how well you manage your thoughts and actions)
 - Self control
 - Adaptability to situations
- Difficulty with self monitoring

14

Common Strengths of Children with ASD

- Ability to understand concrete concepts, rules
- Strong memory skills
- Strong rote skills (i.e., math)
- May be musically or artistically talented
- Visual processing is a strength
- Honesty
- May be hyperlexic

15

Our Teaching Needs to Compensate for

- Attention
 - How to establish, maintain and shift attention
 - Establishing joint attention
 - Attending when multiple stimuli are present
- Motivation
 - May need extrinsic motivators
 - May not be motivated in a typical manner
- Generalization
 - May not be able to use skills in a different environment, with different people, with different materials

16

- Cause-Effect
 - May not understand the relationship between events
 - Need to teach contingency
- Behavioral control/regulation
 - Self regulation skills
 - Self control
- Observation skills
 - Poor imitation skills
 - Poor observational learning skills

17

- Communication
 - Lack of communicative intent
 - Understanding that communication serves a function
 - Use of verbal language, Picture Exchange Communication Systems, Augmentative/alternate Communication
- Social skills
 - Play skills
 - Awareness of others
 - How to interact with others (i.e., proximity, approaching others, reciprocal exchanges)
 - Theory of Mind

18

Diagnosing Autism

- May receive medical diagnosis
- Schools use DSM-V criteria for eligibility under autism
- Onset must occur before age of 3
- Must have weaknesses in areas of : social interactions, social communication, and behavior
- No one “test”
- Child should be observed in structured and unstructured settings
- ADOS

19

Treatment

- No cure for autism
- Early intervention is crucial
- Applied Behavioral Analysis Interventions
- Speech/Occupational Therapy
- Social Skills Development
- Medications
- Dietary

20

