

# Understanding Autism: Strategies to Improve Communication

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West Cleveland's Leading  
Comprehensive Service Provider  
for Autism Spectrum Disorders

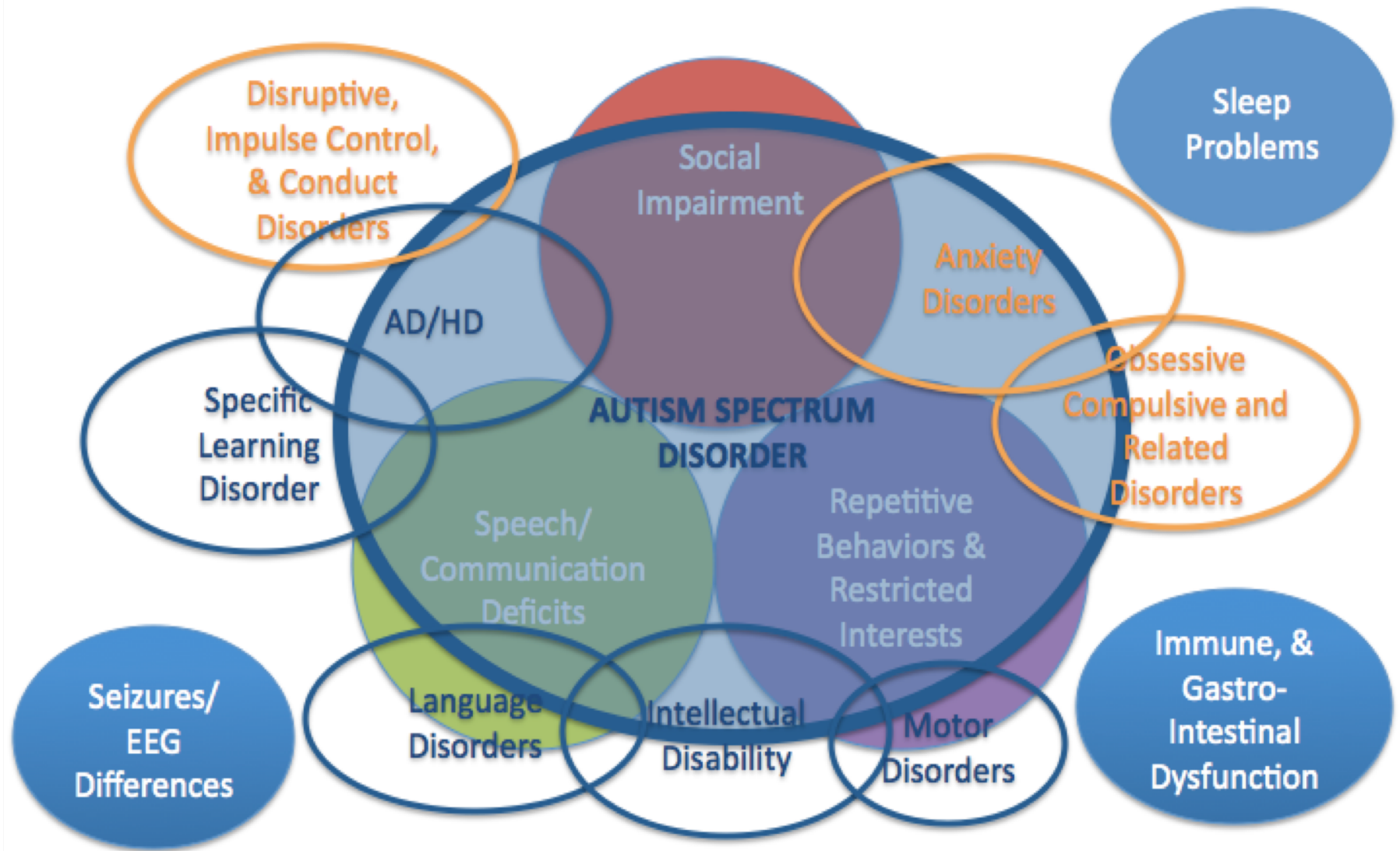
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# Outline

- A. Conceptualization of Autism
- B. Etiology
- C. Brain Development and Function
- D. Key to Understanding Autism
- E. Communication Strategies

# Conceptual Framework





# Autism Spectrum Disorders (ASD): Prevalence & Etiology

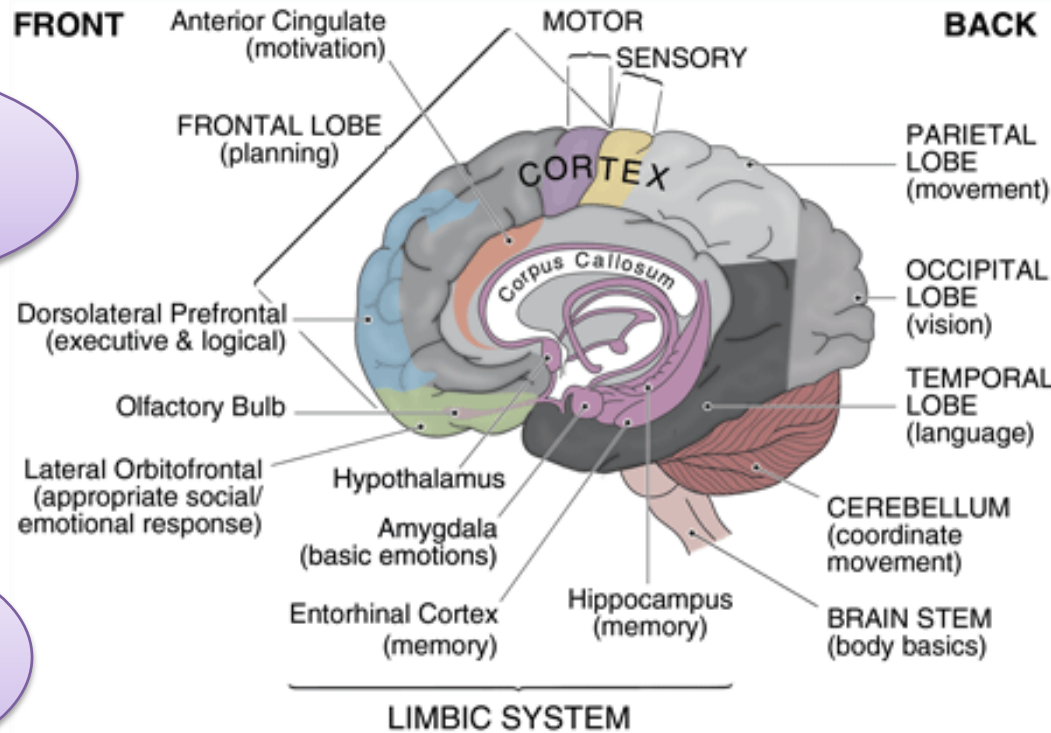
- 1 in 6 children diagnosed with a neurodevelopmental disorder
- 1 in 59 children diagnosed with autism
- Growing at rate of 30 percent
- 5 times more common in boys
- No known etiology?
- Genetics
  - Identical twin studies (70% - 90% concordance rates)
  - Siblings studies (2-18%)
  - Microdeletions or microduplications linked to certain genes

(CDC, 2018; National Center on Birth Defects and Developmental Disabilities, 2006)

# Autism Spectrum Disorders (ASD): Etiology - Correlations

- Correlation with Maternal and Paternal Age (Croen and colleagues, 2007; See Klevzon and colleagues, 2007, for a review)
- Prenatal teratogens related to autism risk in first trimester (see Arndt, Strodgell and Rodier, 2004, for a review):
  - Maternal rubella infection
  - Ethanol
  - Thalidomide
  - Valproic acid
  - Misoprostol
- Perinatal factors, such as low birth weight, abnormally short gestation length, and birth asphyxia
- Post-natal factors associated with ASD include autoimmune disease, viral infection, hypoxia, mercury toxicity
  - (for more information, see review by Park and Colleagues, 2016).

# Brain Function



Excess of Neurons:  
overconnectivity or  
underconnectivity

Abnormal  
formation of  
synapses &  
dendritic spines

Temporal Lobe  
Prefrontal Cortex  
Corpus Callosum  
Amygdala  
Cerebellum  
Hippocampus

Neurotransmitters  
•Serotonin  
•Glutamate

# Brain Function: What it Means

- Intact or Enhanced Abilities:
  - Basic attention
  - Elementary motor
  - Sensory perception
  - Simple memory
  - Formal language (phonological and grammatical elements)
  - Rule-Learning
  - Visuospatial processing

(Williams & Minshew, 2010)

# Brain Function: What it Means

- Deficits:
  - Executive functioning
  - Integrative processing
  - Complex sensory, motor, memory, and language skills
  - Concept and Prototype Formation (facial recognition, emotional expression, organization of information into different categories, detecting patterns)
  - Differential processing of human speech and the integration of complex auditory information
  - Processes auditory information in the right-hemisphere (visually) instead of left-hemisphere

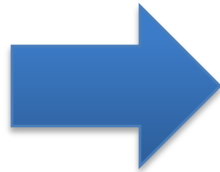
(Williams & Minshew, 2010)

# Key Analogy: Start of the Day

Presented with  
Task

Needs to unlock (access) each piece of  
information they have with a key before  
starting the task

Has a Set of Keys



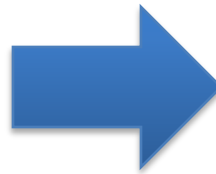
# Key Analogy: Processing Information Throughout the Day



Interrupted to start a new task

Starts unlocking another door which requires access to each piece of information they have about that task.

Need to get an entirely different set of keys to process new information.





# Key Analogy: End of the Day





# Processing Information and Performing a Task



# Communication Strategies

- Eliminate Distractions
- Focus on proximity
- Assess your verbal and nonverbal communication
- Less Words
- Present one thing at a time
- Allow time for processing
- Make it positive
- Use Visuals

# Visuals

- Picture Exchange Communication System (PECS)

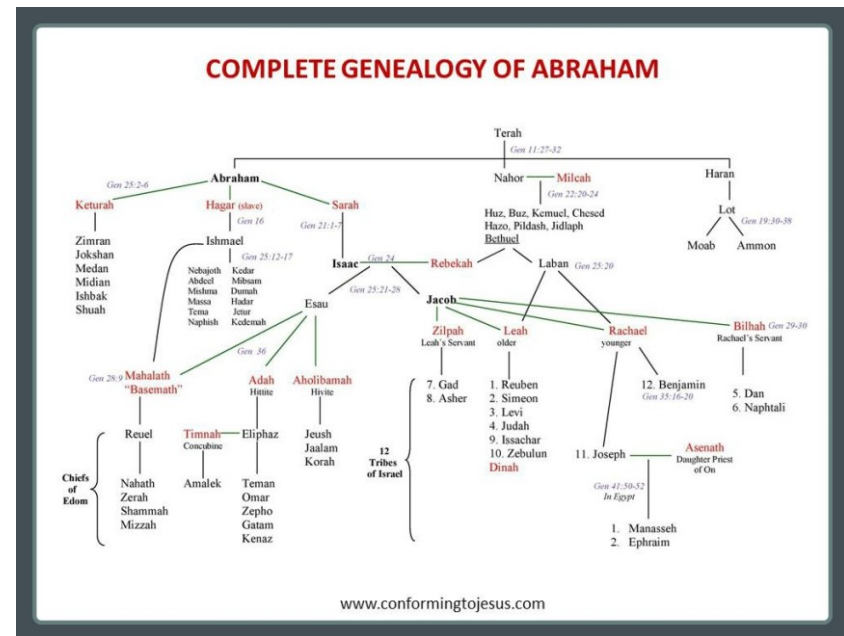
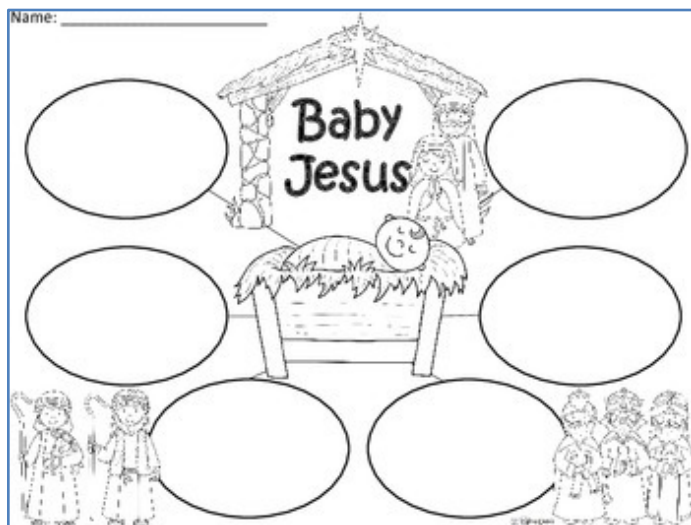
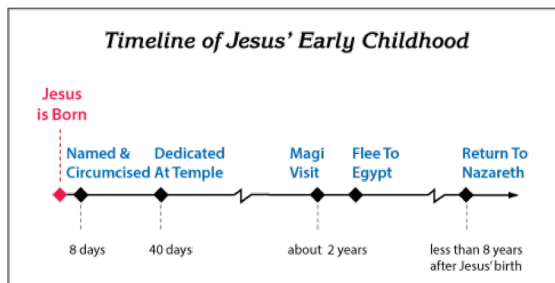


- Visual Schedules



# Visuals

- Graphical Organizers (e.g., Timelines, Venn Diagrams, Webbing)



# Visuals

- Social Stories – Carol Gray

On Sundays, I go to church with my family. Our church starts the worship service at 10 a.m. and ends at 11 a.m.

At church, we see a lot of other people. We sit inside the chapel and sing songs and pray together. Our church leader or pastor will read to us from the Bible. When he is reading or speaking, I can write or color in my special church book. It is important to try to not talk loudly while we are inside the chapel service. Other people may not hear words the pastor is saying if I talk loudly. This is called being respectful of others.

I can close my eyes if I hear the pastor say "Let us pray to God". My family and other people will be closing their eyes too. I can open my eyes when I hear the pastor and the people say Amen.

If I need to take a break during the service, I can ask my parents for a break and we can quietly walk to the sitting area in the lobby for five minutes. After five minutes, we will go back into the chapel.

After church, my family and I eat donuts, which I really like. I like the chocolate donuts with rainbow colored sprinkles.

# Visuals

- Video Modeling
- Power Cards

## Just Like Minnie

Minnie mouse wants me to remember:

1. Keep my hands to myself
2. Talk with my indoor voice
3. Stay seated at my desk



Thank you!  
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