# Evidence Based Practice Training:

## Behavioral Momentum Intervention (BMI)

Adapted from Steinbrenner, J.R. et.al. (2020). Behavioral Momentum, Evidence-Based Practices for Children, Youth, and Young Adults with Autism Spectrum Disorder Report, National Clearinghouse on Autism Evidence and Practice (NCAEP) https://ncaep.fpg.unc.edu/

# What is CAPTAIN

The California Autism Professional Training And Information Network (CAPTAIN) is an interagency network developed to support the understanding and use of evidence based practices (EBPs) for individuals with Autism across the state of California

# What is CAPTAIN

Marin County SELPA in partnership with CAPTAIN, are members of the Statewide System of Support as the Special Education Content Lead for Autism

This project is funded by the California Department of Education and the California Collaborative for Educational Excellence.

# Levels of Professional Development to Reach Implementation


This is a Workshop/Training and is designed to increase your KNOWLEDGE of the topic. Implementation supports to assist you with use of this EBP will be outlined following the TRAINING/WORKSHOP

# Before We Begin…

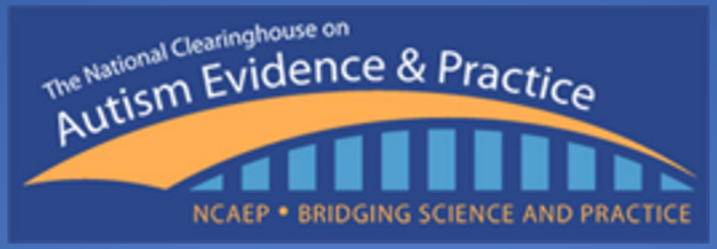
Please complete the **Pre Training Survey** sent to your email

# Core Components: Learning Objectives

By the end of this training, participants will be able to:

- Describe what EBPs for autism are
- Define Behavioral Momentum Intervention
- Describe circumstances that might indicate behavioral momentum could be used
- Identify the components of Behavioral Momentum
- Determine the effectiveness of Behavioral Momentum Intervention

# What are Evidence Based Practices?



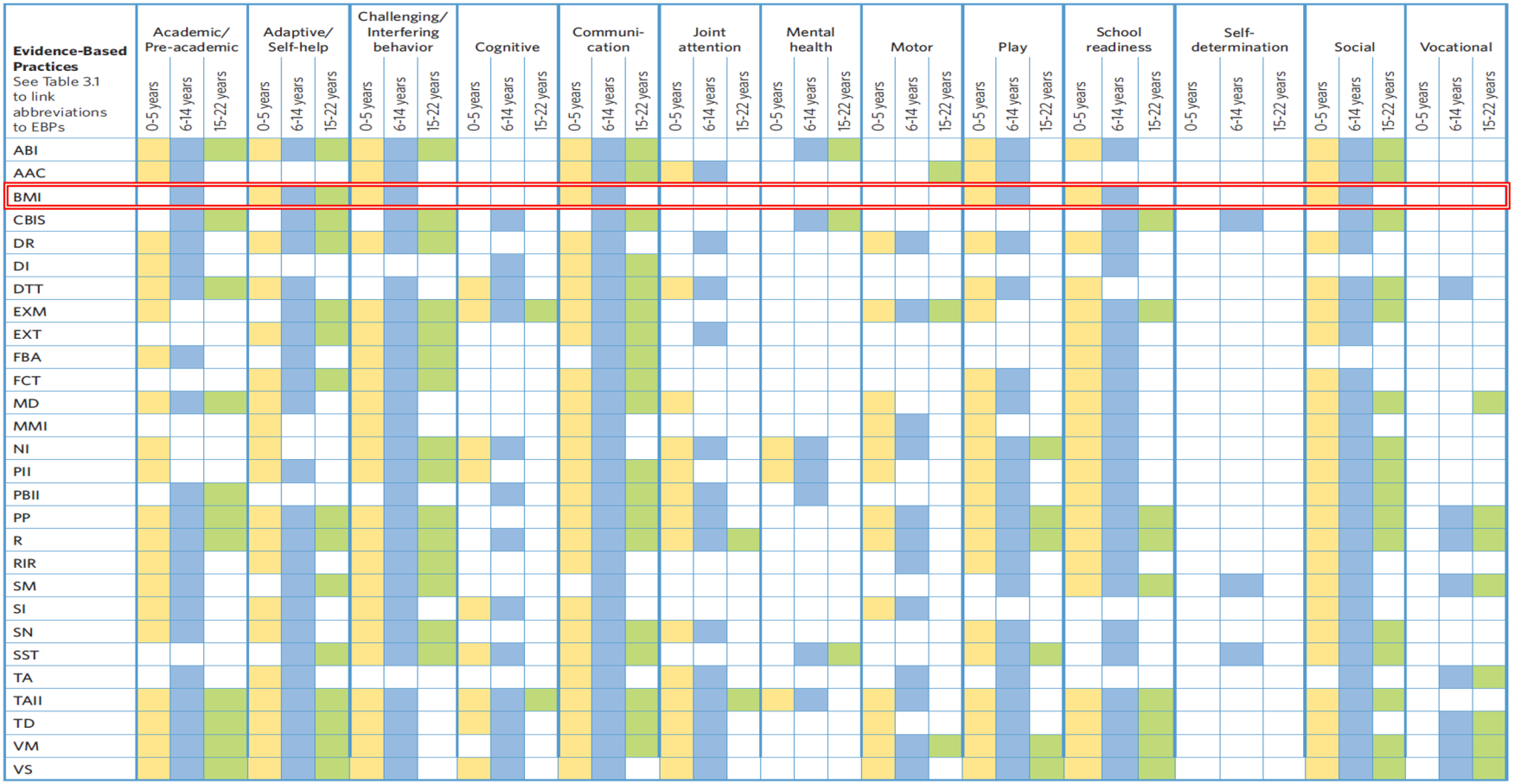

NCAEP definition of an EBP:

"Focused intervention practices that have evidence of efficacy in promoting positive outcomes for learners with ASD."

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.

# Evidence Based Practice Matrix (28 EBPs)

Table 3.7 Matrix of evidence-based practices, outcomes, and age categories



| Evidence-Based Practices (See Table 3.1 to link abbreviations to EBPs) | Academic/ Pre-academic | | | Adaptive/ Self-help | | | Challenging/ Interfering behavior | | | Cognitive | | | Communi-cation | | | Joint attention | | | Mental health | | | Motor | | | Play | | | School readiness | | | Self-determination | | | Social | | | Vocational | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years |
| ABI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AAC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BMI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CBIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DTT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EXM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EXT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FBA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FCT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MMI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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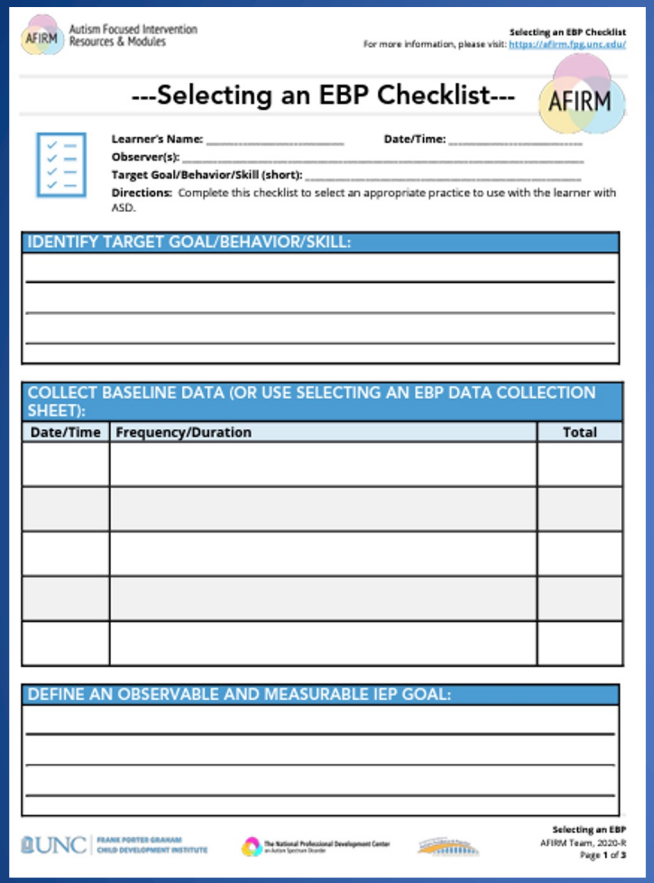
| R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RIR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TAII | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

# Selecting EBPs

Before beginning a new practice with a learner, it is important to follow four planning steps

1. Identify the behavior
2. Collect baseline data on the behavior
3. Establish an observable and measurable goal
4. Choose an EBP
   - Consider the child and family characteristics
   - Consider the teacher and team characteristics
   - Consider other available resources

# Selecting an EBP Checklist



Autism Focused Intervention Resources & Modules

Selecting an EBP Checklist
For more information, please visit: https://afirm.fpg.unc.edu/

## ---Selecting an EBP Checklist---

Learner's Name: _____ Date/Time: _____
Observer(s): _____
Target Goal/Behavior/Skill (short): _____
**Directions:** Complete this checklist to select an appropriate practice to use with the learner with ASD.

### IDENTIFY TARGET GOAL/BEHAVIOR/SKILL:

### COLLECT BASELINE DATA (OR USE SELECTING AN EBP DATA COLLECTION SHEET):

| Date/Time | Frequency/Duration | Total |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

### DEFINE AN OBSERVABLE AND MEASURABLE IEP GOAL:

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Selecting an EBP
AFIRM Team, 2020-R
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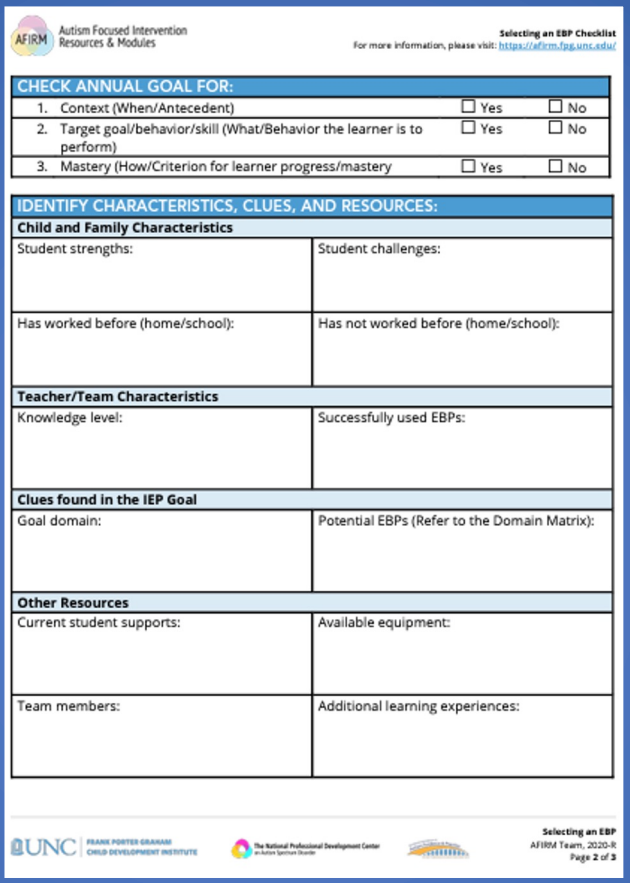

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### CHECK ANNUAL GOAL FOR:

| | | |
|---|---|---|
| 1. Context (When/Antecedent) | ☐ Yes | ☐ No |
| 2. Target goal/behavior/skill (What/Behavior the learner is to perform) | ☐ Yes | ☐ No |
| 3. Mastery (How/Criterion for learner progress/mastery | ☐ Yes | ☐ No |

### IDENTIFY CHARACTERISTICS, CLUES, AND RESOURCES:

**Child and Family Characteristics**

| | |
|---|---|
| Student strengths: | Student challenges: |
| Has worked before (home/school): | Has not worked before (home/school): |

**Teacher/Team Characteristics**

| | |
|---|---|
| Knowledge level: | Successfully used EBPs: |

**Clues found in the IEP Goal**

| | |
|---|---|
| Goal domain: | Potential EBPs (Refer to the Domain Matrix): |

**Other Resources**

| | |
|---|---|
| Current student supports: | Available equipment: |
| Team members: | Additional learning experiences: |

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Selecting an EBP
AFIRM Team, 2020-R
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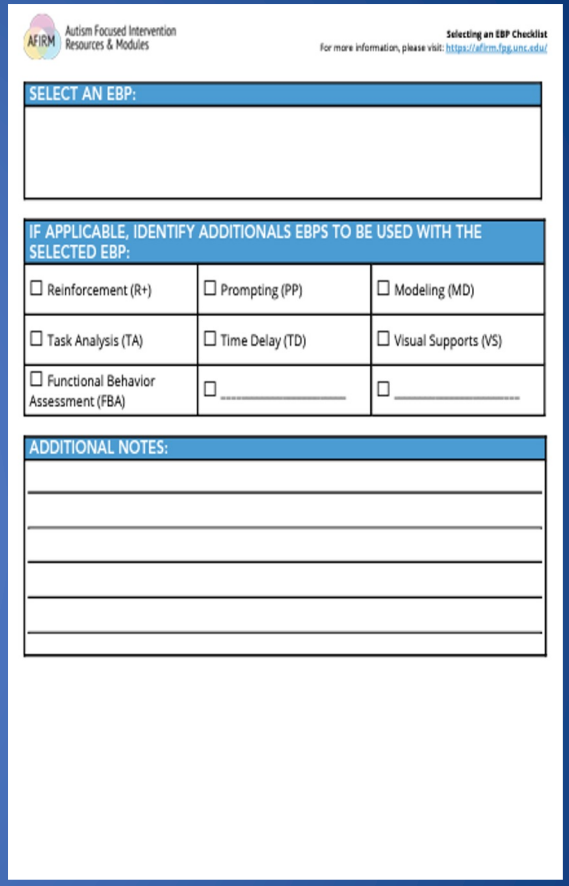

Autism Focused Intervention Resources & Modules

Selecting an EBP Checklist
For more information, please visit: https://afirm.fpg.unc.edu/

### SELECT AN EBP:

### IF APPLICABLE, IDENTIFY ADDITIONALS EBPS TO BE USED WITH THE SELECTED EBP:

| | | |
|---|---|---|
| ☐ Reinforcement (R+) | ☐ Prompting (PP) | ☐ Modeling (MD) |
| ☐ Task Analysis (TA) | ☐ Time Delay (TD) | ☐ Visual Supports (VS) |
| ☐ Functional Behavior Assessment (FBA) | ☐ _____ | ☐ _____ |

### ADDITIONAL NOTES:

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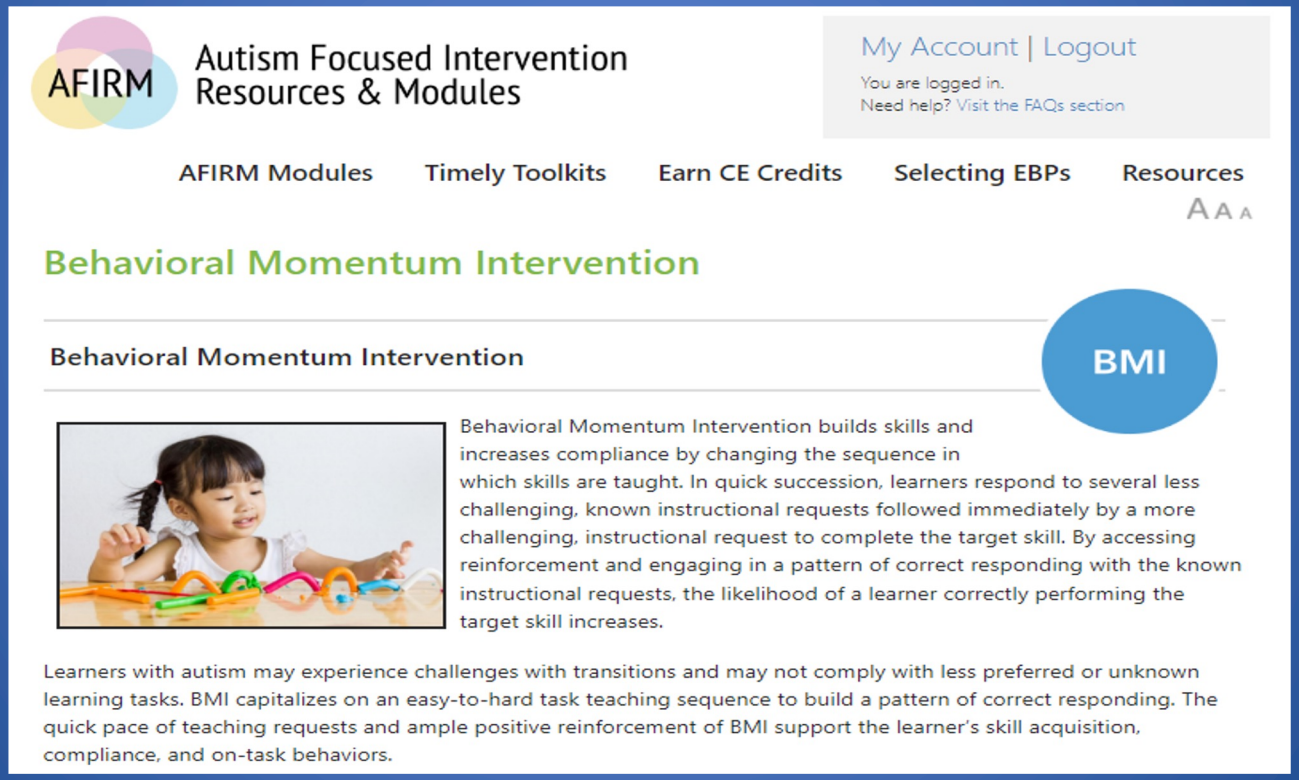
SELPA Content Lead
EVIDENCE Based Practices
—Autism—

# High Quality Training:

## Autism Focused Intervention Resources and Modules (AFIRM)

Designed to help you learn the step-by-step process of planning for, using, and monitoring EBPs with learners with Autism from birth to 22 years of age

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—Autism—

# Evidence-base for BMI

| | PRESCHOOL | ELEMENTARY SCHOOL | MIDDLE SCHOOL | HIGH SCHOOL |
|---|---|---|---|---|
| | 3-5 years | 6-11 years | 12-14 years | 15-18 years |
| Academic | Yes | Yes | | |
| Adaptive | Yes | Yes | | Yes |
| Challenging | | Yes | Yes | Yes |
| Communication | Yes | Yes | | |
| Play | Yes | Yes | | |
| School readiness | Yes | Yes | Yes | |
| Social | Yes | Yes | | |

# Basics of Behavioral Momentum Intervention BMI

# Definition: Behavioral Momentum Intervention (BMI)

Behavioral Momentum is an antecedent based intervention that provides opportunity for low-probability behavior (target skill) completion when preceded with high-probability behavior (mastered skill) completed at a quick and consistent rate.

Behavioral Momentum strategies are often used in conjunction with other evidence based practices including prompting, reinforcement and discrete trial teaching

# Behavioral Momentum Components

High-probability or “high-p” and low-probability or “low-p” behaviors are behavioral momentum components.

A high-p request sequence can reduce low-p non-compliance because the opportunity for the learner to escape the low-p behavior is reduced through pacing and successful high-p opportunties.

# Behavioral Momentum Components

<u>High-probability (High-p) behaviors:</u>

- Have a history of learner compliance
- Are easy for the learner to complete
- Are quick for the learner to complete
- May also be called “Mastered SKills”

# Behavioral Momentum Components

Low-probability (Low-p) behaviors:

- Have a history of learner refusals
- Is a more difficult task for the learner
- Is often called the “Target Skill”

# Behavioral Momentum Sequence

High-p Request→Behavior completion→Reinforcer

High-p Request→Behavior completion→Reinforcer

High-p Request→Behavior completion→Reinforcer

Low-p Request→Behavior completion→Reinforcer

# Example BMI Sequence

| Type | Demand | Student Response | Reinforcer |
|---|---|---|---|
| High-P1 | "What's your Name" | "Juan" | "Awesome" |
| High-P2 | "How Old Are You?" | "5" | "Excellent work!" |
| High-P3 | "What's Your Favorite Color?" | "Blue" | High Five |
| Low-P | "Can you spell Blue?" | "BLUE" | Gets to look at preferred book |

# Example: Video Example and Non-Example of BMI

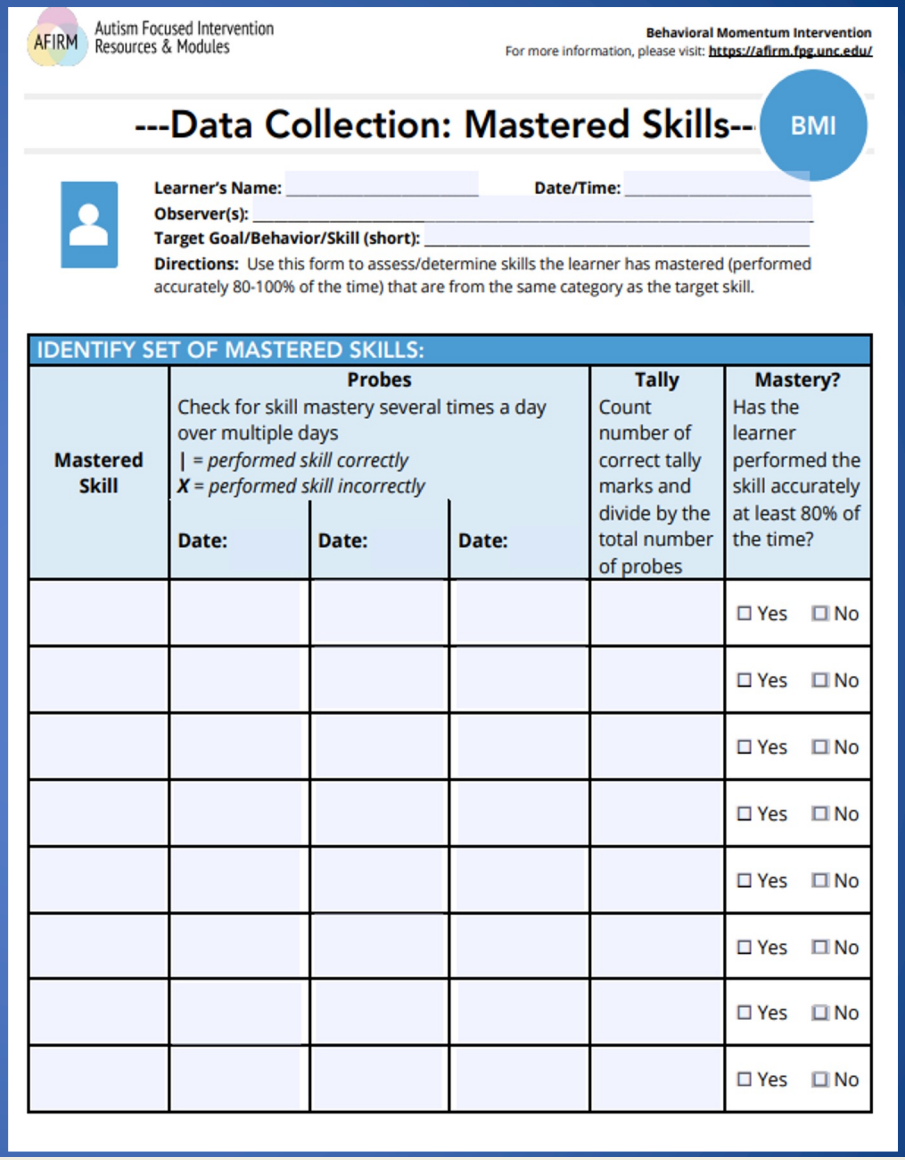
# Steps for Using BMI

# Plan for BMI

## 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

# Identify Set of Mastered Skills



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**Behavioral Momentum Intervention**
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## ---Data Collection: Mastered Skills--

BMI

**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** Check for skill mastery several times a day over multiple days | | | **Tally** Count number of correct tally marks and divide by the total number of probes | **Mastery?** Has the learner performed the skill accurately at least 80% of the time? |
|---|---|---|---|---|---|
| | | | | | |
| | **Date:** | **Date:** | **Date:** | | |
| | | | | | ☐ Yes ☐ No |
| | | | | | ☐ Yes ☐ No |
| | | | | | ☐ Yes ☐ No |
| | | | | | ☐ Yes ☐ No |
| | | | | | ☐ Yes ☐ No |
| | | | | | ☐ Yes ☐ No |
| | | | | | ☐ Yes ☐ No |
| | | | | | ☐ Yes ☐ No |

*| = performed skill correctly*
*X = performed skill incorrectly*

# Determine Number of High-p Skills in Sequence

- Three to five High-p prior to asking the Low-p is usually sufficient to build the momentum of correct responding

- With strong history of refusals, increasing number of High-p to be performed prior to Low-p

# Use Quick Reinforcers That Will Not Interrupt FLow

Examples:

- Verbal praise
- Physical (e.g., high-fives, fist bumps, shoulder squeezes)
- Visual stimulation (e.g., bubbles, pinwheels, etc.)
- Tokens or points

# Determine Response Time

- The acceptable amount of time in which a learner may respond correctly after the teaching request is made
- Usually 1-3 seconds is adequate
- Lengthen if information about the learners suggests they need additional time
- Pace of BMI is a critical component of it's successful use

# Determine Prompts to be Used

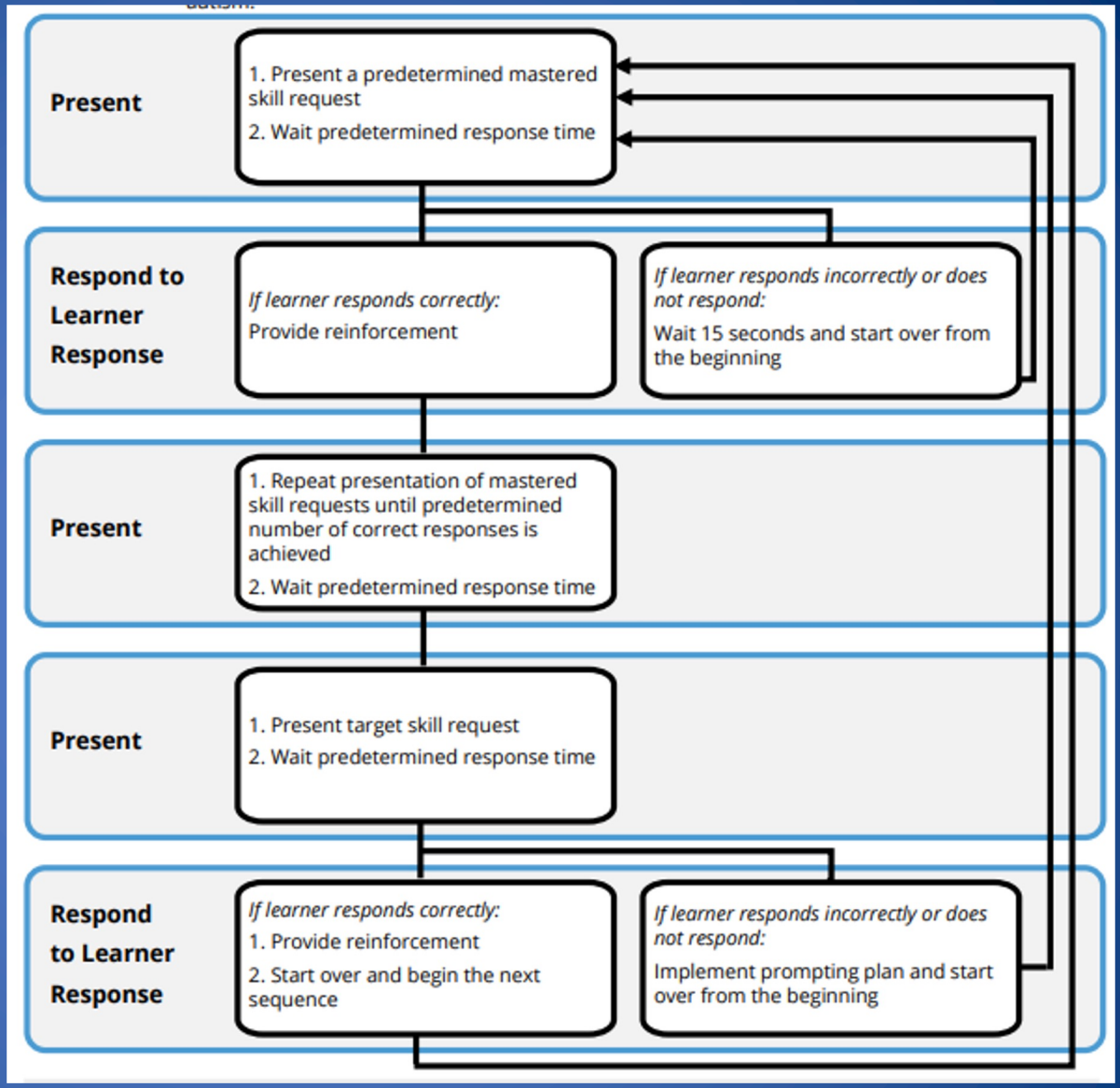
- Prompting procedures are often used in conjunction with BMI
- Identify the least restrictive prompt that will provide the needed support for the specific Low P skill being taught
- Fade the prompt as quickly as possible

# Use BMI

## 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

# BMI Sequence




# Practice with Feedback

Look at the information on the following slides and determine what to do in the Behavioral Momentum Sequence

# Let's Practice

Example: Student engages in escape or tantrum behaviors when requested to complete copying task

High-p behaviors:

writes name independently

writes date independently

underlines words independently

# Let's Practice

Low-p behavior:
copying words

Reinforcers:
verbal praise
high fives
Points on chart

# Behavioral Momentum Sequence

| Type | Demand | Student Response | Reinforcer |
|---|---|---|---|
| High-P1 | "Write your name" | Student writes name | ? |
| High-P2 | ? | Student writes date | "Excellent work!" |
| High-P3 | ? | Student underlines first word | "Amazing!" |
| Low-P | "Copy the first word" | Student copies first word | ? |

# Monitor BMI Use

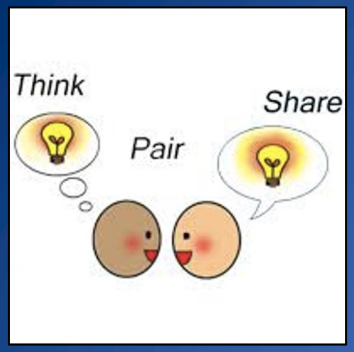
## 3. MONITOR

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

**Data Key:**
HP = HIgh probability behavior
LP = Low probability behavior
Prompt Hierarchy): P (Physical), G (Gestural), E (Expectant Look)
Response Data: + (correct), -(incorrect)

| MONITORING DATA: | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Goal: ____ correct responses out of ____ presented opportunities to respond | | | | | | | | | | |
| Date | 2/1 | 2/1 | 2/1 | | | | | | | |
| Trial 1 | HP+ | HP+ | HP+ | | | | | | | |
| Trial 2 | HP+ | HP+ | HP+ | | | | | | | |
| Trial 3 | HP+ | HP+ | HP+ | | | | | | | |
| Trial 4 | LPP | LPG | LP+ | | | | | | | |


Based on the data, is the BMI procedure helping with the Low P skill? What would you advise doing?



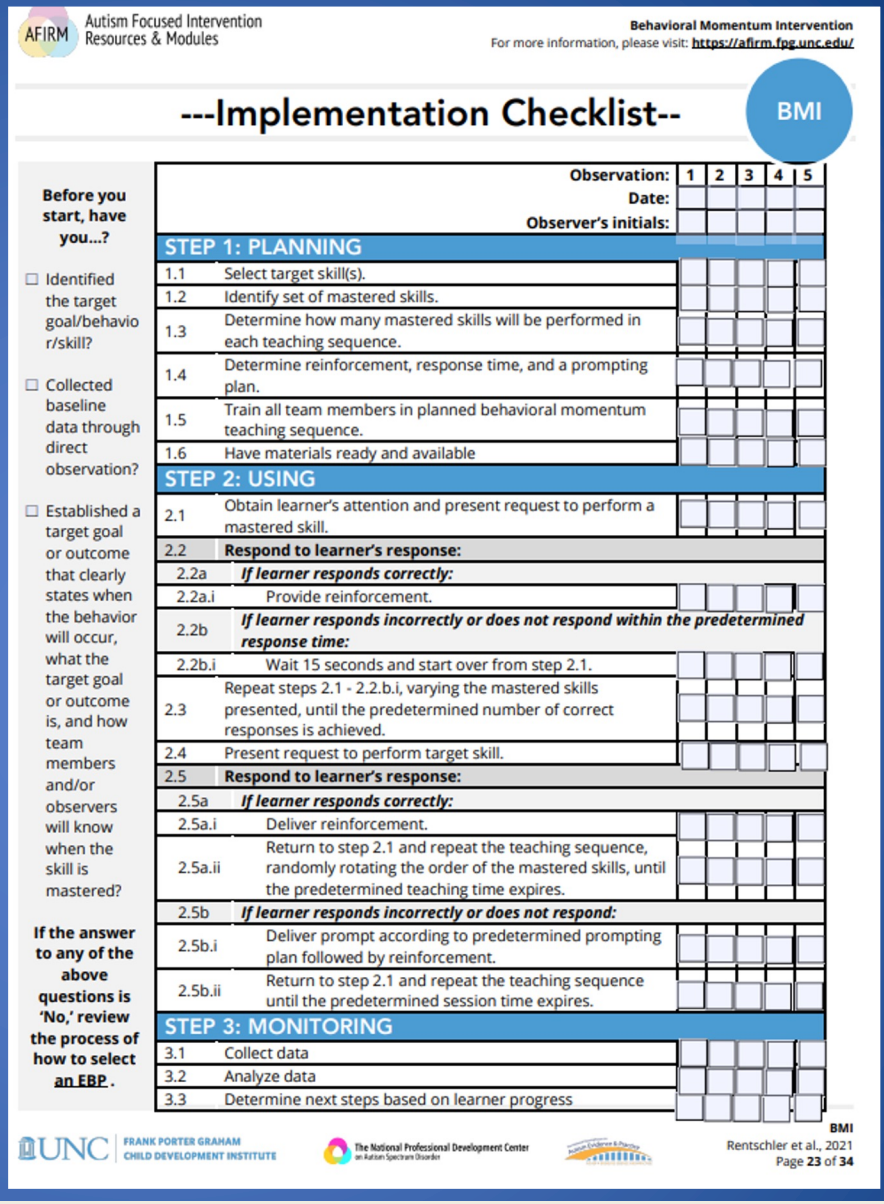

# My Takeaways

1. What are 4 things you remember from today's training?

1. What are 2 things you see yourself doing?

1. What is the 1 thing you can implement tomorrow?

# Next Steps



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## ---Implementation Checklist--

BMI

**Before you start, have you...?**

- ☐ Identified the target goal/behavior/skill?
- ☐ Collected baseline data through direct observation?
- ☐ 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?

**If the answer to any of the above questions is 'No,' review the process of how to select an EBP.**

| | | Observation: | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| | | Date: | | | | | |
| | | Observer's initials: | | | | | |
| **STEP 1: PLANNING** | | | | | | | |
| 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 | ***If learner responds correctly:*** | | | | | | |
| 2.2a.i | Provide reinforcement. | | | | | | |
| 2.2b | ***If learner responds incorrectly or does not respond within the predetermined response time:*** | | | | | | |
| 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 | ***If learner responds correctly:*** | | | | | | |
| 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 | ***If learner responds incorrectly or does not respond:*** | | | | | | |
| 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 | | | | | | |

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BMI
Rentschler et al., 2021
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# After the Training…

Please complete the **Post Training Survey**
that will be sent to your email

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# SELPA Content Lead
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