

Early Intervention Imperative: An Innovative Framework for ASD Assessment

Presented by Hogrefe & WPOS

Presenters



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Disclaimers

Ashley Arnold is an assessment consultant with Western Psychological Services, and Molly Ware is an assessment consultant with Hogrefe Publishing. As salaried employees we have no additional relevant financial interests or conflicts of interest related to this presentation.

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Learning Objectives

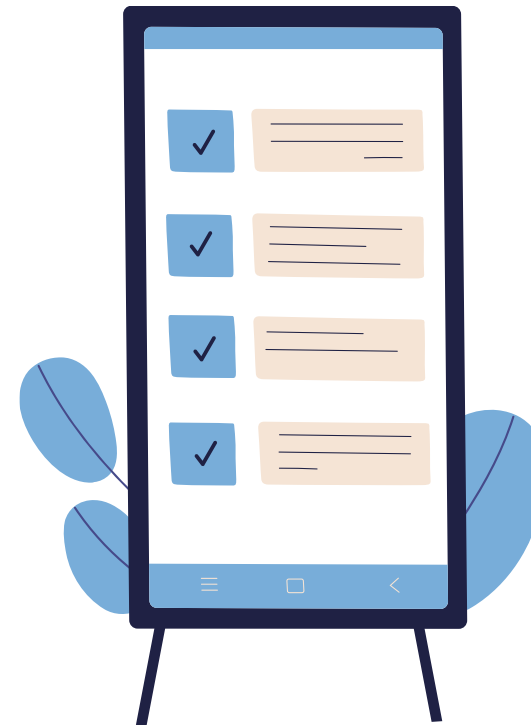
- List the benefits and shortcomings of current multidisciplinary evaluation models in preschool ASD assessment.
- Explain how females may exhibit challenges in sociocognitive development differently than males using examples from case studies and discussion.
- Describe how ESB and MIGDAS-2 can help promote earlier identification of ASD across genders using a neurodiversity-affirming practice.





Agenda

- I. Identifying ASD
- II. Gender Disparities in ASD Identification
- III. School-Based ASD Evaluations
- III. Introduction to the ESB
- IV. Introduction to MIGDAS-2
- V. Integrating Results
- I. Conclusions



Understanding ASD

First Things First

- Autism is complex, but comprehensive evaluations and intervention plans can simplify life for individuals with autism spectrum disorder (ASD)
- Assessment and diagnosis are only of value when they provide access to appropriate intervention and educational services
- Professionals must also determine whether ASD has been overlooked or misclassified



Neurological Differences

- Neuroimaging studies show differences in brain connectivity and structure between males and females with ASD (Lai et al., 2013)
 - More neurotypical patterns are demonstrated in females, which may explain social functioning
 - More pronounced differences in males may relate to social communication and restricted interests
- Implications
 - Subtle differences in brain structure may explain why ASD is more challenging to detect in females

Understanding the Discrepancy

- Girls may camouflage their autism characteristics
 - Demonstrate stronger social motivation and social coping strategies
 - Elementary school staff are less likely to recognize autism characteristics in girls
 - Assessment practices and instruments may be less sensitive to autism presentation
- Consequently, girls are more likely to be identified later in life

Sociocultural Factors

- Social expectations
 - Girls are often socialized to be more nurturing, emotionally expressive and socially attentive which can contribute to masking (Hiller et al., 2014)
- Pressure to conform
 - Girls may develop strong coping mechanisms to fit into social expectations contributing to under-identification
- Cultural perceptions
 - In some cultural groups, expectations for gender roles may further obscure ASD traits in females, as they are expected to be more socially engaged and compliant than males

School-Based Evaluations

IDEA (2004)

- IDEA (2004) 300.8.(c)(1)(i) defines autism as a
- Developmental disability that:
 - Significantly impacts verbal and nonverbal communication and social interaction
 - Is generally evident before age 3
 - Has an adverse impact on education
- Other characteristics often associated with autism:
 - Engagement in repetitive activities and stereotyped movements
 - Resistance to environmental change or change in daily routines
 - Unusual responses to sensory experiences

IDEA (2004) *(cont.)*

- Can be identified after age 3
- Pervasive developmental disorders are included
- Autism does not apply if emotional disturbance (ED) is primary



Multidisciplinary Team (MDT) Evaluation

Best Practices: MDT Evaluation

1. Team meets and reviews existing data to determine scope of the evaluation and plan the assessments.
2. Team conducts assessments; conducts mid-assessment staffing.
3. Team generates integrated report.
4. Team meets with parent to review the evaluation; provide a draft copy review prior to eligibility summary.
5. Team reviews evaluation data with school personnel prior to eligibility meeting.
6. Team participates in eligibility meeting and individualized education plan (IEP) development.
7. Team attends IEP to present results and assist in determining the educational program.

MDT Evaluation: 5-Phase Process

- Phase I: Team planning/coordination
- Phase II: Evaluation planning
- Phase III: Evaluation/testing
 - a: Collecting the data/information
 - b: Analyzing the data/information
- Phase IV: Report writing/integration of data
- Phase V: Recommendations & IEP development
 - a: Recommendations
 - b: IEP development

Early Intervention Imperative

- Enhanced outcomes with early intervention
 - Research shows early intervention is linked to significant improvements in communication, social, and adaptive skills for children with ASD (Smith et al., 2023)
- Critical period for brain development
 - Early childhood represents a critical window where interventions can have the greatest impact on neural pathways (Johnson et al., 2022)
- Improved family support and education
 - Early identification enables greater access to resources, training and support thus reducing stress and empowering caregivers (Lee et al., 2022)
 - Enhanced school readiness
 - Intervention in early childhood improves school readiness, promoting successful integration, and reducing the need for more intensive support later (Nguyen & Chen, 2023)

Challenges School-Based Teams Face

- Limited resources, staffing shortages, and time constraints
- Fewer assessment instruments
- Variability in ASD symptom presentation in early childhood
 - Symptoms can vary greatly across age, gender, and cultural backgrounds
- Subtle or overlapping symptoms
 - There may be slight social or communication difficulties which resemble other conditions, leading to misidentification
- Gender discrepancies
 - Symptom presentation may present differently in girls, often with more subtle challenges often overlooked by standardized assessments focused on more obvious symptoms

Challenges Early Childhood Teams Face

- Variability in developmental milestone achievement
 - Children develop at different rates which may mask social or communication delays
- Limited communication abilities
 - Young children may have still developing verbal and nonverbal skills making it challenging to assess social communication
- Reliance on parent reports
- Pressures to identify children early and quickly may lend itself to evaluations without sufficient information
- Early childhood teams are often the first exposure that families have to the assessment and special education process; these initial interactions lay the foundation for the future

Strategies for Overcoming Challenges

- Employ a multi-instrument approach to assess diverse behaviors and settings
- Advocate for and engage in professional development on ASD identification and gender differences
- Engage in collaboration with families, school staff, and other specialists for comprehensive perspectives
- Make test selections carefully
 - Ensure relevance and appropriateness to the case.
 - Address the referral questions you want to answer
 - Check that data obtained is consistent with evaluation goals
- **Remember:** Assessment and diagnosis are only of value when they provide access to delivery of appropriate intervention and educational services

How Do You Assess for ASD?

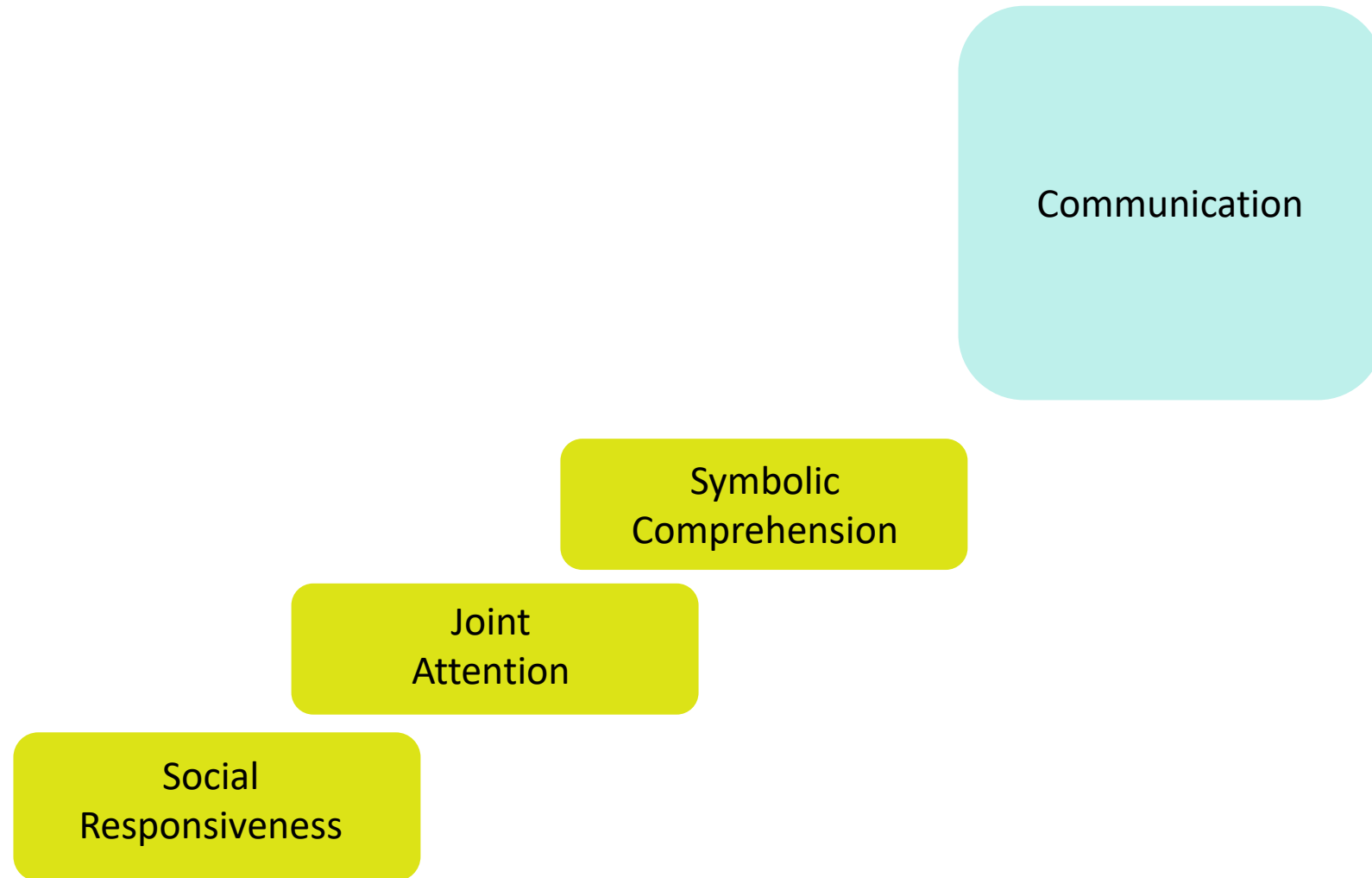




The Early Sociocognitive Battery (ESB)

Authored by: Penny Roy, Shula Chiat, and Jennifer Warwick

Rationale for the ESB



Rationale for the ESB

Of the children who scored “Low” on the ESB, when followed up with 7-8 years later, 89% of them were either diagnosed with ASD or had social communication difficulties as reported by their parent/guardian.



Sociocognitive Skills Measured in the ESB



What Is the ESB?

A quick, standardized, and direct assessment that:

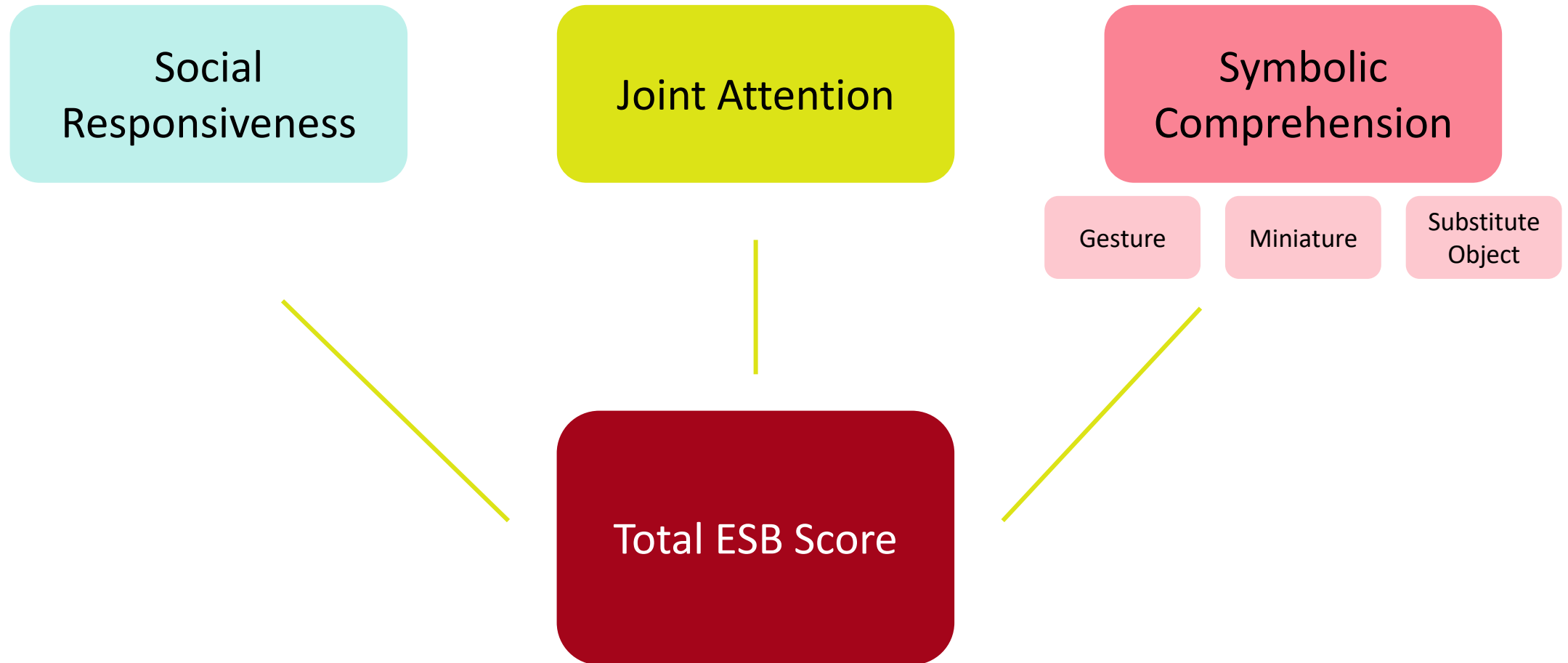
- comes in a suitcase with manipulatives organized by subtest into colored bags
- is untimed, but takes about 15 minutes to administer
- is for children ages 1:6-4:11
- evaluates developing social communication skills
- confirms concerns about social differences or helps to rule out concerns about foundational social skills
- is predictive of social communication differences noted in children with autism spectrum disorder (ASD)



Why Choose the ESB?

- Systematic
- Standardized
- Reliable and valid
- Direct assessment
- Quick (~15 minutes)
- Culturally and linguistically neutral
- Requires no speaking on the child's part
- Provides opportunity to discuss strengths
- Paired with other pieces of information, can help with decision-making in the moment

Design of the ESB



Social Responsiveness



This subtest assesses children's responses to a range of feelings expressed by an adult



Through play, the examiner presents an exaggerated expression of an emotion (e.g., frustration, hurt, fear, etc.) with no vocalization

Social Responsiveness – Scoring

The child is scored based on their nonverbal response to the emotion.

For example:

- A look to the practitioner that lasts at least two seconds immediately after the practitioner expressed the emotion earns 2 points
- A brief or fleeting look to the practitioner immediately after the emotion is expressed earns 1 point and
- No look to the practitioner earns 0 points

	2	1	0
1. HURT (Peg set and two hammers) “Look, I found a hammer and peg set. Oh, look, there is another hammer for you. Let’s do some hammering together.” “Ow!” “I hurt my finger. I’m going to stop hammering now.”			

Interpretation of Social Responsiveness



Low Social Responsiveness Score:

- Limited interest in others
- Difficulty noticing nonverbal cues
- Children with ASD tend to ignore, or not notice expressions of negative affect and spend more time looking at toys (Sigman et al 1992, Swettenham et al 1998)
- Relative weakness in social engagement that might affect the child's understanding and participation in communication exchanges

Average Social Responsiveness Score:

- Well-developed interest and engagement with others
- Notice nonverbal cues
- Strong base for establishing a shared focus and eventually shared meaning

Joint Attention



This subtest assesses children's capacity to share interest in an object with an adult



Responsiveness to bids for joint attention is critical for the development of language and communication. In the case of the Joint Attention subtest, the practitioner initiates engagement, which lends itself to systematic measurement of the child's response

Joint Attention – Scoring

Score is based on two factors:

- *Gaze Switch*: Either child looks from egg to adult while adult is shaking egg (i.e., before opening egg) or child looks from toy to adult after the egg has been opened
- *Gaze Monitoring*: Child follows adult’s gaze switch with verbal statement only, or the child follows adult’s point with repeated verbal statement

	Gaze Switch	Gaze Monitoring	
	Either before or after opening the egg Score = 1	After examiner’s gaze + statement Score = 2	After examiner’s point + statement Score = 1
Person			
Tiger			

Interpretation of Joint Attention



Low Joint Attention Score:

- Limited interest in others
- Difficulty sharing in engagement with others
- Relative weakness in reciprocal social engagement that might affect the child's understanding and participation in communication exchanges

Average Joint Attention Score:

- Strong base for establishing a shared focus leading to shared meaning
- The ability to realize that the speaker is using words to convey a specific message and can identify where the speaker's attention is directed in order to grasp that message

Symbolic Comprehension



This subtest assesses children's understanding of the meaning of symbols (e.g., gestures) used by an adult

Symbolic Comprehension

The examiner presents an object or an action

The child demonstrates understanding of symbols by selecting the target/correct object from a choice of six objects and placing it down the chute



Symbolic Comprehension – Scoring

Symbolic Comprehension is unique in that it includes a Practice task, and then three additional tasks:

- Gesture
- Miniature
- Substitute Object

- Scoring most straightforward for the tasks within this subtest
- Child receives 1 point for the correct selection of an object
- Fabric chute is used to engage the child in selecting their object

Score	1	0
1. Toothbrush: <i>Pretend to brush teeth using index finger</i>		



Interpretation of Symbolic Comprehension



Low Symbolic Comprehension Score:

- Difficulty understanding communication intentions
- May represent cognitive difficulties in recognizing what symbols signify

Average Symbolic Comprehension Score:

- Knows what someone is telling them using gestures and objects rather than words
- Shows potential for the ability to infer intentions and meanings behind actions and words

Guidance for Interpretation

Total ESB Score

- Children who score in the Low category (more than 2 SDs below the mean) are at risk for later diagnosis of ASD or social communication disorders

Subtest Scores

- Low scores on at least two subtests are also indicative of significant sociocognitive deficits
- Most children’s performance is consistent across three subtests; however, discrepancies do exist and should be examined to understand strengths and weaknesses

SUBTEST RAW SCORE CONVERSIONS

Subtest	Raw Score	Scaled Score	Percentile
Social Responsiveness			
Joint Attention			
Symbolic Comprehension			

Scoring the ESB

When it comes to interpretation of ESB performance, we rely on two types of scores:

Cut-off scores

- Identify “low” performance on the ESB
- Indicative of high risk for later social communication difficulties and autism spectrum disorder
- Useful for immediate feedback as a part of the assessment process

Normative scores

- Relate to scaled and standard scores
- Enable a clinician to create a profile of ESB performance
- Important to identify an individual child’s needs and to guide intervention

Using Multiple Sources of Information

While the ESB is an evidence-based data source for understanding a child's social communication skills it is one source of data in what is to be a multi-modal assessment

We know that research tells us that using multiple pieces of data to inform decision-making is best practices



Using Multiple Sources of Information (*cont.*)

The use of multiple instruments and data sources supports a holistic perspective; providing a well-rounded understanding of the individual.

Using varied instruments reduces the risk of misidentification by cross-validating findings from different sources and methods.

ASD symptoms vary widely across individuals. The use of multiple tools helps capture this diversity; particularly for subtle or atypical presentations.

The MIGDAS-2 is a complement to the ESB as a qualitative, clinical interview. Used together these tools minimize bias by reliance on any single measure or observer, leading to a more objective identification with more support for evidence-based decision making.

MIGDAS™-2

Monteiro Interview Guidelines for Diagnosing the Autism Spectrum
Second Edition

A Sensory-Based Approach

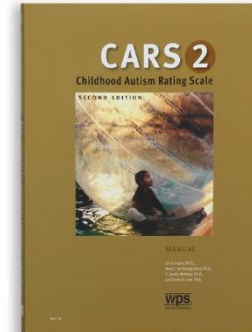
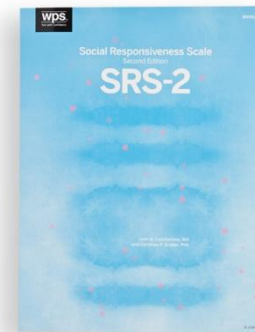
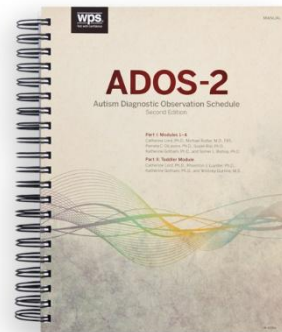
Marilyn J. Monteiro, PhD Sheri Stegall, PhD

MIGDAS-2 Provides Solutions

- Utilizes structured but conversational interview protocols
- Sensory-based diagnostic interview elicits patterns of distinctive behavioral differences to assist with case conceptualization
- Yields positive, descriptive language emphasizing areas of strength and differences that make up the autism spectrum brain style profile across age and ability levels
- Enables evaluators to discuss global criteria in a highly individualized way

MIGDAS-2 Provides Solutions

- Adds to and enhances the use of standardized evaluation measures, like the ESB, and other behavior rating scales and direct assessment measures



Key Features of MIGDAS-2

- Interactive interview techniques
- Parent/caregiver and teacher participation
- Comprehensive qualitative information
- Sensory-based approach



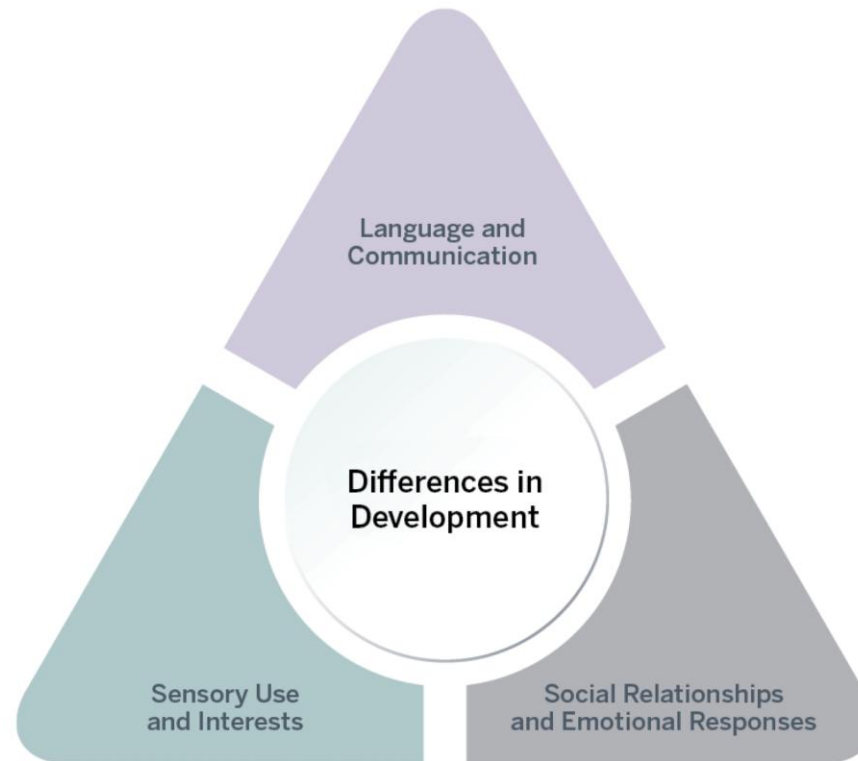
MIGDAS-2: Five-Step Assessment Process

- Preparing for the diagnostic assessment
- Completing the Parent/Caregiver and Teacher Questionnaires
- Conducting the diagnostic interview
- Formulating diagnostic impressions and educational/intervention recommendations
- Providing diagnostic feedback and writing the narrative evaluation report

MIGDAS-2 Components

- Manual
- Five evaluation protocols
 - Parent/Caregiver Questionnaire
 - Teacher Questionnaire
 - Diagnostic Interview for Individuals With Limited to No Verbal Fluency
 - Diagnostic Interview for Children and Adolescents With Verbal Fluency
 - Diagnostic Interview for Adults With Verbal Fluency

The Visual Framework for Autism Spectrum Disorder



The Descriptive Triangle

- Shapes your language and interview process so you:
 - Understand the autism worldview
 - Take the perspective of the individual being evaluated
 - Describe behavior patterns instead of using labels
 - Start with strengths and then describe differences
 - Link the individual's behavior profile with practical interventions and educational supports



MIGDAS-2

Questionnaires

MIGDAS-2 Questionnaires

- Each questionnaire provides structured prompts so that parents, caregivers, and teachers can provide descriptive details regarding the individual
- The key features of the autism spectrum brain style are included in the structured prompts and questions
- Prompts include asking about interests and abilities, three qualities that best describe the individual, and what the parent, caregiver, or teacher hopes to gain from the evaluation process

Parent/Caregiver Questionnaire

- Concerns
- Relationships
- Activities and interests
- Sensory behaviors
- Emotions
- Medications
- Developmental milestones
- School experience
- Current understanding of ASD
- History (family and evaluation)

Teacher Questionnaire

- Concerns
- Organizational skills
- Relationships (peers and adults)
- Communication style
- Preoccupations/skills/interests
- Sensory behaviors
- Academic abilities
- Behaviors during unstructured times
- Emotional qualities



MIGDAS-2

Diagnostic Interview

MIGDAS-2 Diagnostic Interview

- The cornerstone of the MIGDAS-2 assessment process covers 3 key areas of development affected in ASD:
 - Sensory Use and Interests
 - Language and Communication
 - Social Relationships and Emotional Responses
- Dynamic interview focusing on individual's areas of interest
- Uses sensory-based toys and materials (not included in the kit)

MIGDAS-2 Diagnostic Interview (*cont.*)

- Helps guide evaluators to gather individualized behavior profiles that capture the sensory-based differences that are an integral part of the autism spectrum brain style
- Provides descriptive language designed to help evaluators recognize patterns of autism spectrum differences, contrasting these behavior patterns with those of their neurotypical counterparts
- Provides positive descriptive language to help evaluators describe the individual's autism spectrum differences in terms of areas of strength and differences

MIGDAS-2 Diagnostic Interview (*cont.*)

- Each protocol guides evaluators through the process of structuring a sensory-based interview, using topics of preferred interest and sensory materials
- The sensory interview begins with prompts for the individual to discuss topics of preferred interest and to manipulate sensory materials that provide visual, tactile, and auditory input (Sensory Entry Point)
- Social and emotional topics and interactions are then prompted by the evaluator
- Physical movement activities are included for children and adolescents being evaluated

MIGDAS-2 Diagnostic Interview (*cont.*)

- The sensory-based approach guides evaluators to elicit behavior samples by using the entry point of preferred topics and materials containing interesting and novel sensory properties for the individual to explore



MIGDAS-2 Diagnostic Interview (*cont.*)

- The structure of encouraging individuals to explore areas of preferred interest and novel sensory materials provides a rich and authentic behavior sample in a systematic way
- This profile of behaviors is difficult to obtain through the examiner-driven tasks and routines that are inherent in standardized assessments
- The MIGDAS-2 Sensory-Based Diagnostic Interview is ideally suited to use prior to the administration of formal measures like the ADOS-2 modules, and it elicits a detailed sensory profile that is not generally elicited through ADOS-2 module tasks

MIGDAS-2 Diagnostic Interview (*cont.*)

- The use of positive, descriptive language guides evaluators to individualize their diagnostic results using terminology that is readily accessible by parents and teachers
- The emphasis on describing the individual's behavior profile in terms of areas of strength and differences leads to a better understanding of the individual and links effectively to recommend interventions

DI for Individuals with Limited to No Verbal Fluency

Sensory Use and Interests

- Visual/movement properties
- Auditory properties
- Tactile properties
- Preferred interests
- Body movements/mannerisms

Language and Communication

- Vocalizations
- Emerging language
- Nonverbal communication

Limited to No Verbal Fluency (*cont.*)

Social Relationships and Emotional Responses

- Eye contact/gaze
- Facial expressions and quality of emotional responses
- Anxiety/agitation level
- Shared enjoyment and joint attention

DI for Children and Adolescents with Verbal Fluency

Sensory Use and Interests

- Visual/movement properties
- Auditory properties
- Tactile properties
- Preferred topics
- Body movements/mannerisms

Language and Communication

- Intonation/inflection
- Content of preferred topics
- Quality, clarity and relevant of speech
- Reciprocity
- Idioms/colloquial expressions
- Jokes/riddles

Children and Adolescents w/ Verbal Fluency *(cont.)*

Social Relationships and Emotional Responses

- Eye contact/gaze
- Facial expressions and quality of emotional responses
- Perception of self to others
- Anxiety/agitation level
- Self-awareness of anger/agitation triggers
- Feelings, wishes, self-description and school changes

MIGDAS-2: Diagnostic Interview

Diagnostic Interview

Children and Adolescents With Verbal Fluency


unlocking potential

MIGDAS™-2

Marilyn J. Monteiro, PhD Sheri Stegall, PhD

Child's name/ID number:		
Brody D.		
Date of birth:	Age:	Gender:
	8 years, 1 month	Male
School:	Grade:	
	3rd	

Date completed:

Evaluator(s):

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Instructions

Description of this evaluation protocol:

- This MIGDAS-2 protocol is for use with verbally fluent children and adolescents.
- The term *child* is used throughout the protocol to refer to the child or adolescent being interviewed.

The Diagnostic Interview is organized into three sections to facilitate a sensory-based interview with the child:

- Sensory Use and Interests
- Language and Communication
- Social Relationships and Emotional Responses

Each section highlights specific features designed to help you elicit a unique sample of the child's behavioral profile, as well as share and document the child's areas of interest and perspective. Each feature includes Prompts, Observations, and Notes.

Prompts

- Help you structure the interview.

Observations

- Direct your attention to important aspects of the child's behavior and responses to the materials and topics. Although the primary focus is on the child's interaction with you (the evaluator), be sure to also observe the child's interactions with others who may be present during the interview, such as a parent or another team member.
- Help facilitate a team discussion (when applicable) and help you write a detailed review of the child's behavioral profile following the interview session.

Notes

- Provide space to record your specific observations of the child's behavior in response to the materials and topics.

Discussion and summary:

- Either during the interview or immediately afterward, record your observations of the child's behavior in the space provided.
- After the interview, use the Behavioral Profile Summary (located at the end of this booklet) to summarize the key features of the child's unique behavioral profile. Be sure to consider all sources of data prior to making a diagnostic determination.

Preparation/Materials needed:

- Age-appropriate sensory materials (visual, movement, auditory, tactile; to begin the interview, place one or two sensory toys or objects that produce visual and movement effects on the table in front of where you will direct the child to sit)
- Ball (for game of catch)
- Facts and items (objects, pictures, books) to be used as visual prompts related to the child's areas of preferred interest
- Compact mirror (for younger children)
- Feelings cards

2 MIGDAS-2

Diagnostic Interview

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Diagnostic Interview Examples (cont.)

Language and Communication	
1. Intonation and Inflection	
Prompts: Listen carefully to the child's intonation, inflection, cadence, and voice volume. Reflect a subtle version of the child's style as you speak. Match the child's voice volume and intensity. Periodically interrupt the child's narrative flow by asking questions or making comments when the child is speaking.	
Observations: How does the child's speech style vary throughout the session?	
Speaks with an unusual cadence that is distinctive and unvarying throughout the session. • Lifting • Exclamatory • High pitched • Nasal • Sotted • Monotone • Exaggerated or overemphasized • Halting flow	Varies his or her cadence to match the flow and content of the conversation.
Speaks in a format or scripted style	Speaks in a style consistent with range displayed by typically developing peers.
Does not modulate voice volume to fit the conversation (consistently loud or soft spoken)	Modulates voice volume as a natural part of the conversation.
Responds to interruptions by increasing voice volume in a pronounced way.	Responds to interruptions without increasing voice volume.
Distinctive differences in speech patterns become more pronounced as the session progresses.	Intonation, inflection, cadence, and voice volume remain consistent throughout the session.
Notes: Nasal, monotone quality to his speech. Formal sound to his statements. Lots of hesitation when answering questions and shifting from his preferred topics to social questions. Override Sw's comments throughout the interview by speaking louder. Innuciated each word in an exaggerated way. Exclamatory quality when he was making his point and stating facts.	

Diagnostic Interview Children and Adolescents With Verbal Fluency 9
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Behavioral Profile Summary	
Sensory Use and Interests	
Strengths: • Visual and three-dimensional thinker. • Has age-appropriate academic skills and excels in the areas of science and math. • Has developed several age-appropriate skills and interests (reading, science and space, weather). • Attends to visual details and retains information well when encoded visually. • Self-regulates by engaging in solitary activities (reading, building rockets, following weather patterns).	
Differences: • Captured by his thoughts and topics of interest. • Displays some sensory sensitivities. • Transition times are unsettling for him. • Flexibility can be challenging when he is required to switch from his agenda to the agenda of others.	

Diagnostic Interview Children and Adolescents With Verbal Fluency 25
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PATTERN OF OBSERVATIONS			
	Consistent with ASD	Not consistent with ASD	Unclear
Sensory Use and Interests			
1. Response to materials that have visual and movement properties	X		
2. Response to materials that have auditory properties	X		
3. Response to materials that have tactile properties	X		
4. Response to introduction of preferred topics	X		
5. Body movements and mannerisms	X		
Overall for this section	X		
Language and Communication			
1. Intonation and inflection	X		
2. Content of preferred topics	X		
3. Quality, clarity, and relevance of speech	X		
4. Reciprocity	X		
5. Idioms and colloquial expressions	X		
6. Jokes and riddles	X		
Overall for this section	X		
Social Relationships and Emotional Responses			
1. Eye contact and eye gaze	X		
2. Facial expressions and overall quality of emotional responses	X		
3. Perception of self in relation to others	X		
4. Anxiety or agitation level	X		
5. Self-awareness of anger and agitation triggers			X
6. Feelings and description of wishes, self, and ways to make school a better place	X		
Overall for this section	X		
Overall pattern (all sections)	X		

24 MISDAS-2 Diagnostic Interview
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MIGDAS-2

Using Sensory Materials

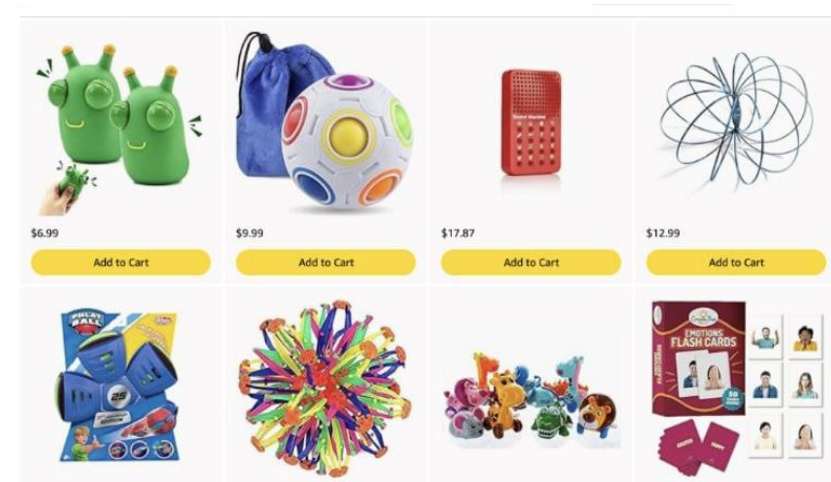
MIGDAS-2: Sensory Materials Categories



Categories

- Visual
- Auditory
- Tactile
- Movement

See Handout: Examples of Sensory-Based Materials



MIGDAS-2: Sensory Entry Point

- Begin interview with 1 or 2 toys on table where the child can readily observe them
- Limit verbal language and social expressions at start of session
 - Engagement with evaluator may be enhanced when the child associates the adult with sensory-based enjoyable materials instead of stressful linguistic and social demands
- Suggestions for sensory materials: spinning light up toys, wind-up toys, cause-and-effect toys, noisemakers, tactile materials, and inset puzzles

Using Sensory Materials *(cont.)*

- Preferred topics are often integrated into the use of the sensory materials (e.g., creating a preferred cartoon character/object out of the materials)
- Sensory materials containing movement properties, tactile properties, and visual properties elicit the object-focused sensory routines in the ASD brain style
- Having multiple sensory items provides opportunities to observe the drive to create systematic routines and to categorize objects
- The sensory-based approach guides evaluators to elicit behavior samples by using the entry point of preferred topics and materials containing interesting and novel sensory properties for the individual to explore

Using Sensory Materials *(cont.)*

- Across age and ability levels, when provided with multiples of sensory objects, individuals on the autism spectrum engage in systematic, repetitive routines
- These sensory-based, object-focused routines are not evident in interactions between evaluators and individuals who do not have autism spectrum brain style differences
- The contrast between object-focused interactions and social interactions becomes readily apparent

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Integrating Results

Examining a Case Study

Olivia: 3 years, 3 months

Background:

- delayed language skills
- referred for concerns about her social engagement and communication skills
- parents report concerns about her not responding to her own name and not doing the same things as same-age peers
- often vocalizations are just repetitions of what others say, songs, or phrases from her favorite shows



Social Responsiveness Administration (cont.)

	2	1	0
1. HURT (Peg set and two hammers) "Look, I found a hammer and peg set. Oh, look, there is another hammer for you. Let's do some hammering together." "Ow!" "I hurt my finger. I'm going to stop hammering now."		X	
2. SURPRISE (Diaper) "OK, let's see what other toys we can find in the bag." "What's this? It's a diaper. That's not a toy!" "Let's see what else is inside our bag of toys."		X	
3. FRUSTRATION/ANGER (Flashlight) "Ooh, look it's a flashlight, it lights up. Let's turn it on." "Oh...it's not working. It doesn't have any batteries." "Let's see what else is inside our bag."			X
4. FEAR (Gift box and spider) "Ooh, a present. I wonder what's inside. Let's open it and see." "Aaaagh, it's a spider...I don't like spiders!" "Oh, phew, it's only a pretend spider."		X	
5. DISTRACTION (Toy cell phone) "What is that noise!" "Oh, it's my phone! I don't know who that is." "Let's turn it off."	X		
6. ACHIEVEMENT (5 wooden blocks) "OK, there is another toy in this bag for us to play with. Let's see what it is." "Let's see if you can build a big tower." "Wow!"		X	
TOTAL SOCIAL RESPONSIVENESS SCORE	6 /12		

Joint Attention Administration (*cont.*)

	Gaze Switch	Gaze Monitoring	
	Either before or after opening the egg	After examiner's gaze + statement	After examiner's point + statement
	Score = 1	Score = 2	Score = 1
Person	X		X
Tiger			X
Hat	X	X	
Ring	X	X	
Backpack		X	
Candle	X	X	
SUB-TOTAL SCORES	4 /6	6 /12	
TOTAL JOINT ATTENTION SCORE	14 /18		

Symbolic Comprehension Administration (cont).

Miniature Bags 5 & 6			
Score		1	0
Score 1. Toothbrush: Pretend to brush teeth us 2. Comb: Use hand as if holding comb an 3. Hammer: Use hand as if holding a hamm 4. Baby's bottle: Use hand as if holding b 5. Sock: Use hands as if pulling sock onto 6. Scissors: Use first and second fingers	1. Teddy		X
	2. Brush		X
	3. Book		X
	4. Shoe	X	
	5. Spoon		X
	6. T-shirt	X	
TOTAL MINIATURE SCORE		2 /6	
TOTAL GESTURE SCORE		4 /6	

Examining a Case Study (*cont.*)

Olivia's Raw Scores

Subtest	Raw Score
Social Responsiveness	6
Joint Attention	14
Symbolic Comprehension	6

	Raw Score
Total ESB Score	26

Examining a Case Study (cont.)

Using the Record Form, Raw Scores can be converted to Score Bands for immediate feedback.

Social Responsiveness

Once completed: • Circle child's age group • Circle the Score Band that includes the child's score • Mark the relevant Score Band in the box on the front page			
Age Group	Low	Borderline	Normal
1:6-1:11	0-3	4	5-12
2:0-2:5	0-5	6	7-12
2:6-2:11	0-7	8	9-12
3:0-3:5	0-8	9	10-12
3:6-3:11	0-8	9	10-12
4:0-4:11	0-8	9	10-12

Joint Attention

Once completed: • Circle child's age group • Circle the Score Band that includes the child's score • Mark the relevant Score Band in the box on the front page			
Age Group	Low	Borderline	Normal
1:6-1:11	0-5	6	7-18
2:0-2:5	0-8	9	10-18
2:6-2:11	0-9	10	11-18
3:0-3:5	0-10	11	12-18
3:6-3:11	0-11	12	13-18
4:0-4:11	0-12	13	14-18

Examining a Case Study (cont.)

Using the Record Form, Raw Scores can be converted to Score Bands for immediate feedback.

Symbolic Comprehension

Once completed:			
• Circle child's age group			
• Circle the Score Band that includes the child's score			
• Mark the relevant Score Band in the box on the front page			
Age Group	Low	Borderline	Normal
1:6-1:11	0	0	1-18
2:0-2:5	0	1-2	3-18
2:6-2:11	0-5	6	7-18
3:0-3:5	0-7	8-9	10-18
3:6-3:11	0-9	10	11-18
4:0-4:11	0-11	12	13-18

Total ESB Score

Once completed:		
• Circle child's age group		
• Circle the Score Band that includes the child's total score		
• Mark the relevant Score Band in the box on the front page		
Age Group	Low	Above the Cut-Off
1:6-1:11	0-8	9-48
2:0-2:5	0-13	14-48
2:6-2:11	0-23	24-48
3:0-3:5	0-28	29-48
3:6-3:11	0-30	31-48
4:0-4:11	0-34	35-48

Examining a Case Study (cont.)

These results can then be entered into the summary table on the cover page of the Record Form.

SUMMARY OF RESULTS

Mark the box with the child's Score Category for each ESB subtest and Total ESB Score:

	Low	Borderline	Normal
Social Responsiveness	X		
Joint Attention			X
Symbolic Comprehension	X		

	Low	Above the Cut-Off
Total ESB Score	X	

Remember: A Low Total ESB score and/or Low scores on at least 2 subtests are indicative of risk of long-term social communication difficulties and ASD.

Examining a Case Study (cont.)

Converting Raw Scores to Scaled and Standard Scores allow for a more nuanced profiling of her performance.

SUBTEST RAW SCORE CONVERSIONS

Subtest	Raw Score	Scaled Score	Percentile
Social Responsiveness	6	2	1
Joint Attention	14	9	37
Symbolic Comprehension	6	4	3

TOTAL RAW SCORE CONVERSIONS

Total ESB Score	Raw Score	Standard Score	95% CI	Percentile
	26	60		0.4

Examining a Case Study (cont.)

A visual profile of results can be made by plotting her standard and scaled scores on the profile figure.

Olivia's Low Total ESB, Social Responsiveness, and Symbolic Comprehension scores indicated she was at significant risk of social communication difficulties.

Her Joint Attention score in the Normal Range can be used during intervention to help grow the other areas of need.

Deviation From the Mean	Scaled Score	Subtest Scores			Total ESB Score	
		Social Responsiveness	Joint Attention	Symbolic Comprehension	Standard Score	Total ESB Score
+3SD	20	.	.	.	150	.
	19	.	.	.	145	.
	18	.	.	.	140	.
	17	.	.	.	135	.
+2SD	16	.	.	.	130	.
	15	.	.	.	125	.
	14	.	.	.	120	.
+1SD	13	.	.	.	115	.
	12	.	.	.	110	.
	11	.	.	.	105	.
Mean	10	.	.	.	100	.
-1SD	9	.	X	.	95	.
	8	.	.	.	90	.
	7	.	.	.	85	.
-2SD	6	.	.	.	80	.
	5	.	.	.	75	.
	4	.	.	X	70	.
-3SD	3	X	.	.	65	.
	2	.	.	.	60	X
	1	.	.	.	55	.
	0	.	.	.	50	.

Integrating the ESB with the MIGDAS-2

- The MIGDAS-2 administration can be described across its three sections: *Sensory Use and Interests; Language and Communication; and Social Relationships and Emotional Responses*.
- ESB tasks of *Social Responsiveness, Joint Attention* and *Symbolic Comprehension* easily coincide with MIGDAS-2 areas and can be described together or separately with a summary statement integrating results.
- Note that MIGDAS-2 diagnostic impressions can be made based on multiple sources of data, meaning that the child's performance on the ESB can be considered when making conclusions on the MIGDAS-2.



MIGDAS-2 Case Study: Olivia

Sensory Use and Interests

- Strengths
 - Preferred interest: Gabby's Dollhouse
 - Uses sensory materials to organize and regulate the social environment
- Differences
 - Shows some sensitivity and aversion to loud noises and tactile experiences/textures
 - Ignores social partners when shifting from their agenda to that of others
 - Engages in repetitive sensory-based behaviors (e.g., hand flapping when excited or anticipating the introduction of a new object)

MIGDAS-2 Case Study *(cont.)*

Language and Communication

- Strengths
 - Instrumental vocalizations
 - Signs of emerging language when paired with visual contextual cues
- Differences
 - Responds best to visual prompts paired with verbal labeling
 - Communication attempts are object-dependent and self-initiated

MIGDAS-2 Case Study *(cont.)*

Social Relationships and Emotional Responses

■ Strengths

- Uses eye contact to organize social and environmental demands
- Evidence of shared enjoyment
- Emerging range of emotions

■ Differences

- Ambivalent to exaggerated expressions
- Shows limited understanding of and response to social overtures
- Not yet developed the ability to describe herself, her emotions, nor the perspective of other people

MIGDAS-2 Case Study: Interventions

- Communication supports: visual prompts paired with verbal labeling
- Social skills supports: gain attention before prompting/eliciting engagement
- Organizational supports: reduce unnecessary visual distractions, when possible
- Sensory/Self-regulation supports: incorporate play and movement
- Home supports: create a visual schedule; read books and tell social stories in person

Conclusions

The background of the slide is a solid teal color. Overlaid on this background is a faint, large-scale floral pattern. The pattern consists of several large, rounded petals or leaves arranged in a circular, symmetrical fashion, resembling a stylized flower or a cluster of leaves. The pattern is rendered in a slightly darker shade of teal than the background, creating a subtle, textured effect.

Diagnostic Best Practices

- Comprehensive, multi-method assessment
 - Combine tools like the ESB & MIGDAS-2 with other measures like the ABAS-3 and IQ testing, and include family interviews to gather a full picture of social, cognitive and adaptive functions
- Consider developmental history
 - Thorough understanding of early developmental milestones, regression patterns, and early history aids in diagnosis
- Strengths-based assessment
 - Use of strengths-based tools helps clinicians to see beyond symptoms and identify an individual's full potential

Strategies to Improve ASD Identification in Females

- Refine diagnostic criteria
 - Intentionally incorporate more behaviors common in girls into diagnostic criteria (Happe & Frith, 2020)
- Continued education
 - Increase awareness of sex differences in behavior and presentation
- Multi-modal assessments
 - Follow a best practices approach to identifying ASD including behavioral observation, family report, school reports and tools that are sensitive to gender differences

Key Takeaways

- Sex differences exist
 - Females are underdiagnosed for ASD for numerous reasons such as camouflaging of what are considered traditional symptoms and male-based bias in diagnostic criteria and many assessment instruments
 - Females with ASD often present with less overt symptoms, like anxiety or perfectionism
- Assessment is important
 - Holistic assessment will help to capture a more accurate portrayal of a person's symptoms
 - Tools like the ESB and MIGDAS-2 can be used together with gender-specific differences for ASD in mind to support evidence-based decision making in eligibility determinations

Questions?

