

Sensory Processing and Mental Health: The Role of Occupational Therapy

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Poll 1: What is your profession?

- A. Social Worker
- B. Occupational Therapist
- C. Psychologist/Psychiatrist
- D. Medical Doctor/Nurse
- E. Therapist
- F. Other

Poll 2:
Have you worked
with an
Occupational
Therapist in your
setting?

- A. Yes
- B. No

Learning Objectives

- Describe occupational therapy and skill areas occupational therapists address.
- Identify the sensory systems and basic features of dysfunction in each of these areas
- Identify how sensory processing may impact individuals with mental health diagnoses
- Identify the role of occupational therapy in a mental health setting
- Identify the features of an appropriate referral for an occupational therapy evaluation
- Describe the process of an occupational therapy referral, evaluation, treatment, and home programming.

What is Occupational Therapy?

“Occupational therapy is the only profession that helps people across the lifespan to do the things they want and need to do through the therapeutic use of daily activities (occupations).

Occupational therapy practitioners enable people of all ages to live life to its fullest by helping them promote health, and prevent—or live better with—injury, illness, or disability. ”

American Occupational Therapy Association. (n.d.). *What is Occupational Therapy?*. <https://www.aota.org/Conference-Events/OTMonth/what-is-OT.aspx>

Areas OTs Help With

- **Self-care skills**
- **Sensory Processing**
- **Self-regulation**
- **Feeding**
- **School/work skills**
- **Social skills**
- **Visual perceptual skills**
- **Leisure skills**
- **Community skills**
- **Regain skills lost due to illness/injury**
- **Provide supports/adaptations**

Poll 3:
How many
sensory
systems are
there?

- A. 4
- B. 5
- C. 7
- D. 8

What is Sensory Processing

The ability to accurately interpret information from the 8 senses



Visual



Auditory



Gustatory



Olfactory



Tactile



Vestibular



Proprioceptive



Interoceptive

What is Sensory Integration

The ability to synthesize, organize, and process incoming sensory information received from the body and the environment to produce purposeful goal directed responses” (Dr. Jean Ayres).



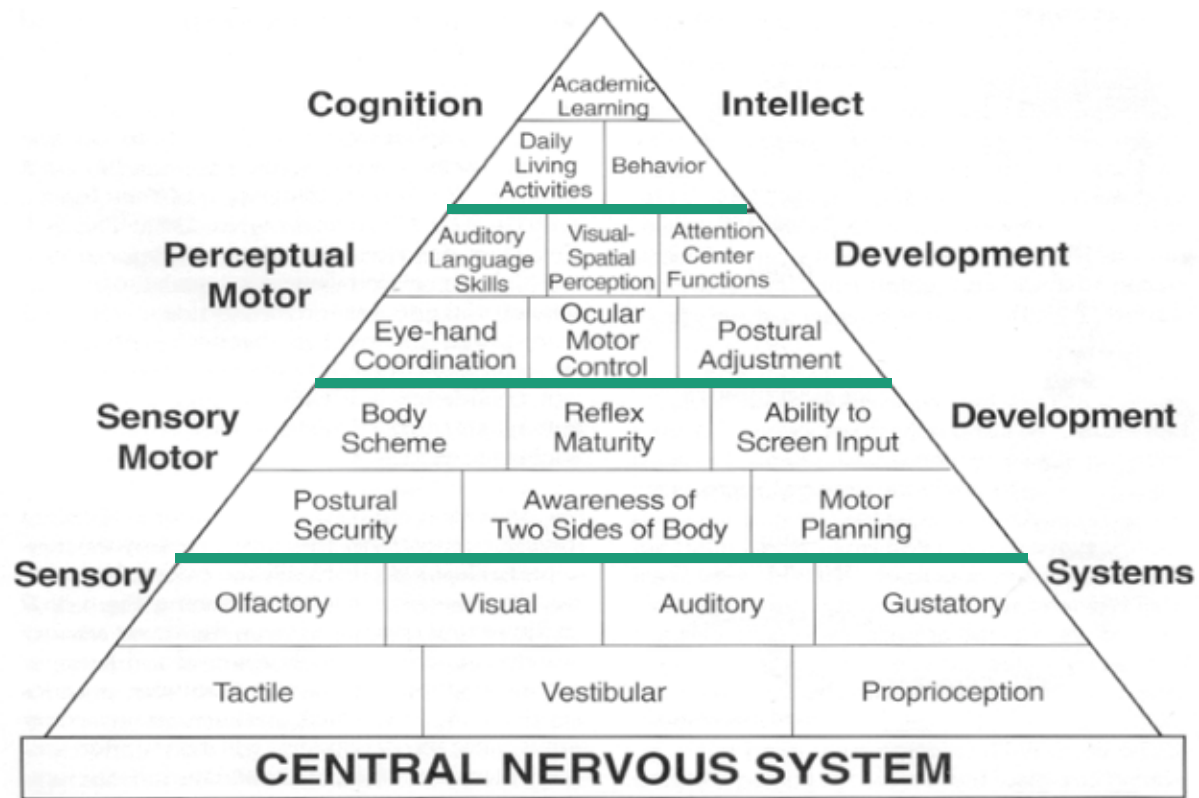


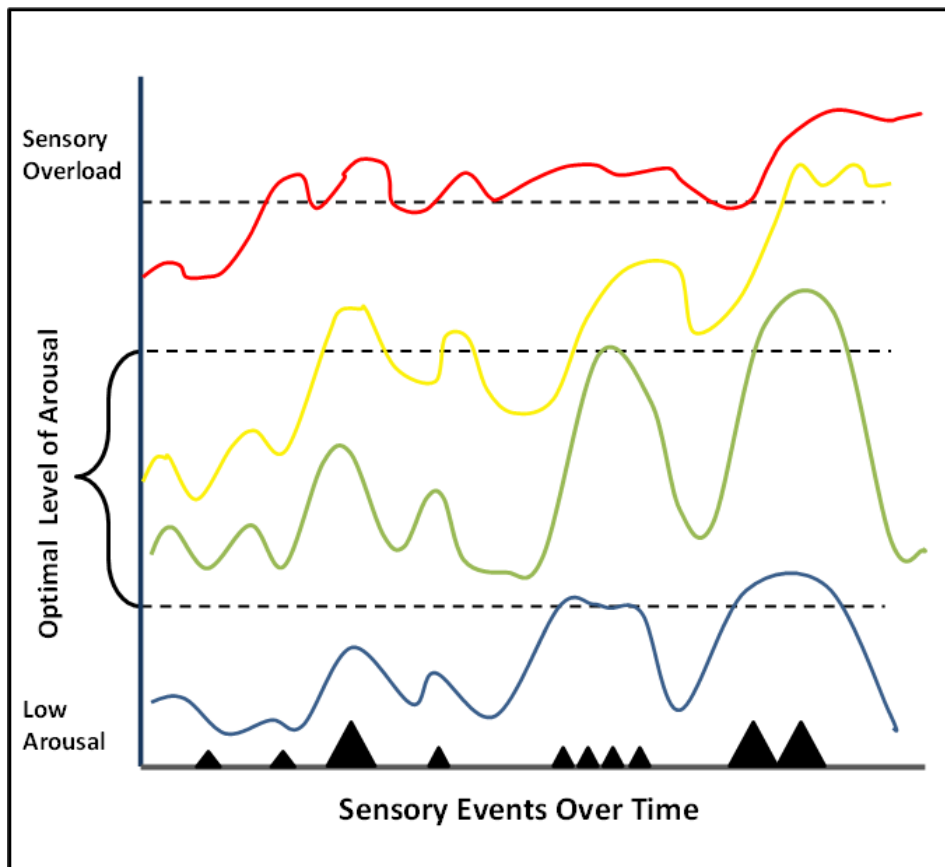
Figure 1-3. Printed with permission.

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The Pyramid of Learning. Taylor and Trott, 1991, cited in and reprinted from How does your engine run? (p. 4) by M.S. Williams & S. Shellenberger 1994, Albuquerque NM USA: Therapy Works. Copyright 1991 by Taylor and Trott. Permission granted for reprinting for educational purposes

Sensory Dysfunction

- Sensory Integration Disorder, Sensory Modulation Disorder, Sensory Processing Disorder
- Break down in:
 - Taking in sensory input
 - Hypo responsive
 - Hyper responsive
 - Organizing/interpreting sensory input
 - Sensory Discrimination
 - Generating appropriate reactions to sensory input
 - Hypo responsive
 - Active Reaction (Sensory Seeker)
 - Passive Reaction (Low Registration)
 - Hyper responsive
 - Active reaction (Sensory Avoider)
 - Passive reaction (Sensory Sensitive)
 - Sensory based movement disorder (dyspraxia)
- Sensory Integration Difference vs Sensory Integration Disorder



Adapted from: Williams, M.S., & Shellenberger, S. (1992). An introduction to "How Does Your Engine Run?"[®] The Alert Program[®] for Self-Regulation [Booklet]. Albuquerque, NM: TherapyWorks, Inc.



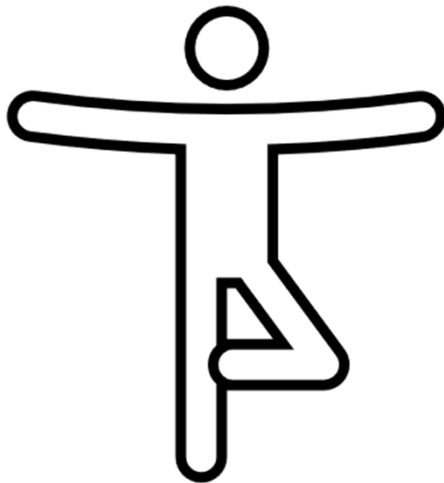
<https://www.youtube.com/watch?v=K2P4Ed6G3gw&feature=youtu.be>

Vestibular System

- Sense of Movement/Balance- Recognizing and interpreting movement
- Responds to change in head/body position
- Gives information about where our body is in space
- Assists with-
 - Maintaining muscle tone and posture
 - Coordinating eyes and body
 - Using both sides of our body together (bilateral integration).
- Earliest sense to develop in-utero and acts as a “traffic cop” to organize all other incoming sensory input
- Strong relation with arousal/mood regulation



Vestibular Dysfunction



- Gravitational insecurity: discomfort with feet off the ground and/or fear of movement
- Avoids heights, climbing, jumping activities
- Gets dizzy/carsick easily
- Constantly moving or fidgeting, doesn't ever seem to get dizzy
- Poor safety awareness
- Poor focus and attention
- Low tone
- Arousal regulation difficulties

Auditory System

- Sense of hearing- Recognizing and interpreting sounds in our environment
- Hearing: How our brain interprets what it hears and how we respond to it.
- Listening: Gaining information about content and details
- Filtering: Ability to ignore background/unimportant stimuli while “tuning into” important input



Auditory Dysfunction



- Irritability in crowded/noisy places or avoidance of them
- Cover ears around loud noises
- Discomfort/distracted with environmental sounds (i.e. vacuum, automatic flush toilets, hand dryers, etc.)
- Sensitivity to or fear of loud/sudden sounds
- Discomfort with the sound of others chewing food
- Appears not to hear (says “what” a lot)
- Speech issues
- Difficulties with voice volume
- Difficulty filtering or “tuning out” unimportant sounds in environment
- Poor focus and attention
- Difficulty following multi-step directions

Visual System

- Sense of sight- using and interpreting visual information from the world around us
 - Acuity/sharpness and focus
 - Visual perception
 - Response to light
 - Dominant system- Often works together with other systems to give information



Visual Dysfunction



- Squints
- Covers eyes from bright light
- Over-reactive pupil dilation
- Eyes water frequently
- Stares at/into lights
- Can't locate objects in competing environments (eg. Obtain pencil from junk drawer)
- Problems copying shapes/letters/numbers
- Unable to copy from board
- Loses place while reading
- Depth perception issues: clumsy, trip frequently, bump into things
- Under/over reaches for objects

Proprioceptive System

- Sense of muscles, joints, and body position (both conscious and unconscious)-Recognizing and interpreting information from our muscles and joints
- Knowing how much force our muscles need to exert for a task
- Helps us to move smoothly
- Works with the vestibular system for overall body awareness.
- Assists with overall sensory organization and calming



Proprioceptive Dysfunction



- Difficulty with force modulation (i.e. using excessive or not enough pressure while writing)
- Poor body awareness and motor planning- clumsy, uncoordinated
- Have to look at what they are doing (i.e. stare at feet while walking)
- Avoids crashing, jumping, pushing, pulling, bouncing
- Craves crashing, jumping, pushing, pulling, bouncing
- May push, hit, bite, or bang into other children
- Chewing on clothing/objects
- Overstuffs mouth
- Frequent drooling
- Poor oral strength/coordination
- Speech issues

Tactile System

- Sense of Touch- Recognizing and interpreting tactile information in our environment
 - Different receptors for different types of touch (i.e. deep pressure, light touch, vibration)
- Discriminative touch
 - Sense and localize touch
 - Gain information about objects
- Protective touch
 - Reflexive response to touch that may be harmful (spider crawling on your skin)
 - Keeps us safe
 - Can trigger a “fight” or “flight” response. (Strike back or run).



Tactile Dysfunction



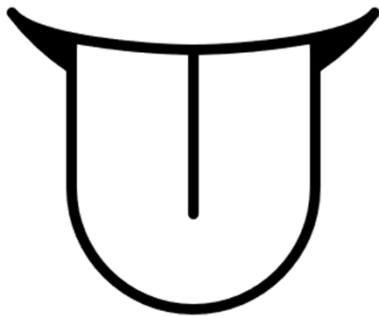
- Doesn't notice clothing twisted on body
- May not be able to identify an object just by touching (without vision)
- Tactile Defensiveness: interpreting touch input as more intense or noxious than others
 - Dislikes/Avoids:
 - Getting messy
 - Hugs or unexpected touch
 - Certain clothing/tags in clothing
 - Grooming/hygiene tasks (hair washing, toothbrushing or fingernail cutting)
- Picky eater, especially related to food textures
- Touches everything and everyone
- Runs hand along wall when walking

Gustatory System

- Sense of taste-Recognizing and interpreting tastes in our environment
- Strongly related to sense of smell
- Affects eating/appetite
- Matures/changes with development



Gustatory Dysfunction



- Gags easily
- Picky eater
- Unable to differentiate between tastes

Olfactory System

- Sense of Smell- Recognizing and interpreting smells in our environment
- Plays a large role in the way our food tastes.
- Often tied to our emotions and memories



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Olfactory Dysfunction



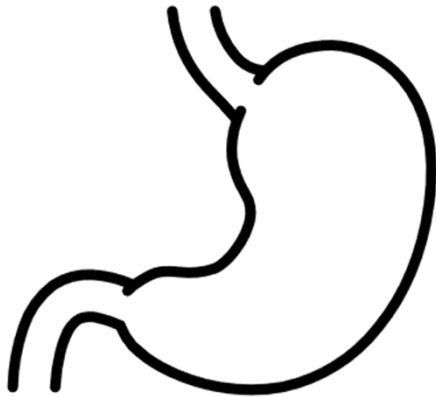
- Plugs nose frequently
- Avoids rooms with smells (i.e. lunch room)
- Picky eater, avoids foods with strong smells
- Unaware of smells that others smell
- Explores objects with smell
- Craves certain smells
- Unable to differentiate/identify smells

Interoceptive System

- Sense of internal body state- Recognizing and interpreting our internal sensations
- Sensory receptors located in organs, muscles, and skin
- Sensations of:
 - Hunger/thirst
 - Fatigue
 - Temperature changes
 - Bathroom needs
 - Other internal body sensation (i.e. emotional states)



Interoceptive Dysfunction

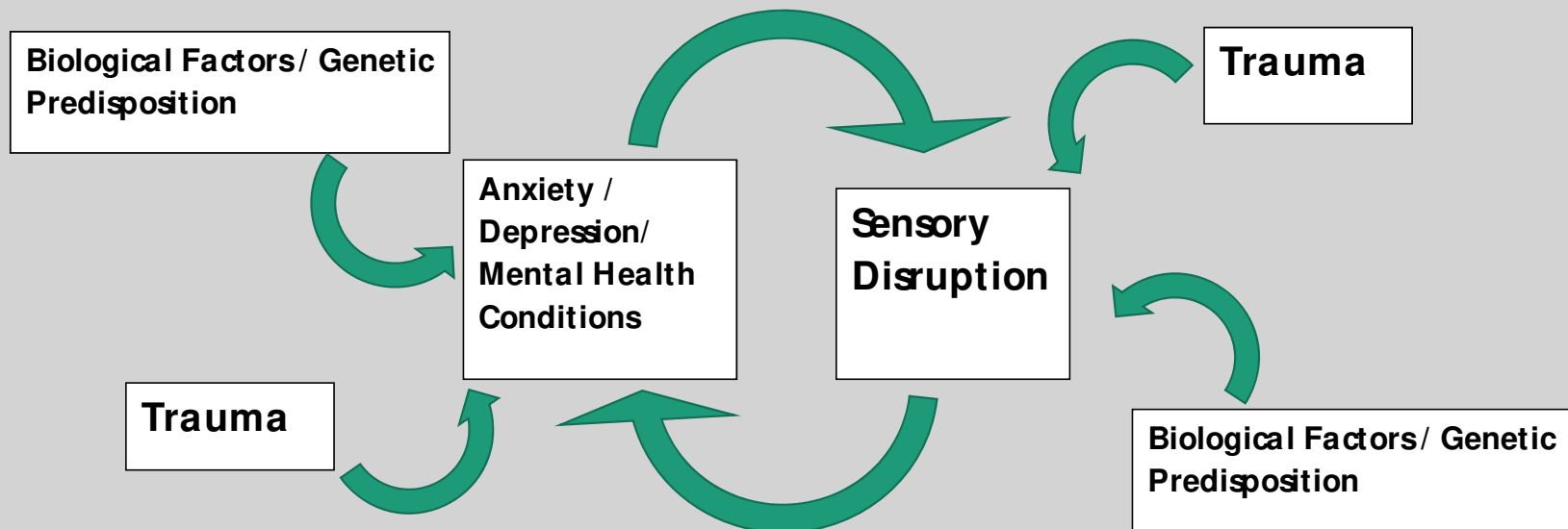


- Difficulty with toileting (bed wetting and accidents)
- Either never or always feels thirsty and/or hungry
- Difficulty recognizing internal body states such as hot/cold, pain, etc.
- Difficulty regulating emotions and feelings
- Distracted by internal body sensations such as hearing their own heart beat
- Unable to tell how loud their voice is in an environment



<https://www.youtube.com/watch?v=D1G5ssZIVUw&feature=youtu.be>

How Sensory Processing Dysfunction Relates to Mental Health



Sensory Regulation and Trauma

Children learn to regulate themselves off the adults in their lives first

- Co-Regulation
- Security/Attachment

History of trauma/compromised nervous systems:

- More difficulty with recovering from distressing sensory events
- Different thresholds for input
- Different competencies for coping

When people feel out of balance, they will act to regain that balance

- If maladaptive—against their best interests—they need help to find ways that work better

Referral/What to Look For

- Self-Cares
 - decreased independence
 - sensitivity to textures/foods
 - resistance to grooming/hygiene
- Regulation
 - cannot calm self
 - intense emotional reactions to small changes in plans/routines/expectations
 - afraid of failing at new tasks
 - poor safety awareness
- Motor skills
 - clumsy/poor motor skills or handwriting
 - weak muscles/poor endurance
 - lethargic and slow
- Focus/attention
 - constantly moving
 - easily distracted

Evaluation Process

- Requires referral/order from a psychiatrist, doctor, RN, CNP, LPN etc prior to scheduling
- Evaluation assesses sensory processing, behavioral/emotional skills, social functioning, self care skills, and motor skills
 - Through standardized assessment tools, observation, interview
- Therapist establishes plan of care with goals, frequency, duration
- Ongoing consultation between Occupational Therapist and Mental Health Professionals

OT Role in Mental Health Treatment

- Educating clients/caregivers on sensory contributions to emotional dysregulation
- Providing strategies to integrate sensory input or to cope
- Helping address limitations in daily occupations as a result of mental health difficulties
 - Establishing routines
 - Increasing independence in self cares
- Teaching and practicing social skills

Sensory and Neurological Treatment

- Play Based Intervention
 - Playful Exploration
 - Integrating Sensory Input in Activities
 - Rapport/Relationship Building



Sensory and Neurological Treatment

- Sensory Diet
 - Planned/Structured Sensory Input for Optimal Alertness
 - Individualized to Each Client
 - Frequency/Intensity/Duration of input
 - Type of Input
 - Each Sensory System Considered



Sensory and Neurological Treatment

- Therapressure Program™ (Wilbarger)
 - Addresses Sensory Defensiveness
 - Structured Tactile and Proprioceptive Input
 - Starts Intensively
 - Frequency and Duration Monitored by OT Based on Response



Sensory and Neurological Treatment

- Kavar Program/Astronaut Program
 - Structured Input to Vestibular, Visual, and Auditory Systems
 - Helps with gravitational insecurity or movement seeking



Sensory and Neurological Treatment

- Auditory Programs
 - Uses Modulated Music to Elicit Neurological Responses Through Cranial Nerve Connections
 - Intensive Intervention
 - Can Include:
 - Integrated Listening System (iLs)
 - Therapeutic Listening
 - Safe and Sound Protocol
 - Quickshifts



Sensory and Neurological Treatment

- Reflex Integration
 - Addresses Reflex Patterns Interfering with Higher Level Movement Patterns
 - Uses Functional Movement Patterns or Masgutova Neurosensorimotor Reflex Integration (MNRI) Method



Sensory and Neurological Treatment

- Feeding Therapy
 - Feeding Involves all 8 Sensory Systems
 - Sequential Oral Sensory (SOS) Approach
 - 26 Steps to Eating
 - Sensory Exploration of Food
 - Fear/ Trauma Related Feeding
 - Avoidant/Restrictive Food Intake Disorder (ARFID)
 - Addressed in Collaboration with Mental Health Professional



Cognitive Strategies

- Zones of Regulation[®]
- The Alert Program[®]
- 5 Point Scale[®]
- Social Thinking[®] Curriculum
 - Superflex Social Thinking[®] Curriculum





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Questions?

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