

# **Sensory Integration Resources**

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## Your Child's Sensory World

Beginning prenatally, and continuing on after birth, our bodies begin to sense and experience the world around us – a newborn knows they are wet, or cold, or hot, and cries to get this need addressed. As we get older and explore our environments more, we encounter more stimulation. Our senses are designed to give us information so that we can interact appropriately with our environment, helping us select, filter, and organize information, and helping us to alert to or protect ourselves from a situation. Infants learn to notice and react to sensory input such as lights, noises, and smiles. Children learn to enjoy activities such as swimming, climbing, mashing play dough, and smelling flowers. These sensory experiences are crucial to the developing nervous system of a child, and, in many ways, the essence of childhood. Parents naturally monitor their child's experiences by ensuring adequate rest, play, and affection. If a trusted caretaker is attentive to the developing child and helps them learn to self-regulate as they mature, the child learns to:

- take in sensory input
- organize/interpret it effectively
- respond appropriately

However, some children have had less than ideal beginnings – their birth mother may have experienced a stressful or difficult pregnancy, or the child may have experienced early hospitalization or institutionalization. In such situations, a child may not receive enough stimulation to help their developing brain learn to appropriately interact with their world, or the child may simply not have enough developmental interactions with others to learn how to regulate their world.

This can result in difficulties with any of the steps bulleted above. For example, a child may misinterpret a light touch as too harsh, and respond by pulling away. This may seem confusing to a parent, who just wanted to hug their child gently, but the touch truly feels too harsh to the child. A child dealing with such difficulties on a constant basis can begin to see the world as a frightening and confusing place, and may react to everyday stimuli with a flight, fight, or freeze reaction. Many children, especially older children who have had several years of less than optimal care, have learned to compensate and mask their difficulty in managing their world, but the underlying impact on their development may still be there.

Difficulties with sensory processing can manifest in a multitude of ways, since our senses, and the accompany processing in the brain, are so diverse. The above example is just one small piece of the possibilities. When looking at sensory issues, professionals look at more than just the five senses you learned in elementary school: taste, touch, smell, sight, and hearing. The picture is widened to include the tactile sense, the vestibular (balance, position, and movement) sense, and the proprioceptive sense (muscles and joints). Looking at all of these critical senses gives the broadest picture of how sensory processing may impact a child's behaviors.

Children with sensory difficulties are often sensory seeking or sensory avoiding, meaning that their sensory needs may lead them to either seek out excessive stimulation or to avoid minor stimulation.

Sensory integration: “the process by which individuals organize and interpret information received through their senses in order to successfully meet environmental challenges” (Kathleen Morris)

Note: Sensory processing disorder does not indicate there is a problem with the actual sense organs. For example, if a child is solely having difficulties with how his brain processes sensory information, he may be sensitive to light or sound but he will not fail a vision or hearing test.

## How the Senses are Attached to Behavior

As the cliché goes, “actions speak louder than words.” Think of your child’s behavior as a message telling you what he or she needs. Though it may be difficult, it will help to be as objective as possible in assessing your child’s behaviors, rather than interpreting the behaviors as a direct response to you or your parenting. Remember that your child has likely come to you from some difficult situations, which are not a reflection on you. The following behaviors may indicate that your child is having difficulty with sensory integration:

- Activity level that is unusually high or unusually low
- Agitation when spinning or roughhousing
- Avoidance of group play
- Delays in speech, language, or academics, despite intelligence
- Difficulties with haircuts, bathing, brushing teeth, certain clothing
- Difficulty in making transitions, adapting to changes in routine
- Easily tired, “floppy” muscles
- Engaging in self-soothing, self-stimulating behavior
- Excessive seeking out of spinning or swinging movements
- Feeding problems, picky eater
- Handwriting difficulties
- Has problems coordinating both sides of the body
- Impulsive, lacking in self control
- Inability to unwind or calm self, difficult to soothe
- Observed “flight or fight” response as child attempts to deal with or avoid unwelcome stimuli, which he perceives as real threat
- Often experiences “meltdowns” or outbursts, is aggressive
- Overly sensitive to touch, movement, sights, or sounds
- Physical clumsiness or apparent carelessness
- Poor self concept
- Poor sleep habits, difficulty falling or staying asleep
- Resistant to touching things
- Tends to bump or push others, perhaps without provocation
- Uncoordinated/clumsy
- Under reactive to touch, movement, sights, or sounds

While it may be difficult to try to parcel out what portions of these behaviors are due to difficulties with sensory integration, and what behaviors may be tied more to other concerns, keep in mind that accurate processing of the senses forms a foundation for emotional development, social relationships, physical interactions, and cognitive performance. If you suspect your child is having difficulty in this area and you provide appropriate support, you will see gains in all other areas as well.

A Note on ADD/ADHD: Distinguishing between ADHD and SPD (Sensory Processing Disorder) can be difficult, especially because it is possible that both disorders could be present. Carol Stock Kranowitz clarifies that a defining characteristic of SPD is that a

child will have unusual responses to touching/being touched, and/or moving/being moved. Children with ADHD tend to alert to unexpected sensations and then habituate, while children with SPD experience unexpected sensations and remain on alert. For example, a child who only experiences difficulty paying attention and focusing (ADD) can handle soft and firm touch, but a child who only experiences tactile difficulties but often demonstrates the ability to focus and complete a task (SPD) will enter into a flight or fight response when touched too firmly or too lightly.

For more information on interpreting your child's behavior, see pages 36-37 of The Connected Child, by Purvis and Cross.

## Supporting your Child's Sensory Needs

### Professional Help –

- Early intervention is recommended. For children placed as toddlers who are at risk for sensory difficulties, we recommend getting an assessment now rather than waiting until your child enters school and is dealing with the higher level of expectations associated with kindergarten.
- Sensory-based occupational therapy: Sensory Processing Disorder is most effectively treated by an occupational therapist experienced in working with children with special sensory needs. The therapist will first conduct an assessment to evaluate your child's needs, and will then make a plan for executing several activities designed to incrementally expose your child to a variety of sensory experiences, which they can then learn to appropriately regulate. The therapist should give you tips on how to integrate activities at home as well to help your child progress.
- Work with your child's occupational therapist to get trained in the Wilbarger Brushing Protocol, if your child's therapist feels this will be beneficial to your child. Adults trained in this protocol use a special brush to swiftly and firmly stroke a child's limbs, and then alternate the brushing with joint compression. Using this technique can help children with sensory processing disorder transition between activities, self calm, focus, and enjoy appropriate touch. You must be trained specifically in this procedure, as doing it improperly can actually agitate or harm a child.
- Get trained in how to use massage appropriately with your child. If your child has experienced abuse prior to coming to your home, their body may store memories of hurt, and touch may be frightening. Be patient in establishing a safe touch environment for your child.

### At Home –

- Provide a sensory-rich environment in your home, which will also promote attachment. Engage your child in activities such as: face painting, singing, bicycling, swinging, cooking, and massage. Think of ways to engage your child in frequent and varied physical activities. Providing such activities at the beginning of the day, or prior to a difficult task (such as homework) can often help your child be prepared for the next task.
- Get in the habit of proactively preparing your child for all transitions. Posting a visual schedule of the day's routine may help, especially for children who do not yet understand written English. Go over the schedule regularly with your child, and prepare them for what's coming next, including any changes in routine. For example, you can remind your child of a transition by saying: "When the little

hand on the clock gets to 6, your little brother will come home from school. He will probably be hungry and want a snack. You can have a snack too.”

- Establish a “sensory schedule” for your child, where within every two hour time span throughout the day you provide an opportunity for an alerting physical activity, some food, and a calming activity. This is especially important when thinking ahead to potentially difficult environments for your child. For example, if you need to attend a family birthday party, which you know will be overwhelming for your child, go to the park beforehand and allow your child to run and play. Have a snack, and then some calming time. Discuss with your child in the quiet time what he can do if he feels overwhelmed at the party. After the party, provide more quiet time.
- Discuss with your child their sensory needs and help them learn to self-regulate. “How Does Your Engine Run?” ([www.alertprogram.com](http://www.alertprogram.com)) offers guidance in checking in with your child, and teaching them to express when their internal engine is running too high, too low, or just right. You can help your child express their internal state by attuning to their observable, physical symptoms. For example, signs of sensory overload include nausea, pupil constriction, dizziness, and withdrawn behavior. Once your child has expressed how they are doing internally, you can help them learn how to help their engine run slower or faster, as needed.

Alerting activities – Physical activity (“Duck, duck, goose,” relays, tug of war), sour or crunchy snacks, strong smelling scents, music

Calming activities – Sweet snacks, sweet smelling scents, weighted vests, physical activity (rocking, swinging, “human sandwich” or “human pancakes”), self-calming techniques (tightening and relaxing muscles)

Tactile activities – Fossil hunts, shaving cream, baths, swimming, drawing, play doh, making bread, cooking, playing in pool of rice or beans

Vestibular activities – Swinging, rocking slowly, spinning, log rolling, horseback riding, somersaults, piggyback rides, wheelbarrow walking

Proprioceptive activities – pounding (with hammer or in cooking), lifting weights, sitting on the dryer (for a toddler, but with close supervision), holding up the wall

# Practice

## Vignette 1

Mikhail was adopted from Russia when he was almost 4 years old. He was placed in a baby house shortly following his birth, and lived in the same baby house until he was adopted. Now 6 years old, he is speaking English fluently, loves to play soccer, and is excited about being a big brother to his younger sister Emily, who his parents adopted two months ago, and who is now 18 months old.

Mikhail is excited to go to school each day, but struggles somewhat with getting green lights for having good behavior in kindergarten. Mikhail most often gets red lights for poor behavior in music class, where sometimes he simply folds his arms and tells the teacher he will not sing, and she can't make him. Since his sister's arrival home, Mikhail has begun getting red lights in music class every time. His sister is noisy, and when she cries really loudly, Mikhail will put his hands over his ears and go whisper to his parents that "Emily is upset – make her stop NOW!" If they cannot get Emily to stop crying quickly, Mikhail will hide in his bedroom closet and cry.

- ❖ What sensory needs do you think Mikhail has?
- ❖ What would you do as his parent to support Mikhail's needs?

Another Perspective: Mikhail's sensitivity to sound, as evidenced by his response to music class, and his response to his sister's crying, should be evaluated. Parents should first work with their pediatrician to rule out any medical concerns with his hearing, and then follow up with an occupational therapy evaluation and additional support services at home and school.

Mikhail's parents did visit with an occupational therapist, referred to them by their friend whose daughter had also had difficulties with sensory issues. The therapist assessed Mikhail and found that he had a fair amount of sensory avoidance of auditory stimulation. She established a therapeutic program for Mikhail to become more comfortable with auditory stimulation; once a week his mother takes him to therapy, where he listens to a special auditory processing program.

At home, Mikhail's parents help him to become more comfortable as well by following his therapist's recommendations for music listening time, and they assist him in verbalizing his needs and monitoring his level of anxiety in response to noise. Each time Emily begins to fuss, his parents will say "Oh, there goes my little noise machine – Mikhail, how is your engine running right now?" After he expresses if his engine is "too high," "high" or "just right" he gets a high 5. If his engine is running "too high" he gets to go to a special tent, filled with calming toys, and play.

Mikhail's mom visited his school one day and noticed that music class happens right after recess, a very noisy event where both first graders and kindergarteners are on the playground. Watching Mikhail, she noticed that he tended to stay to the outside of the

playground, where he could draw in sidewalk chalk, away from the loud noise of the soccer game, which surprised her because she knew how much Mikhail loved soccer. Before going to music class, she asked Mikhail about his engine, and he said it was “too too high.” Mom shared her concerns about the schedule with Mikhail’s teacher, who related that the other kindergarten class attended music class first thing each Monday and Wednesday mornings. The school arranged for Mikhail to attend this music class. When his regular class goes to music, he now participates in quiet reading time with the other class. Mom ensures that Mikhail has calming time before school on Mondays and Wednesdays, when she knows he will attend music. His red lights have almost gone away, and he now will even sing a little at home, very quietly.

## Vignette 2

Mai has been home from China for a few months, and is about to celebrate her 9<sup>th</sup> birthday. She is doing well in school and in her English as a Second Language classes. She loves spending time with her family, is bonding well, and looks forward to when her older siblings come home from college for weekend visits. Mai’s parents know little about her history prior to placement, other than that she was in the orphanage for 2 years, after being found in the streets.

Mai rocks herself to sleep each night, and then sleeps soundly. At home, she sucks her thumb. In the few months she has been home, her parents have noticed that Mai seems to have more knowledge of male-female relationships and sexual behaviors than is common for a child her age. Mai will comment when she sees women in the mall wearing immodest clothing, or when she sees her older sister kissing her boyfriend. Sometimes she “flirts” with men she has just met.

When at the playground, Mai’s favorite thing to do is twirl on the swing. She also loves to roll down the hill repeatedly, and jumps up laughing after each roll. Often the family goes to the playground with a neighborhood family who has a child Mai’s age. The mother is amazed that Mai can continue to roll down the hill without becoming dizzy.

- ❖ What needs do you think Mai has?
- ❖ What would you do as a parent to support Mai’s needs?

Another Perspective: Mai appears to be engaging in some self-stimulating behaviors (rocking, thumb sucking), which probably help her self regulate and self calm. She also appears to be seeking out sensory stimulation, and to possibly have some vestibular needs, as evidenced by her playground activity. It is possible that she has experienced some sexual abuse as well, as evidenced by her other behaviors.

Mai began meeting with an occupational therapist to meet her vestibular needs, and needs for self-stimulation. After several sessions with the therapist, her thumb-sucking began to diminish. Following the therapist’s recommendation, Mai and her parents began playing a “human sandwich” game each night, with each person as part of the

sandwich. Receiving this proprioceptive input prior to bedtime helped Mai calm down without having a need to rock before sleep. Mai's mother also became trained in the Wilbarger brushing protocol, and began doing this with Mai each night as well. Mai's family established a "sensory diet" for Mai, ensuring that she received regular physical activity, calming activity, and solid nutrition. After a long day at school Mai especially loves to play "Ring around the Rosy" for several times before having a snack.

Mai's parents are also aware of possible sexual abuse in Mai's past, and redirect her, without shaming her, when she inappropriately seeks out attention from men. They are beginning to teach and reinforce concepts such as "Everyone is in charge of their own body" and "It is safe to tell us anything," and realize that it will be difficult for Mai to fully discuss her experiences prior to placement until her English is more advanced. They have looked into local counseling resources for childhood sexual abuse.

### Vignette 3

Jill and Matt are excited to have their daughter, Kassa, age 15, home from Ethiopia. She has been warmly welcomed by their extended family and her peers at church. She has started school and really wants to do well in school. She has been caring and maternal towards their younger children, ages 6, 3, and 2.

Matt and Jill are puzzled as to how Kassa can be happy and engaging one moment, and then switch quickly to anger and rudeness. While generally they have many happy times together as a family, they feel as if it is very unpredictable as to when Kassa will become angry and refuse to do something.

This last weekend Jill asked Kassa to help pack the picnic basket so the family could enjoy a sunny day in the local park. Kassa refused to help, calling her mother names and saying she wanted to go back to Ethiopia. Her parents told her that treating another family member this way violated the family rule of "No Hurts", so she stopped, but remained pouty and in a sour mood for the rest of the day. She refused to eat the picnic lunch, and later that evening, she refused to eat dinner. The next day Kassa awoke with a smile and a cheerful attitude.

From their previous experiences speaking with other adoptive parents, Matt and Jill are aware that this vacillation of emotion can be a pattern with teenagers recently placed for adoption. They began keeping a journal to look for patterns and triggers in Kassa's behavior.

- ❖ What needs do you think Kassa has?
- ❖ What would you do as a parent to support Kassa's needs?

Another Perspective: Matt and Jill are wise to begin keeping a journal looking for triggers to Kassa's behavior. Often, older children who have had a long history of sensory deprivation are skilled at masking their sensory needs, but the need is still

there. Kassa is dealing with a huge transition into a family at this time, and any sensory deficits she has will make that transition more difficult.

As they expected, Matt and Jill began to notice from their journal that Kassa did best when she was not hungry or tired. They noticed that her refusal to follow their instructions and her name calling seemed to increase on the weekends, and on days when her activities at school were out of the normal routine. Mid-way through their journaling, Kassa joined a hip hop dance class, and on days when she attended dance, her behavior improved dramatically.

Jill and Matt began encouraging Kassa to practice dance each day, and they made a conscious effort to dance with her. They also instituted a family schedule, asking Kassa to help them teach the younger children what was coming next each day. As a family they actually constructed a picture schedule, which outlined times for events such as breakfast, school, snack, and homework, and hung it in their kitchen. The rule was that if there was a change to the daily schedule, Kassa was responsible for constructing the new picture and showing the younger children where the new event would be inserted in the schedule. The schedule helped decrease Kassa's anxiety immensely, and disarmed her fear response to new events. Being responsible for teaching the younger children improved her self-esteem, as did the dance class, which also improved her motor skills.

As Kassa has experienced more security in her home, she has begun to talk about how she feels. The younger children in the home love talking about "how their engines run" and Kassa also enjoys the game, explaining to her parents when she is internally wound up versus internally calm.

## Sample Parent Journal Entries

Note: Parents generally begin to recognize patterns after recording behaviors for 1 to 2 weeks.

Behavior	Date/Time	Want or Need/ Circumstances	Food/Sleep
Temper tantrum lasting 45 minutes	Monday afternoon, 3:45 p.m.	Just came home from school	Last ate at lunchtime, 12 p.m.
Played gently with younger sister for 30 minutes	Wednesday afternoon, 4 p.m.	Had great day at school. Came home and jumped on trampoline.	Had snack after school
While in line to see Santa, shoved several other kids	Saturday morning, 11 a.m.	Woke up grumpy and in a bad mood that morning	Ate breakfast at 8:30 a.m., slept soundly night before