Characteristics of Sensory Processing Disorder
from The Out-of-Sync Child (Kranowitz, 2005)

TACTILE DYSFUNCTION
The child with MODULATION DISORDER who is over-sensitive to touch stimuli may:
• Have tactile over-responsivity to unexpected, light touch, rubbing off kisses or casual touches and pushing others away to avoid closeness.
• Instantly and intensely exhibit a "fight or fright" response or a “flight or freeze” response to harmless touch sensations.
• Dislike messy activities (cooking, painting, using chalk or tape).
• Be bothered by certain types of clothing, and be particularly sensitive to sock seams, shoes, and tags in shirts.
• Prefer wearing long sleeves and pants, even in summer, or dress lightly, even in winter.
• Become anxious or aggressive on windy, "hair-raising" days.
• Be a picky eater, avoiding some foods (rice, chunky peanut butter, mashed potatoes, vegetables) because of texture, or preferring food to be the same temperature, hot or cold.
• Dislike swimming, bathing, brushing teeth or having hair cut.
• Have poor peer relationships.

The child with MODULATION DISORDER who is under-responsive to touch stimuli may:
• Seem unaware of touch unless it is intense, showing little reaction to pain, and getting hurt without realizing it.
• Not realize he has dropped something.
• Have poor body awareness.
• Disregard whether clothes are on straight or face is messy.
• Physically hurt other people or pets, not comprehending their pain.

The child with MODULATION DISORDER who seeks extra touch sensations may:
• Touch objects and people constantly, showing “in your face” behavior.
• Seek certain messy experiences, often for long durations.
• Rub or bite own skin; twirl hair in fingers; prefer being barefoot.
• Chew on inedible objects (fingernails, hair, collars, cuffs, toys, pencils).

The child with DISCRIMINATION DISORDER may:
• Seem out of touch with his hands.
• Have trouble holding and using tools (pencils, scissors, forks).
• Not touch or pick up items that appeal to others.
• Not perceive objects’ properties (texture, shape, size, density).
• Need vision to identify body parts or familiar objects (buttons, erasers).
• Prefer standing to sitting, to ensure visual control of his surroundings.

The child with DYSPRAXIA may:
• Have difficulty conceiving of, organizing, and performing activities that involve a sequence of movements, such as cutting, pasting, coloring, etc.
• Have poor eye-hand coordination and poor fine motor control.
• Have poor gross motor control for running, climbing, jumping.
VESTIBULAR DYSFUNCTION

The child with MODULATION DISORDER who is over-responsive to movement may:

• Overreact, negatively and emotionally, to ordinary movement.
• Dislike physical activities such as running, biking, sledding, or dancing.
• Avoid playground equipment, (swings, slides, jungle gyms, and merry-go-rounds).
• Be cautious, slow-moving, and sedentary, hesitating to take risks.
• Not like head to be inverted, as when being shampooed over the sink.
• Be very tense and rigid to avoid changes in head position.
• Be uncomfortable on stairs, clinging to walls or banisters.
• Feel seasick when riding in a car, airplane, escalator or elevator.
• Appear to be willful, manipulative, uncooperative, or a sissy.
• Demand continual physical support from a trusted peer or adult.
• Have gravitational insecurity, a great fear of falling experienced as primal terror.

The child with MODULATION DISORDER who is under-responsive to movement may:

• Not notice or object to being moved.
• Seem to lack inner drive to move actively.
• Once started, swing for a long time without dizziness.
• Not notice sensation of falling or being off-balance, and not protect self well.

The child with MODULATION DISORDER who seeks extra movement may:

• Crave intense, fast, and spinning movement (rocking/swiveling in chairs, jumping on a trampoline, riding roller-coasters, racing around corners) – and not get dizzy.
• Be a thrill seeker and daredevil, e.g., enjoying riding over speed bumps and jumping from high places.
• Need to move constantly (rocking, swaying, spinning, jiggling, shaking her hands or head, fidgeting) in order to function. The child may have trouble staying seated.
• Enjoy being in upside down positions.
• Enjoy swinging very high and/or for long periods.

The child with DISCRIMINATION DISORDER may:

• Fall frequently off seat or while moving or standing.
• Become easily confused when turning or changing directions.
• Be unable to tell when he has had enough swinging, and keep going until he feels sick.

The child with DYSPRAXIA may:

• Have difficulty conceiving of, planning, and carrying out complex, unfamiliar movement sequences.
• Have poor eye-hand coordination and poor fine motor control.
• Have difficulty with gross motor skills and thus move awkwardly while running, climbing, or jumping.
• Be unable to generalize what he has already learned to accomplish a new task.
PROPRIOCEPTIVE DYSFUNCTION
When MODULATING sensations of body position and muscle movement, the child may:
• Have problems with touch and/or with gravity and movement, as well.
• Be stiff, uncoordinated, and clumsy, falling and tripping frequently.
• Lean, bump or crash against objects and people, and invade others' body space.
• Crave bear hugs and heavy work activities, more than others.
• Slap feet when walking, sit on his feet, stretch his limbs, poke his cheeks, pull on his fingers, and crack his knuckles (for additional feedback).
• Pull and twist clothing, stretch his tee-shirt over his knees, or chew sleeves or collars.

With poor DISCRIMINATION of body position and muscle movement, the child may:
• Have a poor sense of body awareness.
• Be “klutzy” while positioning limbs to get dressed, climb stairs, or ride a bike.
• Be unable to grade movements smoothly, using too much or not enough force, and manipulate hair clips, lamp switches, crayons, and classroom tools so hard they break.

The child with DYSPRAXIA may:
• Have difficulty carrying out unfamiliar, complex motions, e.g., putting on new ice skates.
• Be unable to do ordinary, familiar things without looking, such as getting dressed.
• Have difficulty ascending and descending stairs.
• Avoid participation in ordinary movement experiences, because they make him feel uncomfortable or inadequate.
• Stick to familiar activities and resist new challenges.
• Have eating, speaking and other oral-motor problems.

VISUAL DYSFUNCTION
The child with MODULATION problem of over-responsivity to sights may:
• Become over-excited with too much to look at (words, toys, or people).
• Overreact, negatively & emotionally, to the sight of people or objects in motion.
• Cover eyes and/or have poor eye contact.
• Be inattentive to desk work.
• Be hyper-vigilant, ever alert and watchful.

The child with MODULATION problem of under-responsivity to sights may:
• Ignore novel visual stimuli, such as obstacles in her path.
• Respond slowly to approaching objects.
• Not turn away from intense bright light.
• Stare and “look right through you.”

The child with MODULATION problem of craving sights may:
• Seek visually stimulating scenes and screens for long periods of time.
• Be attracted to shiny, spinning objects and bright, flickering light.

With VISUAL DISCRIMINATION DISORDER, the child may:
• Confuse likenesses and differences in pictures, written words, objects, and faces.
• Miss people’s expressions and gestures.
• Have difficulty with visual tasks, such as lining up columns of numbers or judging where things (including himself) are in space.
AUDITORY DYSFUNCTION

The child with MODULATION problem of over-responsivity to sounds may:
• Overreact, negatively & emotionally, to ordinary sounds and voices.
• Cover ears frequently.

The child with MODULATION problem of under-responsivity to sounds may:
• Ignore ordinary sounds and voices.
• “Turn on” to exaggerated musical beats or extremely loud, close, or sudden sounds.

The child with MODULATION problem of craving sounds may:
• Crave intense, loud noises and TV or radio volume.
• Love crowds and places with a lot of noisy action.
• Speak in a booming voice.

With AUDITORY DISCRIMINATION DISORDER, the child may:
• Have difficulty recognizing differences between sounds, e.g., consonants at beginnings or ends of words.
• Be unable to repeat or make up rhymes.
• Sing very much out of tune.
• Look to others for cues, because verbal instructions may be confusing.
• Have problems with basic auditory skills, such as localizing where a sound comes from or picking out a teacher’s voice from a noisy background.
• Have poor listening skills (receptive) and poor speech and language skills (expressive) because of underlying dysfunction of auditory and vestibular senses.

TASTE (GUSTATORY) DISORDER

The child with MODULATION DISORDER who is over-responsive to taste may:
• Strongly object to certain textures of food — chewy, lumpy, or pureed.
• Strongly object to certain temperatures of food — very hot, lukewarm, or ice cold.
• Frequently gag while eating.
• Be a picky eater but may enjoy more foods when alerting tastes (sour or bitter) are eliminated.

The child with MODULATION DISORDER who is under-responsive to taste may:
• Not be alerted when eating something rotten or harmful.
• Be uninterested in food but may learn to enjoy new foods when spices & herbs are added.
• Be able to eat very spicy food without reaction.

The child with MODULATION DISORDER who seeks taste sensations may:
• Lick or taste inedible objects, such as Play-Doh, glue, and toys.
• Overeat.
• Eat during times when they need to pay attention, as food helps them get organized.
• Prefer very spicy or very hot-flavored foods.
• Prefer very cold or steaming hot foods.

The child with DISCRIMINATION DISORDER may:
• Be unable to distinguish tastes or tell when food is too spicy, salty, or sweet.
• Be unable to distinguish when food’s taste indicates that it has gone bad.
• Choose or reject food based on the way it looks.
SMELL (OLFACTORY) DISORDER

The child with MODULATION DISORDER who is over-responsive to smell may:
- Strongly object to odors, such as a ripe banana, that others do not notice.
- Be a picky eater.
- Become irritable when strong odors such as disinfectants are in the air.

The child with MODULATION DISORDER who is under-responsive to smell may:
- Be unaware of unpleasant odors, such as sour milk.
- Be unable to smell his meal.

The child with MODULATION DISORDER who seeks smell sensations may:
- Seek strong odors, even objectionable ones.
- Sniff food, people, and objects.

The child with DISCRIMINATION DISORDER may:
- Be unable to distinguish distinct smells, such as lemons, vinegar, or soap.
- Be unable to distinguish when food’s odor indicates that it has gone bad.

SENSORY-BASED MOTOR DISORDER

The child with POSTURAL DISORDER may:
- Be tense or have “loose and floppy” muscle ton.
- Lose balance easily and “trip on air.”
- Have difficulty using both sides of the body together (bilateral coordination).
- Not have a hand preference by age 4 (unilateral coordination).
- Have difficulty crossing the midline.

The child with DYSPRAXIA may:
- Have difficulty ideating a new, complex action; sequencing the steps and motor planning to do the action; and executing the plan.
- Be awkward, clumsy, apparently careless, and accident prone.
- Have poor gross-motor coordination and difficulty in learning new skills, such as skipping.
- Have poor fine-motor skills in the hands, such as drawing, buttoning, playing with Legos.
- Have poor fine-motor skills in the eyes, having difficulty using both eyes together.
- Have poor fine-motor skills in the mouth, having difficulty sucking, eating, chewing, holding mouth closed, and speaking clearly enough to be understood.
For Fun and Function:
The Obstacle Course, of Course!

Fish gotta swim, birds gotta fly, and kids gotta climb, jump and balance. While dangling from banisters, scooting under turnstiles, teetering on curbs, and jumping into puddles may dismay grown-ups, children persist with good reason.

How do kids learn to think and relate to the world around them? By scanning their surroundings; touching wooden, metal, rubber, or concrete surfaces; grasping and releasing handholds; changing body positions; maintaining equilibrium; and experimenting with different movement patterns. And, they are having fun!

An obstacle course is sensational, both to provide fun and to promote praxis. Praxis, a sensory-based process, involves:

- Ideation (having an idea of something you want to do)
- Motor planning (figuring how to do it)
- Execution (carrying out the plan)

The person who builds and moves through his own obstacle course strengthens praxis many times over.

You and your child can build an obstacle course outdoors, where everything is better, or indoors in bad weather. You don’t need special equipment – just a fresh way of looking at ordinary objects, with an eye on how they can promote sensory processing.
What to Do:

1) Brainstorm, or ideate, with your kids and encourage them to tell or show you what they have in mind. This step is wonderful for kids who are old enough to help. You can always do it on your own if your child isn’t ready to participate in this step. Make three lists of “ingredients” with these headings: *Ways to Move, Prepositions, and Objects.*

<table>
<thead>
<tr>
<th>Ways to Move</th>
<th>Prepositions</th>
<th>Objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step</td>
<td>Into</td>
<td>Shoe boxes</td>
</tr>
<tr>
<td>Creep on all fours</td>
<td>Below</td>
<td>Table</td>
</tr>
<tr>
<td>Walk</td>
<td>Beside</td>
<td>Lines of masking tape</td>
</tr>
<tr>
<td>Roll</td>
<td>Over</td>
<td>Plush rug</td>
</tr>
<tr>
<td>Crawl on belly</td>
<td>Through</td>
<td>Tunnel</td>
</tr>
<tr>
<td>Hop</td>
<td>Across</td>
<td>Mattress</td>
</tr>
<tr>
<td>Jump</td>
<td>On</td>
<td>Bubble wrap</td>
</tr>
<tr>
<td>Scoot</td>
<td>Around</td>
<td>Wastebaskets</td>
</tr>
<tr>
<td>Leap</td>
<td>Between</td>
<td>Paper plates</td>
</tr>
<tr>
<td>Slither</td>
<td>Under</td>
<td>Chairs</td>
</tr>
<tr>
<td>March</td>
<td>On top of</td>
<td>Telephone books</td>
</tr>
<tr>
<td>Stomp</td>
<td>In and out of</td>
<td>Hoops</td>
</tr>
</tbody>
</table>

2) Together, plan the course by mixing and matching ingredients. It is *very important to vary* movements, prepositions, and objects! Variations reinforce children’s ability to handle and discriminate different materials (tactile sense), stretch muscles and develop body awareness (tactile/proprrioceptive sense), balance and move through space (vestibular sense), perceive spatial relationships and negotiate around obstacles (visual-motor skills), and improve motor planning, coordination and postural responses (sensory-based motor skills).

3) Execute the plan by laying out the course. In tight spaces, such as a hallway, a linear course is okay for one or two kids. In the yard or cleared room a circular course is best for a crowd. And, of course, let youngsters help! Remember that the heavy work of lifting, carrying, pushing, and pulling materials into place is functional fun.
Soon you will see that obstacle courses can be everywhere you look, indoors and out. Set a dining room chair in the doorway for the kids to climb over or crawl under as they come for a meal. Place that same chair in the hallway for them to jump around on the way to the bathroom. Or place two for them to alternate over and under on their way out the door.

Naturally, outdoors can present the perfect obstacle course. Ready-made obstacles include hills for running or rolling up (try it!) and down, puddles for jumping into or over, rocks to walk between or balance on, trees to go around, and branches to crawl under.

Be vigilant about safety. Allow sufficient space between obstacles for the child to readjust his posture before moving to the next. Always be there.

Suggestions:

- Have the kids go barefoot, or backwards, or with music.
- Suggest adverbs to encourage variation in the quality of the child’s movement, such as quietly, gently, softly, angrily, noisily, quickly, slowly.
- Incorporate concepts such as direction by adding arrows, and rhythm by using a metronome.
- Incorporate your child’s favorite theme. Does he love trains? Pretend that obstacles are the locomotive, freight car, caboose…. Is ballet her thing? Have her twirl through the course, wearing a tutu.
- For a group, have everyone travel in the same direction to avoid traffic jams.
- Prior to a happy birthday party, practice building and going through a course with your child so she feels in-the-know and ready to help her friends if they get stuck.

To give children the chance to master new physical challenges, learn problem-solving skills and develop praxis, make an obstacle course every day! Build it, and they will come.
Alive, awake, alert, enthusiastic

Tune: "If You're Happy and You Know It"

From Test Drive: Introducing the Alert Program through Song,
by Mary Sue Williams, OTR/L, and Sherry Shellenberger, OTR/L
(used with permission)

Alive (touch toes),
Awake (touch knees),
Alert (touch shoulders),
Enthusiastic (reach for sky)!

(Repeat above lines, and then just . . .)

Alive, awake, alert,
Alert, awake, alive,
(... and finish with ....)

Alive (touch toes),
Awake (touch knees),
Alert (touch shoulders),
Enthusiastic (reach for sky)!

(Repeat the whole song, faster each time.)

And now, in Spanish, too!
Vivo, despierto, alerta, entusiasta!
Vivo, despierto, alerta, entusiasta!
Vivo, despierto, alerta
Vivo, despierto, alerta
Vivo, despierto, alerta, entusiasta!
Today’s “In-Sync” Sensory-motor Activities and Sources

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>SOURCE</th>
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</thead>
<tbody>
<tr>
<td>Where Am I?</td>
<td>In-Sync Activity Card Book</td>
</tr>
<tr>
<td>Bus Driver</td>
<td>Growing an In-Sync Child</td>
</tr>
<tr>
<td>Shape Stretch</td>
<td>In-Sync Activity Card Book</td>
</tr>
<tr>
<td>Billions of Boxes</td>
<td>Out-of-Sync Child Has Fun</td>
</tr>
<tr>
<td>Bottle Babies</td>
<td>Out-of-Sync Child Has Fun</td>
</tr>
<tr>
<td>Heavy Work Activities</td>
<td>Out-of-Sync Child Has Fun</td>
</tr>
<tr>
<td>Obstacle Course</td>
<td>Out-of-Sync Child Has Fun (and this handout)</td>
</tr>
<tr>
<td>People Obstacle Course</td>
<td>In-Sync Activity Card Book</td>
</tr>
<tr>
<td>Alive, Awake, Alert, Enthusiastic</td>
<td>Test Drive, Williams/Shellenberger (&amp; handout)</td>
</tr>
<tr>
<td>Rubber Band Harp</td>
<td>101 Activities for Kids in Tight Spaces</td>
</tr>
<tr>
<td>Sorting Jobs</td>
<td>101 Activities for Kids in Tight Spaces</td>
</tr>
<tr>
<td>If I Had a Hammer</td>
<td>Growing an In-Sync Child</td>
</tr>
<tr>
<td>Windowsill Garden</td>
<td>101 Activities for Kids in Tight Spaces</td>
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<tr>
<td>Deep Pressure and People Sandwich</td>
<td>The Goodenoughs Get in Sync</td>
</tr>
<tr>
<td>Hauling Mulch</td>
<td>The Goodenoughs Get In Sync</td>
</tr>
</tbody>
</table>