AFIRM

Autism Focused Intervention Resources & Modules

ASI®

EBP Brief Packet: Ayres Sensory Integration®

UNC Frank Porter Graham Child Development Institute
Autism Focused Intervention Resources & Modules
Nowell, S., Sam, A., Waters, V., Dees, R., & AFIRM Team, 2021

The National Professional Development Center on Autism

The National Clearinghouse on Autism Evidence & Practice
NCAEP • BRIDGING PRACTICE AND SCIENCE

UNC FRANK PORTER GRAHAM CHILD DEVELOPMENT INSTITUTE

Overview of Content

1. **Table of ASI® Contents:** This list details the specific ASI® resources that apply to Ayres Sensory Integration®.
2. **What is ASI®:** A quick summary of salient features of Ayres Sensory Integration®, including what it is, who it can be used with, what skills it has been used with, and settings for instruction.
3. **Evidence-base:** The evidence-base details the National Clearinghouse on Autism Evidence and Practice (NCAEP) criteria for inclusion as an evidence-based practice and the specific studies that meet the criteria for Ayres Sensory Integration®.
4. **Planning Checklist:** This checklist details the steps for planning for Ayres Sensory Integration®, including what prerequisite learning of practices are needed, collecting baseline data of the interfering behavior if needed, and what materials/resources are needed.
5. **Other Resources:** Other resources may include decision trees, checklists, and/or template forms that will support the use of Ayres Sensory Integration®.
6. **Step-by-Step Guide:** Use this guide as an outline for how to plan for, use, and monitor Ayres Sensory Integration®. Each step includes a brief description as a helpful reminder while learning the process.
7. **Implementation Checklist:** Use this checklist to determine if Ayres Sensory Integration® are being implemented as intended.
8. **Monitoring Progress Checklist:** Use this form as a method for collecting and analyzing data to determine if the learner on the spectrum is making progress towards the interfering behavior.
9. **Tip Sheet for Professionals:** Use this tip sheet, intended for professionals working with learners on the spectrum, as a supplemental resource to help provide basic information about Ayres Sensory Integration®.
10. **Parent Guide:** Use this guide intended for parents or family members of learners on the spectrum to help them understand basic information about Ayres Sensory Integration® and how it is being used with their child.
11. **Additional Resources:** This list provides additional information for learning more about Ayres Sensory Integration® as well as resources.
12. **CEC Standards:** This list details the specific CEC standards that apply to Ayres Sensory Integration®.
13. **Glossary:** This glossary contains key terms that apply specifically to Ayres Sensory Integration®.
14. **References:** This list details the specific references used for developing this ASI® module in numerical order.

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AYRES SENSORY INTEGRATION®

WHAT IS ASI®?

Ayres Sensory Integration® (ASI) can be used to increase learner communication, socialization, cognitive, and adaptive skills while reducing challenging behaviors in learners with identified challenges in sensory processing.
Ayres Sensory Integration® (Ayres, 2005), has also been referred to in the literature as "Sensory Integration Therapy" as originated by A. Jean Ayres, "classical sensory integration," The evidence base at this time only supports Ayres Sensory Integration. We will use "ASI" throughout this module to refer to these models of sensory integration that are supported by the systematic review (Steinbrenner et al., 2020).

EVIDENCE-BASE:

Based upon the 2020 systematic review conducted by the National Clearinghouse on Autism Evidence and Practice (NCAEP), Ayres Sensory Integration® is a focused intervention that meets the evidence-based practice criteria with 3 single case design studies. This practice has been effective for preschoolers (3-5 years), elementary school learners (6-11 years), and middle school learners on the spectrum. Studies included in the 2020 EBP report (Steinbrenner et al., 2020) detail how this practice can be used to effectively address the following outcomes for a target goal/behavior/skill: academic/pre-academic, adaptive/self-help, behavior, cognitive, communication, motor, and social.

HOW IS ASI® BEING USED?

DISCLAIMER: Ayres Sensory Integration requires specialized training with a certified provider to implement with fidelity. This training is most commonly completed by Occupational Therapists and, in some cases, other licensed therapists. This module is not intended to replace training in ASI and the certification process, but rather, to introduce basic knowledge of ASI as an evidence-based practice for learners on the spectrum. (Nowell et al., 2021)

This practice can be used by practitioners trained in Ayres Sensory Integration®. Other support staff, like classroom teachers, school-based staff, and families, may collaborate with ASI providers to support parts of the ASI process.

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EVIDENCE-BASE

The National Clearinghouse on Autism Evidence and Practice has adopted the following criteria to determine if a practice is evidence-based. The 2020 EBP report (Steinbrenner et al., 2020) provides more information about the systematic review process.

Efficacy must be established through high-quality, peer-reviewed research in scientific journals using:

- At least 2 randomized or quasi-experimental group design studies, or
- At least 5 single subject/case design studies, or a
- Combination of evidence of 1 randomized or quasi-experimental group design study and 3 single subject/case design studies

OVERVIEW:

Based upon the 2020 systematic review conducted by the National Clearinghouse on Autism Evidence and Practice (NCAEP), Ayres Sensory Integration® is a focused intervention that meets the evidence-based practice criteria with 3 single case design studies. This practice has been effective for preschoolers (3-5 years), elementary school learners (6-11 years), and middle school learners on the spectrum. Studies included in the 2020 EBP report (Steinbrenner et al., 2020) detail how this practice can be used to effectively address the following outcomes for a target goal/behavior/skill: academic/pre-academic, adaptive/self-help, behavior, cognitive, communication, motor, and social.

In the table below, the instructional outcomes identified by the evidence base are shown by age of participants.

Age	Academic	Adaptive	Behavior	Cognitive	Communication	Motor	Social
3-5	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6-11	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12-14			Yes			Yes	Yes

PRESCHOOL (3-5 YEARS):

***Kashefimehr, B., Kayihan, H., & Huri, M. (2018). The effect of sensory integration therapy on occupational performance in children with autism. *OTJR: Occupation, Participation, and Health, 38*(2), 75-83. https://doi.org/10.1177/1539449217743456**

***Schaaf, R. C., Benevides, T., Mailloux, Z., Faller, P., Hunt, J., van Hooydonk, E., Freeman, R., Leiby, B., Sendecki, J., & Kelly, D. (2014). An intervention for sensory difficulties in children with autism: A randomized trial. *Journal of Autism and Developmental Disorders*, *44*(7), 1493-1506. https://doi.org/10.1007/s10803-013-1983-8**

ELEMENTARY SCHOOL (6-11 YEARS):

***Kashefimehr, B., Kayihan, H., & Huri, M. (2018). The effect of sensory integration therapy on occupational performance in children with autism. *OTJR: Occupation, Participation, and Health, 38*(2), 75-83. https://doi.org/10.1177/1539449217743456**

*Pfeiffer, B. A., Koenig, K., Kinnealey, M., Sheppard, M., & Henderson, L. (2011). Effectiveness of sensory integration interventions in children with autism spectrum disorders: A pilot study. *The American Journal of Occupational Therapy*, *65*(1), 76-85. https://doi.org/10.5014/ajot.2011.09205

***Schaaf, R. C., Benevides, T., Mailloux, Z., Faller, P., Hunt, J., van Hooydonk, E., Freeman, R., Leiby, B., Sendecki, J., & Kelly, D. (2014). An intervention for sensory difficulties in children with autism: A randomized trial. *Journal of Autism and Developmental Disorders*, *44*(7), 1493-1506.**

MIDDLE SCHOOL (12-14 YEARS):

*Pfeiffer, B. A., Koenig, K., Kinnealey, M., Sheppard, M., & Henderson, L. (2011). Effectiveness of sensory integration interventions in children with autism spectrum disorders: A pilot study. *The American Journal of Occupational Therapy*, *65*(1), 76-85. https://doi.org/10.5014/ajot.2011.09205

Notes: * denotes the study has participants in at least two age ranges
Bold denotes new studies since 2011 (2012 till 2017)

Types of Sensory Modalities

Auditory: Hearing

Auditory input (e.g., alarms, traffic)

Gustatory: Taste

Flavors in the mouth (e.g., spicy, sour).

Olfactory: Smell

Smells (e.g., cooking smells, craft supply smells)

Proprioceptive: Muscle contraction & Joint position

Positioning and force of the body (e.g., learner may have challenges with daily tasks like engaging zippers or tying shoes, learner may break delicate items because of lack of awareness of the force needed to keep it intact)

Tactile: Touch

Sensations on the skin (e.g., sunscreen, wet foods)

Vestibular: Balance & Movement

Equilibrium and body movement in space (e.g., may appear clumsy, off-balance, or have out-of-control movements). A learner may seek or avoid linear movements like swinging or rotary movements like spinning.

Visual: Vision/Sight

Visual input (e.g., flickering lights)

DATA COLLECTION: OBSERVATIONS

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Goal/Behavior/Skill: _____
Directions: Collect data observations on the learner's sensory responses and behaviors.

Time	Activity	Sensory Input	Observation Notes

Session Plan

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Goal/Behavior/Skill: _____
Directions: Use this form to session plan for an ASI session for the learner.

Sensory Modality	Activities	Materials Needed
Auditory: Hearing		
Gustatory: Taste		
Olfactory: Smell		
Proprioceptive: Muscle contraction & Joint position		
Tactile: Touch		
Vestibular: Balance & Movement		
Visual: Vision/Sight		

PLANNING CHECKLIST

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Skill/Goal/Behavior: _____
Directions: Complete this checklist to determine if Ayres Sensory Integration® is appropriate to use with the learner on the spectrum as well as if ASI® is ready to be implemented.

ASSESS THE LEARNER'S CURRENT ABILITIES:

- ❑ Is the learner distracted by sensory stimuli in a way that intrudes with their academic goals?
- ❑ Is the learner showing behaviors in response to sensory stimuli that interferes with their safety or learning?
- ❑ Does the learner seek certain sensory input in a way that interferes with their academic or social goals?
- ❑ Does the learner avoid certain age-appropriate activities due to suspected sensory issues?
- ❑ Is the learner distracted by sensory stimuli in a way that intrudes with social goals?

If you checked off any of these questions, you may want to consult with your school occupational therapist.

SELECT ADDITIONAL EBPS:

- ❑ Modeling
- ❑ Reinforcement
- ❑ Social Narratives
- ❑ Task Analysis
- ❑ Video Modeling
- ❑ Visual Supports
- ❑ Other:

PLANNING:

- ❑ Has the target goal/behavior/skill been identified?
- ❑ Has baseline data and/or a functional behavior assessment been collected through direct observation of the learner?
- ❑ Is the target goal/behavior/skill measurable and observable? Does it clearly state **what** the target goal/behavior/skill is, **when** it will occur, and **how** team members/observers will know it has been mastered?
- ❑ Is Ayres Sensory Integration® appropriate for the learner's target goal/behavior/skill?
- ❑ Does the learner require additional adaptations/modifications/supports? Such as a communication device?
- ❑ Have team members received ASI certification or is additional training needed?
- ❑ Has a session plan for ASI been developed?
- ❑ Are materials and/or activities for using Ayres Sensory Integration® ready and available?

SESSION COMPONENTS CHECKLIST

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Skill/Goal/Behavior: _____
Directions: Complete this checklist to determine if the session components of Ayres Sensory Integration® have been completed.

SESSION COMPONENTS:

- ❑ Trained ASI therapist worked one-on-one with the learner
- ❑ Session occurred at the specified meeting time and place
- ❑ Therapist ensured physical safety of the learner
- ❑ Therapist presented sensory opportunities from at least 2 different modalities (for example, vestibular and proprioceptive)
- ❑ Therapist helped the child maintain optimal level of alertness for engagement
- ❑ Therapist supported and challenged at least one of: postural control, ocular control, and bilateral coordination
- ❑ Therapist challenged planning and organization of behavior or series of behaviors
- ❑ Therapist collaborated with learner in choosing activities and materials
- ❑ Therapist tailored activities to provide "just right" challenges
- ❑ Therapist ensured activities are successful
- ❑ Therapist supported the learner's intrinsic motivation to play
- ❑ Established a therapeutic alliance with the learner

Generalization Plan

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Goal/Behavior/Skill: _____
Directions: Use this form to plan for supporting generalization of the learner's skills across settings.

Time	Activity	Sensory Input	Behavior Observed	Possible Strategies

DATA COLLECTION

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Goal/Behavior/Skill: _____
Directions: Collect data on the learner demonstrating the target goal/behavior/skill to determine if the learner is making progress.

Date	Sensory Stimuli	Behavior Observed	Support Needed	Notes

Prompt Key: V = Verbal; G = Gestural; M = Model; P = Physical; I = Independent/No support needed; 0 = No response; SN = Social Narratives; TA = Task Analysis; VM = Video Modeling; VS = Visual Support

MONITORING PROGRESS CHECKLIST

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Skill/Goal/Behavior: _____
Directions: Complete this checklist to determine if the learner is making progress with using Ayres Sensory Integration®.

REFLECTION:

1. How do you think that went?

2. At which points did you see ASI strategies working?

3. What could you have done differently?

❑ Did you encounter any challenges implementing ASI strategies?

❑ Were the activities naturally motivating for the learner, utilizing their natural drive to play?

❑ Did you feel comfortable implementing the ASI strategies?

❑ Did the learner respond positively to naturally occurring reinforcers?

❑ Did the learner seem to enjoy the activities?

MONITORING PROGRESS:

- ❑ Is the target skill or behavior well defined?
- ❑ Is the skill or behavior measurable and observable?
- ❑ Has data been collected and analyzed?
- ❑ Is the skill or behavior too difficult for the learner? Does it need to be broken down into smaller steps?
- ❑ Has enough time been devoted to using this practice (frequency, intensity, and/or duration)?
- ❑ Was Ayres Sensory Integration® used with fidelity?
- ❑ Does the learner require additional adaptations/ modifications/supports? Such as visual supports or a communication device?

ANECDOTAL NOTES:

Step-by-Step Guide

This step-by-step practice guide outlines how to plan for, use, and monitor Ayres Sensory Integration®.

BEFORE YOU BEGIN…

Each of the following points is important to address so that you can be sure Ayres Sensory Integration® is likely to address the target goal/behavior/skill of your learner on the spectrum.

HAVE YOU FOUND OUT MORE INFORMATION ABOUT…?

- ❑ Identifying the interfering behavior…?
- ❑ Collecting baseline data through direct observation…?
- ❑ Establishing a target goal or outcome that clearly states when the behavior will occur, what the target goal or outcome is, and how team members and/or observers will know when the skill is mastered…?

If the answer to any of the above questions is 'No,' review the process of how to select an appropriate EBP (https://afirm.fpg.unc.edu/selecting-EBP).

For more information about Ayres Sensory Integration®, please visit https://afirm.fpg.unc.edu/ .

Keep in mind that **Ayres Sensory Integration®** can be used to increase communication, socialization, cognitive and adaptive skills while reducing interfering behaviors in learners with identified challenges in sensory processing.

STEP 1: PLANNING FOR ASI®

The planning step details the initial steps and considerations involved to prepare for using Ayres Sensory Integration® with a learner on the spectrum.

1. **Obtain ASI training**
   ASI requires training from certified providers. The USC program is presently the only certification program recommended by the American Occupational Therapy Association.

2. **Determine learner's sensory needs**
   Conducting an assessment can help you determine the learner's current sensory processing level as well as specific areas of need that the learner may have. This information may be used as part of a referral to a trained OT or as part of an ASI assessment conducted by a trained OT.
   - Complete the **Planning Checklist** to determine if the learner may benefit from an ASI assessment.
   - Use the **Data Collection: Observations** to collect data.

3. **ASI assessment**
   An ASI Assessment is performed by a certified provider and involves observation of the learner in natural settings, interviews, standardized testing, and structured observations in a clinical setting. Other support staff, including classroom teachers, may support the process by contributing valuable information.

4. **Develop an ASI session plan**
   ASI sessions take place one-on-one, on set schedule, and in a clinical setting. Components must be pre-planned and include a variety of sensory opportunities and activities and materials that are intrinsically motivating to the learner.
   - Use the **Session Plan** form to plan for an ASI session for the learner.

5. **Identify additional EBPs**
   It can be helpful to use additional foundational evidence-based practices during ASI sessions to provide needed support to the learner. Modeling, social narratives, task analysis, video modeling and visual supports can be useful in ASI sessions.

6. **Discuss plan with team members**
   All members of the learner's school team, including family members, will need to understand the learner's sensory processing challenges and how to implement ASI strategies. Whenever possible, include the learner as a leader of their own support team.

7. **Have materials ready and available**
   Verify that all the materials are ready and space for teaching is available. Materials should include:
   - the individual ASI session plan
   - prepared materials for their sensory activities and opportunities to be addressed in the ASI session
   - data collection forms
   - any other EBP supports you have decided to use

   Complete the **Planning Checklist** before using the procedure.

STEP 2: USING ASI®

This step details the process of implementing Ayres Sensory Integration® with a learner on the spectrum.

1. **Address the ASI session goals**
   Some essential components of an ASI therapy session as implemented by a trained therapist include:
   - a sensory experience
   - a response to a challenge
   - an enriched physical environment
   - the context of play
   - the therapeutic alliance (the trusting relationship between the therapist and learner).

   Use the **Session Components Checklist** to determine if ASI is being used with fidelity.

2. **Use other EBPs to support ASI sessions**
   Visual supports and modeling are commonly implemented as part of ASI sessions to make expectations clear to the learner.

3. **Promote generalization of learner's target skills**
   Generalizing the learner's positive sensory experiences in therapy to home, school, and community settings is a process that includes:
   - regular communication with the learner's team
   - team collaboration to adapt environments meet the learner's sensory needs
   - establishing consistent responses to the learner's behaviors
   - involving learners in plans to generalize their skills

   Use the **Generalization Plan** to support generalization of the learner's skills across settings.

STEP 3: MONITORING ASI®

The following step details how to monitor the use of Ayres Sensory Integration® with a learner on the spectrum and how to determine next steps based on the data.

1. **Collect and analyze data**
   It is important to continuously collect and review data with the ASI team. Collect data on:
   - setting of observation
   - sensory experiences available in the setting by modality
   - learner's response to sensory stimuli
   - level of prompting needed for learner to participate in that sensory setting
   - other EBPs or strategies used to support the learner

   Use the **Data Collection** form to collect data monitor learner progress toward ASI goals.

2. Determine next steps based on learner progress

Collecting data will help team members decide about the effectiveness of using Ayres Sensory Integration® and whether the learner on the spectrum is making progress. If a learner is making progress based upon data collected, team members should continue to use the selected strategies.

If team members determine that the learner is not making progress, consider the following:

- Have team members received ASI® training or is additional training needed?
- Is the target goal/behavior/skill well defined?
- Is the target goal/behavior/skill measurable and observable?
- Has enough time been devoted to using this practice (frequency, intensity, and/or duration)?
- Is the target goal/behavior/skill being targeted during appropriate routines and activities?
- Is ASI appropriate or a 'good fit' for the target behavior?
- Are ASI strategies addressing the target behavior?
- Does the learner need additional supports?
- Are the selected materials and activities intrinsically motivating for the learner?
- Was Ayres Sensory Integration® used with fidelity? (Use the Ayres Sensory Integration® Implementation Checklist to determine fidelity.)

If these issues have been addressed and the learner on the spectrum continues not to show progress, consider selecting a different evidence-based practice to use with the learner on the spectrum.

IMPLEMENTATION CHECKLIST

BEFORE YOU START, HAVE YOU…?

- ❑ Identifying the target goal/behavior/skill…?
- ❑ Collecting baseline data through direct observation…?
- ❑ Establishing a target goal or outcome that clearly states when the behavior will occur, what the target goal or outcome is, and how team members and/or observers will know when the skill is mastered…?

If the answer to any of the above questions is 'No,' review the process of how to select an appropriate EBP (https://afirm.fpg.unc.edu/selecting-EBP).

	Observation:	**1**	**2**	**3**	**4**	**5**
	Date:					
	Observer's Initials:					
	STEP 1: PLANNING					
1.1	Obtain ASI training from a licensed provider					
1.2	Determine learner's sensory needs					
1.3	Conduct an ASI Assessment					
1.4	Develop an ASI session plan					
1.5	Identify additional EBPs					
1.6	Discuss plan with team members					
1.7	Have materials ready and available					
	STEP 2: USING					
2.1	Address the ASI session goals					
2.2	Use other EBPs to support ASI sessions					
2.3	Promote generalization of learner's target skills					
	STEP 3: MONITORING					
3.1	Collect data on target behaviors					
3.2	Determine next steps based on learner progress					

Tip Sheet for Professionals

AYRES SENSORY INTEGRATION® …

- An evidence-based practice that targets a learner's ability to process and internally integrate sensory information from their body and the environment.
- Ayres Sensory Integration® is the only type of sensory integration therapy with an evidence-base.
- Used to increase a target goal/behavior/skill and/or to decrease an interfering/inappropriate behavior

WHY USE WITH LEARNERS ON THE SPECTRUM?

- About 56% to 70% (Baranek, David, Poe, Stone, & Watson, 2006; Ben-Sasson et al., 2007) of learners on the spectrum are estimated to have sensory processing challenges.
- ASI can help learners on the spectrum regulate their bodies and process sensory information so that they can complete daily activities. Learners may benefit from ASI to support fine and gross motor skills, adaptive skills, communication and socialization skills, and emotion regulation.

TIPS:

- Training in ASI is necessary to become proficient with using ASI.
- Determine the learner's current sensory processing level to decide whether an ASI assessment would be beneficial.
- Additional EBPs can be used to support learners during ASI sessions.

INSTRUCTIONAL OUTCOMES:

The evidence-base for Ayres Sensory Integration® supports its use to address the following outcomes, according to age range, in the table below:

Age	Academic	Adaptive	Behavior	Cognitive	Communication	Motor	Social
3-5	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6-11	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12-14			Yes			Yes	Yes

STEPS FOR IMPLEMENTING:

1. **PLAN**
   - Obtain ASI training from a licensed provider
   - Determine learner's sensory needs
   - Conduct an ASI Assessment
   - Develop an ASI session plan
   - Identify additional EBPs
   - Discuss plan with team members
   - Have materials ready and available

2. **USE**
   - Address the ASI session goals
   - Use other EBPs to support ASI sessions
   - Promote generalization of learner's target skills

3. **MONITOR**
   - Collect and analyze data on target behaviors
   - Determine next steps based on learner progress

Ayres Sensory Integration®
ASI®

This sheet was designed as a supplemental resource to provide basic information about Ayres Sensory Integration® for professionals working with learners on the spectrum.

For more information about this selected evidence-based practice, please visit https://afirm.fpg.unc.edu/.

PARENT'S GUIDE

WHAT IS ASI®?

- An evidence-based practice that targets a learner's ability to process and internally integrate sensory information from their body and the environment.
- Ayres Sensory Integration® is the only type of sensory integration therapy with an evidence base.
- Used to increase a target goal/behavior/skill and/or to decrease an interfering/inappropriate behavior

WHY USE THIS ASI® WITH MY CHILD?

- Research studies have shown ASI has been used effectively with learners on the spectrum from preschool through high school.
- ASI can help learners on the spectrum regulate their bodies and process sensory information so that they can complete daily activities.
- ASI can be used to support fine and gross motor skills, adaptive skills, communication and socialization skills, and emotion regulation.

WHAT ACTIVITIES CAN I DO AT HOME?

ASI strategies and activities at home are most effective when used in collaboration with a certified ASI therapist (usually an Occupational Therapist). Here are some examples:

- Create a quiet, calming space in the home. Provide comfortable seating like a bean bag chair, soft cushions, or pillows. Offer soothing activities, calming music or sounds, or other pleasing sensory stimulation in this space.
- Provide a series of movement-based activities for your child to participate in on a regular basis. A visual sequence, or picture cues, can guide your child to engage in activities such as swinging, jumping, balancing, and climbing.
- To address tactile needs, provide deep pressure using a weighted blanked or squeezing hands. Encourage play that involves a variety of materials like sand, water, finger paint or playdough.

Ayres Sensory Integration®
ASI®

This parent introduction to ASI® was designed as a supplemental resource to help answer questions about Ayres Sensory Integration®.

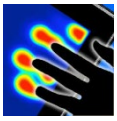
To find out more about how this ASI® is being used with your child, please talk with:

_____

For more information about this selected evidence-based practice, please visit https://afirm.fpg.unc.edu/.

Additional Resources

APPS:

Icon	Developer	Name	Available	Pricing
	Sensational Brain, LLC	*Brain Works*	App Store	$13.99
	TriggerWave, LLC	*Pocket Pond 2*	App Store	Free
	HAUS K. K.	*Dropophone*	App Store	Free
	Seebs, LLC	*Miracle Modus*	App Store	Free
	Padadaz	*Heat Pad- Relaxing Surface*	App Store	Free

BOOKS:

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CEC STANDARDS

INITIAL PRACTICE-BASED STANDARDS FOR EARLY INTERVENTIONISTS/EARLY CHILDHOOD (0-5 YEARS; CEC, 2020)

Standard 4: Assessment Processes

4.2 Develop and administer informal assessments and/or select and use valid, reliable formal assessments using evidence-based practices, including technology, in partnership with families and other professionals.

4.4 Candidates, in collaboration with families and other team members, use assessment data to determine eligibility, develop child and family-based outcomes/goals, plan for interventions and instruction, and monitor progress to determine efficacy of programming.

Standard 5: Application of Curriculum Frameworks in the Planning of Meaningful Learning Experience

5.1 Collaborate with families and other professionals in identifying an evidence-based curriculum addressing developmental and content domains to design and facilitate meaningful and culturally responsive learning experiences that support the unique abilities and needs of all children and families.

Standard 6: Using Responsive and Reciprocal Interactions, Interventions, and Instruction

6.1 In partnership with families, identify systematic, responsive, and intentional evidence-based practices and use such practices with fidelity to support young children's learning and development across all developmental and academic content domains.

6.3 Engage in ongoing planning and use flexible and embedded instructional and environmental arrangements and appropriate materials to support the use of interactions, interventions, and instruction addressing developmental and academic content domains, which are adapted to meet the needs of each and every child and their family.

6.4 Promote young children's social and emotional competence and communication, and proactively plan and implement function-based interventions to prevent and address challenging behaviors.

6.6 Candidates use responsive interactions, interventions, and instruction with sufficient intensity and types of support across activities, routines, and environments to promote child learning and development and facilitate access, participation, and engagement in natural environments and inclusive settings.

6.7 Plan for, adapt, and improve approaches to interactions, interventions, and instruction based on multiple sources of data across a range of natural environments and inclusive settings.

Standard 7: Professionalism and Ethical Practice

7.2 Engage in ongoing reflective practice and access evidence-based information to improve own practices.

INITIAL PRACTICE-BASED STANDARDS FOR (GRADES K-12; CEC, 2020):

Standard 2: Understanding and Addressing Each Individual's Developmental and Learning Needs

2.1 Apply understanding of human growth and development to create developmentally appropriate and meaningful learning experiences that address individualized strengths and needs of students with exceptionalities.

Standard 4: Using Assessment to Understand the Learner and the Learning Environment for Data-Based Decision Making

4.1 Collaboratively develop, select, administer, analyze, and interpret multiple measures of student learning, behavior, and the classroom environment to evaluate and support classroom and school-based systems of intervention for students with and without exceptionalities.

4.3 Assess, collaboratively analyze, interpret, and communicate students' progress toward measurable outcomes using technology as appropriate, to inform both short- and long-term planning, and make ongoing adjustments to instruction.

Standard 5: Supporting Learning Using Effective Instruction

5.2 Use effective strategies to promote active student engagement, increase student motivation, increase opportunities to respond, and enhance self-regulation of student learning.

5.3 Use explicit, systematic instruction to teach content, strategies, and skills to make clear what a learner needs to do or think about while learning.

5.6 Plan and deliver specialized, individualized instruction that is used to meet the learning needs of each individual.

Standard 6: Supporting Social, Emotional, and Behavioral Growth

6.2 Use a range of preventive and responsive practices documented as effective to support individuals' social, emotional, and educational well-being.

6.2 Use a range of preventive and responsive practices documented as effective to support individuals' social, emotional, and educational well-being.

6.3 Candidates systematically use data from a variety of sources to identify the purpose or function served by problem behavior to plan, implement, and evaluate behavioral interventions and social skills programs, including generalization to other environments.

Standard 7: Collaborating with Team members

7.2 Candidates collaborate, communicate, and coordinate with families, paraprofessionals, and other professionals within the educational setting to assess, plan, and implement effective programs and services that promote progress toward measurable outcomes for individuals with and without exceptionalities and their families.

ADVANCED PRACTICE-BASED STANDARDS (CEC, 2012):

Standard 1: Assessment

1.2 Design and implement assessments to evaluate the effectiveness of practices and programs.

Standard 2: Curricular Content Knowledge

2.2 Continuously broaden and deepen professional knowledge and expand expertise with instructional technologies, curriculum standards, effective teaching strategies, and assistive technologies to support access to and learning of challenging content.

Standard 3: Programs, Services, and Outcomes

3.1 Design and implement evaluation activities to improve programs, supports, and services for individuals with exceptionalities.

3.4 Use instructional and assistive technologies to improve programs, supports, and services for individuals with exceptionalities.

GLOSSARY

Activities of daily living (ADLs) - everyday skills required to care for oneself including skills related to hygiene, feeding and mobility

Ayres Sensory Integration® (ASI®) - Interventions that target a person's ability to integrate sensory information (visual, auditory, tactile, proprioceptive, and vestibular) from their body and environment in order to respond using organized and adaptive behavior.

Baseline data - information gathered from multiple sources to better understand the target behavior, before using an intervention or practice; data collected on current performance level prior to implementation of intervention

Cognitive flexibility - the ability to adapt thinking and behavior in response to new, changing, or unplanned stimuli the environment

Executive functioning - a set of mental skills that involve planning, monitoring, and executing goals

Fidelity - how well and how often the implementation steps for an evidence-based practice are followed

Generalization - the ability to use learned skills in new and different environments

Gustatory - referring to the sense of taste

Implementation checklist - the specific steps needed to accurately follow an evidence-based practice.

Interfering behavior - is a behavior that interferes with the learner's ability to learn

"Just Right" Challenge - A core feature of ASI treatment sessions where the therapist creates a task that challenges the learner just beyond their current skill or comfort level to progress toward a goal without overly frustrating the learner

Modeling (MD) - Demonstration of a desired target behavior that results in use of the behavior by the learner and that leads to the acquisition of the target behavior.

Natural reinforcer - a reward that occurs as a result of the learner's behavior

Naturalistic Intervention (NI) - A collection of techniques and strategies that are embedded in typical activities and/or routines in which the learner participates to naturally promote, support, and encourage target skills/behaviors.

Norm referenced score - a score on a test or assessment that compares the learner's performance to that of other students taking the test

Olfactory - referring to the sense of smell

Prompting (PP) - Verbal, gestural, or physical assistance given to learners to support them in acquiring or engaging in a targeted behavior or skill.

Proprioceptive - relating to the sense of body awareness, location, and movement

Reinforcement (R) - The application of a consequence following a learner's use of a response or skills that increases the likelihood that the learner will use the response/skills in the future.

Sensory processing dysfunction - difficulty processing and responding to information from the senses and

Social Narratives (SN) - Interventions that describe social situations in order to highlight relevant features of a target behavior or skill and offer examples of appropriate responding.

Task Analysis (TA) - A process in which an activity or behavior is divided into small, manageable steps in order to assess and teach the skill. Other practices, such as reinforcement, video modeling, or time delay, are often used to facilitate acquisition of the smaller steps.

Team members - includes the parents, other primary caregivers, IEP/IFSP team members, teachers, therapists, early intervention providers, and other professionals involved in providing services for the learner on the spectrum

Therapeutic alliance - The trusting relationship established between the learner and therapist in order for ASI treatment to be successful, particularly during "just right" challenges

Vestibular - referring to the body's sense of balance and movement

Video Modeling (VM) - A video-recorded demonstration of the targeted behavior or skill shown to the learner to assist learning in or engaging in a desired behavior or skill.

Visual Supports (VS) - A visual display that supports the learner engaging in a desired behavior or skills independent of additional prompts.

Working memory - the ability to mentally hold and use information over a short period of time

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