Kids Do Well If They Can MOVE!

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School Discipline That Works Conference
Atlanta, GA
February 8, 2018
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Objectives

- Understand sensory processing, self-regulation and how it impacts behavior and learning
- Identify underlying sensory motor deficits that may be impacting a child's ability to meet classroom expectations
- Utilize simple techniques in the classroom to improve student performance

alive

Awake

ALERT

ENTHUSIASTIC!!
Sensory Processing

Sensory processing is a natural process of brain function. We constantly receive sensory information, interpret it, and process it, which allows us to understand the world around us and make adaptive responses.

Sensorimotor Development

- Built in layers

- We lay the foundations for future development by achieving earlier developmental milestones

- When a child reaches a milestone can vary, but "skipping steps" may impact future motor skills and school performance.
Sensory Processing Disorders

A Sensory Processing Disorder (SPD) is when the brain is unable to correctly process or interpret information coming in through our senses.

What level are your sensory issues?

- **Differences**: I don't process sensory information the same way as others.
- **Disorders**: I struggle to interact easily with the environment, and I contend with this on a daily basis.
- **Disabilities**: I can't function in a given situation because of my inability to process.


The Vestibular Sense

![Image of children swinging on swings](image)
The Vestibular Sense

What we know...

The vestibular sense provides information related to head position and movement. This system is related to functions such as:

- Balance
- Equilibrium responses
- Muscle tone
- Bi-lateral coordination
- Arousal
- Stabilizing eye movements

The Vestibular Sense

What we know...

- The first sense to develop in utero
- Sends information and gets information from all parts of the brain
- Responds to changes in gravity and therefore is activated by movement!

The Vestibular Sense

What we see in school...

Children who "seek" vestibular input

- Can't sit still
- Enjoys falling
- Little regard for safety
- Constantly fidgeting
- Do anything and everything to move: swing legs, drop things off their desk, as to get a drink or go to the bathroom, etc.
The Vestibular Sense

What we see in school...

Children who “avoid” vestibular input

• Dislike playground activities
• Prefers to sit, be on the floor, or walk perimeter of playground
• Gets dizzy easily
• Does not like getting picked up or leaned back
• Gravitational insecurities

The Vestibular Sense

What can we do in school...

Encourage movement activities in school! There is no rule or research that says you have to sit still or “sit up straight” to learn.

- For younger children, encourage floor activities, working in prone, music and dance breaks throughout the day.
- For older children, include breaks outside the classroom, changing seating positions, or re-locating where they work.

Brain Breaks

www.brain-breaks.com
Pilot study

4,800 students (5 elementary schools, 2 pre-schools)
First year: 40,000 minutes of physical activity
Second year: 32,000 minutes of physical activity

The Tactile Sense

What we know...

- There are two components of the tactile system: protective and discriminative
- Gives information about touch, pain, temperature and pressure
- We are always either actively touching something or being passively touched by something (Kornwitz, 1998).
- You can close your eyes and cover your ears, but you cannot turn off your skin.
The Tactile Sense

What we see in school...

- Kids who are Tactile Defensive
  - Don't like getting hands dirty
  - Rub spots on their body that were just touched
  - Selective eaters and dressers

- Kids who have Tactile Discrimination issues
  - Don't know when their face is messy
  - Unaware that clothes are crooked on their bodies
  - Uses whole hand instead of pinching (i.e. pencil grip)

The Tactile Sense

What can we do in school...

- Respect a child's defensiveness and understand things we may think feel "ok" actually may be painful or stressful for the child.

- No surprise touching (head, shoulders, backs). An endearing touch may send a child into fight or flight!

- Lots of opportunities in school for great tactile input! For the defensive child, use Q-tips when finger-painting, sponges, paper towels to wipe hands, personal space at circle time or during a sensory activity.

The Proprioceptive Sense
The Proprioceptive Sense

What we know...

- The proprioceptive sense tells us where we are in space. It provides us information about when our muscles are stretching and contracting, and how joints are bending, straightening, being pulled or compressed. It also senses the direction and velocity of movement.
- It "wakes up" the muscles, increasing motor responsibility, graded control, coordination, and strength.
- It facilitates the release of serotonin, which helps with regulation and "coping."

The Proprioceptive Sense

What we see in school...

- Kids who are clumsy
- Bumping friends in line
- "Bull in a china shop"
- Plays hard on toys
- Enjoys rough-housing even with unsuspecting friends
- Pushes hard on a pencil
- Squeezes all the glue out of the bottle

The Proprioceptive Sense

What we can do in school...

- Heavy work activities
- We need to get them the input they need. If not, they're going to get it anyway! These kids should not get in trouble for running their hand on the wall when walking in line, or for "accidentally" knocking over the block tower in class.
Sensory Diets

- The optimal sensorimotor input a person needs to feel alert, exert effortless control, and perform at peak (Biel, Peske).

- A sensory diet is a strategic use of sensory activities so a person will be able to engage in social interaction; focus on their education; self-soothe; and sustain attention to a task more effectively.

Self-Regulation

A child's ability to deal with stressors effectively and efficiently and then return to a baseline of being calmly focused and alert.
Head-Toes-Knees-Shoulders

Article: Predictors of early growth in academic achievement: the head-toes-knees shoulders task.


YouTube: Head, toes, knees and shoulders test

Sensory Diets

The Evolution of the Sensory Diet

Past

• Specific schedule geared for parents or teachers to follow
• Minimal teaching of the child
• Inconsistency with measuring, adjusting and getting some teachers to buy into a sensory frame of reference

Today

• Focus on movement
• More flexibility with diets
• More focus on self-regulation
• Kids more involved with communicating needs

Sensory Diets

Active students make better learners!

The Association Between School-Based Activity, Including Physical Education, and Academic Performance (2010)

Sensory Diet Programs

SticKids
Brain Works
How Does Your Engine Run?
Zones of Regulation (+ app)
References and Resources

Effectiveness of OT using a sensory integrative approach


Biological basis for sensory processing disorders


American Academy of Pediatrics Position Paper

The Crucial Role of Recess in School (Dec 31, 2012)
http://pediatrics.aappublications.org/content/early/2012/12/25/peds.2012-2993

School Readiness

