

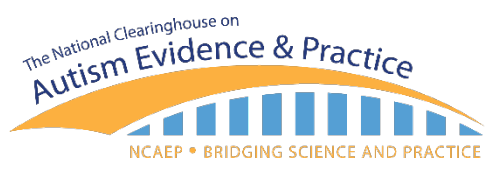


Autism Focused Intervention
Resources & Modules

EVIDENCE-BASED PRACTICE BRIEF PACKET:
**BEHAVIORAL MOMENTUM
INTERVENTION**



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



---Overview of Content---

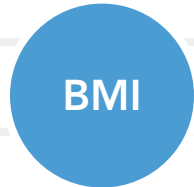
BMI

1. **Table of BMI Contents:** This list details the specific BMI resources that apply to behavioral momentum intervention.
2. **What is BMI:** A quick summary of salient features of behavioral momentum intervention, 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 behavioral momentum intervention.
4. **Planning Checklist:** This checklist details the steps for planning for behavioral momentum intervention, including what prerequisite learning of practices are needed, collecting baseline data of the target goal/behavior/skill if needed, and what materials/resources are needed.
5. **Data Collection Form(s):** Use this form as a method for collecting and analyzing data to determine if the learner with autism is making progress towards the target goal/behavior/skill.
6. **Other Resources:** Other resources may include decision trees, checklists, and/or template forms that will support the use of behavioral momentum intervention.
7. **Step-by-Step Guide:** Use this guide as an outline for how to plan for, use, and monitor behavioral momentum intervention. Each step includes a brief description as a helpful reminder while learning the process.
8. **Implementation Checklist:** Use this checklist to determine if behavioral momentum intervention is being implemented as intended.
9. **Tip Sheet for Professionals:** Use this tip sheet, intended for professionals working with learners with autism, as a supplemental resource to help provide basic information about behavioral momentum intervention.
10. **Parent Guide:** Use this guide intended for parents or family members of learners with autism to help them understand basic information about behavioral momentum intervention and how it is being used with their child.
11. **Additional Resources:** This list provides additional information for learning more about behavioral momentum intervention as well as resources.
12. **Glossary:** This glossary contains key terms that apply specifically to behavioral momentum intervention.
13. **References:** This list details the specific references used for developing this BMI module in numerical order.
14. **CEC Standards:** This list details the specific CEC standards that apply to behavioral momentum intervention.

This BMI Brief Packet will support your use of:
Behavioral Momentum Intervention



---Table of BMI Contents---



---Overview of Content--- 2

---What is Behavioral Momentum Intervention--- 4

---Evidence-base--- 5

---Data Collection: Mastered Skills--- 8

---R+ Checklist & Sampling--- 9

---Prompting Hierarchy--- 12

---Planning Checklist--- 13

---Decision Tree--- 15

---Data Collection: Discrete Trial--- 16

---Step-by-Step Guide--- 18

---Implementation Checklist--- 23

---Tip Sheet for Professionals--- 24

---Parent’s Guide--- 26

---Additional Resources--- 27

---Glossary--- 28

---References--- 30

---CEC Standards--- 32



---Behavioral Momentum Intervention

BMI

WHAT IS BMI?

Learners with autism may experience challenges with transitions and may not comply with less preferred or unknown learning tasks. BMI capitalizes on a teaching sequence of easy-to-hard tasks to build a pattern of correct responding. The quick pace of teaching requests and ample positive reinforcement of BMI support the learner's skill acquisition, compliance, and on-task behaviors.

EVIDENCE-BASE:

Based upon the 2020 systematic review conducted by the National Clearinghouse on Autism Evidence and Practice (NCAEP), behavioral momentum intervention is a focused intervention that meets behavioral momentum intervention criteria with 12 single case design studies. Behavioral momentum intervention has been effective preschoolers (3-5 years), elementary school learners (6-11 years), middle school learners (12-14 years), and high schoolers (15-18 years) with autism. Studies included the 2020 EBP report (Steinbrenner et al., 2020) detail how behavioral momentum intervention can be used to effectively address the following outcomes for a target goal/behavior/skill: academic/pre-academic, adaptive/self-help, challenging/interfering behavior, communication, play, school readiness, and social.

HOW IS THIS BMI BEING USED?

Behavioral momentum intervention can be used by a variety of professionals, including teachers, special educators, therapists, paraprofessionals, and early interventionists in educational and community-based environments. Parents and family members also can use behavioral momentum intervention in the home.

Suggested Citation:

Rentschler, L. F., Sam, A., Waters, V., Dees, R., & AFIRM Team. (2021). *Behavioral Momentum Intervention*. The University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Institute, Autism Focused Intervention Resources & Modules.
<https://afirm.fpg.unc.edu/behaviorial-momentum-intervention>

---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 BMI 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), behavioral momentum intervention is a focused intervention that meets behavioral momentum intervention criteria with 12 single case design studies. Behavioral momentum intervention has been effective for preschoolers (3-5 years), elementary school learners (6-11 years), middle school learners (12-14 years), and high schoolers (15-18 years), and with autism. Studies included the 2020 BMI report (Steinbrenner et al., 2020) detail how behavioral momentum intervention can be used to effectively address the following outcomes for a target goal/behavior/skill: academic/pre-academic, adaptive/self-help, challenging/interfering, communication, play, school readiness, and social.

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

	ACADEMIC	ADAPTIVE	CHALLENGING	COMMUNICATION	PLAY	SCHOOL READINESS	SOCIAL
3 5	Yes	Yes		Yes	Yes	Yes	Yes
6 11	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12 14			Yes			Yes	
15 18		Yes	Yes				



EARLY INTERVENTION (0-2 YEARS):

No studies as of the 2020 EBP Report

PRESCHOOL (3-5 YEARS):

Ducharme, J. M., Lucas, H., & Pontes, E. (1994). Errorless embedding in the reduction of severe maladaptive behavior during interactive and learning tasks. *Behavior Therapy*, 25(3), 489-501. [https://doi.org/10.1016/S0005-7894\(05\)80159-5](https://doi.org/10.1016/S0005-7894(05)80159-5)

Houlihan, D., Jacobson, L., & Brandon, P. K. (1994). Replication of a high-probability request sequence with varied interprompt times in a preschool setting. *Journal of Applied Behavior Analysis*, 27(4), 737-738. <https://doi.org/10.1901/jaba.1994.27-737>

*Jung, S., Sainato, D. M., & Davis, C. A. (2008). Using high-probability request sequences to increase social interactions in young children with autism. *Journal of Early Intervention*, 30(3), 163-187. <https://doi.org/10.1177/1053815108317970>

Kelly, L., & Holloway, J. (2015). An investigation of the effectiveness of Behavioral Momentum on the acquisition and fluency outcomes of tacts in three children with autism spectrum disorder. *Research in Autism Spectrum Disorders*, 9, 182-192. <https://doi.org/10.1016/j.rasd.2014.10.007>

Patel, M., Reed, G. K., Piazza, C. C., Mueller, M., Bachmeyer, M. H., & Layer, S. A. (2007). Use of a high-probability instructional sequence to increase compliance to feeding demands in the absence of escape extinction. *Behavioral Interventions*, 22(4), 305-310. <https://doi.org/10.1002/bin.251>

***Pitts, L., & Dymond, S. (2012). Increasing compliance of children with autism: Effects of programmed reinforcement for high-probability requests and varied inter-instruction intervals. *Research in Autism Spectrum Disorders*, 6(1), 135-143. <https://doi.org/10.1016/j.rasd.2011.03.013>**

ELEMENTARY SCHOOL (6-11 YEARS):

Davis, C. A., Brady, M. P., Williams, R. E., & Hamilton, R. (1992). Effects of high-probability requests on the acquisition and generalization of responses to requests in young children with behavior disorders. *Journal of Applied Behavior Analysis*, 25(4), 905-916. <https://doi.org/10.1901/jaba.1992.25-905>

Esch, K., & Fryling, M. J. (2013). A comparison of two variations of the high-probability instructional sequence with a child with autism. *Education & Treatment of Children*, 36(1), 61-72. <https://doi.org/10.1353/etc.2013.0008>

*Jung, S., Sainato, D. M., & Davis, C. A. (2008). Using high-probability request sequences to increase social interactions in young children with autism. *Journal of Early Intervention*, 30(3), 163-187. <https://doi.org/10.1177/1053815108317970>

***Pitts, L., & Dymond, S. (2012). Increasing compliance of children with autism: Effects of programmed reinforcement for high-probability requests and varied inter-instruction intervals. *Research in Autism Spectrum Disorders*, 6(1), 135-143. <https://doi.org/10.1016/j.rasd.2011.03.013>**



ELEMENTARY SCHOOL (6-11 YEARS):

Riviere, V., Becquet, M., Peltret, E., Facon, B., & Darcheville, J. C. (2011). Increasing compliance with medical examination requests directed to children with autism: Effects of a high-probability request procedure. *Journal of Applied Behavior Analysis, 44*(1), 193-197. <https://doi.org/10.1901/jaba.2011.44-193>

Romano, J. P., & Roll, D. (2000). Expanding the utility of behavioral momentum for youth with developmental disabilities. *Behavioral Interventions, 15*(2), 99-111. [https://doi.org/10.1002/\(SICI\)1099-078X\(200004/06\)15:23.0.CO;2-K](https://doi.org/10.1002/(SICI)1099-078X(200004/06)15:23.0.CO;2-K)

MIDDLE SCHOOL (12-14 YEARS):

Banda, D. R., & Kubina, R. M. (2006). The effects of a high-probability request sequencing technique in enhancing transition behaviors. *Education and Treatment of Children, 29*(3), 507-516.

HIGH SCHOOL (15-18 YEARS):

Ewry, D. M., & Fryling, M. J. (2016). Evaluating the high-probability instructional sequence to increase the acceptance of foods with an adolescent with autism. *Behavior Analysis in Practice, 9*(4), 380-383. <https://doi.org/10.1007/s40617-015-0098-4>

YOUNG ADULT (19-22 YEARS):

No studies as of the 2020 EBP Report

Note: * denotes the study has participants in at least two age ranges; **new studies since 2011 (2012 till 2017) are denoted in bold**



---Data Collection: Mastered Skills---



Learner's Name: _____ Date/Time: _____

Observer(s): _____

Target Goal/Behavior/Skill (short): _____

Directions: Use this form to assess/determine skills the learner has mastered (performed accurately 80-100% of the time) that are from the same category as the target skill.

IDENTIFY SET OF MASTERED SKILLS:					
Mastered Skill	Probes			Tally	Mastery?
	Check for skill mastery several times a day over multiple days = performed skill correctly X = performed skill incorrectly				
	Date:	Date:	Date:	Count number of correct tally marks and divide by the total number of probes	Has the learner performed the skill accurately at least 80% of the time?
					<input type="checkbox"/> Yes <input type="checkbox"/> No
					<input type="checkbox"/> Yes <input type="checkbox"/> No
					<input type="checkbox"/> Yes <input type="checkbox"/> No
					<input type="checkbox"/> Yes <input type="checkbox"/> No
					<input type="checkbox"/> Yes <input type="checkbox"/> No
					<input type="checkbox"/> Yes <input type="checkbox"/> No
					<input type="checkbox"/> Yes <input type="checkbox"/> No
					<input type="checkbox"/> Yes <input type="checkbox"/> No



---R+ Checklist & Sampling---



Learner's Name: _____

Date/Time: _____

Observer(s): _____

Target Goal/Behavior/Skill: _____

Directions: Use this checklist to select reinforcers/rewards based on the learner's preferred items, interests, and activities.

CONDUCT A REINFORCER SAMPLING:

1. Sit in front of the learner and hold up two items. Ask the learner to "Pick one."
2. Wait 10 seconds for the learner to indicate selection in manner that is appropriate for the learner (e.g., verbalization, pointing, using an augmentative communication device).
3. Place the selected object in a container for learner's selection and non-selected item in the not selected container.
4. Repeat steps 1 through 3 until half of the objects presented are selected.

Item 1	Selection	Item 2	Selection
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
List:			



GENERAL CHECKLIST:		
Consider...	List Potential Reinforcers	Age Appropriate
1. What natural reinforcers could be used?		<input type="checkbox"/> Yes
2. What activities, objects, and/or foods does the learner select independently?		<input type="checkbox"/> Yes
3. What phrases or gestures seem to produce a pleasant response from the learner?		<input type="checkbox"/> Yes
4. What does the learner say they would like to work for (if appropriate)?		<input type="checkbox"/> Yes
5. What reinforcers were identified by parents/family members and/or team members as being successful in the past?		<input type="checkbox"/> Yes
6. Does the learner require additional adaptations/modifications/supports? Such as visual supports or a communication device?		<input type="checkbox"/> Yes
7. Have reinforcers/rewards for the learner been identified based on the learner's interests/preferred items and/or activities?		<input type="checkbox"/> Yes
8. Are additional materials and/or resources for using this selected practice ready and available?		<input type="checkbox"/> Yes



SPECIFIC CHECKLIST:		
Foods for Snacks/Mealtime Routines:		
<input type="checkbox"/> Goldfish	<input type="checkbox"/> French Fries	<input type="checkbox"/> Ice Cream
<input type="checkbox"/> Pizza	<input type="checkbox"/> Pretzels	<input type="checkbox"/>
<input type="checkbox"/> Chicken Nuggets	<input type="checkbox"/> Chips	<input type="checkbox"/>
<input type="checkbox"/> Fruit	<input type="checkbox"/> Cheese	<input type="checkbox"/>
Games for Play/Recess Routines:		
<input type="checkbox"/> Peek-a-boo	<input type="checkbox"/> Pat-a-Cake	<input type="checkbox"/>
<input type="checkbox"/> Chase	<input type="checkbox"/> Tickle games	<input type="checkbox"/>
<input type="checkbox"/> Burrito games with a blanket	<input type="checkbox"/>	<input type="checkbox"/>
Toys for Play/Recess Routines:		
<input type="checkbox"/> Trains and Cars	<input type="checkbox"/> Computer	<input type="checkbox"/> Books
<input type="checkbox"/> Legos	<input type="checkbox"/> Puzzles	<input type="checkbox"/>
<input type="checkbox"/> Remote controls	<input type="checkbox"/> Noisy toys	<input type="checkbox"/>
<input type="checkbox"/> Phones	<input type="checkbox"/> Doll house	<input type="checkbox"/>
Special Interests for Activities/Routines:		
<input type="checkbox"/> Movie:	<input type="checkbox"/> TV Show:	<input type="checkbox"/> Real-Life Person:
<input type="checkbox"/> Movie Character:	<input type="checkbox"/> TV Show Character:	<input type="checkbox"/> Video Game:
<input type="checkbox"/> Letters	<input type="checkbox"/> Cars, Trains, Trucks	<input type="checkbox"/> Music
<input type="checkbox"/> Numbers	<input type="checkbox"/> Dinosaurs	<input type="checkbox"/> Computers/Technology
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

---Prompting Hierarchy---



Learner's Name: _____ **Date/Time:** _____

Observer(s): _____

Target Goal/Behavior/Skill: _____

Directions: Use this checklist to determine order of prompts based on the learner's needs and the target skill.

PROMPTS:

- **Gestural** – a physical movement that provides the learner with information about how to perform the target skill/behavior
- **Independent** – the learner is able to perform the target skill/behavior without assistance or support from others
- **Model** – demonstrating the correct way to perform the target skill/behavior for the learner
- **Physical** – hands-on assistance given to the learner to support them to perform the target skill/behavior
- **Verbal** – any spoken words direct to the learner to help them perform the target skill/behavior
- **Visual** – a picture, icon, or physical object used to provide the learner with information on how to perform the target skill/behavior

DETERMINE PROMPT ORDER:		
Level	Prompt	Instructions
Level 1	Independent	
Level 2		
Level 3		
Level 4		
Level 5		
Level 6		



---Planning Checklist---



Learner's Name: _____ Date/Time: _____

Observer(s): _____

Target Goal/Behavior/Skill (short): _____

Directions: Complete this checklist to determine if this is an appropriate practice to use with the learner with autism and to determine if this practice is ready to be implemented.

GENERAL PLANNING:

1. Has the target goal/behavior/skill been identified?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. Has baseline data and/or a functional behavior assessment been collected through direct observation of the learner?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
3. 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?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4. Is this selected practice appropriate for the learner's target goal/behavior/skill?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
5. Does the learner have needed prerequisite mastered skills/abilities?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
6. Does the learner require additional adaptations/modifications/supports? Such as visual supports or a communication device?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
7. Have reinforcers/rewards for the learner been identified based on the learner's interests/preferred items and/or activities?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
8. Are additional materials and/or resources for using this selected practice ready and available?	<input type="checkbox"/> Yes	<input type="checkbox"/> No

TARGET GOAL/BEHAVIOR/SKILLS:



MASTERED SKILLS:

PREFERRED REINFORCERS:

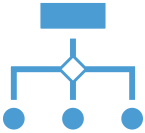
PROMPT ORDER:

Level	Prompt	Instructions
Level 1	Independent	
Level 2		
Level 3		
Level 4		
Level 5		
Level 6		

OTHER MATERIALS:



---Decision Tree---



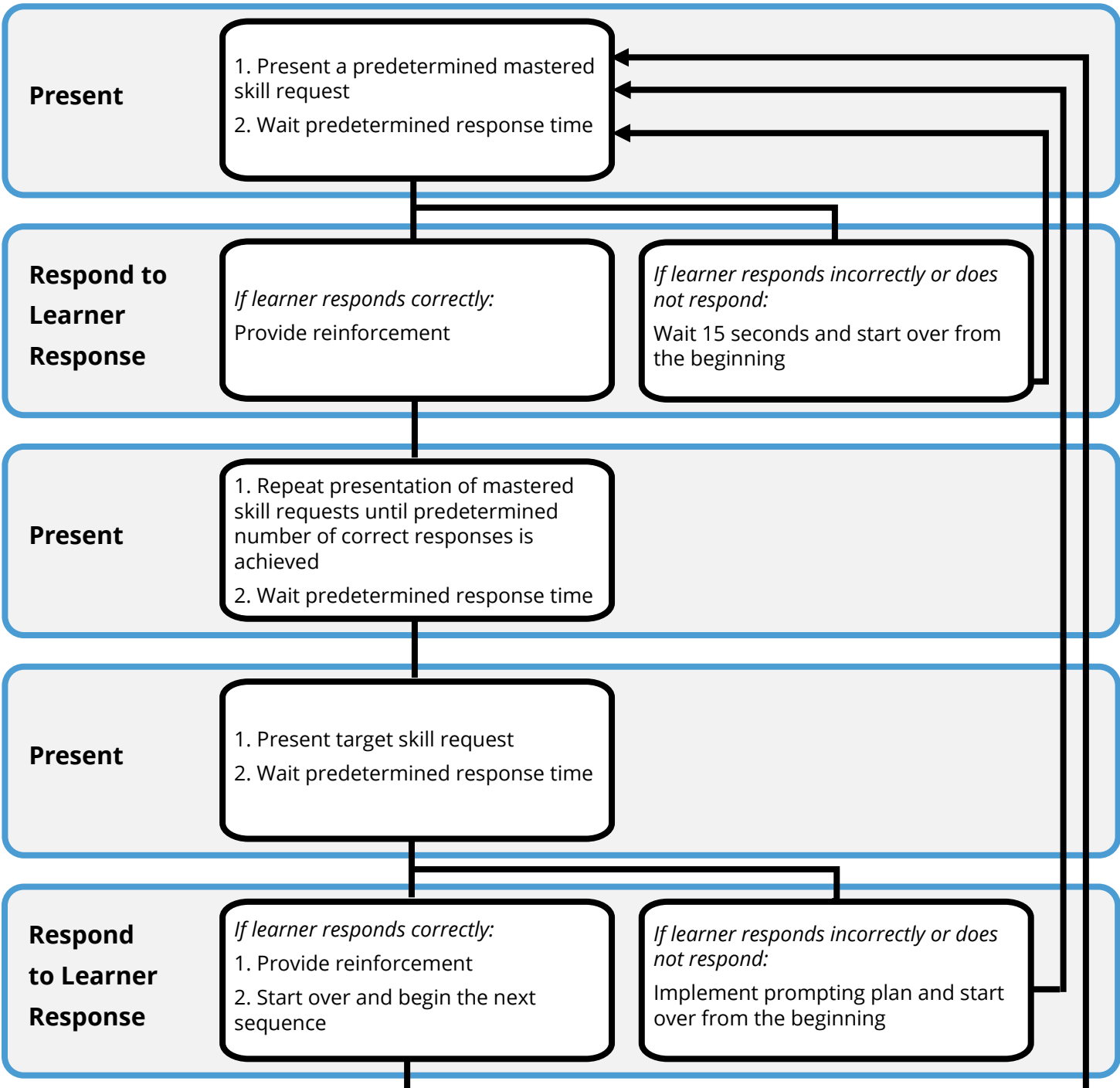
Learner's Name: _____

Date/Time: _____

Observer(s): _____

Target Goal/Behavior/Skill: _____

Directions: Use this decision tree for following the BMI teaching sequence with a learner with autism.





---Data Collection: Discrete Trial---



Learner's Name: _____ Date/Time: _____

Observer(s): _____

Target Goal/Behavior/Skill: _____

Directions: Collect data on the learner performing the target skill request.

MONITORING DATA:

Goal: _____ correct responses out of _____ presented opportunities to respond

Date										
Trial 1										
Trial 2										
Trial 3										
Trial 4										
Trial 5										
Trial 6										
Trial 7										
Trial 8										
Trial 9										
Trial 10										
% Correct										

Prompt Key: V = Verbal; G = Gestural; M = Model; P = Physical; I = No prompts needed/Independent

Response Key: ✓ = Correct; X = Incorrect; 0 = No response



[Blue header bar]										
[Left column for graph]										
	[Bottom row for graph]									

DETERMINE DATA TREND:		
Does the graph of monitoring data show a stable trend of the learner's progress?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If no, collect 5 more data points. If after five more collected data points the trend line is still variable or unstable, the team may determine next steps.		

ANECDOTAL NOTES:
[Large empty box for notes]

---Step-by-Step Guide---

BMI



This step-by-step practice guide outlines how to plan for, use, and monitor behavioral momentum intervention.

BEFORE YOU BEGIN...

Each of the following points is important to address so that you can be sure this selected evidence-based practice is likely to address the target goal/behavior/skill of your learner with autism.

HAVE YOU FOUND OUT MORE INFORMATION ABOUT...?

- 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 BMI (<https://afirm.fpg.unc.edu/selecting-EBP>).

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

Keep in mind that BMI can be used to support skill acquisition and increase compliance.

STEP 1: PLANNING FOR BMI

The planning step details the initial steps and considerations involved in preparing to use behavioral momentum intervention with a learner with autism.

1.1 Select target skill

To select a target skill, team members should identify a singular discrete skill or a few discrete target skills from a group of similar skills. Usually, 1-3 specific target skills are identified to work on during teaching sessions.

1.2 Identify set of mastered skills

Collect data to help identify a list of known or mastered skills. The list should include at least double the number of target skills identified. Mastered skills should:

- be categorically similar to the target skill.
- have a high likelihood of compliance.
- be performed accurately 80-100% of the time.



Use the **Mastered Skills Data Collection Form** to determine what skills the learner has mastered.

1.3 Determine how many mastered skills will be performed in each teaching sequence

Team members must decide on the number of known skills the learner must correctly perform prior to requesting the learner to perform the target skill. Usually, having the learner perform three to five known skills prior to requesting that they perform the target skill is sufficient to build the momentum of correct responding.

1.4 Determine reinforcement, response time and prompts

Use the Reinforcer Checklist and Sampling form to determine what type of positive reinforcement will be delivered after all correct responses. Identify an exact amount of allowable response time to allow for the quick pace of BMI. Additionally, team members may choose to include a prompting plan to supplement BMI.



Use the **Reinforcer Checklist and Sampling** to determine which reinforcers to use based on learner preference.



Use the **Prompting Hierarchy** form to determine the order of prompts based on the learner's needs and the target skill.

STEP 1: PLANNING FOR BMI (CONTINUED)

1.5 Train all team members

Prior to using BMI, team members should be trained on, and practice, the BMI teaching sequence as planned for the learner. Practice should include:

- role playing the teaching sequence.
- collecting data.
- accurately performing at least 80% of the steps on the Implementation Checklist.



Use the **Implementation Checklist** to check fidelity when learning to use BMI.

1.6 Have materials ready and available

Verify that all the materials are ready and space for teaching is available. Materials should include:

- a data sheet.
- items necessary for teaching the target skill(s) (e.g., visuals, flashcards, food and eating utensils, play toys, etc.).
- reinforcers.



Use the **BMI Planning Checklist** to determine if ready to use BMI.

STEP 2: USING BMI

This step details the process of implementing behavioral momentum intervention with a learner with autism.

2.1 Obtain learner's attention and present request to perform a mastered skill

After obtaining the learner's attention, present a request to perform a mastered skill and wait the predetermined amount of time for the learner to respond.

2.2 Respond to learner's response

After presenting the first request to perform a mastered skill, the learner will respond in one of three ways.

- If the learner responds correctly, provide brief reinforcement.
- If the learner responds incorrectly, wait 15 seconds then start the teaching sequence from the beginning with a different mastered skill request.
- If the learner does not respond within the predetermined allowable response time, wait 15 seconds then start the teaching sequence from the beginning with a different mastered skill request.

2.3 Repeat steps above until the predetermined number of correct responses is achieved

When repeating the steps above, randomly rotate requests to perform mastered skills from the predetermined list. Stop presenting mastered skill requests when the learner has correctly responded to the predetermined consecutive number of mastered skills.

2.4 Present request to perform target skill and respond to learner's response

Once the learner has correctly performed the predetermined number of mastered skills, immediately present the request to perform the target skill. A quick pace is key to building compliance and correct responding momentum.



Use the **BMI Decision Tree** to follow BMI procedure with the learner.

STEP 3: MONITORING BMI

The following step details how to monitor the use of behavioral momentum intervention with a learner with autism and how to determine next steps based on the data.

3.1 Collect and analyze data

Only collect data on the learner's response to the target skill request, not the mastered/known requests. Note correct and incorrect responses as well as any prompts used.



Use the **Data Collection Form** to track learner responding.

3.2 Determine next steps based on learner progress

Collecting and analyzing data will help team members decide about the effectiveness of using this practice and whether the learner with ASD is making progress. If a learner is making progress based upon data collected, team members should continue to use the selected BMI strategy. If a plateau or decline is observed in the graphed data line, teaching adjustments should be made.

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

- Is the target goal/behavior/skill well defined?
- Is the target goal/behavior/skill measurable and observable?
- Is the target goal/behavior/skill too difficult/complex? Does it need to be broken down into smaller steps?
- Has enough time been devoted to using behavioral momentum intervention (frequency, intensity, and/or duration)?
- Is the learner correctly responding to the known/mastered requests and accessing reinforcement for those correct responses?
- Did the learner successfully perform a sufficient number of known/mastered skills prior to being asked to perform the target skill?
- Is the pace of the request delivery sufficiently quick to build the momentum of correct responding prior to the target skill request?
- Was behavioral momentum intervention implemented with fidelity (see Implementation Checklist)?
- Does the learner need additional supports?
- Are the selected reinforcers preferred items/activities for the learner?

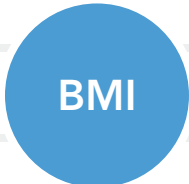
If these issues have been addressed and the learner with autism continues not to show progress, consider selecting a different evidence-based practice to use with the learner with autism.



---Implementation Checklist---

		Observation:				
		1	2	3	4	5
		Date:				
Observer's initials:						
STEP 1: PLANNING						
<p>Before you start, have you...?</p> <p><input type="checkbox"/> Identified the target goal/behavior/skill?</p> <p><input type="checkbox"/> Collected baseline data through direct observation?</p> <p><input type="checkbox"/> Established 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?</p> <p>If the answer to any of the above questions is 'No,' review the process of how to select an EBP .</p>	1.1	Select target skill(s).				
	1.2	Identify set of mastered skills.				
	1.3	Determine how many mastered skills will be performed in each teaching sequence.				
	1.4	Determine reinforcement, response time, and a prompting plan.				
	1.5	Train all team members in planned behavioral momentum teaching sequence.				
	1.6	Have materials ready and available				
STEP 2: USING						
	2.1	Obtain learner's attention and present request to perform a mastered skill.				
	2.2	Respond to learner's response:				
	2.2a	<i>If learner responds correctly:</i>				
	2.2a.i	Provide reinforcement.				
	2.2b	<i>If learner responds incorrectly or does not respond within the predetermined response time:</i>				
	2.2b.i	Wait 15 seconds and start over from step 2.1.				
	2.3	Repeat steps 2.1 - 2.2.b.i, varying the mastered skills presented, until the predetermined number of correct responses is achieved.				
	2.4	Present request to perform target skill.				
	2.5	Respond to learner's response:				
	2.5a	<i>If learner responds correctly:</i>				
	2.5a.i	Deliver reinforcement.				
	2.5a.ii	Return to step 2.1 and repeat the teaching sequence, randomly rotating the order of the mastered skills, until the predetermined teaching time expires.				
	2.5b	<i>If learner responds incorrectly or does not respond:</i>				
	2.5b.i	Deliver prompt according to predetermined prompting plan followed by reinforcement.				
	2.5b.ii	Return to step 2.1 and repeat the teaching sequence until the predetermined session time expires.				
STEP 3: MONITORING						
	3.1	Collect data				
	3.2	Analyze data				
	3.3	Determine next steps based on learner progress				

---Tip Sheet for Professionals---



BEHAVIORAL MOMENTUM INTERVENTION IS...

- An evidence-based practice that capitalizes on an easy-to-hard task teaching sequence and positive reinforcement to build a pattern of correct responding.
- Used to increase a target goal/behavior/skill and/or to decrease interfering or challenging behaviors.



WHY USE WITH LEARNERS WITH AUTISM?

- BMI is always used with positive reinforcement which has been shown to support new skill acquisition in learners with autism.
- BMI is an antecedent-based intervention which has been shown to decrease noncompliance and challenging behaviors for learners with autism.
- BMI may be a good strategy to use when other teaching strategies have not been successful or when compliance with particular target skills is low.

TIPS:

- Identify a list of mastered skills that the learner can accurately perform 80-100% of the time.
- Keeping the flow of skill requests as quick as possible is key to building momentum. Select reinforcers that are fast to administer and to experience by the learner.
- Target skills should be discrete, meaning they are short, closed-ended and require a single response.

INSTRUCTIONAL OUTCOMES:

- The evidence-base for behavioral momentum intervention supports its use to address the following outcomes, according to age range, in the table below:

	ACADEMIC	ADAPTIVE	CHALLENGING	COMMUNICATION	PLAY	SCHOOL READINESS	SOCIAL
3-5	Yes	Yes		Yes	Yes	Yes	Yes
6-11	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12-14			Yes			Yes	
15-18		Yes	Yes				



Behavioral Momentum Intervention BMI

This sheet was designed as a supplemental resource to provide basic information about this evidence-based practice for professionals working with learners with autism.

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

STEPS FOR IMPLEMENTING:

1. PLAN

- Select target skill(s)
- Identify set of mastered skills
- Determine how many mastered skills will be performed in each teaching sequence
- Determine reinforcement, response time, and a prompting plan
- Train all team members in planned behavioral momentum teaching sequence
- Have materials ready and available

2. USE

- Obtain learner's attention and present request to perform a mastered skill
- Respond to learner's response
- Repeat steps above, varying the mastered skills presented, until the predetermined number of correct responses is achieved
- Present request to perform target skill and respond to learner's response

3. MONITOR

- Collect data
- Analyze data
- Determine next steps based on learner progress

---Parent's Guide---

BMI



Behavioral Momentum Intervention BMI

This parent introduction to BMI was designed as a supplemental resource to help answer questions about this practice.

To find out more about how this BMI 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/>.

WHAT IS BMI?

- BMI is an evidence-based practice for children with autism from 3-18 years old.
- BMI capitalizes on an easy-to-hard task teaching sequence and positive reinforcement to build a pattern of correct responding.

WHY USE THIS BMI WITH MY CHILD?

- BMI can be used to increase a target behavior or skill and/or to decrease interfering or challenging behaviors.
- Research studies have shown BMI has been used effectively with learners with autism to address academic, adaptive, communication, play, school readiness, social and behavior outcomes.
- BMI may be a good strategy to use when other strategies have not been successful or when compliance with particular target skills is low.

WHAT ACTIVITIES CAN I DO AT HOME?

- Choose a target skill or behavior that is discrete, meaning it is short, closed-ended and requires a single response. Some examples include putting an item away, taking off shoes or hanging up a coat.
- In quick succession, request that your child perform several known/mastered skills prior to requesting the target skill to be performed.
- Provide a brief reinforcer after every correct response to build momentum of correct responding, increasing your child's likelihood of correctly performing the target skill.



---Additional Resources---



Check out these resources, applications, books, and websites, to support your use of this evidence-based practice.

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

APPLICATIONS:

Developer	Available	Pricing
 Track & Share Apps, LLC <i>Autism Tracker Lite</i>	Mac App Store	Free
 Touch Autism <i>Preference Assessment</i>	Mac App Store	\$9.99

WEBSITES:

Nebraska Autism Spectrum Disorders Network. (2021, September 2021). *Behavior Momentum*.
<https://www.unl.edu/asdnetwork/virtual-strategies/behavior-momentum>

Project ACCESS, Missouri State. (2021, September 27). *Behavioral Momentum Interventions (BMI)*.
<https://education.missouristate.edu/Access/BMI.htm>

---Glossary---

BMI



Below are the key terms that apply specifically to this evidence-based practice.

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

Antecedent

the activities and specific events preceding the 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

Behavioral Momentum Intervention

an evidence-based practice that capitalizes on an easy-to-hard task teaching sequence and positive reinforcement to build a pattern of correct responding

Discrete task

a close-ended task that requires a single response and is of a relatively short duration

Discrete Trial Training

an evidence-based practice consisting of adult-directed, massed trial instruction, reinforcers, and clear contingencies and repetition to teach a new skill or behavior

Duration data

records how long a learner engages in a particular behavior or skill

Event sampling

collects frequency data at every instance the behavior occurs

Fade

to systematically reduce and eventually withdraw the use of stimulus such as a prompt, request, or reinforcer

Fidelity

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

Focused intervention

a practice designed to address a single skill or goal of a learner

Implementation checklist

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

Interfering behavior

challenging behavior that interferes with the learner's ability to learn

Mastered skill

a skill that is known by the learner and typically has a high rate of correct responding and compliance

Modeling

an evidence-based practice that involves the learner observing someone correctly performing a target behavior

Prompting

an evidence-based practice that will assist the learner in using specific skills; prompts can be verbal, gestural, or physical

Reinforcement

an evidence-based practice that provides feedback that increases the use of a strategy or target behavior/skill

Response time

the allowable amount of time in which the learner may respond correctly after the teaching request is made

Target skill

skill that is the focus of the intervention

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 with autism

Time Delay

an evidence-based practice used to fade the use of prompts during instructional activities by using a brief delay between the initial instruction and any additional instructions or prompts

Topographically similar

describes behaviors that look similar or are categorically similar

Visual Supports

an evidence-based practice that provides concrete cues that are paired with, or used in place of, a verbal cue to provide the learner with information about a routine, activity, behavioral expectation, or skill demonstration

---References---

BMI



Listed below, in numerical order, are the references used in the module.

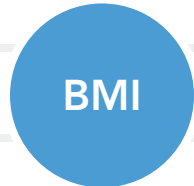
For more information about this selected evidence-based practice, please visit <https://afirm.fpg.unc.edu/>.

1. Ducharme, J. M., Lucas, H., & Pontes, E. (1994). Errorless embedding in the reduction of severe maladaptive behavior during interactive and learning tasks. *Behavior Therapy*, 25(3), 489-501. [https://doi.org/10.1016/S0005-7894\(05\)80159-5](https://doi.org/10.1016/S0005-7894(05)80159-5)
2. Esch, K., & Fryling, M. J. (2013). A comparison of two variations of the high-probability instructional sequence with a child with autism. *Education & Treatment of Children*, 36(1), 61-72. <https://doi.org/10.1353/etc.2013.0008>
3. Pitts, L., & Dymond, S. (2012). Increasing compliance of children with autism: Effects of programmed reinforcement for high-probability requests and varied inter-instruction intervals. *Research in Autism Spectrum Disorders*, 6(1), 135-143. <https://doi.org/10.1016/j.rasd.2011.03.013>
4. Riviere, V., Becquet, M., Peltret, E., Facon, B., & Darcheville, J. C. (2011). Increasing compliance with medical examination requests directed to children with autism: Effects of a high-probability request procedure. *Journal of Applied Behavior Analysis*, 44(1), 193-197. <https://doi.org/10.1901/jaba.2011.44-193>
5. Romano, J. P., & Roll, D. (2000). Expanding the utility of behavioral momentum for youth with developmental disabilities. *Behavioral Interventions*, 15(2), 99-111. [https://doi.org/10.1002/\(SICI\)1099-078X\(200004/06\)15:23.0.CO;2-K](https://doi.org/10.1002/(SICI)1099-078X(200004/06)15:23.0.CO;2-K)
6. Banda, D. R., & Kubina, R. M. (2006). The effects of a high-probability request sequencing technique in enhancing transition behaviors. *Education and Treatment of Children*, 29(3), 507-516.
7. Davis, C. A., Brady, M. P., Williams, R. E., & Hamilton, R. (1992). Effects of high-probability requests on the acquisition and generalization of responses to requests in young children with behavior disorders. *Journal of Applied Behavior Analysis*, 25(4), 905-916. <https://doi.org/10.1901/jaba.1992.25-905>
8. Houlihan, D., Jacobson, L., & Brandon, P. K. (1994). Replication of a high-probability request sequence with varied interprompt times in a preschool setting. *Journal of Applied Behavior Analysis*, 27(4), 737-738. <https://doi.org/10.1901/jaba.1994.27-737>
9. Ewry, D. M., & Fryling, M. J. (2016). Evaluating the high-probability instructional sequence to increase the acceptance of foods with an adolescent with autism. *Behavior Analysis in Practice*, 9(4), 380-383. <https://doi.org/10.1007/s40617-015-0098-4>

10. Patel, M., Reed, G. K., Piazza, C. C., Mueller, M., Bachmeyer, M. H., & Layer, S. A. (2007). Use of a high-probability instructional sequence to increase compliance to feeding demands in the absence of escape extinction. *Behavioral Interventions*, 22(4), 305-310.
<https://doi.org/10.1002/bin.251>
11. Kelly, L., & Holloway, J. (2015). An investigation of the effectiveness of Behavioral Momentum on the acquisition and fluency outcomes of tacts in three children with autism spectrum disorder. *Research in Autism Spectrum Disorders*, 9, 182-192.
<https://doi.org/10.1016/j.rasd.2014.10.007>
12. Jung, S., Sainato, D. M., & Davis, C. A. (2008). Using high-probability request sequences to increase social interactions in young children with autism. *Journal of Early Intervention*, 30(3), 163-187. <https://doi.org/10.1177/1053815108317970>
13. Sevin, J. A., Rieske, R. D., & Matson, J. L. (2015). A review of behavioral strategies and support considerations for assisting persons with difficulties transitioning from activity to activity. *Journal of Autism and Developmental Disorders*, 2(4), 329-342.
14. Wolf, M., Risley, T., & Mees, H. (1963). Application of operant conditioning procedures to the behaviour problems of an autistic child. *Behaviour Research and Therapy*, 1(2-4), 305-312.
15. Harvey, S. T., Boer, D., Meyer, L. H., & Evans, I. M. (2009). Updating a meta-analysis of intervention research with challenging behaviour: Treatment validity and standards of practice. *Journal of Intellectual and Developmental Disability*, 34(1), 67-80.
16. Martin, G. L., England, G., Kaprowy, E., Kilgour, K., & Pilek, V. (1968). Operant conditioning of kindergarten-class behavior in autistic children. *Behaviour Research and Therapy*, 6(3), 281-294.
17. Steinbrenner, J. R., Hume, K., Odom, S. L., Morin, K. L., Nowell, S. W., Tomaszewski, B., Szendrey, S., McIntyre, N. S., Yücesoy-Özkan, S., & Savage, M. N. (2020). Evidence-Based Practices for Children, Youth, and Young Adults with Autism. The University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Institute, National Clearinghouse on Autism Evidence and Practice Review Team.
<http://autismpdc.fpg.unc.edu/sites/autismpdc.fpg.unc.edu/files/imce/documents/2014-BMI-Report.pdf>



---CEC Standards---



Below are the CEC Professionals Standards that apply specifically to Behavioral Momentum Intervention (BMI).

The CEC Standards that apply to all 28 evidence-based practices (EBPs) can be found on our website at <https://afirm.fpg.unc.edu/>.

Initial Practice-Based Standards for Early Interventionists/Early Childhood (0-5 years; CEC, 2020)

Standard	Description
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.
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.
6.5	Identify and create multiple opportunities for young children to develop and learn play skills and engage in meaningful play experiences independently and with others across contexts.
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	Description
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.



Advanced Practice-Based Standards (CEC, 2012)

Standard	Description
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.