Sensory Integration: Making It Work For You!
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1. Increase awareness of Sensory Processing.
2. Increase knowledge of Sensory Processing Dysfunction.
3. Increase knowledge of sensory regulation.
Objectives

- Sensory Integration refers to a neuronal process and is the ability to perceive sensation on a cellular level. Sensory Processing is the way we take in, interpret, and respond appropriately to sensory input or organizing sensation for use so that we can respond successfully to our environment.
Sensations

- Vision, hearing, smell, taste and touch
- Tactile discrimination—provides information on texture, shape and size of objects, distinguish between threatening and non-threatening touch sensation
- Vestibular sense—provides information about gravity and space, balance, movement and head position in relation to the ground
- Proprioceptive sense—information from our muscles, joints, ligaments and what each is doing
Sensory Processing

- The ability to take in, sort out and connect information from the world around us in an organized manner.
- Puts it all together so we have a total experience
  - Eating an orange
Sensory Processing

- Sensory Processing nourishes the brain by appropriately processing the sensory information it receives.
- 2 million bits of sensory information bombard our nervous system.
- Food for the brain.
Sensory Processing

- Without adequate sensory information the brain gradually becomes disorganized.
- Sensory deprivation tanks
  - Brain needs sensation, without it, it will create its own
- Difficulty understanding sensory input results in sensory processing deficits
Sensory Processing

- With too much unmodulated sensory information a person is overwhelmed, and can become over stimulated or shut down.
- Without proper digestion and nutrients for the brain one does not perceive the world correctly nor have adequate sensory processing.
Sensory Processing

- Need to be:
  - Alert
  - Protect
  - Select
  - Organize

- Central nervous system must receive accurate information to produce appropriate motor and behavioral feedback
Sensory Processing

- From July 9, 2002 NYTimes.com article
- “Ever since his baby days, Alex, now nearly 4, has been a puzzle to his parents. As an infant, he screamed unless he was being rocked or held. He hated the feel of water, baths were a nightmare. By 3, he was covering his ears at loud noises. He loved the feel of the sandbox, but could not stand sock fuzz between his toes. Sleep came only in fits and starts”. 
Sensory Processing

- Experiential-
  - Rough tag in clothes
  - Stand up and try new motor plan
Sensory Processing

- Sensory Processing Disorder (SPD) is an umbrella term that includes sensory modulation disorder, sensory discrimination disorder and sensory-based motor disorder.
- 5-10% of the individuals with sensory issues receive therapy.
Sensory Processing

- Improper sensory processing leads to abnormal motor output and abnormal feedback
- Cycle continues with more disorganized sensory input and chaotic output and feedback
- Consequences - developmental lags, behavioral, emotional and learning problems affecting the ability to develop and maintain relationships
- Organization and modulation can be increased by improving one’s regulation
Sensory Processing Dysfunction
Behaviors

- Over or under sensitive to touch, movement, sight or sound
- High or low arousal levels
- Poor sense of body awareness
- Immature gross motor skills
- Poor bilateral coordination skills
- Fatigues easily, uses objects to support self
- Poor sense of rhythm
- Emotional and frustrates easily
- Difficulty with time and transitions
- Difficulty revving up or calming down
Therapy for Sensory Processing Disorder

- Arousal is the state of the nervous system, describing how alert one feels.
- To attend, concentrate and perform tasks successfully one’s nervous system must be at an optimal state of arousal for that task.
- “Self Regulation” is the ability to attain, maintain and change arousal appropriately for a task or situation.
Sensory Processing Therapy

- **Alert Levels:**
  - Anne
  - Paul
  - Carl
  - Claire- stays up late because company was over and the next day is falling into the low state but in an effort to not crash, she runs around the house, jumping, talking excessively to stay higher
EXAMPLES OF ALERT LEVELS

Normal Day (Anne)

High

"Just Right"

Low

10:00 am Noon 3:00 5:30 10:00 pm

High (Paul)

Low (Carl)

AM PM

Figure 1-5.
Sensory Defensiveness

- Major or minor sensory events create changeable levels of stress and anxiety.
- Sensory defensiveness is simply the over activation of our protective senses.
- The individual may be overly sensitive to loud noises, excessive amounts of visual input, unexpected touch, certain types of food textures, tastes and smells.
Sensory Defensiveness

- Events that disrupt the individual or contribute to the recovery from disturbing events
- Response:
  - Flight-run away, avoidance
  - Fright- freeze, I can’t or crying
  - Fight- hit or kick, verbally abusive, refusing
Sensory Defensiveness

- Poor sensory processing should be considered as a possible cause instead of behavior and desire to misbehave.
- If a sensory event is perceived as threatening then the body will try to protect no matter what the cost.
- Honor their request.
Inhibition

- Top-down inhibition: cortical thinking only
- Bottom-up inhibition: attain optimal arousal level and then do task requested
- Coming in from recess and engine going very fast, suggest Mary carry a heavy book to the office before sitting in her seat to do math, or just go right to seat and start work
Alert Program

- Teaches ways to utilize the more efficient bottom-up inhibition through sensorimotor strategies, rather than relying on top-down inhibition such as using verbal reminders or “get in control”

- Sensory diet: allows an individual ample opportunities to receive beneficial sensory input at frequent intervals
Sensory Diet

- Enable an individual to participate in activities that could compromise your daily schedule
  - Scott and math class- loves math but gets so excited before it starts that he can’t sit down to complete. Scott could wear back pack with books in it before math, use a chewy, stand, move a table/desk or drink something with a small straw
Sensory Diet

- Implementation should span all aspects of child’s day
- For optimum effect should be designed for the specific child and their needs
- Sensory input for some is calming the same input for others is stimulating
Sensory Diet

- Attaining, maintaining and/or changing arousal is often an unconscious process
- Requires detective skills to identify sensory motor preferences
  - What supports or compromises occupation
- Must find the correct intensity, duration and frequency of sensorimotor experiences
- Individuals needs change over time
Sensory Diet

- Desk work- chair push-ups or squeezes, finger fidgets (rubber bands, balls), seating options, chewing tough items)

- Classroom tasks- doorway pushes, heavy marching, pushing against wall, stretches, crab walk, hopping, carrying heavy objects, jumping, moving chairs, blowing quiet whistle
Sensory Diet

- Play at home-wrestling, jumping on trampoline, wheelbarrow walking, crawling under cushions, hot dog blanket wrap, swinging, hugging

- Public place- hugging, mouth object (celery, carrots, apples, nuts, dried fruits, beef jerky), humming, wearing backpack, finger fidget, wear fanny pack with objects inside that are needed
Sensory Diet

- Chores- dusting, vacuuming, sweeping, mopping, carrying heavy laundry basket, shoveling, raking, avoid breakable items
- Attending- deep pressure (weighted vest or lap tray) deep pressure protocol program (by occupational therapist), massage, erasing paper, mouthing activities
Sensory Diet

- Clothing preferences- cut tags, baggy clothes, allow for layering (no overheating), and extended time to shift to weather changes (pants to shorts), prewashed, cotton or soft material, seamless socks or inside out, overalls with no waistband
Sensory Diet

- Night Time Routine- calming chanting music, massage, deep pressure protocol (therapist), drinks with small straw (yogurt, applesauce), heavy warm pajamas, heavy covers or sleeping bag, sheet bag

- Morning Routine- sour juice in sports bottle, rhythmic music, snooze alarm clock, climb out of snug blankets and sheets, movement to make bed, stretching, colder atmosphere
How Does Your Engine Run

- Identify your alert level - handout
- Begin to identify what events help to organize the individual-strategies handout
- Practice using strategies in the clinic, home and school
- Consult with an Occupational Therapist to initiate the Alert Program and therapeutic intervention
Reading Suggestions

- The Out-of-Sync Child, Carol Stock Kranowitz
- The Out-of Sync Child Has Fun, Carol Stock Kranowitz (both available Amazon.com)
- “How Does Your Engine Run”, Mary Sue Williams, Sherry Shellenberger, Therapy Works, Inc. 4901 Butte Place N.W., Albuquerque, NM 87120
Informative Websites

- www.sensoryintegration.org
- www.kidfoundation.org - The KID Foundation
- www.spdnetwork.org - resources for Sensory Processing Disorder Community
- www.sinetwork.org - sensory integration resources
- www.ateachabout.com, Diane Henry OTR
Studies on The Efficacy of Sensory Integration

- **Sensory Efficacy References taken from:**

Sensory Stimulation to Reduce Self-stimulatory and Stereotypic Behaviors

Sensory Stimulation to Reduce Self-Injurious Behaviors


The Effects of Using Deep Pressure to Decrease Anxiety and Arousal


Single-Case Design Studies Using Sensory Integration with Individuals with Autism


The Effect of SI with Children with Learning Disabilities

Sensory Processing

- The combination of sensory processing knowledge, sensory diet strategies and therapy if needed, provide a multifaceted approach to addressing sensory issues and promotes success in all that the individual does.
THANK YOU FOR YOUR ATTENTION

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