Understanding Sensory Processing in Children and Adolescents for Educators

Adapted by Rachel Roberts, MSOT, OTR/L
Presented by Sandra Wilde-Sutton, OTR/L
Objectives

• General understanding of sensory processing systems and Sensory Integration
• Potential impacts on children
• Suggested activities in the classroom
What is Sensory Processing?

• What?
• Where?
• Why?
• How?
• When?

• A. Jean Ayres, Ph.D.
• Principles of SI Theory:
  • Innate Process
  • Child-Driven
Our senses

• Proprioception
• Vestibular
• Tactile
• Vision
• Auditory
• Taste/Smell
• Interoception
Proprioception

Over-Responsive

• Avoid weight bearing activities providing strong input (jump, crawl, run); stretching; does not like limbs moved, poor body awareness, may be rigid, tense and uncoordinated and will resist getting into unusual positions

Under-Responsive

• Poor body awareness may result in clumsiness, difficulty maintaining an upright posture, unable to orient body to get dressed, using too little/too much pressure when touching objects or people (poor grading of strength). Low tone, and lack inner drive to move/play

Seeking

• Crave active movement and passive input to muscles, bump & crash into people, objects, wall, off furniture! Kick heels against floor or on chair.
Sensory Diet Activity Suggestions for Preschoolers and Grade-Schoolers

**Heavy Work**

- Move furniture or rearrange books and toys on shelves (G)
- Carry groceries (P, G)
- Carry a full laundry basket (P, G)
- Shovel snow or rake leaves (G)
- Take out the trash (G)
- Push a vacuum cleaner (P, G)
- Do yoga poses (P, G)
- Knead or roll bread, stir cookie dough (G)
- Push the shopping cart in a store (P, G)
- Work with a therapy ball (G)
- Mop or sweep (P, G)
Vestibular

**Over-Responsive**
- Intolerance of movement

**Under-Responsive**
- Poor registration

**Seeking**
- “Thrill seeker”
**Sensory Diet Activity Suggestions for Preschoolers and Grade-Schoolers**

(P) - Preschooler  
(G) - Grade-Schooler

### Vestibular (movement)

- Run, jump, march, dance or walk (P, G)
- Play on a merry-go-round or use a spinning toy (P, G)
- Somersault or roll (P, G)
- Do push-ups (G)
- Climb stairs (P, G)
- Play catch (G)
- Swing on a swing (P, G)
- Climb and slide on playground equipment (P, G)
- Ride trike, bike, scooter or 3-wheeled scooter (P, G)
- Do standing jumping jacks or lying-down “snow angels” (P, G)
- Hop up and down like a frog or on one foot (P, G)
- Bounce on a therapy ball with feet on the ground (G)
Tactile

Over-Responsive
- Intolerance, anxiety

Under-Responsive
- Poor registration

Seeking
- More!
Tactile (touch)

- Squish play-dough (P, G)
- Squish sensory sand, foam or slime (P, G)
- Knead bread/pizza dough (G)
- Write with vibrating pen (P, G)
- Massage lotion on hands and arms (G)
- Play in sandbox or with water (P)
- Use silly putty (P, G)
- Use squishy or textured fidget, such as a stress bell (P, G)
- Finger paint (P)
- Draw with shaving cream (P, G)
Vision

Over-Responsive

• Overreaction to environmental stimuli

Under-Responsive

• Poor attention to visual stimuli

Seeking

• Excessive time in front of TV, flashing lights, etc.
Auditory

Over-Responsive
• Auditory defensiveness

Under-Responsive
• Unawareness of surrounding sounds

Seeking
• Loud crowds, noisy action
Sensory Diet Activity Suggestions for Preschoolers and Grade-Schoolers

Visual, Auditory and Olfactory (smell)

Listen to favorite music (P, G)
Wear noise-canceling headphones (P, G)
Use calming sensory bottles (P, G)
Lower or brighten lights (P, G)
Bang on pots and pans (P)
Play a musical instrument (P, G)
Turn on white noise machine (P, G)
Look at picture books (P)
Wear sunglasses or hat to cut glare (P, G)
Move away from visual clutter (P, G)
Sniff scented candles or lip balm (P, G)
Taste/Smell

Over-Responsive

• Avoiding or seeking certain tastes/smells

Under-Responsive

• Oblivious to strong odors

Seeking

• Routinely smell non-food items
Sensory Diet Activity Suggestions for Preschoolers and Grade-Schoolers

Oral Motor

(P) - Preschooler  (G) - Grade-Schooler

- Chew on gummy snacks or gum (G)
- Eat crunchy food, like carrot sticks, apples or pretzels (P, G)
- Use "chewelry" (P, G)
- Eat sour or spicy snacks, like hard candy (G) or lemonade (P, G)
- Blow bubbles in water with a straw (P, G)
- Blow a whistle or kazoo (P, G)
- Apply scented lip balm (G)
- Brush teeth with a vibrating toothbrush (P, G)
- Blow bubbles (P)
- Use a straw to drink thick liquid, like a milkshake (P, G)
Sensory Integration: Development and Learning

Both body and brain must be able to:

- **Detect and perceive** information from the environment
- **Interpret** its meaning
- **Make appropriate adaptations** and accommodations in behavior as a response
Sensory Difficulties

• Sensory Integration Dysfunction
  Sensory Processing Disorder

• A child with a sensory system that is not functioning effectively can demonstrate a wide variety of behaviors

• Some may lead to learning difficulties
Behavioral Component

- Sensory challenges or behaviors?
- Sensory → Behavior
- Address both issues together
- Behavioral support
What is a Sensory Integrative Approach?

- Purpose
- Evaluation
- Parent Report
- Clinical Observations
- Sensory Profile
- Level of Responsiveness
- Seeking, Avoiding, Sensitivity, Low Registration
<table>
<thead>
<tr>
<th>ENVIRONMENTAL FACTOR</th>
<th>POSSIBLE IMPLEMENTATION/VARIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room layout</td>
<td>Variety of spaces for individual vs. group activities, spaces which are noisier/quieter.</td>
</tr>
<tr>
<td>Variety of activities</td>
<td>Provide choices for students, including activities with varied levels of stimulation, physical engagement (e.g., gross vs. fine motor), and interaction with others.</td>
</tr>
<tr>
<td>Lighting and visual organization</td>
<td>Natural and incandescent lighting, at a variety of heights and levels of intensity (minimizing fluorescent lighting when possible). Examine walls for balance of white/quiet space with visual stimulation, varied throughout the classroom. Consider visual stimulation outside the classroom. Provide a well-organized/ordered environment that children can help maintain.</td>
</tr>
<tr>
<td>Available seating options</td>
<td>Chairs, stools, and floor seating, with a variety of textures, heights, and levels of firmness. Alternative seating, such as ball chairs, slant cushions, standing desks, seating discs, or rocking chairs.</td>
</tr>
<tr>
<td>Active unstructured play</td>
<td>Multiple times per day, ideally outdoors, in all weather (dressed appropriately), in environments that stimulate tactile, vestibular, and proprioceptive senses.</td>
</tr>
<tr>
<td>Structured movement</td>
<td>Built into the daily curriculum via “brain breaks,” PE classes, yoga, dance curriculum, obstacle courses, music/ rhythm activities, age-appropriate sports, or active games.</td>
</tr>
<tr>
<td>“Time in”</td>
<td>Quiet, individual space in the classroom, where a child can go to “reset”—perhaps equipped with a rocking chair, headphones (with or without music), fish tank, and fidgets.</td>
</tr>
<tr>
<td>Taking care of personal needs</td>
<td>Access to water, snacks, and bathrooms that can be utilized without assistance (as developmentally appropriate).</td>
</tr>
<tr>
<td>Other sensory factors</td>
<td>Awareness of nearby environmental sounds and smells, controlling/accommodating for them when possible.</td>
</tr>
</tbody>
</table>
The Zones of Regulation

How can you help yourself?

**The BLUE zone**

- How might you feel?
  - sad
  - tired
  - bored
  - moving slowly

- What might help you?
  - Talk to someone
  - Stretch
  - Take a brain break
  - Stand
  - Take a walk
  - Close my eyes

**The GREEN zone**

- How might you feel?
  - happy
  - okay
  - focused
  - ready to learn

- What might help you?
  - The goal of this exercise is to get to the GREEN zone. What can you do to be happy, calm and ready to learn?

**The YELLOW zone**

- How might you feel?
  - nervous
  - confused
  - silly
  - not ready to learn

- What might help you?
  - Talk to someone
  - Count to 20
  - Take deep breaths
  - Squeeze something
  - Draw a picture
  - Take a brain break

**The RED zone**

- How might you feel?
  - angry
  - frustrated
  - scared
  - out of control

- What might help you?
  - Stop what I’m doing
  - Make sensible choices
  - Take deep breaths
  - Ask for a break
  - Find a safe space
  - Ask for help
General Sensory Strategies
A special signal kids can use when they need a break
Using visual picture schedules to indicate what’s coming next
Mindful breathing techniques
A designated calming space for children to retreat to
Seat child away from common distractions
Allow variable seating/standing during classwork
Working outside to increase alertness and engagement
Just-a-minute meditations (http://www.just-a-minute.org/en/resource_centre/)

Oral Sensory/Olfactory Strategies
Chewy snacks like gum (often calming)
Crunchy snacks (often alerting)
Wearable chewy jewelry
Chewy pencil toppers
Using scented markers for drawing/completing work
Allowing child to drink from water bottle with a bite valve
Scented play dough as a break
Add essential oils to a felt square and place near the child
Scented rice bins or sensory tables
Create scented bottles with calming and alerting items
Drink cold water (often alerting)

Auditory Sensory Strategies
Using a quiet voice to give directions
Using a noise meter to maintain adequate noise level
White noise (e.g. rain sounds, ocean sounds, fan)
Auditory Sensory Strategies, Cont.

Quiet calming music
Making up songs or rhymes to bring attention to a task
Having the child repeat instructions or important information back after listening
Using games, toys, and apps that teach concepts using music and sound
Listen to audio books using headphones
Allow child to enter or transition before/after the rest of the class
Use a listening phone for children to amplify their voice during silent reading
Allow text to speech software for children that need to hear the work
Allow wait time after giving directions or verbal information
Provide a quiet space for testing and focused work

Proprioceptive Sensory Strategies

Sensory breaks to squish/squeeze play dough or putty
Sensory breaks to pull against resistance bands
Holding a heavy door open for the whole class to go through
Carrying library books to the library
Carrying lunch boxes to the cafeteria on a cart
Placing resistance band around legs of desk for kids to bounce feet on
Sensory breaks with wall push ups
Sensory breaks with chair dips
Sensory breaks to squeeze balloons filled with play dough, dry rice, or dry beans
Sensory breaks to jump
Animal walks during transitions
Tossing and catching heavy bean bags during breaks
Sensory breaks to tear paper
Sensory breaks to crumple paper
Wiping down or erasing the dry erase board
Wiping down tables with a wet rag
Wall sits during sensory breaks
100 Classroom Sensory Strategies Continued

**Tactile Sensory Strategies**
- Sensory breaks with tactile bins
- Sit in a bean bag chair
- Learning activities with manipulatives
- Using a vibrating pen for handwriting activities
- Velcro on the underside of desk to use as a fidget
- Pencil topper fidget toys
- Popping bubble wrap during sensory breaks
- Pipe cleaners for fidgets
- Write words/letters in sand trays
- Sensory breaks with finger exercises
- Allow children to use a marble maze in their lap at the carpet
- Use carpet square with different textures during carpet time
- Use hot glue to create tactile letter/word cards to trace with finger
- Create sandpaper letters to trace with finger
- Practice forming sight words with playdough
- Use sensory bins to find academically related items (sight words, letters, numbers, etc)
- Create a basket of scrap paper/textured paper for cutting practice
- Use a hula hoop at circle time to help a child define his/her space if they struggle with touching others
- Sensory break to rub lotion on hands
- Sharpen pencils at break times with manual sharpener
- Use simple fine motor tasks as fidgets for the hands (e.g. stringing beads)
- Hand clapping games with a partner during break times

**Vestibular Sensory Strategies**
- Movement breaks using songs and videos
- Sitting on a rocking chair
- Movement breaks with yoga
**Vestibular Sensory Strategies, Cont.**

- Sitting on a ball chair
- Working or reading on the floor (sitting or lying down)
- Completing work on a vertical surface in standing (tape paper to wall, work on an easel)
- Sitting on an inflatable disc cushion
- Allow child to sit on a wiggly seat or wobble stool
- Movement breaks with animal walks
- Allow children to stand during work
- Act out sight words with your body
- Sensory breaks to balance on one foot
- Use painters tape to create lines on the floor to follow/balance on during transitions
- Acting as classroom helper to pass out papers
- Delivering notes and papers to other teachers/office

**Visual Sensory Strategies**

- Dim or turn off the lights
- Store supplies and materials off of tables and desks to limit distractions
- Limiting decorations and other things hanging on walls
- Sensory breaks with visual bottles or calm down jars
- Using learning materials that are bold, bright, and colorful
- Working or playing on a brightly colored surface
- Completing learning activities on a light table
- Cover part of the work so only one problem can be seen
- Use a visual scale for child to gauge energy level
- Use checklists and rubrics for jobs/activities with steps
- Seat child away from bright windows or lights
- Use preferential seating for children needing to be closer to the board
- Mazes, hidden pictures, and I spy for calming visual activities
- Use a visual timer to indicate how much time is left in an activity
Thank you!
References


