

Unclogging the Traffic Jam

Some basics of Sensory Integration
for use in the Classroom

Kids with a “Traffic Jam” in their midbrain

- “Sensory Integration is the organization of sensation for our use. Our senses give us information about the physical conditions of our body and environment... The brain locates, sorts, and orders sensations – somewhat as a traffic policeman directs moving cars. When sensations flow in a well-organized... manner, the brain can use those sensations... When the flow of sensations is disorganized, life can be like a rush-hour traffic jam.”
- A. Jean Ayers, *Sensory Integration and the Child*, 1985, pg.5

The Reticular Formation

- The Reticular Formation is a collection of cell bodies in the central core of the brainstem. It functions as a “Filtering system...Integrates data received from all other systems and relays them to other centers involved in learning, actions, or survival. Regulates heart rate, respiration, the Autonomic Nervous System, and the 4-As – Asleep, Awake, Alert, Attending...”
- Josephine Moore, PhD, OTR, *Brain Atlas and Functional Systems*, 1993

What did you say!?!?!?

- For instance... The sensation of your bottom sitting on the chair has been sent to your brain the whole time you have been listening, but the “filtering system” has been saying “not important at this time” so the information has not been sent to the thinking portion of the brain. As soon as it is mentioned you are aware of it, or if blood stops flowing to a part of it and it becomes important to shift your position you are aware of it because the “filtering system” says “it’s important now”!

How is that important to the Student?

- If the student's "filtering system" is not working well, the information from their bottom, the feel of the clothes on their skin, the noise of the lights, the noise of the chairs on the floor, etc. are all competing with the teacher's instructions. There is a "traffic jam" to get through and the teacher's words are arriving late, if they arrive at all!!

How do I get through the “Traffic Jam”?

- One way is from the “brain down”...
 - Talk to them. Warning... this way is not very effective until they are in their late teens!
 - Teach them “Self talk” – Give them “positive sayings” to say to themselves to keep them focused. Yoga Calm addresses this.
 - Use your voice. A soft quiet voice can make them have to focus on your words... A firm voice can catch their attention for a minute... A starting/ stopping pattern can encourage engagement and anticipation...

How do I get through the “Traffic Jam”?

- Another way is to use music or drumming
 - Entrain the internal body rhythms. Sixty beats per minute will slow down a fast beating heart, calm respiration, and entrain the brain to wave lengths that are more conducive to taking in new information. This can be used effectively with Yoga Calm.
 - Use a low pitched drum, starting at the rate you feel the students are working at, then slow down to the rate you want them to work at.

How do I get through the “Traffic Jam”?

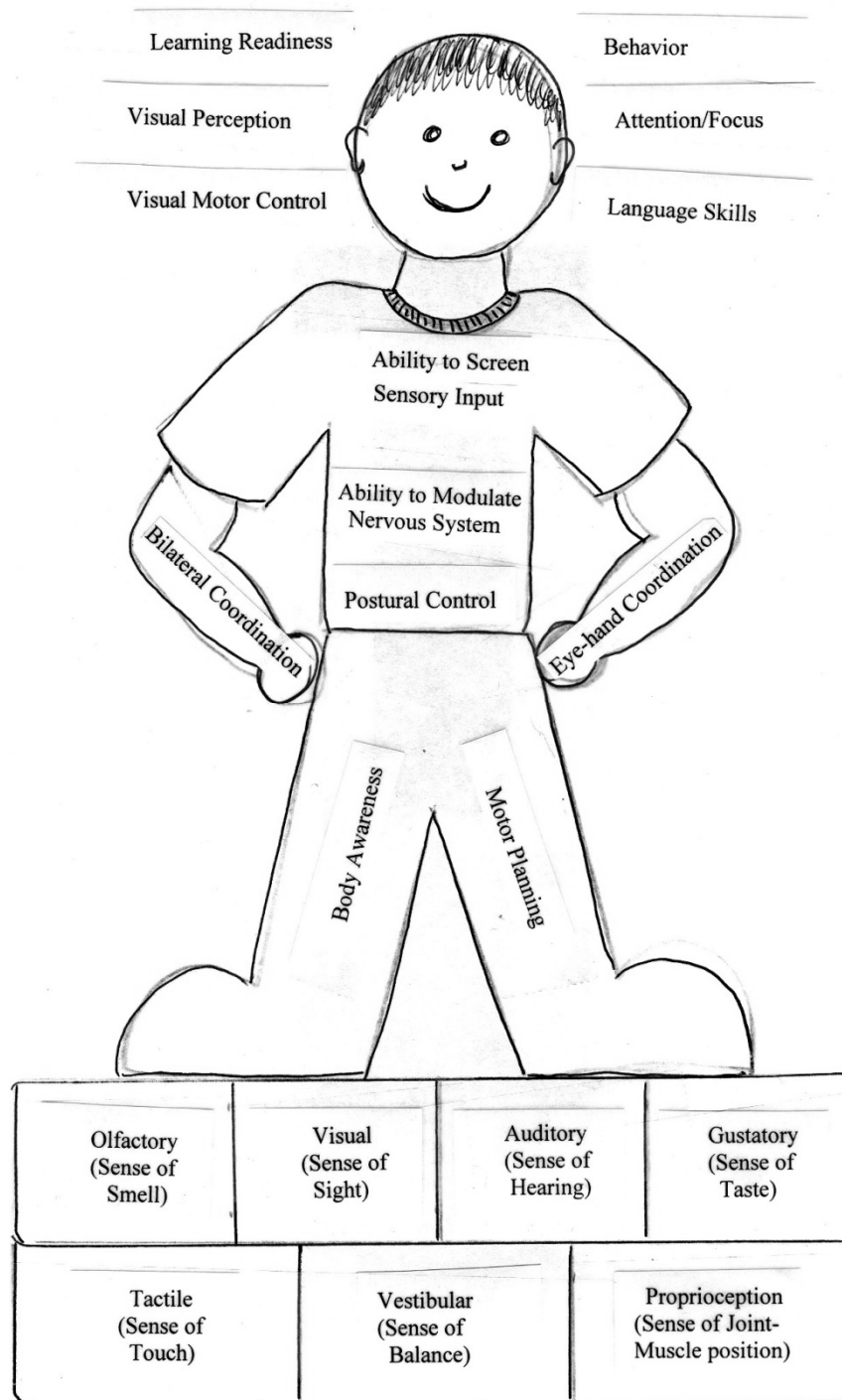
- The most effective way is from the “body up”!
 - Deep pressure through the muscles and joints is organizing to the neurological system and is called Proprioceptive Input. Yoga Calm provides lots of it!
 - Respiration that is initiated from the diaphragm and has a regular rhythm leads to better attending skills. Yoga Calm provides that!
 - A heart rate that is strong, regular, and not too fast directly relates to a brain that is ready to learn. Yoga Calm addresses that, too.

How do I get through the “Traffic Jam”?

- Provide a “safe community” in the classroom that allows the Limbic System (our emotional brain) to operate at optimal arousal. Safety allows the freedom to explore and the opportunity to learn new things. Yoga Calm helps to foster the “safe community”.
- Present the “just right” Challenge, because the chemical of emotion and movement (adrenalin) is also the chemical that is needed to make the transfer from short term memory to long term memory! Yes, Yoga Calm provides challenge!

How do I get through the “Traffic Jam”?

- Adapt the environment
 - Minimize distractions – not too much clutter, use calming colors (blues, greens, neutrals)
 - Minimize noise – tennis balls on the chair legs, closed door, soft background music/white noise
 - Use soft lighting – turn off the fluorescent lights, use table lamps, use indirect outside light
 - Keep the heat at moderate – not too hot or cold
 - Use calming scents – vanilla, lavender, cinnamon



Is Your Child Really Ready to Read?

Sensory-Motor Reading Readiness Checklist

[Not meant as medical advice, but as guidelines for noticing sensory-motor integration and development in the pre-school, kindergarten, or early grade-school child. Thanks to developmental and behavioral pediatrician Dr. Susan Johnson for contributing to this important information.]

True reading readiness (as opposed to forced reading “readiness”) is a *biological phenomenon**, and requires that a child has passed a number of benchmarks of sensory-motor integration—which is an aspect of healthy brain development! Many of these benchmarks have been passed when a child is able to do the following:

- ◆ *Pay attention and sit still in a chair for at least 20 minutes (without needing to wiggle or sit on his feet or wrap his feet around the legs of the chair as a way to locate his body in space)*
- ◆ *Balance on one foot, without her knees touching, and in stillness, with both arms out to her sides—and count backwards without losing her balance.*
- ◆ *Stand on one foot, with arms out in front of him, palms facing up, with both eyes closed for 10 seconds and not fall over.*
- ◆ *Reproduce various geometric shapes, numbers, or letters onto a piece of paper with a pencil while someone else traces these shapes, letters, or numbers on her back.*
- ◆ *Walk on a balance beam*
- ◆ *Jump rope*
- ◆ *Skip*

If children can't do these tasks easily, their vestibular and proprioceptive (sensory-motor) neural systems are not yet well-integrated, and chances are they will have difficulty sitting still, listening, focusing their eyes, focusing their attention, and remembering letters and numbers in the classroom.

Support for sensory-motor integration comes *not from flash cards or video games...* but from the following activities:

Physical movements, such as

- | | |
|------------------------------------|-------------------------|
| ◆ <i>Skipping</i> | ◆ <i>Running</i> |
| ◆ <i>Hopping</i> | ◆ <i>Walking</i> |
| ◆ <i>Rolling down hills</i> | ◆ <i>Clapping games</i> |
| ◆ <i>Playing catch with a ball</i> | ◆ <i>Circle games</i> |
| ◆ <i>Jumping rope</i> | |

...as well as fine motor activities to strengthen important neural pathways, such as

- ♦ *Cutting with scissors*
- ♦ *Digging in the garden*
- ♦ *Kneading dough (play or bread!)*
- ♦ *Pulling weeds*
- ♦ *Painting*
- ♦ *Beading*
- ♦ *Drawing*
- ♦ *String games (e.g., Jacob's Ladder)*
- ♦ *Sewing*
- ♦ *Finger crochet/knitting*

By contrast, watching television/videos or playing video or computer games are extremely poor sources of stimulation for sensory-motor development and actually interfere with the healthy integration of the young nervous system, by keeping the child's nervous system in a state of stress ("fight or flight" system is activated and maintained.)

Children who have difficulties reading and writing often also have

- ♦ *a poorly developed sense of balance*
- ♦ *difficulty making eye contact*
- ♦ *difficulty tracking or following with their eyes*
- ♦ *trouble distinguishing the right side of their body from the left*
- ♦ *difficulty sitting still in a chair*
- ♦ *difficulty in locating their body in space*
- ♦ *poor muscle tone exemplified by a slumped posture*
- ♦ *a tense or fisted pencil grip*
- ♦ *"flat feet" (collapsed arches)*
- ♦ *oversensitivity to touch*
- ♦ *overactive sympathetic nervous system (fight or flight), thus extra sensitive to the stimulant effects of sugar, chocolate, lack of sleep, changes in routines, watching television, playing computer/video games*

Sometimes these children have difficulties in their peer relationships because they are using their mind and eyes to help their body navigate in space, and miss the non-verbal social cues from their playmates.

Dr. Johnson has seen children diagnosed with AD/HD or learning disabilities "miraculously" improve when they are taken out of an "academic" kindergarten or given an extra year in a developmental kindergarten that emphasizes movement, play, and the integration of their sensory-motor systems!

On reading readiness as a biologically-based development: we would never label a child with a "disorder" (or try to hurry them along) if she was "late" to loose her first tooth, or begin menstruating.. Reading is similarly linked to a child's uniquely unfolding biology, so relax and enjoy your child's **childhood!! Read to him, tell her stories, let them play, putter, and pretend: that is the most reliable foundation for your child's healthiest brain development and later reading skills and academic success!*

Try it!

- Write your first name on this line_____
- Now let's simulate a student with Sensory Motor Problems. Decrease your Postural Security and Adjustment by keeping your feet off of the ground while sitting in a chair. Decrease your Motor Planning and Eye-hand Coordination by using your non-dominant hand.
 - Write your first name on this line_____

Central Nervous System

- “If, in the central nervous system, those seven sensory systems are adequately registering and processing information, all sensorimotor development will be supported.”
- Williams and Shellenberger, *How Does Your Engine Run?*

All Nervous Systems are not alike!

- Three basics
 - The “well functioning” nervous system is one that is able to adapt to the demands of the day, bounce back from stress, and maintain an “optimal” level of arousal.
 - The “overloaded” nervous system is one that is always on the brink of “losing control”. It is constantly in the “Fight or Flight” state, cannot bounce back from stress easily, and may present as withdrawn, hyperactive, or agitated.
 - The “low arousal” nervous system is one that never seems to get up to the “optimal” level of function, tends to be passive, and may present as “flat affect” or socially withdrawn.

The Autonomic Nervous System

- It has two divisions:
 - The Sympathetic division – “Fight or Flight”
 - The Parasympathetic division – calming, digestion

Light touch turns on the Sympathetic division (Kill that spider!!!)

Deep touch turns on the Parasympathetic division (I feel calm...)

Summary

- Knowing more about the Nervous System will help you to help your students learn easier.
 - Organization of the incoming sensory input is essential to learning.
 - You can help them untie the “traffic jam” by using techniques that work from the “brain down” and from the “body up”.
 - Be aware that not all children are at the same developmental level in their nervous system.
 - Be aware that all nervous systems are different.

Focusing Exercises

- Have the students prepare for the test/assignment they are going to do at the end of the exercises.
- EXERCISE 1: Expel stale air from lungs, leading to a natural refilling of lungs
Place both arms up high above the head, bend at the waist to quickly bring arms down between legs, audibly expelling air, 9 times total,
Ha,Ha,Ha,He,He,He,Hi,Hi,Hi (or some other sequence of “H” sounds)
- EXERCISE 2: Balance and deep pressure
Spread feet 2-3' apart, place right toe towards the front wall and left toe towards the side wall, bend the right knee, lean onto knee with right elbow, then focus on balance. Bring left hand to top of head and gently push straight through the head and neck down into the spine. Maintain balance for 30 seconds. Change sides and do over.
- EXERCISE 3: Gentle twist
Sit in chair, place feet firmly on floor in front of you, GENTLY AND SLOWLY, twist the body to the right until the left hand rests on the back of the chair and the head faces the back. Hold 30 seconds then unwind SLOWLY AND GENTLY, and do the same to the left. If any student complains of pain, they should only go as far as possible WITHOUT PAIN.
- EXERCISE 4: Fresh blood to the brain
Hang head down between legs, if possible, or lay head on the table.
Teacher is to verbalize what is expected of the students next and ask the students to visualize themselves doing it. Sit up and start to work.
- Play background music of 50-60 beats per minute without recognizable words.
Offer sour/intensely flavored candies to suck on. Monitor for staying on task.



Seated Belly Breathing



Seated Pulse Count



Volcano Breath



Mountain



Upward Mountain



Forward Bend



Lunge (right leg back)



Upper Lunge



Chair Dog



Lunge (right leg forward)



Upward Lunge



Forward Bend



Chair



Upward Mountain



Mountain



Twist



One-Minute Exploration



Relaxing/Focus Background Music (available @ Amazon.com)

- Sacred Spirit II: More chants and dances of the Native Americans
- Cool Bananas: Favorite Kids Rhythms for Calming, Cool downs, and Bedtime Routines
- Inner Peace: Classics for the spirit
- The most relaxing Classical album in the world... ever!
- David and Steve Gordon Sacred Earth Drums