

SENSORY-BASED MOTOR DISORDERS: POSTURAL DISORDER

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Our previous columns described the first Sensory Processing Disorder (SPD) Pattern: Sensory Modulation Disorder (SMD) and its three subtypes. Described here is the second primary SPD pattern, Sensory-based Motor Disorder (SBMD), focusing on Postural Disorder.

SBMD is defined as a motor challenge with an underlying sensory basis, and has two subtypes: Postural Disorder and Dyspraxia. Unlike Sensory Modulation Disorder in which individuals have difficulty regulating sensory input, individuals with SBMD are regulated but have a sensory-motor challenge. SMD and SBMD can occur separately but often co-occur. Children who demonstrate poor postural control may also demonstrate the other SBMD subtype, *dyspraxia*, or motor planning problems. Dyspraxia will be further explored in the September/October 2012 issue. Sensory Underresponsivity (see March/April 2012 *AADigest Sensory Solutions* column), poor detection of sensory signals, usually co-occurs with Postural Disorder.

Postural Disorder

Children with Postural Disorder (PD) demonstrate poor core strength and decreased endurance. Thus they are weak, have low endurance, and often exhibit poor balance. They tend to move inefficiently and have poor body awareness. The sensory systems most affected are the tactile (touch) and proprioceptive (muscles and joints).

Behaviorally you will see slow, cautious movement, or an unwillingness to move, with a clear preference for sedentary activities. Moving on uneven surfaces (e.g., bumpy ground) is difficult. Concentration is required to maintain a stable position even during simple actions such as stepping onto an escalator, or on/off a curb.

The decreased stability and poor body control in PD causes individuals to compensate by increasing their “base of support,” widening the “platform” on which the body rests. For example, sitting in a “W-sit” position provides a wider base of support as does standing with legs shoulder width apart and raising arms with bent elbows in a “primitive” posture. Children with PD often feel unstable, insecure, and unsafe; muscles that fire together automatically in most people often do not engage with equal force (e.g., quadriceps with hamstrings, abdominals with back muscles, biceps with triceps). Therapists call this poor muscle *co-contraction*.

Postural ability is needed to stand or sit in an upright position. Those with PD fatigue quickly, often leaning against furniture, slumping over, or propping their head on their hand when at a desk. An individual with PD exhibits problems on moving surfaces and doesn't automatically compensate when bumped by another person. This may cause a “fight, flight, or freeze” reaction if the individual with PD is forced to move; but often the person is simply sluggish and lethargic, choosing not to move.

Although children with PD are less likely than children with Sensory Modulation Disorder to have self-control issues (e.g., temper tantrums, severe withdrawal), they often exhibit poor self-esteem and self-confidence. They tend to play alone because they cannot keep up physically with their peers and are at risk for becoming “loners.”

Symptoms of PD may include the following:

- > no internal motivation to move (e.g., run, jump, skip, hop)
- > poor bilateral coordination—difficulty using both sides of the body simultaneously (e.g., catching a ball, rotating trunk to cross the midline of body needed to ride a bike or hit a baseball)
- > challenges with ocular-motor abilities (e.g., following a moving object with eyes, noticing what happens around him using peripheral vision)
- > inefficient vestibular (awareness of where he is in space) and proprioceptive (awareness of position of muscles and joints) processing

Ways to Help a Child with PD

Since children with PD frequently suffer from low self-esteem and self-confidence, occupational therapists have a perfect opportunity! The major principle of occupational therapy (OT) is to scaffold the client so that their therapeutic activity is a challenge, but they are successful. Intervention also needs to

highlight social participation. OT boosts the motor skill level and therefore increases confidence. Play is the platform for strengthening overall core muscles, increasing endurance, and

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improving motor skills. The activities *must* be fun! Exercises do not work the same way that play does because play is internally motivating. A large focus of our therapy with families is educating them about how therapeutic pure play is and coaching families in use of a playful approach (rather than turning parents into therapists by giving them extensive home programs). Our philosophy highlights a sensory *lifestyle* rather than a sensory diet.

Intervention must be individually designed for each child's needs based on his family's priorities. Other PD therapeutic activities might include the following:

- > lying on stomach while trying to bring arms and legs in the air like a flying “Superman”
- > squatting down to pick up an object, then reaching up high to place it in a bucket
- > using gravity to create “heavy work” (e.g., climbing up stairs or a hill with a heavy backpack on [always less than 10–15 percent of the child's body weight on back])
- > having the child pull another child/adult on a scooter board
- > crawling through and over an obstacle course of tunnels, barrels, and swings/tires (the child can construct the obstacle course with your assistance!)

Case Study. Matt is a 7-year-old receiving treatment for PD. He sits on a bolster swing, which is tilted about 10 degrees forward, so that he can achieve good alignment of shoulders over his pelvis as he “flies to Mars.” Then on the hunt for “aliens and Martians,” he walks across mats with different amounts of foam to challenge his proprioceptive system. He maintains balance and finds the Martian (which looks surprisingly like a small army figure) and then rotates his trunk, turning to toss the Martian into the “spaceship” to take back to Earth. He wears special “Martian finding” gear (a compression vest). This game helps Matt build self-esteem, gives him increased body awareness, and challenges and improves his postural abilities. Because the game is so much fun, Matt doesn't even know that he is working!

Many children who experience SPD can have symptoms in multiple subtypes. A child with Postural Disorder is greatly affected in day-to-day function. Increasing a child's postural strength and control increases his capability to move more efficiently in space, walk on uneven surfaces without tripping, balance, sit or stand upright, and more. Once a child feels more confident about how his body moves, he demonstrates increased self-esteem, which in turn makes it easier to have solid peer relationships, play sports, and trust that he will be safe. Overall, joy in life for the individual with PD and his family can increase substantially with therapy geared at social relationships and postural control. ■