Sensorimotor Skills
SERIOUSLY FUN FOUNDATIONS FOR LIFE!

Introductions and Session Plan
- Dr. Jennifer Hight
- Dr. Leslie J. Hardman

Session focus – Typical sensory development for children birth to 3 years, red flags/concerns and strategies to promote sensory development

Objectives
- Identify red flags for sensory or motor delays in early childhood.
- Recognize the role of sensorimotor processing related to typical development and early childhood behavior.
- Apply sensorimotor strategies to early childhood behaviors, e.g. biting, hitting, tantrums, and withdrawal.

DEC Recommended Practices (2014)
Assessment
- A3. Practitioners use assessment materials and strategies that are appropriate for the child’s age and level of development and accommodate the child’s sensory, physical, communication, cultural, linguistic, social, and emotional characteristics.

Environment
- E1. Practitioners provide services and supports in natural and inclusive environments during daily routines and activities to promote the child’s access to and participation in learning experiences.

Instruction
- INS1. Practitioners, with the family, identify each child’s strengths, preferences, and interests to engage the child in active learning.

Sensory Development
- What discipline and areas do you currently practice?
- What learning experiences do you have related to sensorimotor development?
- What experiences have you had related to sensory processing?
- How comfortable are you in addressing a child’s sensory needs?
- What would you like to take away from today’s session?

Cognitive Development
- Automatic functions
- Blood pressure/heart rate
- Respiration
- Sleep/wake cycles
- Ingestion/digestion/elimination
- Integrated function of nervous, endocrine & immune systems
- Muscle/cortical tone
- State maintenance
- Monitoring for survival
Sensory Integration

- First proposed by Dr. Jean Ayres in the 1960’s
- Functional impairments due to inability of the brain to properly process sensory information
- Current focus is on sensory processing

What are the Primary Senses?

- Sensory Input
  - Process, Organization, Motor Output, and Continual Feedback

Kranowitz, 2005, p. 63

How do you Interact with Your Environment?

Table 2.1 Summary of SP Patterns, Definitions, Descriptors

<table>
<thead>
<tr>
<th>Sensory Processing Place</th>
<th>Definition</th>
<th>Descriptor</th>
<th>Neurologic Threshold</th>
<th>Self-Reg. Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td>Misses sensory input</td>
<td>Bystander</td>
<td>High</td>
<td>Passive</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>Deflects sensory input</td>
<td>Sensor</td>
<td>Low</td>
<td>Passive</td>
</tr>
<tr>
<td>Seeking</td>
<td>Obtains sensory input</td>
<td>Seeker</td>
<td>High</td>
<td>Active</td>
</tr>
<tr>
<td>Avoiding</td>
<td>Bothers by sensory input</td>
<td>Avoider</td>
<td>Low</td>
<td>Active</td>
</tr>
</tbody>
</table>
Sensorimotor Checklist

- Work at your table to complete the self checklist and questions to ponder.

Sensorimotor Development:
Milestones and Expectations

- Gross Motor
- Fine Motor
- Cognition
- Communication

Gross Motor Development

- Reflexive to Voluntary
- Gross to Fine
- Integrated Stability to Mobility

(Case-Smith, 2010, p. 307)

Activities to Develop Postural Stability

- Core strength is key!
  - Tummy time
  - Prone play beyond infancy
  - Army crawl
  - Tunnels
  - Scooter Boards
  - Exercise/yoga balls

Typical Fine Motor Development Requires
The First Year

- Gross Motor Milestones Support Fine Motor Development
- Crawling
- Visual Skill Development Supports Eye-Hand Coordination
- Contrasting Colors
  - Black & White
  - Red & Green
- Dangling/Suspended Toys
- Hand & Finger Puppets
- Baby Safe Mirror
- Tactile Exploration is Beneficial
- Textured Toys
- Textured Books
- Textured Blankets
- Infant Massage

Somatosensory Functions

- “Ability to interpret our Tactile World and Respond Appropriately to Touch” (Bundy, Lane, & Murray, 2002, p. 44)
- Receptors in the Skin and Around the Joints (Bundy Lane, & Murray, 2002, p. 69)
- Finger tips Gather Information about Object Qualities
- Required to Sustain Objects in the Hand (Gordon & Forsberg, 1997, as cited by Exner, p. 306)
- Tactile Awareness
  - Needed to Judge Amount of Force Needed to Grasp or Lift an Object (Exner, 2005)

Activities to Develop Tactile Awareness

- Weight Bearing through Hands
- Crawling and climbing
- Wheelbarrow Walking
- Exploration of Textures with Hands
- Textured Toys and books
- Food play
- Play in all indoor and outdoor environments
- Textured Blankets
- Fun Foam or Shaving Cream
- Sensory Bin
- Water and sand play
- Oobleck or Goop
- Finger Painting

Positioning For Fine Motor Activities

- Supine
- Crawling
- Prone on Elbows
- Vertical Surfaces
- Slanted Surface
  - Nurek, K., Wendelburg, D., Patterson, K., 2010
  - Pieraccini, V., Vance, D., 2001

Sensorimotor Development: Milestones and Expectations

- Sensory
  - Vestibular (balance and movement)
  - Proprioceptive (body position and force)
  - Tactile (touch)
  - Auditory (hear)
  - Visual (sight)
  - Olfactory (smell)
  - Gustatory (taste)

Red Flags for Sensory Concerns

from the STAR Institute for Sensory Processing Disorder (2006)

Red flags of Sensory Processing Disorder

If more than a few of the symptoms listed below fit your child, refer to the complete SPD Checklist:

Infants and toddlers

- Problems eating or sleeping
- Refuses to go to anyone but me
- Irritable when being dressed: uncomfortable in clothes
- Rarely plays with toys
- Resists cuddling, arches away when held
- Cannot calm self
- Happy or still body, motor delays

Smith, 2011
Red Flags for Sensory Concerns

Red flags of Sensory Processing Disorder

If more than a few of the symptoms listed below fit your child, refer to the complete SPD Checklist.

Pre-schoolers

- Over-sensitive to touch, noises, smells, other people
- Difficulty making friends
- Difficulty dressing, eating, sleeping, and/or toilet training
- Clumsy; poor motor skills; weak
- In constant motion; in everyone else’s face and space
- Frequent or long temper tantrums

Common Concerns

- Biting
- Aggression
- Turn taking
- Crying
- Refusals

Strategies for Sensory Development

Let’s Play

- Movement Play is #1
- More Sensory Play
  - Weight/heavy work
  - Food
  - Texture
  - Art and Drama
  - Outdoor

Resources

- Developmental milestones and checklists
  - Pathways.org https://www.pathways.org/topics-of-development/milestones/
  - Sensory Information
  - Activities for 0-18 months: https://pathways.org/sensory-activities-0-18-months/
  - Sensory Integration Video: http://www.youtube.com/watch?v=Rcdsk4eipd4
  - GoNoodle.com: https://www.gonoodle.com/

Informative Websites

- www.sensoryintegration.org
- www.kidfoundation.org: The KID Foundation
- www.spdnetwork.org: resources for Sensory Processing Disorder Community
- www.pathways.org: sensory integration resources
- www.spectrumfiles.org: Diane Henry OTR

References

References