Evidence Based Practice Training:
Music-Mediated Intervention (MMI)

The information contained within this training is from the AFIRM MMI EBP Module:
https://afirm.fpg.unc.edu/music-mediated-intervention

Adapted from Steinbrenner, J.R. et.al. (2020). Music-Mediated Intervention, 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/

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California Autism Professional Training and Information Network

SELPA Content Lead
EVIDENCE Based Practices
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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.
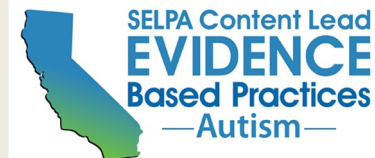
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What is CAPTAIN

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

Systems Support

Information Session

Workshop/ Training

Implementation Coaching

Systems Support

This is an information session. Additional training and certification is required to implement MMI

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Before We Begin…

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

What are Evidence Based Practices?
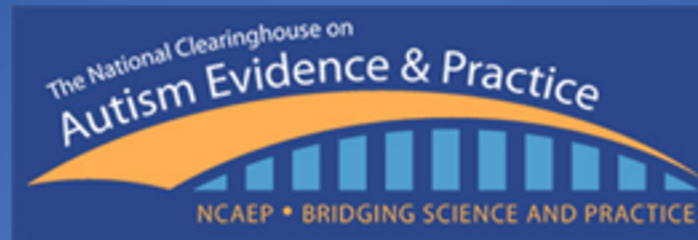
NCAEP definition of an EBP:

"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.

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Evidence Based Practice Matrix (28 EBPs)

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

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

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Selecting an EBP Checklist

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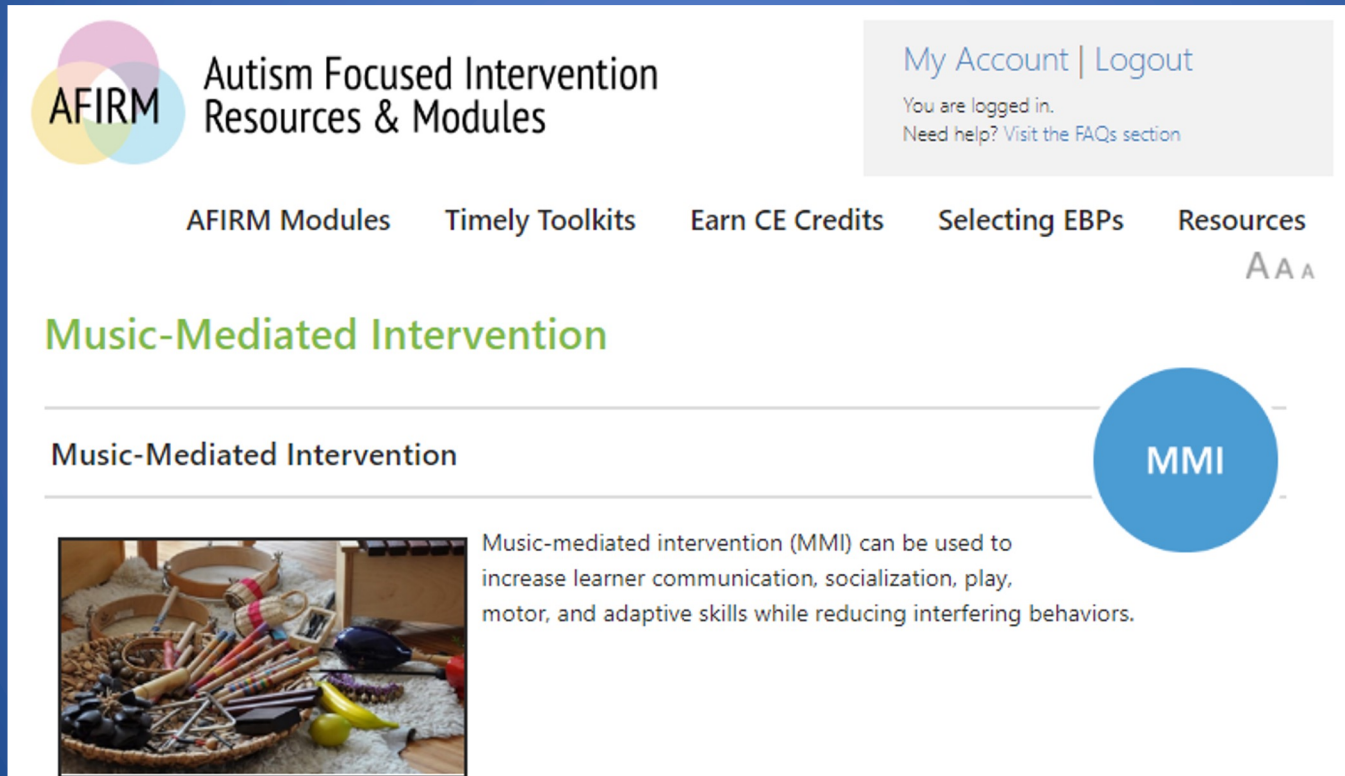
High Quality Training:
Autism Focused Intervention Resources and Modules (AFIRM)

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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Core Components: Information Session Learning Objectives

- Learn the basic knowledge about Music Mediated Intervention (MMI)
- Learn about who can implement MMI
- Learn about complimentary EBPs that align with use of MMI
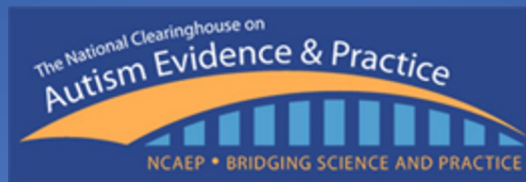
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Evidence (Age and Domains)

Per the NCAEP (2020) report, MMI has an evidence base for 0-14 year olds across the domains as shown below:

EVIDENCE-BASE:							
	ADAPTIVE	CHALLENGING	COMMUNICATION	MOTOR	PLAY	SCHOOL READINESS	SOCIAL
0-2	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3-5		Yes	Yes	Yes		Yes	Yes
6-11			Yes				Yes
12-14			Yes				

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Name of EBP	**Music-Mediated Intervention (MMI)**					
Definition of EBP	Music-mediated intervention (MMI) uses music as a key feature of the intervention delivery. This includes music therapy, which occurs in a therapeutic relationship with a trained music therapist, in addition to the planned use of songs, melodic intonation, and/or rhythm to support the learning or performance of target behaviors and skills in varied contexts.					

Outcome Areas		**Age Ranges**					
		0-2 Toddlers	3-5 Preschoolers	6-11 Elementary School	12-14 Middle School	15-18 High School	19-22 Young Adults
	Communication	✔	✔	✔	✔		
	Social		✔	✔	✔		
	Joint attention						
	Play		✔				
	Cognitive						
	School readiness		✔	✔			
	Academic/Pre-academic						
	Adaptive/self-help	✔					
	Challenging/Interfering behavior		✔	✔			
	Vocational						
	Motor		✔	✔			
	Mental health						
	Self-determination						

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Disclaimer:

DISCLAIMER: This module is not intended to replace the university-based degree program and certification process of a music therapist, but rather, to introduce basic knowledge of MMI as an evidence-based practice for use with learners with autism in daily routines.

Who can implement MMI?:

A certified music therapist (MT) or someone* who has received training/guidance from a MT to deliver the MMI program with a learner. *For example, a parent, teacher, therapist etc. To practice music therapy, an individual must complete a university degree that includes 1200 hours of supervised clinical training, and then pass the exam set forth by the Certification Board for Music Therapists (CBMT).

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What is MMI?

Music-mediated intervention (MMI) uses music as a key feature to address target skills and behaviors of a learner on the autism spectrum. MMI includes music therapy (MT) in addition to the planned use of songs, melodic intonation, and/or rhythm to support learning in varied contexts.

MMI also includes:

- Music-based activities implemented by a professional *other* than a certified music therapist. (For example, Melodic Based Communication Training which is implemented by trained speech- language pathologists).

- Music-based activities implemented using Technology-Aided Instruction and Intervention (TAII) practices, like robot delivered intervention.

MMI goals:

MMI may be used either as a structured music therapy intervention or to support other evidence based treatments or curricula targeting a number of goals for learners with Autism.

Various percussion instruments, including maracas, rhythm sticks, and tambourines can be used in music-mediated intervention.

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Domain areas that can be addressed using MMI:

Per the NCAEP report, MMI can support autistic learners in the areas of:

- **Improving communication**
- **Improving social & play skills**
- **Improving school readiness skills**
- **Improving adaptive skills**
- **Reducing inappropriate behaviors**

Think - Pair - Share

Video example of a music therapy hello song:
<u>Greetings and language expansion via music therapy</u>
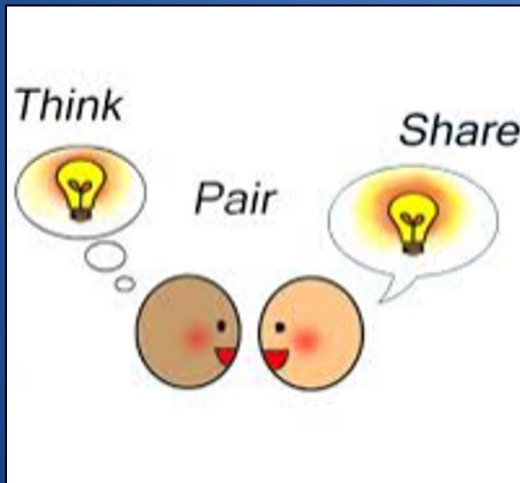
Think about times you have seen MMI's used in a classroom setting.

Within what activities have you seen music embedded?

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How Can MMI Help Learners?

- Some learners with Autism seem to respond particularly well to music and show greater progress toward their goals when music is systematically integrated into their intervention.

- Different elements of music (like tempo, melody, or rhythm) may calm, regulate, excite, and motivate learners with Autism when selected by a trained therapist.

MMI strategies can be particularly motivating and effective with some learners with Autism because:

- Social communication/interaction, sensory and/or motor issues can be addressed in a learner's natural environment

- Learners with Autism often find musical activities enjoyable. There is also evidence that some learners with Autism may have strengths in music perception*

* Heaton, P. (2009). Assessing musical skills in autistic children who are not savants. Philos Trans R Soc Lond B Biol Sci., 364(1522), 1443-1447. doi:10.1098/rstb.2008.0327

Prominent Music Therapy Approaches:

Music therapists base their clinical work on various theoretical frameworks. Prominent approaches applied for learners with autism are the behavioral approach to music therapy, Nordoff-Robbins Music Therapy, and more recently the neurodevelopmental approach to music therapy. While there is advanced training available, it is currently not necessary for music therapists to be specialized in order to provide effective services to learners with Autism.

3 Types of Music Therapy Approaches:

ORFF–SCHULWERK METHOD

- A derivative of the Orff music education program designed for German school children, the Orff-Schulwerk method is a naturalistic, developmental, and success-oriented music treatment for small groups of learners with autism or other developmental disabilities. Musical activities conducted based on Orff-Schulwerk use components of music hearing, singing songs and chants, clapping, movement and dancing, musical drama, working with instruments, and free and creative playing of instruments.

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3 Music Therapy Approaches Continued:

NORDOFF-ROBBINS APPROACH

- Developed by a composer and a special education teacher, the Nordoff-Robbins music therapy approach addresses learner goals by establishing therapeutic relationships through interaction with music. It uses a combination of improvised and pre-composed musical interactions with a variety of instruments, expressive movement, dramatic play to tap into the learner's "core musicality" and stimulate their self-regulation, communication, and social interaction skills.

NEURODEVELOPMENTAL APPROACH

- The Neurodevelopmental Approach to music therapy involves understanding of the developing brain across all domains (communication, motor, sensory), neurological differences in autism, and how music-based activities may impact that development.

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Implementing MMI in a School Setting

We will look at a couple of examples of how MMI may be implemented within a school setting across grade levels.

Note: use of music as a reinforcer, use of musical cues, music being used for calming purposes etc is NOT considered a MMI unless under the direction / guidance of a certified Music Therapist.

MMI in Use - Example 1:

AUDIO: Preschool Teacher

Audio Transcript

"I teach an inclusive mixed-ability preschool class with students with disabilities including autism. I noticed that many of my students seemed to respond well to music. Fast songs with clapping and hand gestures got them excited during our circle time activities and slow melodic music seemed to calm them down during transitions. I felt good about my students' academic progress, but social and play skills were a challenge. I consulted with our music therapist, and he suggested adding music centers to our indoor and outdoor play spaces. He trained me and my staff

Image credit: UNC FPG Child Development Institute

how to work on play and social skills with each student in the music centers. It has been a joy to see some of my reserved students open up in these centers and start interacting with their peers and taking turns with instruments. Adding music activities into natural play settings seems to have really helped our preschoolers."

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MMI in Use - Example 2:

AUDIO: Music Therapist

Audio Transcript

"Briar is a middle schooler with autism on my caseload. Her teacher referred her to me because Briar was struggling with important self-care tasks like remembering to pull her pants up and wash her hands after using the bathroom. Music had always been included in Briar's relaxation area at school but had never been used to work on IEP goals. After evaluating Briar, I created a song embedding a social narrative that included all of the steps for completing her toileting routine in the lyrics. We reviewed the song and social narrative (song lyrics) with her before each scheduled toilet trip and gradually faded the social narrative as a prompt. Briar will now hum the song to herself as she completes the routine independently."

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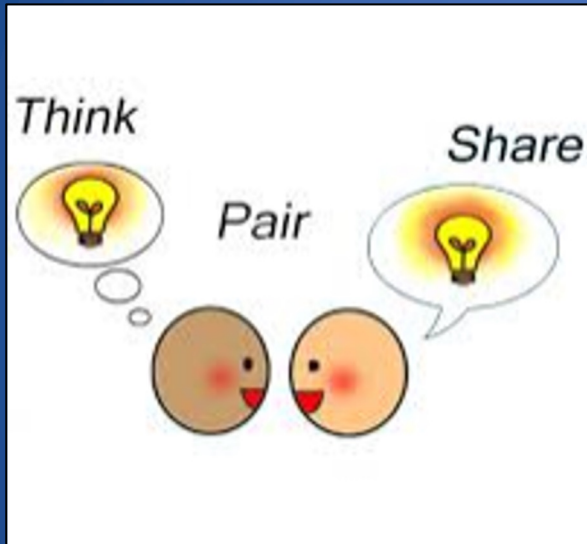SELPA Content Lead EVIDENCE Based Practices —Autism—

How can I incorporate use of music?

While music therapy strategies require collaboration and guidance from a certified Music Therapist, there *are* opportunities for music based activities to be incorporated into daily routines.

For example:
- Embed this within functional routines (e.g. clean up song, songs to cue specific transitions etc)
- Use music as a potential reinforcer
- Use music to assist with calming/self-regulation

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Think - Pair - Share

Considering the examples shared, what are some functional routines that music could be embedded?

SIGNS A STUDENT MAY BENEFIT FROM AN MMI ASSESSMENT:

If you answered "yes" to any of these questions, then you may want to refer this student to a Music Therapist.

The Music Therapist will conduct a formal MMI assessment to plan an individualized program.

This form can be found on the MMI AFIRM module under resources.

Here are some questions to ask when considering if MMI is a good fit for a learner:

SIGNS A STUDENT MAY BENEFIT FROM AN MMI ASSESSMENT:		
1. Does the learner respond positively to music or music-based activities like singing, dancing, or playing instruments?	☐ Yes	☐ No
2. Does the learner have any spontaneous music-related behaviors like tapping or clapping rhythmically, singing to themselves, or preferring certain songs?	☐ Yes	☐ No
3. Has the learner's progress toward certain goals slowed or plateaued?	☐ Yes	☐ No
4. Are there any daily routines where the learner could practice their goals and where adding music would be appropriate?	☐ Yes	☐ No
5. Has the learner's team, including family, brought up any musical abilities or preferences of the learner? Or an interest in music therapy services for the learner?	☐ Yes	☐ No

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Plan for other EBPs to use with MMI

MMI practices are used in conjunction with at least one or more EBPs. These can include:

- Naturalistic Intervention
- Parent-Implemented Intervention
- Peer-Based Instruction and Intervention
- Prompting
- Reinforcement
- Social Narratives
- Video Modeling
- Visual Supports
- Time Delay
- Modeling

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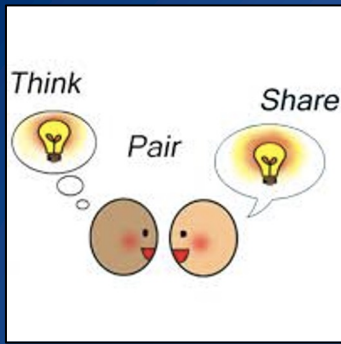
Planning for Implementation of MMI

See MMI AFIRM module resources to access these planning forms

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Implementation Checklist for MMI

In addition to the planning checklist, there is an available Implementation Checklist for MMI that covers: 1) planning, 2) use of, and 3) monitoring of this EBP.

See MMI AFIRM module resources to access implementation checklist

---Implementation Checklist--- MMI

		Observation:	1	2	3	4	5
		Date:					
		Observer's initials:					

STEP 1: PLANNING

1.1	Obtain music therapy degree and certification or collaborate with a certified music therapist					
1.2	Determine if learner would benefit from MMI					
1.2a	Reflect/address concerns and observe learner					
1.2b	Conduct formal MMI assessment					
1.3	Plan an individualized MMI program					
1.3a	Identify when and how MMI will be used with the learner					
1.3b	Plan for and obtain MMI materials					
1.3c	Plan other EBPs to use with MMI					
1.3d	Consider prominent music therapy approaches					
1.4	Discuss program with team members					
1.5	Have materials ready and available					

STEP 2: USING

2.1	Implement the MMI strategies					
2.1a	Introduce the materials to the learner					
2.1b	Use other EBPs to support MMI program and promote engagement					
2.2	Use other EBPs to support MMI sessions					
2.3	Promote generalization of learner's target skills					

STEP 3: MONITORING

3.1	Collect and analyze data					
3.2	Fade prompting and reinforcement					
3.3	Determine next steps based on learner progress					

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.

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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

If you would like to learn more about MMI, the AFIRM module can be accessed here: https://afirm.fpg.unc.edu/music-mediated-intervention

You can find certified Music Therapists by searching here: Certification Board for Music Therapists

TIPS:
- Collaborate with a certified music therapist to plan for and use MMI.
- Use other EBPs to support engagement in MMI programming.
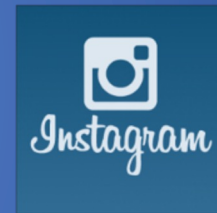- Support learners in generalizing skills learned from MMI across settings.

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After the Training…

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