AFIRM

Autism Focused Intervention Resources & Modules

EXM

EBP Brief Packet: Exercise & Movement

UNC Frank Porter Graham Child Development Institute
Autism Focused Intervention Resources & Modules
Griffin, W., & AFIRM Team, 2025

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 EXM Contents:** This list details the specific EXM resources that apply to Exercise & Movement.
2. **What is EXM:** A quick summary of salient features of Exercise & Movement, 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 Exercise & Movement.
4. **Planning Checklist:** This checklist details the steps for planning for Exercise & Movement, 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 Exercise & Movement.
6. **Step-by-Step Guide:** Use this guide as an outline for how to plan for, use, and monitor Exercise & Movement. Each step includes a brief description as a helpful reminder while learning the process.
7. **Implementation Checklist:** Use this checklist to determine if Exercise & Movement 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 Exercise & Movement.
10. **Parent Guide:** Use this guide intended for parents or family members of learners on the spectrum to help them understand basic information about Exercise & Movement and how it is being used with their child.
11. **Additional Resources:** This list provides additional information for learning more about Exercise & Movement as well as resources.
12. **CEC Standards:** This list details the specific CEC standards that apply to Exercise & Movement.
13. **Glossary:** This glossary contains key terms that apply specifically to Exercise & Movement.
14. **References:** This list details the specific references used for developing this EXM module in numerical order.

Table of Contents

Exercise & Movement

WHAT IS EXM?

Daily moderate to vigorous physical activity is noted to be important for children both for promoting fitness and preventing chronic conditions.[1] However, research suggests that physical activity levels for learners on the spectrum are lower than their typically developing peers.[2] Thus, the integration of daily opportunities for physical activity and/or mindful movement for learners on the spectrum is important for improving their basic physical fitness,[3-4] as well as increase desired behaviors (time on task, correct responding) and decrease inappropriate behaviors (aggression, self-injury).

EVIDENCE-BASE:

Based upon the 2020 systematic review conducted by the National Clearinghouse on Autism Evidence and Practice (NCAEP), Exercise & Movement is a focused intervention that meets the evidence-based practice criteria with 6 single case design and 15 group design studies. Exercise & Movement 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). Studies included the 2020 EBP report (Steinbrenner et al., 2020) detail how Exercise & Movement 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, school readiness, and social.
Note: Exercise & Movement was previously named Exercise in the 2024 systematic review conducted by the National Professional Development Center on autism.

HOW IS EXM BEING USED?

Exercise & Movement 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 Exercise & Movement in the home.

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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), Exercise & Movement is a focused intervention that meets the evidence-based practice criteria with 6 single case design and 15 group design studies. Exercise & Movement 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). Studies included the 2020 EBP report (Steinbrenner et al., 2020) detail how Exercise & Movement 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, school readiness, 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	School Readiness	Social
3-5	Yes		Yes	Yes	Yes	Yes	Yes	Yes
6-11		Yes	Yes	Yes	Yes	Yes	Yes	Yes
12-14		Yes	Yes	Yes	Yes	Yes	Yes	Yes
15-18		Yes	Yes	Yes	Yes	Yes	Yes	Yes

PRESCHOOL (3-5 YEARS):

***Bahrami, F., Movahedi, A., Marandi, S. M., & Abedi, A. (2012). Kata techniques training consistently decreases stereotypy in children with autism spectrum disorder. *Research in Developmental Disabilities, 33*(4), 1183-1193. https://doi.org/10.1016/j.ridd.2012.01.018**

***Bahrami, F., Movahedi, A., Marandi, S. M., & Sorensen, C. (2016). The effect of karate techniques training on communication deficit of children with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 46*(3), 978-986. https://doi.org/10.1007/s10803-015-2643-y**

Celiberti, D. A., Bobo, H. E., Kelly, K. S., Harris, S. L., & Handleman, J. S. (1997). The differential and temporal effects of antecedent exercise on the self-stimulatory behavior of a child with autism. *Research in Developmental Disabilities*, *18*(2), 139-150. https://doi.org/ 10.1016/S0891-4222(96)00032-7

***Chan, A. S., Han, Y. M., Sze, S. L., & Lau, E. M. (2015). Neuroenhancement of memory for children with autism by a mind-body exercise. *Frontiers in Psychology, 6,* 1893. https://doi.org/10.3389/fpsyg.2015.01893**

Luke, S., Vail, C. O., & Ayres, K. M. (2014). Using antecedent physical activity to increase on-task behavior in young children. *Exceptional Children, 80*(4), 489-503. https://doi.org/10.1177/0014402914527241

***Movahedi, A., Bahrami, F., Marandi, S. M., & Abedi, A. (2013). Improvement in social dysfunction of children with autism spectrum disorder following long term Kata techniques training. *Research in Autism Spectrum Disorders*, *7*(9), 1054-1161. https://doi.org/10.1016/j.rasd.2013.04.012**

Nelson, C., Paul, K., Johnston, S. S., & Kidder, J. E. (2017). Use of a creative dance intervention package to increase social engagement and play complexity of young children with autism spectrum disorder. *Education and Training in Autism and Developmental Disabilities, 52*(2), 170-185.

Oriel, K. N., George, C. L., Peckus, R., & Semon, A. (2011). The effects of aerobic exercise on academic engagement in young children with autism spectrum disorder. *Pediatric Physical Therapy*, *23*(2), 187-193. https://doi.org/10.1097/PEP.0b013e318218f149

***Srinivasan, S. M., Eigsti, I. M., Neelly, L., & Bhat, A. N. (2016). The effects of embodied rhythm and robotic interventions on the spontaneous and responsive social attention patterns of children with Autism Spectrum Disorder (ASD): A pilot randomized controlled trial. *Research in Autism Spectrum Disorders, 27*, 54-72. https://doi.org/10.1016/j.rasd.2016.01.004**

***Srinivasan, S. M., Park, I. K., Neelly, L. B., & Bhat, A. N. (2015). A comparison of the effects of rhythm and robotic interventions on repetitive behaviors and affective states of children with Autism Spectrum Disorder (ASD). *Research in Autism Spectrum Disorders, 18*, 51-63. https://doi.org/10.1016/j.rasd.2015.07.004**

ELEMENTARY SCHOOL (6-11 YEARS):

***Bahrami, F., Movahedi, A., Marandi, S. M., & Abedi, A. (2012). Kata techniques training consistently decreases stereotypy in children with autism spectrum disorder. *Research in Developmental Disabilities, 33*(4), 1183-1193. https://doi.org/10.1016/j.ridd.2012.01.018**

***Bahrami, F., Movahedi, A., Marandi, S. M., & Sorensen, C. (2016). The effect of karate techniques training on communication deficit of children with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 46*(3), 978-986. https://doi.org/10.1007/s10803-015-2643-y**

Cannella-Malone, H. I., Tullis, C. A., & Kazee, A. R. (2011). Using antecedent exercise to decrease challenging behavior in boys with developmental disabilities and an emotional disorder. *Journal of Positive Behavior Interventions*, *13*(4), 230-239. https://doi.org/10.1177/109830071140612

***Chan, A. S., Han, Y. M., Sze, S. L., & Lau, E. M. (2015). Neuroenhancement of memory for children with autism by a mind-body exercise. *Frontiers in Psychology, 6,* 1893. https://doi.org/10.3389/fpsyg.2015.01893**

***Chan, A. S., Sze, S. L., Siu, N. Y., Lau, E. M., & Cheung, M. C. (2013). A Chinese mind-body exercise improves self-control of children with autism: A randomized controlled trial. *PLoS One, 8*(7), e68184, 1-12. https://doi.org/10.1371/journal.pone.0068184**

Cheldavi, H., Shakerian, S., Shetab Boshehri, S. N., & Zarghami, M. (2014). The effects of balance training intervention on postural control of children with autism spectrum disorder: Role of sensory information. *Research in Autism Spectrum Disorders, 8*(1), 8-14. https://doi.org/10.1016/j.rasd.2013.09.016

*Fragala-Pinkham, M. A., Haley, S. M., & O'Neil, M. E. (2011). Group swimming and aquatic exercise programme for children with autism spectrum disorders: A pilot study. *Developmental Neurorehabilitation*, *14*(4), 230-241. https://doi.org/10.3109/17518423.2011.575438

***Movahedi, A., Bahrami, F., Marandi, S. M., & Abedi, A. (2013). Improvement in social dysfunction of children with autism spectrum disorder following long term Kata techniques training. *Research in Autism Spectrum Disorders*, *7*(9), 1054-1161. https://doi.org/10.1016/j.rasd.2013.04.012**

Neely, L., Rispoli, M., Gerow, S., & Ninci, J. (2015). Effects of antecedent exercise on academic engagement and stereotypy during instruction. *Behavior Modification, 39*(1), 98-116. https://doi.org/10.1177/0145445514552891

Nicholson, H., Kehle, T.J., Bray, M.A., & Van Heest, J. (2011). The effects of antecedent physical activity on the academic engagement of children with autism spectrum disorder. *Psychology in the Schools*, *48*(2), 198-213. https://doi.org/10.1002/pits

*Pan, C. Y. (2011). The efficacy of an aquatic program on physical fitness and aquatic skills in children with and without autism spectrum disorders. *Research in Autism Spectrum Disorders*, *5*(1), 657-665. https://doi.org/10.1016/j.rasd.2010.08.001

***Pan, C. Y., Chu, C. H., Tsai, C. L., Sung, M. C., Huang, C. Y., & Ma, W. Y. (2017). The impacts of physical activity intervention on physical and cognitive outcomes in children with autism spectrum disorder. *Autism*, *21*(2), 190-202. https://doi.org/10.1177/1362361316633562**

***Sotoodeh, M. S., Arabameri, E., Panahibakhsh, M., Kheiroddin, F., Mirdoozandeh, H., & Ghanizadeh, A. (2017). Effectiveness of yoga training program on the severity of autism. *Complementary Therapies in Clinical Practice, 28*, 47-53. https://doi.org/10.1016/j.ctcp.2017.05.001**

***Srinivasan, S. M., Eigsti, I. M., Gifford, T., & Bhat, A. N. (2016). The effects of embodied rhythm and robotic interventions on the spontaneous and responsive verbal communication skills of children with Autism Spectrum Disorder (ASD): A further outcome of a pilot randomized controlled trial. *Research in Autism Spectrum Disorders, 27*, 73-87. https://doi.org/10.1016/j.rasd.2016.04.001**

***Srinivasan, S. M., Eigsti, I. M., Neelly, L., & Bhat, A. N. (2016). The effects of embodied rhythm and robotic interventions on the spontaneous and responsive social attention patterns of children with Autism Spectrum Disorder (ASD): A pilot randomized controlled trial. *Research in Autism Spectrum Disorders, 27*, 54-72. https://doi.org/10.1016/j.rasd.2016.01.004**

***Srinivasan, S. M., Park, I. K., Neelly, L. B., & Bhat, A. N. (2015). A comparison of the effects of rhythm and robotic interventions on repetitive behaviors and affective states of children with Autism Spectrum Disorder (ASD). *Research in Autism Spectrum Disorders, 18*, 51-63. https://doi.org/10.1016/j.rasd.2015.07.004**

***Tse, C. Y. A., Pang, C. L., & Lee, P. H. (2017). Choosing an appropriate physical exercise to reduce stereotypic behavior in children with autism spectrum disorders: A non-randomized crossover study. *Journal of Autism and Developmental Disorders, 48*(5), 1666-1672. https://doi.org/10.1007/s10803-017-3419-3**

MIDDLE SCHOOL (12-14 YEARS):

***Bahrami, F., Movahedi, A., Marandi, S. M., & Abedi, A. (2012). Kata techniques training consistently decreases stereotypy in children with autism spectrum disorder. Research in Developmental Disabilities, 33(4), 1183-1193. https://doi.org/10.1016/j.ridd.2012.01.018**

***Bahrami, F., Movahedi, A., Marandi, S. M., & Sorensen, C. (2016). The effect of karate techniques training on communication deficit of children with autism spectrum disorders. Journal of Autism and Developmental Disorders, 46(3), 978-986. https://doi.org/10.1007/s10803-015-2643-y**

***Chan, A. S., Han, Y. M., Sze, S. L., & Lau, E. M. (2015). Neuroenhancement of memory for children with autism by a mind-body exercise. Frontiers in Psychology, 6, 1893. https://doi.org/10.3389/fpsyg.2015.01893**

***Chan, A. S., Sze, S. L., Siu, N. Y., Lau, E. M., & Cheung, M. C. (2013). A Chinese mind-body exercise improves self-control of children with autism: A randomized controlled trial. PLoS One, 8(7), e68184, 1-12. https://doi.org/10.1371/journal.pone.0068184**

*Fragala-Pinkham, M. A., Haley, S. M., & O'Neil, M. E. (2011). Group swimming and aquatic exercise programme for children with autism spectrum disorders: A pilot study. Developmental Neurorehabilitation, 14(4), 230-241. https://doi.org/10.3109/17518423.2011.575438

***Movahedi, A., Bahrami, F., Marandi, S. M., & Abedi, A. (2013). Improvement in social dysfunction of children with autism spectrum disorder following long term Kata techniques training. Research in Autism Spectrum Disorders, 7(9), 1054-1161. https://doi.org/10.1016/j.rasd.2013.04.012**

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***Pan, C. Y., Chu, C. H., Tsai, C. L., Sung, M. C., Huang, C. Y., & Ma, W. Y. (2017). The impacts of physical activity intervention on physical and cognitive outcomes in children with autism spectrum disorder. Autism, 21(2), 190-202. https://doi.org/10.1177/1362361316633562**

***Sotoodeh, M. S., Arabameri, E., Panahibakhsh, M., Kheiroddin, F., Mirdoozandeh, H., & Ghanizadeh, A. (2017). Effectiveness of yoga training program on the severity of autism. Complementary Therapies in Clinical Practice, 28, 47-53. https://doi.org/10.1016/j.ctcp.2017.05.001**

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***Srinivasan, S. M., Eigsti, I. M., Neelly, L., & Bhat, A. N. (2016). The effects of embodied rhythm and robotic interventions on the spontaneous and responsive social attention patterns of children with Autism Spectrum Disorder (ASD): A pilot randomized controlled trial. Research in Autism Spectrum Disorders, 27, 54-72. https://doi.org/10.1016/j.rasd.2016.01.004**

***Tse, C. Y. A., Pang, C. L., & Lee, P. H. (2017). Choosing an appropriate physical exercise to reduce stereotypic behavior in children with autism spectrum disorders: A non-randomized crossover study. Journal of Autism and Developmental Disorders, 48(5), 1666-1672. https://doi.org/10.1007/s10803-017-3419-3**

HIGH SCHOOL (15-18 YEARS):

***Bahrami, F., Movahedi, A., Marandi, S. M., & Abedi, A. (2012). Kata techniques training consistently decreases stereotypy in children with autism spectrum disorder. *Research in Developmental Disabilities, 33*(4), 1183-1193. https://doi.org/10.1016/j.ridd.2012.01.018**

***Bahrami, F., Movahedi, A., Marandi, S. M., & Sorensen, C. (2016). The effect of karate techniques training on communication deficit of children with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 46*(3), 978-986. https://doi.org/10.1007/s10803-015-2643-y**

***Chan, A. S., Han, Y. M., Sze, S. L., & Lau, E. M. (2015). Neuroenhancement of memory for children with autism by a mind-body exercise. *Frontiers in Psychology, 6,* 1893. https://doi.org/10.3389/fpsyg.2015.01893**

***Chan, A. S., Sze, S. L., Siu, N. Y., Lau, E. M., & Cheung, M. C. (2013). A Chinese mind-body exercise improves self-control of children with autism: A randomized controlled trial. *PLoS One, 8*(7), e68184, 1-12. https://doi.org/10.1371/journal.pone.0068184**

***Movahedi, A., Bahrami, F., Marandi, S. M., & Abedi, A. (2013). Improvement in social dysfunction of children with autism spectrum disorder following long term Kata techniques training. *Research in Autism Spectrum Disorders*, *7*(9), 1054-1161. https://doi.org/10.1016/j.rasd.2013.04.012**

***Sotoodeh, M. S., Arabameri, E., Panahibakhsh, M., Kheiroddin, F., Mirdoozandeh, H., & Ghanizadeh, A. (2017). Effectiveness of yoga training program on the severity of autism. *Complementary Therapies in Clinical Practice, 28*, 47-53. https://doi.org/10.1016/j.ctcp.2017.05.001**

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

EXERCISE & MOVEMENT TYPES

EXERCISE & MOVEMENT (NOT AN EXHAUSTIVE LIST):


❑ Arm Curls


❑ Bicycle


❑ Chair Raises


❑ Crab Walking


❑ Hopping over Jump Rope


❑ Jumping Hula Hoop


❑ Jumping Jacks


❑ Jumping Rope

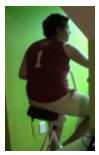

❑ Kick Ball


❑ Leg Kicks


❑ Lunges


❑ Running

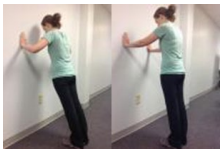

❑ Sit-ups


❑ Stationary Bike


❑ Swimming laps


❑ Toe Raises


❑ Trampoline Jumping


❑ Wall Push-ups


❑ Weights


❑ Yoga

ACTIVITY ASSESSMENT

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Goal/Behavior/Skill: _____
Directions: Use this worksheet to determine potential physical activities and/or mindful movements to use with the learner.

ASSESS LOCATION:

❑ Will the learner be inside?

❑ Will the learner be outside?

❑ Are there alternative locations when there is poor weather outside?

❑ Will the learner be going to the gym?

❑ Will the learner be going to a nearby location (e.g., hallway, another room)?

❑ Will the learner stay inside the classroom?

ASSESS ACTIVITIES:

Review the list of potential activities and options for how those activities might be implemented. Indicate whether or not you may be able to use each activity by checking "Yes" or "No." Notes about specific options/considerations/etc. can also be included here.

Exercise Activity	Description/Options	Yes?	No?	Notes
Arm Curls with weights or resistance bands	A specific number of times or for a specific duration of time			
Chair Raises	Raise self by the arms while seated in a chair			
Crab Walking	Moving a specified distance, for a specified time, or a specific number of laps			

Exercise Activity	Description/Options	Yes?	No?	Notes
Hula Hoop	Can hula-hoop for a specific number of times or for a specific duration of time; can also use hula hoops on the ground to create structure for other movement, such as jumping in and out of a hoop(s)			
Jogging	Same as running but less strenuous			
Jumping Jacks	Jumping a specific number of times or for a specific duration of time			
Jumping Rope	Jump turning own rope or jumping a rope others are turning; Basic jumping or jumping with tricks/kicks/etc.; jump ropes can also be used to create structure for other movement activities, such as laying rope on the ground and jumping back and forth over the rope(s)			
Leg Kicks	A specific number of times or for a specific duration of time			
Leg Scissors	A specific number of times or for a specific duration of time			
Lunges	A specific number of times or for a specific duration of time			
Pushups	A specific number of times or for a specific duration of time; full pushups or pushups on knees			

Exercise Activity	Description/Options	Yes?	No?	Notes
Riding a bike	Riding a specified distance, for a specified time, or a specific number of laps			
Riding a scooter	Riding a specified distance, for a specified time, or a specific number of laps			
Running	Run a specified distance, for a specified time, or a specific number of laps; run a relay-style race; sprints, shuttle-run (sprints while collecting and depositing an item/items from one end to the other)			
Sit-ups	A specific number of times or for a specific duration of time			
Sports-related activities: Basketball, Kickball, Ping pong, Tennis, & Volleyball	Consider the level of exertion involved – keeping a fairly high level of exertion is best, so a sport where the learner sits/waits/is static for a while would not be ideal for an exercise routine. Instead, modified versions/aspects of a sport activity could be considered, such as shooting baskets alone, passing or kicking a ball back and forth, running while dribbling a ball with hands or feet, volleying/hitting a ball back and forth outside of the context of a game, etc.			

Exercise Activity	Description/Options	Yes?	No?	Notes
Stairs	Moving up and down a step or set of stairs			
Swimming	Swimming laps, other swimming activities (swimming aerobics)			
Toe Raises	A specific number of times or for a specific duration of time			
Trampoline	Jumping a specific number of times or for a specific duration of time; simple jumping or jumping with tricks/kicks/etc.			
Wall pushups	Standing "pushups" – pressing on wall and pushing off			
Yoga Poses	Hold static poses or complete a series of poses moving fluidly throughout; may be part of warmup or cool-down aspect of routine			

Activity Skill & Interest Assessment

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Goal/Behavior/Skill: _____
Directions: Use this worksheet to determine the learner's skill level for an activity, as well as any support needed, and interest in performing the activity.

ASSESS GENERAL MOVEMENTS:

Movements	Perform Level	Support Level Needed?	Interest Level
Imitates basic movements/activities	❑Never ❑Sometimes ❑Always		❑None ❑Some ❑Very
Throw	❑Never ❑Sometimes ❑Always		❑None ❑Some ❑Very
Catch	❑Never ❑Sometimes ❑Always		❑None ❑Some ❑Very
Run	❑Never ❑Sometimes ❑Always		❑None ❑Some ❑Very
Jump	❑Never ❑Sometimes ❑Always		❑None ❑Some ❑Very
Crawl	❑Never ❑Sometimes ❑Always		❑None ❑Some ❑Very
Other:	❑Never ❑Sometimes ❑Always		❑None ❑Some ❑Very
Other:	❑Never ❑Sometimes ❑Always		❑None ❑Some ❑Very

Prompt Key: VB = Verbal; VSP = Prompt to use Visual Support; G = Gestural; M = Model; FP = Full Physical; PP = Partial Physical; I = No prompts needed/Independent; IS = Independent with support (VS = Visual Support; VM = Video Modeling; SN = Social Narratives)

ASSESS SPECIFIC ACTIVITIES:

Movements	Duration/Total	Perform Level	Support Level Needed?	Interest Level
Running		❑Never ❑Sometimes ❑Always		❑None ❑Some ❑Very
Jumping jacks		❑Never ❑Sometimes ❑Always		❑None ❑Some ❑Very
Jumping rope		❑Never ❑Sometimes ❑Always		❑None ❑Some ❑Very
Jumping on trampoline		❑Never ❑Sometimes ❑Always		❑None ❑Some ❑Very
Other:		❑Never ❑Sometimes ❑Always		❑None ❑Some ❑Very
Other:		❑Never ❑Sometimes ❑Always		❑None ❑Some ❑Very

Prompt Key: VB = Verbal; VSP = Prompt to use Visual Support; G = Gestural; M = Model; FP = Full Physical; PP = Partial Physical; I = No prompts needed/Independent; IS = Independent with support (VS = Visual Support; VM = Video Modeling; SN = Social Narratives)

ASSESS OTHER CONSIDERATIONS:

1. What are other safety concerns?

2. What are some things that may distract the learner from movement activities?

❑ Does the learner have appropriate clothing/shoes?

❑ Does the learner hydrate effectively?

TASK ANALYSIS

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Goal/Behavior/Skill: _____
Directions: Use this worksheet to identify steps of physical/mindful movement and possible adaptations needed for the learner.

CONDUCT A TASK ANALYSIS ASSESSMENT:

1. Complete an inventory of a typically developing peer completing the skill, task, or activity. As you observe a peer completing the task or activity, write down each step. For more detailed information on this process, check out the Task Analysis module.
2. Observe the learner completing the skill, task, or activity. Record behaviors/steps that are performed independently and those that are not performed independently.
3. Identify behaviors that the learner on the spectrum cannot be expected to perform independently.
4. Create a list of potential adaptations that would allow the learner on the spectrum to participate in the activity. This step will help identify specific instructional modifications that can help the learner participate in a specific activity and reduce interfering behavior.

IDENTIFY MOVEMENT STEPS AND ADAPTATIONS:

Step	Independent	Notes	Adaptations
1.	Yes No		
2.	Yes No		
3.	Yes No		
4.	Yes No		
5.	Yes No		
6.	Yes No		

Reinforcer Sampling & Checklist

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Goal/Behavior/Skill: _____
Directions: Use this worksheet and checklist to identify and select reinforcers/rewards based on the learner's preferred items, interests, and activities for **Positive Reinforcement** and **Token Economy**.

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	Selected?	Item 2	Selected?
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No

LIST SELECTED REINFORCERS:

LIST POTENTIAL REINFORCERS:

AGE APPROPRIATE?

1. What natural reinforcers could be used?

   Yes No

2. What activities, objects, and/or foods does the learner select independently?

   Yes No

3. What phrases or gestures seem to produce a pleasant response from the learner?

   Yes No

4. What does the learner say they would like to work for (if appropriate)?

   Yes No

5. What reinforcers were identified by parents/family members and/or team members as being successful in the past?

   Yes No

6. Does the learner require additional adaptations/ modifications/supports? Such as visual supports or a communication device?

   Yes No

7. Have reinforcers/rewards for the learner been identified based on the learner's interests/preferred items and/or activities?

   Yes No

8. Are additional materials and/or resources for using Functional Behavior Assessment ready and available?

   Yes No

FOODS FOR SNACKS/MEALTIME ROUTINES:

- ❑ Cheese
- ❑ Chicken Nuggets
- ❑ Chips
- ❑ French Fries
- ❑ Fruit
- ❑ Goldfish
- ❑ Ice Cream
- ❑ Pizza
- ❑ Pretzels
- ❑ Other:
- ❑ Other:
- ❑ Other:

GAMES FOR PLAY/RECESS ROUTINES:

- ❑ Burrito games with a blanket
- ❑ Chase
- ❑ Pat-a-Cake
- ❑ Peek-a-Boo
- ❑ Tickles
- ❑ Other:
- ❑ Other:
- ❑ Other:
- ❑ Other:

TOYS FOR PLAY/RECESS ROUTINES:

- ❑ Books
- ❑ Cars/Trains/Trucks
- ❑ Computer
- ❑ Doll house
- ❑ Legos
- ❑ Noisy toys
- ❑ Phones
- ❑ Puzzles
- ❑ Remote controlled toys
- ❑ Other:
- ❑ Other:
- ❑ Other:

SPECIAL INTERESTS FOR ACTIVITIES/ROUTINES:

- ❑ Book Character:
- ❑ Book:
- ❑ Cars, Trains, Trucks
- ❑ Computers/Technology
- ❑ Dinosaurs
- ❑ Letters
- ❑ Movie Character:
- ❑ Movie:
- ❑ Music
- ❑ Numbers
- ❑ Real-Life Person:
- ❑ TV Show Character:
- ❑ TV Show:
- ❑ Video Game:
- ❑ Other:
- ❑ Other:
- ❑ Other:

Prompting Hierarchy

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Skill/Goal/Behavior: _____
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 can 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

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

Exercise & Movement Plan

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Skill/Goal/Behavior: _____
Directions: Use this form to develop a lesson plan for using a selected physical or mindful movement. Ideally exercise routine should be used as antecedent intervention, should be at least 10 to 20 minutes long and should result in moderate physical exertion (i.e., increased heart rate, flushed face, increased breathing rate).[5, 7-10]

EXERCISE:

Physical movement/ Mindful Movement:	Duration:	Frequency:	Time:	Location:

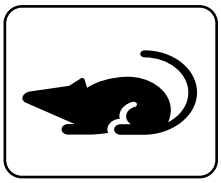
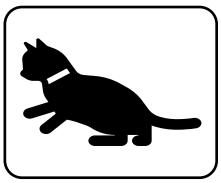
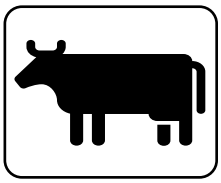
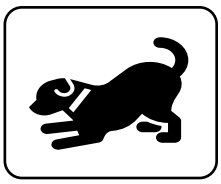
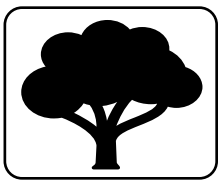
MATERIALS:

Prerequisite skills:	Learner preference(s)/choice(s):

Task analysis of steps in involved:

- ❑ Change of clothes
- ❑ Equipment
- ❑ Reinforcers
- ❑ Visual Supports
- ❑ Water

Example: Movement Routine

- ☐   Mouse pose
- ☐   Cat pose
- ☐   Cow pose
- ☐   Dog pose
- ☐   Warrior pose
- ☐   Tree pose
- ☐   Namaste

PLANNING CHECKLIST

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Skill/Goal/Behavior: _____
Directions: Complete this checklist to determine which type of Exercise & Movement to use with the learner on the spectrum as well as if EXM is ready to be implemented.

ASSESS THE LEARNER'S CURRENT ABILITIES:

❑ **Imitate others:** Is the learner able to imitate others if/when a model is provided?

❑ **Sustain attention:** Can the learner sustain attention long enough to observe the modeled behavior?

❑ **Prerequisite skills:** Does the learner have needed prerequisite skills/abilities?

❑ **Interest:** Does the learner have interest in physical/mindful movements?

If you DID NOT check off any of these questions, Exercise & Movement MIGHT NOT be helpful to use with the learner.

PLANNING:

❑ Has the target goal/behavior/skill been identified?

❑ Is Exercise & Movement appropriate for the learner's target goal/behavior/skill?

❑ Does the learner require additional adaptations/modifications/supports? Such as a task analysis of the physical/mindful movement?

❑ Have reinforcers/rewards for the learner been identified based on the learner's interests/preferred items and/or activities?

❑ Are additional materials and/or resources for using Exercise & Movement ready and available?

Data Collection: Single Activity Reps

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Skill/Goal/Behavior: _____
Directions: This sheet could be completed by highlighting, circling, or shading the number of repetitions for a single physical/mindful movement activity. The sheet is designed to provide a graphic representation of the repetitions completed over time (the resulting data, if blocks are circled or highlighted, will appear similar to a bar graph). Starting from the bottom, shade the number of boxes that represent each repetition completed. Each box represents ONE repetition.

Date				
15	15	15	15	15
14	14	14	14	14
13	13	13	13	13
12	12	12	12	12
11	11	11	11	11
10	10	10	10	10
9	9	9	9	9
8	8	8	8	8
7	7	7	7	7
6	6	6	6	6
5	5	5	5	5
4	4	4	4	4
3	3	3	3	3
2	2	2	2	2
1	1	1	1	1
0	0	0	0	0

Data Collection: Multiple Activities Routine

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Skill/Goal/Behavior: _____
Directions: Collect data on the number of repetitions or duration for activities completed and/or level of support needed for the learner to complete repetitions.

	Date				
Activity					

Prompt Key: VB = Verbal; VSP = Prompt to use Visual Support; G = Gestural; M = Model; FP = Full Physical; PP = Partial Physical; I = No prompts needed/Independent; IS = Independent with support (VS = Visual Support; VM = Video Modeling; SN = Social Narratives)

DATA COLLECTION: A-B-C

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Skill/Goal/Behavior: _____
Directions: Collect data what happens directly before the activity (antecedent), describe the activity (behavior), and determine what happens directly after the activity (consequence). Note approximately how many minutes the learner participated in the activity.

Date/Time/ Setting	Antecedent	Behavior	Consequence	Approximation duration (minutes)

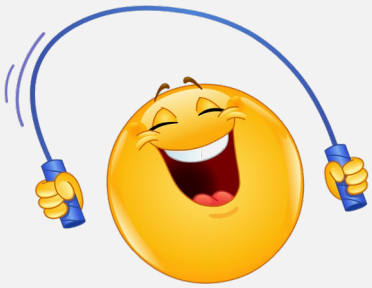
Prompt Key: VB = Verbal; VSP = Prompt to use Visual Support; G = Gestural; M = Model; FP = Full Physical; PP = Partial Physical; I = No prompts needed/Independent; IS = Independent with support (VS = Visual Support; VM = Video Modeling; SN = Social Narratives)

This Activity is...

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

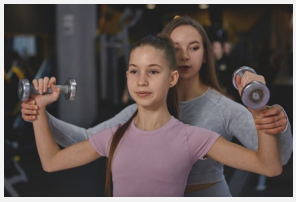
Easy

Light Exercise:
- Your breathing is normal
- You don't sweat
- You can talk easily or sing



Okay

Moderate Exercise:
- Your breathing is faster than normal, but you are not out of breath
- You sweat a little after 10 minutes of activity
- You can talk easily, but can't sing



Hard

Vigorous Exercise:
- Your breathing is fast
- You sweat after just a few minutes of activity
- You can't say more than a few words without pausing to take a breath

Adapted from: https://www.mayoclinic.org/healthy-lifestyle/fitness/in-depth/exercise-intensity/art-20046887

Exertion Scale

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

0 At rest: No physical activity

1 Minimal effort: Very light activity, barely noticeable exertion

2 Light effort: Easy activity, requires little energy

3 Comfortable effort: Light activity that feels sustainable

4 Moderate effort: Noticeable effort, still feels comfortable

5 Moderate intensity: Increased effort, starting to feel challenging

6 Vigorous effort: Requires significant energy, breathing is heavier

7 Very vigorous effort: Challenging activity, hard to maintain for long

8 Hard effort: High intensity, pushing your limits

9 Very hard effort: Extremely challenging, near peak performance

10 Maximum effort: All-out exertion, cannot sustain longer

I Feel...

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

Activity: _____

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 Exercise & Movement.

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?
- ❑ Was Exercise & Movement used with fidelity?
- ❑ Are there too many reinforcers?
- ❑ Are there too few reinforcers?
- ❑ Are all team members using Exercise & Movement in a consistent manner?
- ❑ Is Exercise & Movement occurring at a sufficient level to maintain the behavior or target skill?

ANECDOTAL NOTES:

Step-by-Step Guide

This step-by-step practice guide outlines how to plan for, use, and monitor Exercise & Movement.

BEFORE YOU BEGIN…

Each of the following points is important to address so that you can be sure Exercise & Movement is likely to address the target goal/behavior/skill of your learner on the spectrum.

HAVE YOU FOUND OUT MORE INFORMATION ABOUT…?

- ❑ Identifying the 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 Exercise & Movement, please visit https://afirm.fpg.unc.edu/ .

Keep in mind that the two **Exercise & Movement** can be used to increase physical fitness or as an antecedent intervention to increase desired/ appropriate behaviors and/or to decrease inappropriate behaviors.

STEP 1: PLANNING FOR EXM

The planning step details the initial steps and considerations involved to prepare for using Exercise & Movement with a learner on the spectrum.

1. **Identify potential exercise activities**
   To develop an exercise/mindful movement plan, you should first consider the potential location or locations that will be used for physical activity. Next, brainstorm a list of potential activities that would be appropriate to the location(s).
   - The **Activity Assessment** can assist you in thinking of possible activities

2. **Conduct individualized exercise assessment**
   - An individualized exercise assessment often begins with informal observation and a review of current data. Additional data should be collected as needed to determine learner skills and preferences regarding the various movement activities.
   - Please remember to consult a physical education expert, physical therapist, or even a physician when designing a plan for learners with any physical or medical health issues.

   The **Activity Skill and Interest Assessment** can be used to collect data about a learner's ability and level of interest in performing a skill.

3. **Develop an exercise/mindful movement plan**
   Make a plan for the length and frequency of the intervention – at least one routine per day of at least 10-20 minutes, resulting in moderate to vigorous physical exertion, is recommended. Use the information obtained from the individualized assessment to inform the structure of the routine – consider learner skills, any physical limitations, stamina, and preferences. Finally, determine when the exercise routine will be implemented. Ideally, schedule the routine prior to activities/tasks in which the target behavior will more likely occur.

   The **Exercise and Movement Plan** can be used to develop a physical activity plan.

4. **Plan for any needed supports**
   Determine visual supports that may be needed, such as picture cards, written descriptions, a schedule, or a timer. Consider additional structure that may be needed to make the end of the activity or activities clear. Determine whether peer or adult support is necessary and any modifications that may be needed to make the activity more appealing. Finally, make a plan for reinforcement of engagement in the exercise routine.

5. **Obtain and organize all needed materials and equipment**
   Before beginning the routine, make sure you have all the materials and equipment you need.

STEP 2: USING EXM

This step details the process of implementing Exercise & Movement with a learner on the spectrum.

1. **Teach the learner the exercise routine**
   The teaching process should be individualized for each learner based on his or her strengths and skills. In general:
   - use visual cues as needed; reference the visual schedule for the routine as transitioning to each movement activity
   - model each movement activity
   - prompt as needed (visual, verbal, physical)

2. **Reinforce learner engagement and completion of the exercise routine**
   Part of the teaching process involves the reinforcement of newly learned skills. Some learners are easily reinforced by simple verbal praise, while others may require different forms of rewards or a more sophisticated reinforcement system. Both learner engagement and completion of exercise activities should be reinforced.

2. **Fade prompts and any tangible reinforcement as quickly as possible when criterion is met**
   It is important to fade any additional reinforcement as soon as the learner has learned the routine and can successfully complete the activities. Extra prompting and cuing used while teaching should also be faded as much as possible, although some visual cues might continue to be helpful to learners throughout the intervention

STEP 3: MONITORING EXM

The following step details how to monitor the use of Exercise & Movement with a learner on the spectrum and how to determine next steps based on the data.

1. **Collect and analyze data**
   Collect data on both the learner's participation in the exercise routine and the target behaviors of the learner. Learners may also complete a self-assessment regarding their perceived effort of level of difficulty of the routine. setting of observation
   Use the Data Collection Forms to collect data.

2. **Determine next steps based on learner progress**
   Collecting data will help team members decide about the effectiveness of using Exercise & Movement 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 EXM 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 Exercise & Movement (frequency, intensity, and/or duration)?
   - Is the target goal/behavior/skill being targeted during appropriate routines and activities?
   - Is EXM appropriate or a 'good fit' for the target behavior?
   - Are EXM strategies addressing the target behavior?
   - Does the learner need additional supports?
   - Are the selected materials and activities intrinsically motivating for the learner?

   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	Identify potential physical/mindful movement activities					
1.2	Conduct individual exercise assessment					
1.3	Develop an exercise and movement plan					
1.4	Plan for any needed supports					
1.5	Obtain and organize all needed materials and equipment					
	STEP 2: USING					
2.1	Teach the learner the activity routine:					
2.1a	Use visual cues as needed; reference the visual schedule for the routine when transitioning to each movement activity					
2.1b	Model each movement activity					
2.1c	Prompt as needed (visual, verbal, physical)					
2.2	Reinforce learner engagement and completion of the exercise routine					
2.3	Fade prompts and thin reinforcement as quickly as possible when criterion is met					
	STEP 3: MONITORING					
3.1	Collect data on target behaviors					
3.2	Determine next steps based on learner progress					

Tip Sheet for Professionals

EXERCISE & MOVEMENT …

- Is a focused evidence-based practice for children and youth on the spectrum from 3-18 years old that can be implemented in multiple settings.
- Is the physical activity in which we engage in order to achieve a healthier level of physical fitness
- a potential antecedent intervention for learners on the spectrum to increase desired behaviors and decrease inappropriate behaviors

WHY USE WITH LEARNERS ON THE SPECTRUM?

- Learners on the spectrum often have lower levels of physical activity than their typically developing peers; exercise can improve physical fitness and may also create opportunities for interactions with peers
- Exercise has been used successfully as an antecedent intervention to increase desired behaviors
- Exercise has also been used as an antecedent intervention to decrease inappropriate behaviors

TIPS:

- Design an exercise plan based on assessment data and learner interests.
- For antecedent intervention, aim for 10–20 minutes of moderate to vigorous activity before the target behavior is likely.
- Consult a physical education expert or physician for learners with health concerns.

INSTRUCTIONAL OUTCOMES:

The evidence-base for Exercise & Movement supports its use to address the following outcomes, according to age range, in the table below:

Age	Academic	Adaptive	Behavior	Cognitive	Communication	Motor	School Readiness	Social
3-5	Yes		Yes	Yes	Yes	Yes	Yes	Yes
6-11		Yes	Yes	Yes	Yes	Yes	Yes	Yes
12-14		Yes	Yes	Yes	Yes	Yes	Yes	Yes
15-18		Yes	Yes	Yes	Yes	Yes	Yes	Yes

STEPS FOR IMPLEMENTING:

1. **PLAN**
   - Conduct individual physical activity assessment
   - Develop an exercise and movement plan
   - Plan for any needed supports
   - Obtain and organize all needed materials and equipment

2. **USE**
   - Teach the learner the activity routine:
     - Use visual cues as needed; reference the visual schedule for the routine when transitioning to each movement activity
     - Model each movement activity
     - Prompt as needed (visual, verbal, physical)
   - Reinforce learner engagement and completion of the exercise routine
   - Fade prompts and thin reinforcement as quickly as possible when criterion is met

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

Exercise & Movement
EXM

This sheet was designed as a supplemental resource to provide basic information about Exercise & Movement 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 EXM?

- Exercise is the physical activity in which we engage in order to achieve a healthier level of physical fitness.
- Exercise can be used as an intervention for learners on the spectrum to increase desired behaviors and decrease inappropriate behaviors.

WHY USE THIS EXM WITH MY CHILD?

- Learners on the spectrum often have lower levels of physical activity than their peers; exercise can improve physical fitness and may also create opportunities for interactions with peers.
- Exercise has been used successfully as an intervention to increase desired behaviors such as being engaged in academic work, staying on task, responding correctly, and completing tasks.
- Exercise has also been used as an intervention to decrease inappropriate behaviors such as aggression, self-injury, self-stimulatory/stereotypic behaviors, and being off task.

WHAT ACTIVITIES CAN I DO AT HOME?

- Notice what kinds of exercise or movement activities your child seems interested in and try to schedule time for practicing that activity or skill.
- Find opportunities to teach, practice, and encourage engagement in new exercise or movement activities when possible; this might include riding a bike, jumping rope, doing stretches, throwing a ball, participating in a sport, or doing yoga.
  - These may be individual or group activities – with a peer group or just with your family.
  - This may include opportunities in the community for your child to engage in exercise activities with structure and support.
- Consider planning exercise activities in your schedule at home prior to times that are sometimes challenging for your child; for example, have your child engage in an exercise activity before completing homework or household chores.

Exercise & Movement EXM

This parent introduction to EXM was designed as a supplemental resource to help answer questions about Exercise & Movement.

To find out more about how this EXM 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
	BetterPoints Limited	*BetterPoints*	iPhone Android	Free
	Ubisoft	*Just Dance Now*	App Store Android	Free (in-app purchases)
	Daily Workout Apps, LLC	*Daily Workouts – Fitness Coach*	App Store Android	Free (in-app purchases)

BOOKS:

Geslak, D. S. (2014). The autism fitness handbook: An exercise program to boost body image, motor skills, posture and confidence in children and teens with autism spectrum disorder. Philadelphia, PA: Jessica Kingsley Publishing.

Gray, S. M. (2011). 101 Games and activities for youth with autism. Monteray, CA: Healthy Learning.

Hardy, S. T. (2015). Asanas for autism and special needs: Yoga to help children with their emotions, self-regulation, and body awareness. Philadelphia, PA: Jessica Kingsley Publishing.

Jacobs, D. S. & Betts, D. E. (2011). Everyday activities to help your child with autism live life to the full: Simple exercises to boost functional skills, sensory processing, coordination, and self-care. Philadelphia, PA: Jessica Kingsley Publishing.

WEBSITES:

Chessen, E. (2022). *Exercise and the Autism Population.* https://www.ideafit.com/exercise-and-the-autism-population/

Matthews, A. (2020). *Get Moving: Exercise is an Evidence-Based Practice.* https://www.gvsu.edu/autismcenter/start-connecting-get-moving-exercise-is-an-evidence-384.htm

CEC Standards

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

Standard 3: Collaboration and Teaming

3.1 Apply teaming models, skills, and processes, including appropriate uses of technology, when collaborating and communicating with families; professionals representing multiple disciplines, skills, expertise, and roles; and community partners and agencies.

3.2 Use a variety of collaborative strategies when working with other adults that are evidence-based, appropriate to the task, culturally and linguistically responsive, and take into consideration the environment and service delivery approach.

3.3 Partner with families and other professionals to develop individualized plans and support the various transitions that occur for the young child and their family throughout the birth through 8 age-span.

Standard 4: Assessment Processes

4.1 Understand the purposes of formal and informal assessment, including ethical and legal considerations, and use this information to choose developmentally, culturally and linguistically appropriate, valid, reliable tools and methods that are responsive to the characteristics of the young child, family, and program

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.

4.3 Analyze, interpret, document, and share assessment information using a strengths-based approach with families and other professionals.

4.4 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 6: Using Responsive and Reciprocal Interactions, Interventions, and Instruction

6.2 Engage in reciprocal partnerships with families and other professionals to facilitate responsive adult-child interactions, interventions, and instruction in support of child learning and development.

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 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.

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.

2.2 Use knowledge and understanding of diverse factors that influence development and learning, including differences related to families, languages, cultures, and communities, and individual differences, including exceptionalities, to plan and implement learning experiences and environments.

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.

4.2 Develop, select, administer, and interpret multiple, formal and informal, culturally and linguistically appropriate measures and procedures that are valid and reliable to contribute to eligibility determination for special education services.

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.

5.6 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

6.1 Use effective routines and procedures to create safe, caring, respectful, and productive learning environments for individuals with exceptionalities.

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

6.3 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.

ADVANCED PRACTICE-BASED STANDARDS (CEC, 2012):

Standard 1: Assessment

1.1 Minimize bias in assessment.

GLOSSARY

Aerobic exercise - sustained exercise that stimulates and strengthens the heart and lungs

Antecedent - a cue that tells the learner to use the target skill/behavior

Body Composition Analysis - a test to determine how much of one's body is not fat

Exercise - the physical activity in which we engage in order to achieve a healthier level of physical fitness

Exercise and movement - interventions that incorporate the use of physical exertion and/or mindful movement to increase desired behaviors (time on task, correct responding) and decrease inappropriate behaviors (aggression, self-injury).

Exercise Plan - a plan for the exercise routine that has been developed; this includes the type of activities to be performed, an anticipated duration of the activities and frequency of implementation, the sequence of the activities or the exercise routine itself, and a planned time and location for the exercise routine to occur.

Exercise Routine - the movement activity or activities that are selected/combined to create an exercise plan; this can be a single activity or a series of multiple activities

Individualized intervention - an intervention that is planned and implemented in a way specific to the learner receiving the intervention.

Mindful movement - refers to physical activities performed with focused attention and awareness of the body, mind, and breath in the present moment. It involves consciously engaging in movement while paying attention to sensations, alignment, and the connection between body and mind. The goal is to promote mental clarity, physical well-being, and emotional balance.

Muscular endurance - the muscles ability to repeat the contraction for a longer period of time before it becomes exhausted.

Muscular flexibility - the range of motion/mobility of muscles, which allows for more movement around the joints.

Muscular strength - the highest amount of effort exerted by the muscles of the body to overcome the most resistance in a single effort.

Physical exertion - as related to exercise, physical exertion involves engagement in an activity that results in physiological arousal; observable symptoms of moderate to high aerobic or cardiovascular intensity may include increased heart rate, flushed face, and increased breathing rate.

Positive reinforcement - refers to the presentation of a reinforcer after a learner uses a target skill/behavior, therefore encouraging him/her to perform that behavior again.

Prompt - any help provided that will assist the learner in using specific skills. Prompts can be verbal, gestural, or physical.

Reinforcement - feedback that increases the use of a strategy or target behavior/skill.

Reinforcer sampling - helps to identify activities and materials that are motivating to learner with autism. Also known as a preference assessment.

Reinforcers - increase the likelihood that the target skill/behavior will be used again in the future.

Target behavior - the behavior or skill that is the focus of the intervention. Behavior may need to be increased or decreased.

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.

Visual supports - visual supports are 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.

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