



CONSTRUCTION SEASON: BUILDING A GROSS MOTOR PLAN AROUND THE ORANGE CONES

Contributed by Tammy Nordbeck, BS, MPT, Physical Therapist, Building Bridges Therapy Center Plymouth, MI

As the Michigan weather finally levels out in May, and the orange cones appear on major roads, parents all over the peninsula breathe a sigh of relief as cabin fever ends and playing outside is again an option. For parents with children on the autism spectrum, this relief can be complicated. Play skills, negotiating with peers and gross motor deficits can make a “day at the park” anything but, for families with ASD.

Gross motor development usually follows a typical pattern in children. Children first control their head and their hands, then begin to roll, crawl, pull up, walk, and run. As this movement matures, the child can now begin complex motor patterns such as skipping, hopping and jumping rope. Team participation soon follows, with children using their motor plans to sync with peers’ motor plans to play organized games. They begin to communicate motor plans to each other, and follow rules of play.



Many children on the autism spectrum do well with gross motor skills, especially those that are vital to gaining access to their preferred activities. Children have been known to scale to heights unimaginable to gain access to the treasured train or book, but later trip on an unnoticed object in their path. Visual attention may be noted to a wanted object on the far side of the house, while missing objects between them and their target, resulting in a fall.

The typical pattern of development can be impacted by an ASD diagnosis in many ways. These roadblocks to typical development are as varied as individuals on the spectrum, and may change over time. Children on the spectrum may have sensory processing concerns; they may lack awareness of other’s movements near them, they may lack self-awareness; they may lack motivation for the “skills” parents see as important, their strength and muscle tone may be impaired and they may possess language deficits that impact gross motor skill development.



Impaired social skills: Social skill development allows children to play in a group of peers, and this group play allows children to develop gross motor skills more rapidly, due to increased peer pressure to move, learning new skills from observations of others, and challenges placed on the developing child by the group. When a child is unaware or uninterested in peer play, it may require an adult or a sibling to take on the child 1:1 to address turn taking play skills vital to most games. Once basic turn taking is in place, a simple game like kicking a ball back and forth can increase eye contact and give/take skills with reinforcement.

Sensory processing: Sensory concerns impact gross motor skills in two main ways. Those children who would rather avoid sensory input, the “avoiders”, may shy away from the playground, movement off of the ground (climbing, jumping, riding), and instead choose more sedentary activities. This lack of practice soon begins to limit gross motor skill refinement, and children can become more and more reserved in regards to gross motor play as their peers’ skills begin to pull away.

cont.



Those who love sensory input, the “seekers”, love to run, crash, and bounce. This is great for strengthening and we often see these children with well-defined muscles and great endurance. Unfortunately, balance can sometimes be impaired as they don’t avoid the falls and crashes that typical movers use to refine their movements. This can lead to the “seekers” having less mature motor plans for some activities.

Sensory processing disorders can also contribute to toe-walking in children. The “avoiders” may walk on their toes to limit the amount of contact they must have with the offensive carpet (tile, wood floor, gravel, etc.), while the “seekers” may gain excitement from the added input they realize with all of their body weight focused on such a small area on the ball of the foot. Both avoiders and seekers can become persistent toe walkers if left unchecked, as this pattern quickly becomes a habit, and the muscle and tendon on the back of the calf become functionally shortened in response.

Attention and awareness: Gross motor skills take attention to the task being completed as well as to the surroundings. Intervention before the bike-riding ages can improve and safety skills allowing more functional gross motor coordination as the child develops. Working with the child on stop/go games in walking and running, having the child bat a brightly colored balloon in the air with you, kicking a ball in a hallway to keep the game right in front of the child, and using balls with bells or lights can help increase the child’s attention to the task at hand.

Motivation/interest: This can be one of the most challenging roadblocks in the ASD/PT world. If your child has no interest in running, jumping, or hitting a ball tossed to him, the hundreds of trials needed to build this new skill will be painfully long, and the child will likely develop an aversion to the task. We need to meet children in the middle and make the gross motor tasks 3 things to them: 1. Relevant, 2. Important, and 3. Achievable. Consider “levels” in games for high functioning children with lack of shared interest, relating the game to their high interest items at first and then ramping the gross motor components as the “levels” progress. If this sounds like a scene from Super Mario Bros., or another video game, it’s because speaking the language of value is vital to gaining motivation. Math facts, historical figures, and every Wii game created have come to life in the gross motor gym as we add balance beam “bridges” and target spot “hop stations” to the levels.

Strength & coordination: Strength in children can be hard to accurately measure. The testing assumes full effort in resisting the PT’s force and requires language skills that can be challenging. As children move around their environments in life, they build muscle strength, coordination, and related balance. If a child lacks strength in a certain muscle group, that weakness will translate into functional deficits, lack of endurance, and lack of coordination. If a child tires out easily, and finds certain areas of the playground tiring, they are less likely to choose the playground as a preferred activity. Breaking the visit to the playground into more manageable times, and gradually building the amount of time spent moving can help.

Language gaps: As gross motor skills progress, language begins to play a vital role in development. Listening to rules, instructions and feedback is important. Delays in any of these steps can lead to frustration. Breaking gross motor tasks into short instructions can be helpful. For example, when instructing a child with limited language skills in jumping rope, the instructions might be “Watch. Flip. Turn. Jump.” while the instructor breaks the task into small chunks. Working alongside the speech language pathologist (SLP) has proven to be essential in some PT sessions, as have visual schedules to clearly lay out motor plans via pictures.



Navigating life with a child on the spectrum has many twists and turns. A child who is unable to keep up with peers is less likely to have time to work on the social skills needed in life. Gross motor concerns such as frequent falls, lack of efficient mobility without falls, and toe walking can impact a child’s safety and muscular-skeletal development.

When do you decide you need more help? And where do you turn?



Recommended detours:

Physical Therapy Evaluations can be invaluable for peace of mind when you have gross motor concerns and your child is lacking age appropriate skills. A PT can assess your child for coordination and balance concerns, toe-walking, gross motor planning skills and safety in walking and running. Look for a PT that has practice with pediatrics and one who understands ASD complexities, if you can.

Gross motor social groups at Building Bridges combine gross motor games with social peer groups to make fun, weekly “club” style groupings. Playing a game that is borrowed from PE class, a birthday party, or the playground, slows the tasks down and allows children success in navigation of social skills with support for gross motor skills. Active children pick up better on social skills while on the move, and less active children learn from their peers how to move better in a less threatening environment.

Organized adaptive sports include many local adaptive sports for children from baseball, to bowling, to yoga. Being active is a life-long goal, so finding an active hobby for children is a good way to encourage gross motor development over their lifespan. If your child is not quite ready for participation, ask to sit in and observe a session, or find videos of the sport in action to watch with your child to prepare.

Gross motor play added to daily routine helps quickly build strength, endurance and balance. Using a family walk, a quick “balloon bob” before school, or adding gross motor “chores” to a daily routine can help.

The construction season is ahead of us. Use these sunny days to begin to focus on gross motor skills. Have a safe and happy summer. I'll see you at the hopscotch board out back!

My Child Toe Walks, Should I Be Concerned?

Contributed by Christine Hamstra, DPT, AAoM Medical Advisory

Christine has a doctorate of physical therapy and in addition to her private practice Get Cruisin' PT and works for Binsons Home Health as a Wheelchair Specialist. Christine volunteers her time to AAoM's Medical Advisory Committee.

Always check with child's pediatrician: they can screen for structural or anatomical reasons.

Referral to physical therapy is always appropriate!

Therapist can do a quick screen for structural problems, and refer to physician if needed.

Treatment can be twofold:

1. If structural or anatomical concerns, including bony deformities, contractures (shortening) of the calf muscle, child should be referred to orthopedics.
2. If no structural or anatomical concerns, and child is persistent toe walker, physical therapy is indicated.

Treatment may include, but not limited to the following: (in order from least invasive to most invasive)

1. Stretching and Range of Motion Exercises to ensure calf muscle does not shorten from prolonged toe walking.
2. Active exercises to encourage child to use front shin muscle to pick up foot (dorsiflexion).
3. Additional involved treatment can include taping, or bracing, requiring specialized taping technique, and a certified orthotist to provide custom braces.
4. More aggressive treatment can include serial casting. This would keep the child in a series of casts to keeping the foot in the desired position 24 hrs a day, working to retrain the muscle to maintain the foot/ankle in neutral position.

Most importantly, if you have concerns about your child's toe walking, ask the pediatrician for a referral to a pediatric physical therapist to evaluate and set up an individualized program. Most toe walking can be treated in a few visits with a diligent home program.



MAY AT A GLANCE

SUN	MON	TUE	WED	THR	FRI	SAT
	1 16th Annual START Conference: Integrated Supports Through the Lifespan (East Lansing)	2 Stepping Stones to Independence Workshop #2 (Marquette)	3 Wrightslaw Michigan Special Education Law & Advocacy Conference (Pontiac)	4 Swing Dance (Marquette) Ron Sandison: Taming Sensory & Atypical Behavior (Highland)	5 Behavior is Communication (Brighton)	6 UP Regional Spring Games (Escanaba) Evaluation and Eligibility (Scottville)
7 Cardio Drumming (Canton)	8 Brain Kwon Do (Sterling Heights) Understanding the IEP Process (Traverse City)	9 Stepping Stones to Independence Workshop #3 (Marquette)	10 Parent and Educator, Building Collaborative Communication Skills (Alma)	11 AAOM Parent Networking Night (Frankenmuth)	12 Navigating Autism Today--Regional Conference (Frankenmuth)	13 Martial Arts (Ferndale) ASK Family Day at Indian Trails Camp(G.Rapids)
14 Sensory Friendly Sunday at Leslie Science & Nature Center by My Turn (Ann Arbor)	15 ADOS-2 Two Day Clinical Review (modules 1-4) (Ann Arbor)	16 Art of Yoga (Grand Rapids) MACMHB Spring Conference (Dearborn)	17 Language Acquisition through Motor Planning (LAMP) Extended Course: Highlighting Local Clients (Jenison)	18 PLAY Project Intensive Workshop (Ann Arbor) Adaptive Fishing-Spring Clinic (G. Haven)	19 M-CHAT-R Screening, Referral & Follow-up (G.Rapids, Marquette, Mt. Pleasant, Detroit)	20 Falconers at Potter Park Zoo (Lansing) Test Ride a Pony (Davisburg)
21 2017 Healthy Body/Healthy Mind (Bloomfield Hills)	22 GR Happy Crafters Group (Grayling)	23 Stepping Stones to Independence Workshop #4 (Marquette)	24 Making Sense of SSI/SSDI (Troy) Getting My Own Address Presentation (Troy)	25 ADI-R Training (Wayne)	26 Older Adult Mental Health First Aid Training (Pontiac)	27 Fuse [FORCE] (Royal Oak)
28	29 GR Happy Crafters Group (Grayling)	30 Phenomenal Women (Kalamazoo)	31 Public Input Into the Common Disability Agenda (Alpena)	Please visit our community calendar for full event listings at www.navigator.autismallianceofmichigan.org/events .		

Navigating Autism Today--Regional Conference and Parent Networking Night
May 11th and 12th--Bavarian Inn Lodge Frankenmuth

Join presenters, AAoM staff and caretakers for a night of networking before the all day conference.

Information at aomconference.org