

Down Syndrome and Autism

Lina Patel, Psy.D.
Sie Center for Down Syndrome
Children's Hospital Colorado
University of Colorado School of Medicine
Lina.Patel@childrenscolorado.org



Financial Disclosure



collaborative



Objectives

- ❖ Discuss characteristics of Down syndrome, autism spectrum disorder, and dual diagnosis
- ❖ Methods for diagnosing autism in Down syndrome
- ❖ Implications for treatment intervention



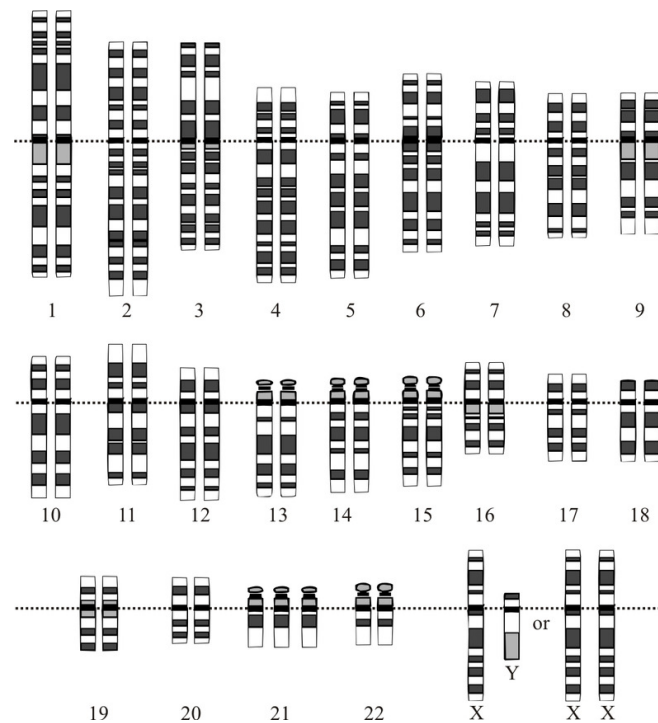
Development

- ❖ When assessing children with Down syndrome, it is critical to remember that they follow the same order of skill development as children without Down syndrome, but just at a slower rate. This rate varies from child to child (Tien et al, 1999)
- ❖ This developmental perspective is applied when looking at what symptoms to endorse.
- ❖ Only weaknesses in social and communicative behaviors below expected for a child's developmental level are deemed relevant.



Down syndrome

- ❖ Genetic disorder
- ❖ Three copies of the 21st chromosome





Development in Down syndrome

- ❖ There is evidence that children with Down syndrome typically have:
 - IQs between 30-70 (Chapman, 1999)
 - 4-5 months of developmental progress per 12 months
 - Receptive language that is correlated to overall IQ (Abbeduto et al 2003)
 - Preferences for routines and sameness



Development in Down syndrome



❖ Relative strengths in

- Orienting and engagement behaviors from infancy (Fidler et al. 2008)
- Social sensitivity and understand nonverbal cues for emotions
- Empathy skills
- Visual processing
- Self help and daily living skills
- Visual short term memory

❖ Relative weaknesses in

- Auditory processing
- Motivation to learn topics that are not of interest



DSM-5 Diagnostic Criteria for autism

DSM-5 Criteria for Autism Spectrum Disorder

Currently, or by history, must meet criteria A, B, C, and D

A. Persistent deficits in social communication and social interaction across contexts, not accounted for by general developmental delays, and manifest by all 3 of the following:

- 1. Deficits in social-emotional reciprocity**
- 2. Deficits in nonverbal communicative behaviors used for social interaction**
- 3. Deficits in developing and maintaining relationships**

B. Restricted, repetitive patterns of behavior, interests, or activities as manifested by at least two of the following:

- 1. Stereotyped or repetitive speech, motor movements, or use of objects**
- 2. Excessive adherence to routines, ritualized patterns of verbal or nonverbal behavior, or excessive resistance to change**
- 3. Highly restricted, fixated interests that are abnormal in intensity or focus**
- 4. Hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of environment;**

C. Symptoms must be present in early childhood (but may not become fully manifest until social demands exceed limited capacities)

D. Symptoms together limit and impair everyday functioning.



collaborative

Development in autism



❖ There is evidence that children autism typically have:

- Average to above average intelligence
- Splinter skills
- Variability in level of delay



Development in autism



❖ Relative strengths in

- ❖ Attention to detail
- ❖ Knowledge for areas of interest
- ❖ Visual processing
- ❖ Verbal communication

❖ Relative weaknesses in

- ❖ Pragmatic communication
- ❖ Motivation to learn topics that are not of interest
- ❖ Perceiving emotional states of others
- ❖ Sensory integration
- ❖ Generalization of skills
- ❖ Empathy



Down syndrome and autism



- ❖ Approximately 7% of children with Down syndrome meet criteria for autism as well.
- ❖ Approximately 18% meet criteria for autism spectrum disorder
(DiGuseppi et al, 2011)

- ❖ Developmental quotient for comorbid Down syndrome and autism is 37, compared to 50 for Down syndrome alone

- ❖ Children with comorbid Down syndrome and autism
 - ❖ score higher on measure of self-absorbed behaviors than just Down syndrome
 - ❖ have more challenges with social relatedness than those with Down syndrome alone
 - ❖ were more impaired in shifting attention, emotion control, and flexibility in problem solving



What makes it difficult to diagnosis autism in Down syndrome



- ❖ Communication
 - ❖ Abnormal social approach
 - ❖ Failure of normal back and forth conversation
 - ❖ Reduced sharing of interests, emotions, or affect

- ❖ Intellectual Disability
 - ❖ Difficulty with adjusting behaviors to suit various social contexts
 - ❖ Imaginative play
 - ❖ Repetitive play with objects
 - ❖ Making friends
 - ❖ Insistence on sameness, inflexibility to routines, difficulty with change

- ❖ Patterns of behavior
 - ❖ Limited interests
 - ❖ Sensory issues
 - ❖ Symptoms must be present prior to the age of 3



collaborative



What to consider when diagnosing

- ❖ Intellectual ability
- ❖ Medical comorbidity
- ❖ Language level
- ❖ Time of onset of symptoms
- ❖ Loss of language skills
 - ❖ 10.9% of 174
 - ❖ 1/3 lost language alone
 - ❖ Loss occurred at 44 months

- ❖ Loss of other skills
 - ❖ ½ lost other skills alone
 - ❖ Loss occurred at 27 months



More specifically...



- ❖ Motivation
- ❖ Self-injurious and disruptive behaviors like skin picking, biting, head banging
- ❖ Repetitive motor behaviors such as spinning, flapping, rocking
- ❖ Unusual vocalizations
- ❖ Unusual sensory responsiveness or fascination with things like lights
- ❖ Feeding challenges
- ❖ Preoccupations with body movements and objects use

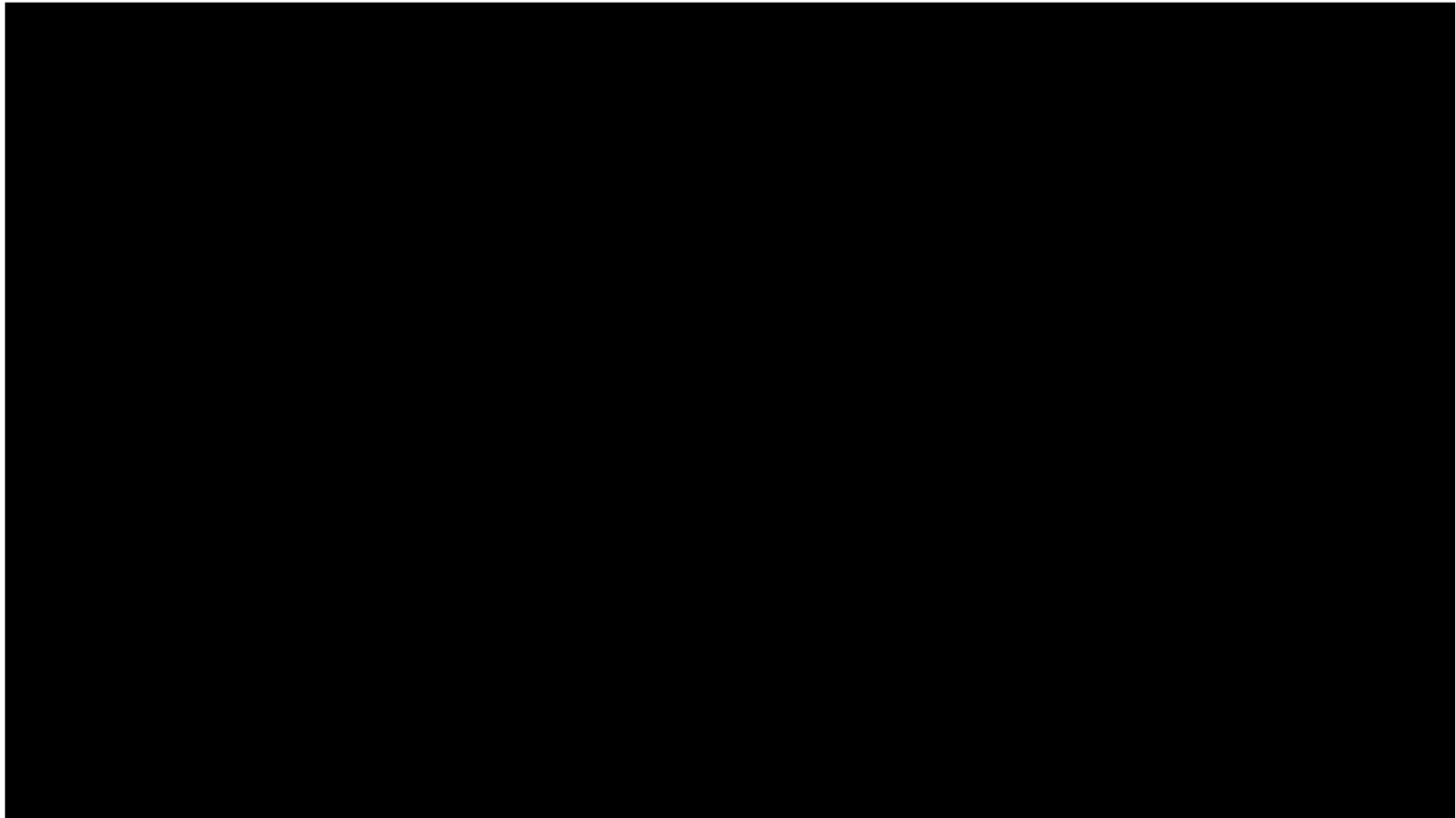


More specifically...

- ❖ Shared affect
- ❖ Responding and initiating joint attention
- ❖ Imitation
- ❖ Social orienting
- ❖ Using nonverbal behaviors to demonstrate communicative intent
- ❖ Difficulty becoming intention communicators
- ❖ Routines/behavior chains

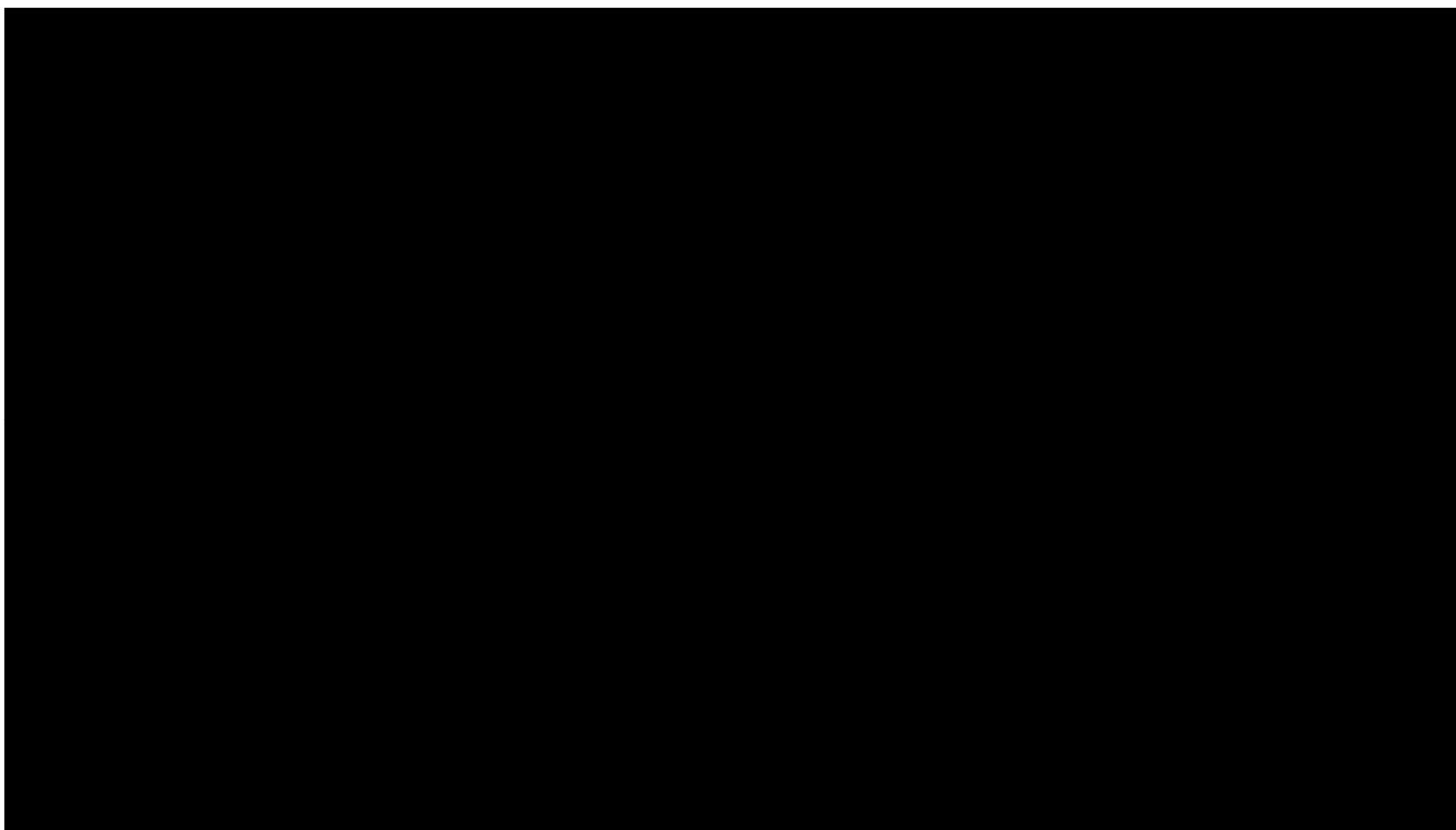


Child with Down syndrome and autism



collaborative

Child with Down syndrome and autism



collaborative

Gold standard



- ❖ Screening Questionnaires
 - ❖ Social Communication Questionnaire (SCQ)
 - ❖ Social Responsiveness Scale (SRS)
 - ❖ Modified Checklist for Autism in Toddlers (M-CHAT)

- ❖ Autism Diagnostic Observation Schedule (ADOS-2)
 - ❖ Series of structured and semi-structured tasks that involve social interaction between the examiner and the subject.
 - ❖ Nonverbal mental age of 15 months or older for Module 1
 - ❖ Presumes that a child is independently ambulatory
 - ❖ Significant hearing or vision impairment

- ❖ Autism Diagnostic Interview-Revised (ADI-R)
 - ❖ Structured interview with parents
 - ❖ Mental age of at least 18 months



Additional information



❖ Measures of Intelligence

- ❖ Differential Abilities Scale-2nd Edition (DAS-2)
- ❖ Leiter International Performance Scale-3rd Edition (Leiter-3)
- ❖ Weschler Intelligence Tests
- ❖ Stanford-Binet Intelligence Scales-5th Edition (SB5)
- ❖ Bailey Scale of Infant and Toddler Development



Additional information



❖ Adaptive Measures

- ❖ Scales of Independent Behavior-Revised (SIB-R)
- ❖ Vineland Adaptive Behavior Scales-3rd Edition (Vineland-3)
- ❖ Adaptive Behavior Assessment System-2nd Edition (ABAS-2)

❖ Language Measures

- ❖ Preschool Language Scale-4th Edition (PLS-4)
- ❖ Peabody Picture Vocabulary Test
- ❖ Expressive One Word Picture Vocabulary Test
- ❖ Receptive One Word Picture Vocabulary Test



Conclusion

- ❖ Autism needs to be diagnosed by a trained provider who has experience in distinguishing characteristics of autism from those that overlap with Down syndrome.
- ❖ Diagnoses are based on observation, formal assessment, and clinical judgment.



Treatment



- ❖ Benefit more from treatment approaches that are evidence based practices with autism
- ❖ Applied Behavioral Analysis is evidence based
- ❖ A structured teaching approach with clear, predictable routines and repetition works best
- ❖ Minimize distractions when learning a new skill
- ❖ Frequently reassess motivators and reinforcers
- ❖ Use clear visual strategies more than verbal/auditory strategies
- ❖ Utilize errorless learning strategies
- ❖ Teach intentional requesting and functional communication
- ❖ Teach in context



THANK YOU



QUESTIONS?



collaborative