

# ACADEMY OF PEDIATRIC PHYSICAL THERAPY

## FACT SHEET

### Strategies for Physical Therapist Collaboration with School-based Teams for Children with Autism Spectrum Disorder

The Centers for Disease Control and Prevention estimates the prevalence of Autism Spectrum Disorder (ASD) to be 1 in 68 children.<sup>1</sup> The high prevalence of ASD has become an extraordinary challenge to early intervention and educational programs across the nation. Although deficits in communication and social skills are considered to be defining characteristics of this disorder, current literature suggests impairments in motor development and motor control systems are core characteristics of children with ASD.<sup>2,3</sup> Increasingly involved in working with children with ASD, physical therapists encounter the need for autism-specific assessment and intervention strategies in concert with other professionals. A range of services are provided based on the child's needs: direct, consultative, episodic. In addition, physical therapists play a key role in collaborating with team members for integration of physical activity into daily routines.<sup>4</sup> School-based teams vary for individual students with ASD and commonly include the child's parents/caregivers, teachers, occupational therapist, physical therapist, speech/language pathologist, autism support teacher, and behavioral specialist. Effective collaboration with the school-based team is a powerful tool in maximizing the student's success in the school setting.

Depending on a student's individual strengths and needs, effective classroom collaboration strategies may vary for any given child with ASD. Learning readiness of children with ASD differs widely, and students range from naïve learners to those with a high level of function. The following suggestions for physical therapy collaboration and support are written to address common classroom concerns. In addition, physical therapists may wish to consider providing in-services or small group training sessions to support team members in exploring and experiencing new ideas before implementing them in the classroom.

	Suggestions for Physical Therapist Collaboration
<b><i>Movement/Motor Concerns</i></b>	
Support transitions including moving through the school building with classmates	<ul style="list-style-type: none"> <li>Suggest ways to utilize visual supports, music, rhymes, timers, verbal cues, and schedule references during transitional routines</li> </ul>

	<ul style="list-style-type: none"> <li>• Collaborate on use of motor opportunities during transitions (e.g., tunnel to come in/out of room, stepping up/down to enter/exit, tape on floor to walk a "balance beam")</li> <li>• Suggest locomotor or motor imitation ideas to be incorporated into "walks" in classroom and hallway (e.g., marching, swinging arms reciprocally, taking big/little steps)</li> <li>• Provide strategies for independence vs. hand held assistance when students walk in hallway (e.g., recommend preferred position in line, identify and cue attention to the specific peer that student follows, reinforce maintaining personal space between peers such as able to place hand on the student in front with elbow straight)</li> <li>• Collaborate in use of weighted strategies (weighted backpack, belt, cap, vest, carrying small weighted ball) if appropriate.</li> </ul>
Expand gross motor skills/play repertoire with peers	<ul style="list-style-type: none"> <li>• Share general knowledge of motor learning principles and the benefits of physical exercise for children with ASD<sup>5</sup></li> <li>• Share autism specific motor learning strategies such as self-video modeling or use of self-talk</li> <li>• Serve as a resource during recess times to facilitate participation in gross motor play vs. sedentary activities</li> <li>• Include motor activities and themes for peer and/or partner motor play (e.g., ball play, tag games with exchange of a tangible item, or simple motor activities upon verbal command)<sup>6</sup></li> <li>• Provide teachers with gross motor ideas (e.g., yoga cards) for work stations<sup>7</sup></li> <li>• Collaborate with Physical Education (PE) teacher in planning strategies for pre-teaching of PE activities and game rules and to provide timely ongoing modifications of motor skills</li> <li>• Assist with peer coaching involving typically developing peers at recess/PE times</li> </ul>
Increase participation in physical activity / decrease risk for obesity	<ul style="list-style-type: none"> <li>• Collaborate with PE teacher to provide education and resources to families regarding age-appropriate physical activity guidelines, the importance of physical activity and fitness, and their relationship to health, participation, and wellness<sup>8,9</sup></li> <li>• Collaborate with PE teacher to promote physical fitness, healthy lifestyles programs at school, and inclusion in physical activity opportunities with peers (e.g. "Jump Rope for Heart")<sup>8,9</sup></li> <li>• Provide families with resources for local community-based fitness and recreational activities</li> </ul>

	<ul style="list-style-type: none"> <li>Consult with team to identify the personal and environmental factors that may be restricting a student's participation in recess activities, physical education, etc.<sup>4</sup></li> </ul>
Promote imitation skills	<ul style="list-style-type: none"> <li>Provide strategies to practice motor imitation (e.g., start with familiar reinforcers and then expand on them: high five, fist bump, index finger touch, thumb up, standing toe bump)</li> <li>Encourage gross motor imitation by practicing simple movement songs for breaks or circle activities and encourage repeated practice until the student initiates the movements</li> </ul>
Expand motor planning skills	<ul style="list-style-type: none"> <li>Suggest strategies for practice and building upon component parts until entire skill is mastered</li> <li>Suggest strategies for pre-teaching foundational motor skills<sup>10-13</sup></li> <li>Assist in modifying the environment to advance from predictable to unpredictable</li> <li>Pair visual with verbal cues</li> <li>Suggests ways to modify tasks requirements</li> <li>Assist with planning and facilitating group motor activities<sup>10-13</sup></li> </ul>
<b>Safety Concerns</b>	
Develop individualized emergency procedures	<ul style="list-style-type: none"> <li>Collaborate with the school team in the development of individualized emergency evacuation plans from the school building and the bus</li> <li>Use social stories to help students understand their emergency routines<sup>14</sup></li> <li>Share information with school administrators on <u>S.2016</u>, also known as Kevin and Avonte's Law; this bill allows Justice Department grants to be used by law enforcement agencies and nonprofits for education and training programs to prevent wandering<sup>15</sup></li> <li>Share information about "<b>Project Lifesaver to Protect Individuals with Autism Prone to Wandering</b>"<sup>16</sup></li> </ul>
Support playground and/or street safety	<ul style="list-style-type: none"> <li>Collaborate with the school team to explore opportunities to embed concrete instruction and/or reinforcement of safety rules (e.g., bus, street, playground, hallways) in school routines. Strategies may include use of social stories and/or video self-modeling<sup>14,17,18</sup></li> </ul>
<b>Programming Concerns</b>	
Set up the classroom environment and routine to maximize student participation and engagement	<ul style="list-style-type: none"> <li>Act as a resource collaborating with school teams to design and embed appropriate motor activities in the daily routine and student environment<sup>19,20</sup></li> <li>Help establish clear boundaries/areas designated for specific activities</li> </ul>

	<ul style="list-style-type: none"> <li>• Provide suggestions to embed practice opportunities for functional mobility skills (e.g., placing a step stool or block at the entrance of the area)</li> <li>• Arrange clear pathways and visual cues to enter the classroom from the hallway and for directions to different areas in the classroom (e.g., different colored taped lines, pictures, etc.)</li> <li>• Provide opportunities for aerobic exercise prior to classroom activities to improve academic engagement and/or response<sup>21</sup></li> </ul>
<p>Support successful use and transport of communication systems (e.g., communication books, PECS, first/then visuals) in all settings</p>	<ul style="list-style-type: none"> <li>• Assess the portability, safety, and durability of systems</li> <li>• Support incorporation of communication systems in motor activities, in consultation with the PE teacher<sup>22-24</sup></li> </ul>
<p><i>Behavior Concerns</i></p>	
<p>Develop self-regulation (impulse control, emotional control, etc.)</p>	<ul style="list-style-type: none"> <li>• Collaborate with Occupational Therapist and Board Certified Behavior Analyst to identify a self-regulation curriculum and strategies that match the child’s needs<sup>25,26</sup></li> <li>• Collaborate with the school team to identify barriers to self-regulation</li> <li>• Provide an individualized exercise “protocol” that supports self-regulation. This protocol may include list of activities, duration of exercise, where and when it can be facilitated, outcomes to be observed, data collection charts, and time of day that activity is most beneficial<sup>27,28</sup></li> <li>• Collaborate with IEP team to develop means of data collection and analysis for informed team decision making<sup>29</sup></li> <li>• Provide information on the difference between typical classroom movement breaks and movement breaks that impact behavior and attending skills (cardiovascular activities as opposed to low intensity exercises appear to provide more benefit for decreasing stereotypic movements and maladaptive behaviors and increasing academic engagement)<sup>5,9,30</sup></li> </ul>
<p>Foster readiness to learn behaviors and engaging in adult directed activities (including remaining seated appropriately and within personal space)</p>	<ul style="list-style-type: none"> <li>• Suggest ideas for group motor activities as a part of the school day for all students (e.g., “brain breaks”) and how to embed these into instruction and/or work tasks</li> <li>• Assist to identify need for seating and posture options (standing, sitting on web ball or stability chairs, back-jack, cushions, etc.) during work table activities<sup>31, 32</sup></li> <li>• Suggest that teachers offer gross motor activities to students when they finish their work</li> </ul>

	<ul style="list-style-type: none"> <li>• Collaborate with the team for a plan that encourages increased demand and tolerance to stationary or non-preferred activities (e.g., floor or desk top)</li> <li>• Collaborate with team to identify barriers to staying seated on the floor<sup>33</sup></li> <li>• Explore visual and tactile supports for defining personal boundaries such as carpet mats, lines or duct tape on the floor, air-filled seat cushions, or hula hoops</li> <li>• Collaborate in implementation of a positive behavior plan and offer suggestions as appropriate</li> <li>• Consider technology or accommodations to increase attention such as allowing student to have his copy of the book being read and using apps such as “Vision Assist” on an iPad to enhance the important focus of attention</li> <li>• Consider preferential seating (e.g., next to or directly across from the teacher, on the edge of the rug or slightly behind the group during circle time, near the corner or wall in the cafeteria, near a model peer)</li> <li>• Suggests peer pairing with student before placing demands so dyad responds vs. individual students<sup>13</sup></li> <li>• Suggest ways to promote student led options or activities</li> <li>• Explore exercise interventions to reduce stereotypical behaviors<sup>34</sup></li> </ul>
Increase acceptance of change of routine and/or adjusting to new routines at school	<ul style="list-style-type: none"> <li>• Suggest using favorite motor routines to teach flexibility (such as complete one trial of an obstacle course in the reverse direction)<sup>35</sup></li> <li>• Link flexible thoughts to good thoughts<sup>35</sup></li> </ul>
Support participation in group activities	<ul style="list-style-type: none"> <li>• Support team in use of visuals to indicate that students are participating in an activity as part of a group (crayons in a box, beanbags in a container)<sup>36,37</sup></li> <li>• Assist team in use of visuals to teach expected behaviors (e.g., gentle touch, quiet voice, hands to self, share/play with friends, stay in line/with group)<sup>36,37</sup></li> <li>• Support team use of auditory prompts (e.g., a catchy song) for signaling group activities<sup>36,37</sup></li> </ul>
Support student management of problems or obstacles that occur during classroom activities (need for "thinking" tool box)	<ul style="list-style-type: none"> <li>• Support team in the use of visuals as problems arise so that the students can learn how to react based on the size of the problems<sup>35</sup></li> </ul>
Develop ability to wait for turn during classroom activities	<ul style="list-style-type: none"> <li>• Encourage using simple motor games during circle to work on waiting for turn (e.g., silly movements to a song, passing a ball, or tossing tokens in a tin can/beanbags into a basket while counting)</li> </ul>

Community and Post-secondary Transition Concerns	
Promote successful community-based instruction (CBI)	<ul style="list-style-type: none"> <li>• Support the staff in ensuring that students have adequate mobility and endurance to participate in CBI and work activities</li> <li>• Collaborate regarding trip planning and motor practice as it relates to the navigating environment</li> <li>• Suggest safety training for street and parking lot crossing and situations involving emergency vehicles<sup>38</sup></li> <li>• Provide ideas to promote independence with public transportation: getting on/off of the bus or train, communicating with the driver, scanning for important locations</li> </ul>

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