TREATING SENSORY PROCESSING DISORDER WITH OCCUPATIONAL THERAPY

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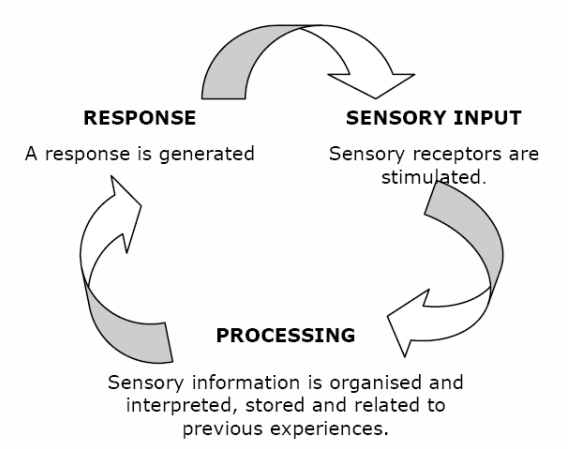
COURSE OBJECTIVES

- Gain a better understanding of Sensory Integration & processing
- Identify the senses that we receive sensory input from
- Understand that all people process information differently and have individual preferences
- Recognize symptoms of sensory processing disorders
- Identify screening tools/methods and appropriate occupational therapy treatment
- Be informed about the strategies and tools that can be implemented into everyday life to help individuals with sensory processing disorders

SENSORY INTEGRATION & PROCESSING



"The ability of a person to take in a variety of sensory input, process and understand it, and use it." Dr. Jean Ayres, 1963

- The process in the brain that allows us to take signals from our senses, make sense of those signals, and respond appropriately.
- An adaptive response to stimulus looks like a useful body response, perception, emotion, or thought to engage in our environment appropriately/functionally.

AYERS SENSORY INTEGRATION THERAPY

- Neuromaturation theory
  - Cortical and subcortical areas
  - Developmental sequence of learning and skill acquisition
  - Neural plasticity
- Systems Theory
  - Seeking sensory input and using adaptive behavior as an organizer of the input
- Enhanced opportunities for controlled sensory input (meaningful)
  - Vestibular
  - Proprioceptive
  - Tactile


THE 8 SENSES
Sight
Hearing
Taste
Touch
Proprioception
Interoception
Vestibular
Smell

INPUT → SENSORY INTEGRATION → OUTPUT

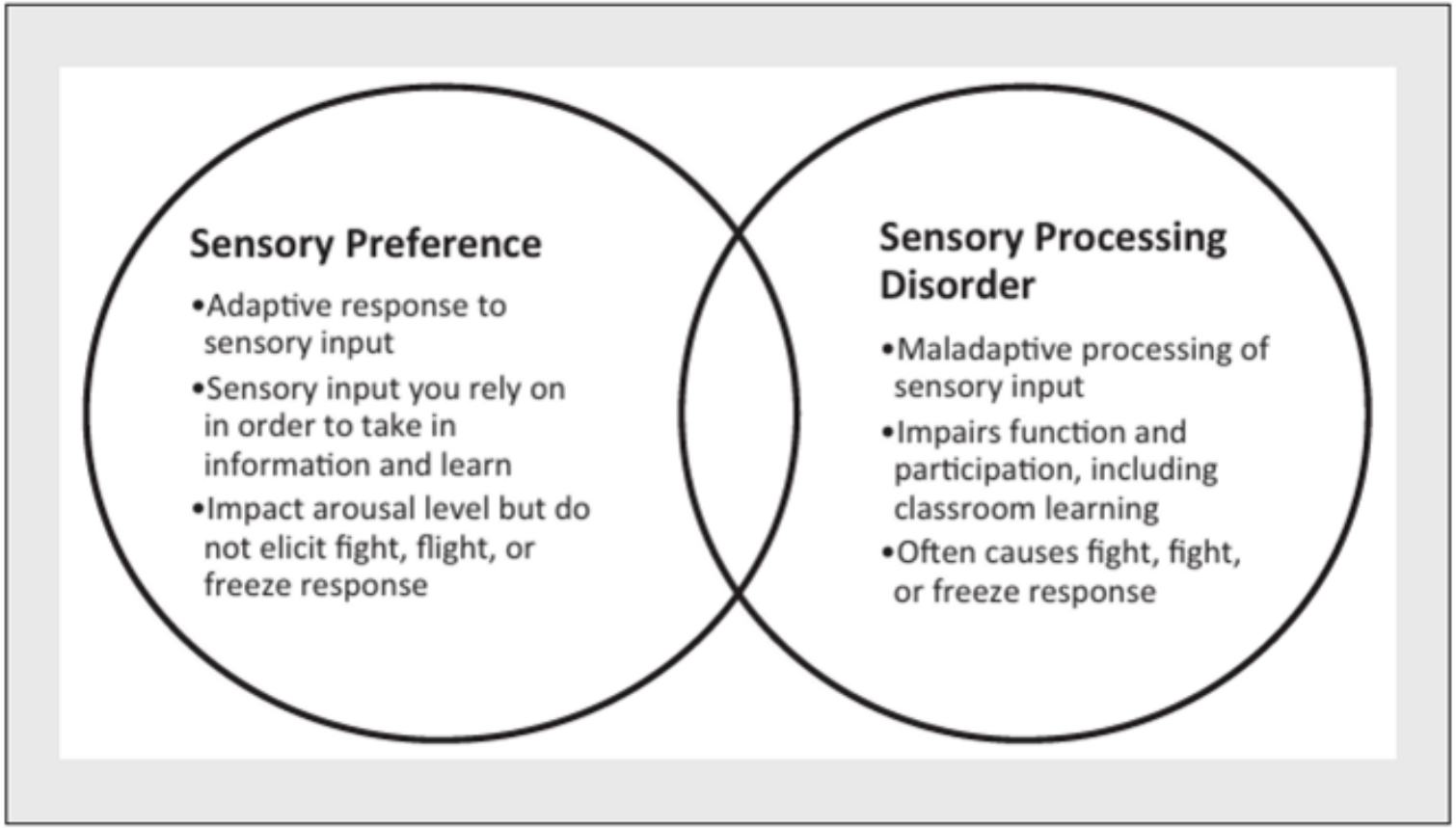
- Senses
  - Vision
  - Hearing
  - Smell
  - Taste
  - Touch
  - Proprioception
  - Vestibular
  - Interoception

- CNS
  - Register
  - Orient
  - Select
  - Integrate
  - Analyze
  - Organize/plan
  - Output/decide

- Result
  - Perception of body/world
  - Adaptive response
  - Learning Process

DISCLAIMER

* Sensory Processing Disorder is not a recognized DSM-V disorder
* Not qualifying diagnosis for school services
* Comorbidities (co-existing conditions) can complicate situations
* Clinical observation by a professional is needed to determine underlying causes
* These strategies do not take the place of consultation/treatment with an Occupational Therapist
* Information is only useful if we receive it- communication is key!


Sensory Preference
•Adaptive response to sensory input
•Sensory input you rely on in order to take in information and learn
•Impact arousal level but do not elicit fight, flight, or freeze response
Sensory Processing Disorder
•Maladaptive processing of sensory input
•Impairs function and participation, including classroom learning
•Often causes fight, fight, or freeze response

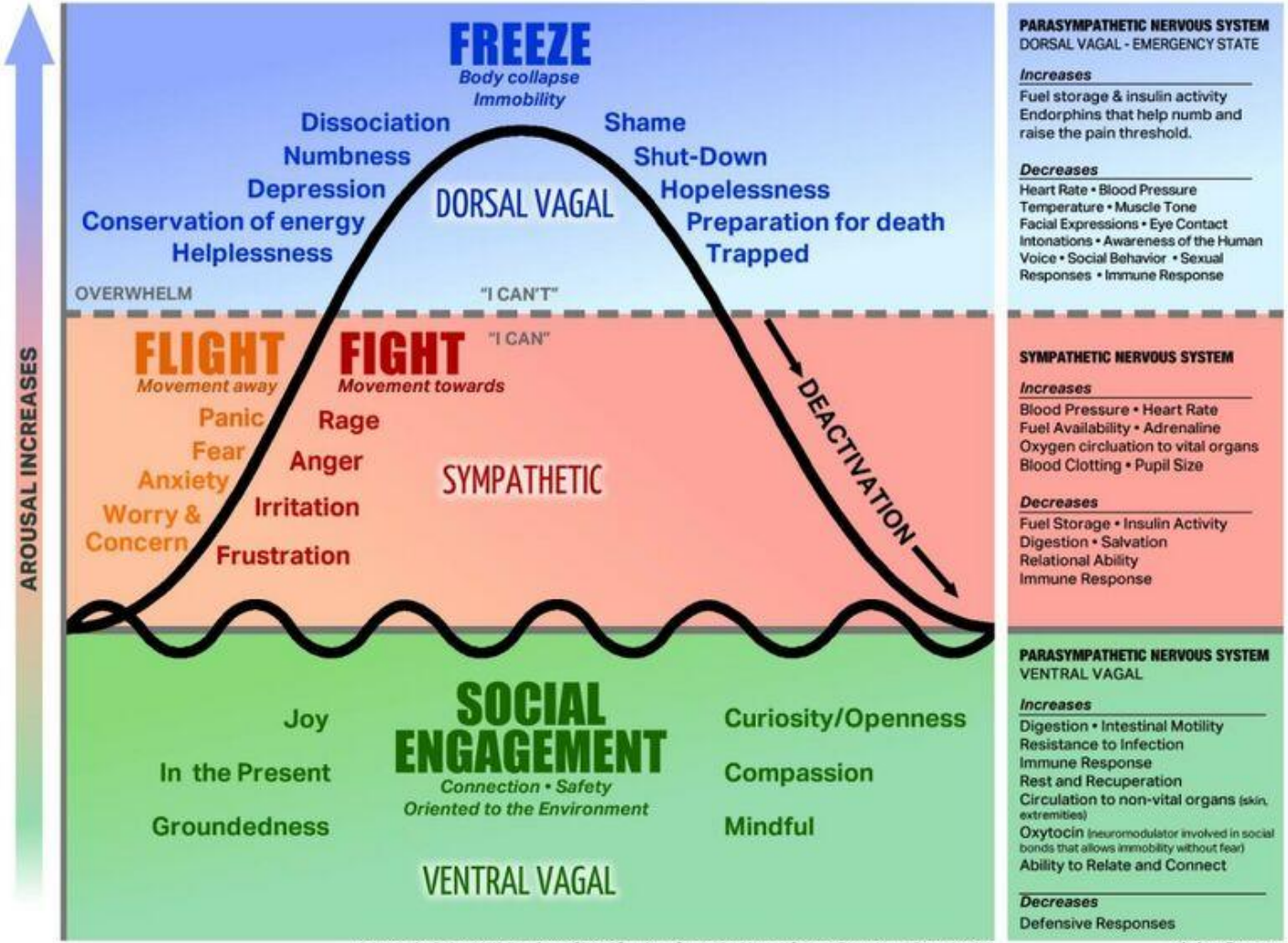
Sensory Processing Disorder

Categories and Subtypes

Sensory Modulation Disorder (SMD)	Sensory overresponsivity (SOR) Sensory underresponsivity (SUR) Sensory seeking/craving (SS)
Sensory-Based Motor Disorder (SBMD)	Dyspraxia (coordination) Postural disorders
Sensory Discrimination Disorder (SDD)	Visual Auditory Tactile Vestibular Proprioception Taste Smell

SENSORY RESPONSES

- Under responsivity
  - Requires more sensory stimulus to produce an adaptive response
- Over responsivity
  - Does not require a lot of sensory stimulus to produce an adaptive response


AROUSAL INCREASES
FREEZE
Body collapse
Immobility
Dissociation
Numbness
Depression
Conservation of energy
Helplessness
DORSAL VAGAL
Shame
Shut-Down
Hopelessness
Preparation for death
Trapped
OVERWHELM
"I CAN'T"
FLIGHT
Movement away
Panic
Fear
Anxiety
Worry & Concern
FIGHT
Movement towards
Rage
Anger
Irritation
Frustration
"I CAN"
SYMPATHETIC
DEACTIVATION
SOCIAL ENGAGEMENT
Connection • Safety
Oriented to the Environment
Joy
In the Present
Groundedness
Curiosity/Openness
Compassion
Mindful
VENTRAL VAGAL
PARASYMPATHETIC NERVOUS SYSTEM
DORSAL VAGAL - EMERGENCY STATE
Increases
Fuel storage & insulin activity
Endorphins that help numb and raise the pain threshold.
Decreases
Heart Rate • Blood Pressure
Temperature • Muscle Tone
Facial Expressions • Eye Contact
Intonations • Awareness of the Human Voice • Social Behavior • Sexual Responses • Immune Response
SYMPATHETIC NERVOUS SYSTEM
Increases
Blood Pressure • Heart Rate
Fuel Availability • Adrenaline
Oxygen circluation to vital organs
Blood Clotting • Pupil Size
Decreases
Fuel Storage • Insulin Activity
Digestion • Salvation
Relational Ability
Immune Response
PARASYMPATHETIC NERVOUS SYSTEM
VENTRAL VAGAL
Increases
Digestion • Intestinal Motility
Resistance to Infection
Immune Response
Rest and Recuperation
Circulation to non-vital organs (skin, extremities)
Oxytocin (neuromodulator involved in social bonds that allows immobility without fear)
Ability to Relate and Connect
Decreases
Defensive Responses
Adapted by Ruby Jo Walker from: Cheryl Sanders, Steve Hoskinson, Steven Porges and Peter Levine
rubyjowalker.com

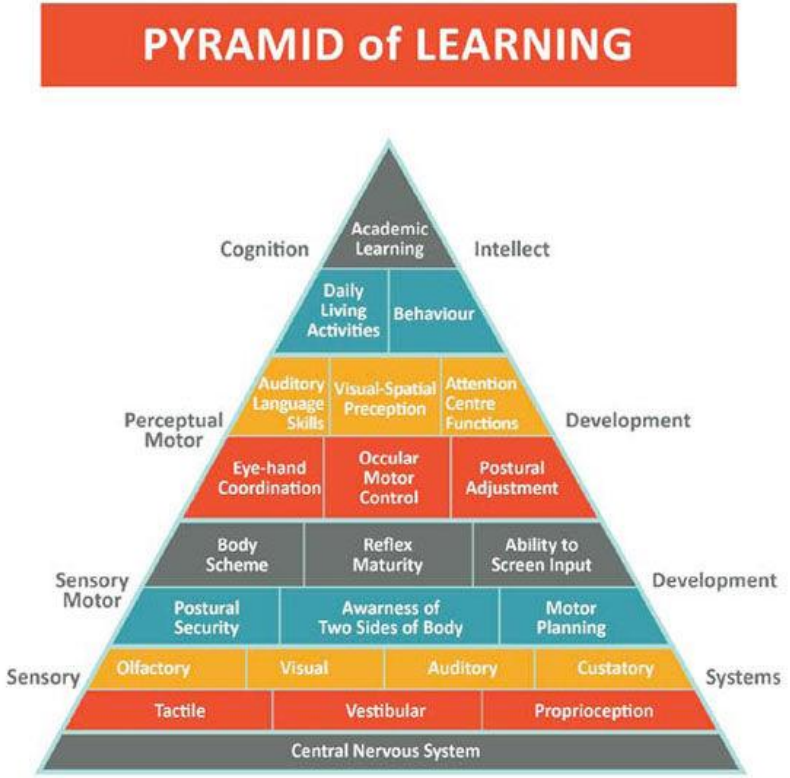
Symptoms of Sensory Processing Disorder

Sensory	Symptoms
Auditory	· Responds negatively to unexpected or loud noises · Holds hands over ears · Cannot walk with background noise · Seems oblivious within an active environment
Visual	· Prefers to be in the dark · Hesitates going up and down steps · Avoids bright lights · Stares intensely at people or objects · Avoids eye contact
Taste/Smell	· Avoids certain tastes/smells that are typically part of children's diets · Routinely smells nonfood objects · Seeks out certain tastes or smells · Does not seem to smell strong odors
Body Position	· Continually seeks out all kinds of movement activities · Hangs on other people, furniture, objects, even in familiar situations · Seems to have weak muscles, tires easily, has poor endurance · Walks on toes
Movement	· Becomes anxious or distressed when feet leave the ground · Avoids climbing or jumping · Avoids playground equipment · Seeks all kinds of movement and this interferes with daily life · Takes excessive risks while playing, has no safety awareness
Touch	· Avoids getting messy in glue, sand, finger paint, tape · Is sensitive to certain fabrics (clothing, bedding) · Touches people and objects at an irritating level · Avoids going barefoot, especially in grass or sand · Has decreased awareness of pain or temperature

CO-MORBIDITIES

- Intellectual disabilities
- Trauma
- Sleep disorders
- Developmental delays
- Behavior issues
- Learning problems
- Gravitational insecurity
- Etc.

WHERE TO START?



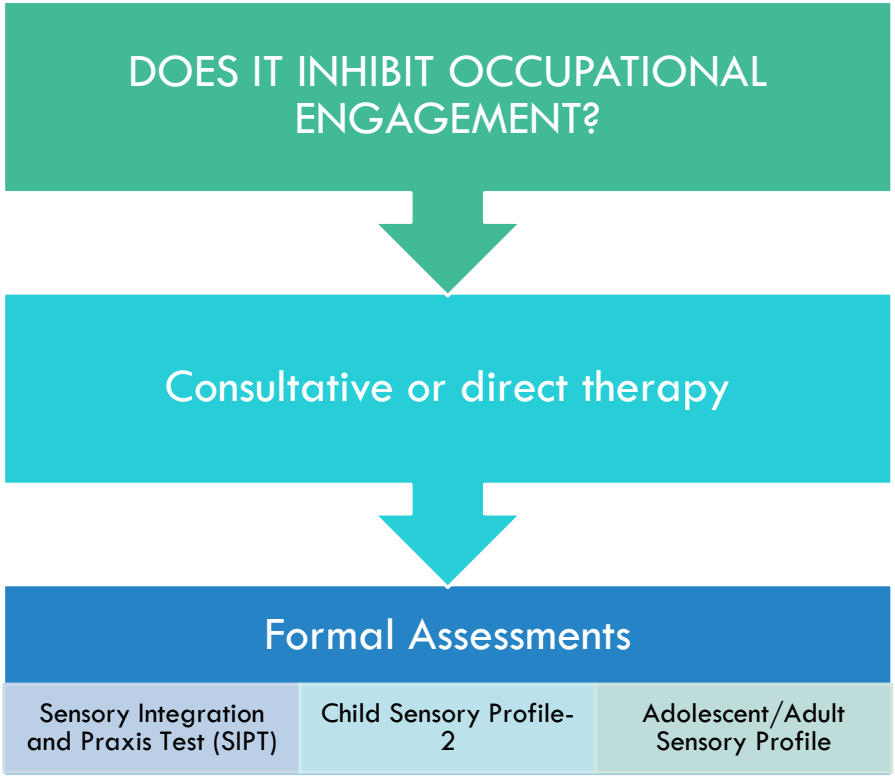
AREAS OF CONCERN FOR INDIVIDUALS WITH ASD

- Activities of daily living
- Social participation
- Play
- Rest/sleep
- Work
- Environments; home, school, workplace, and community environments
- Skills; social skills, behavior regulation, fine/gross motor skills, visual perception, and sensory processing.

OCCUPATIONAL THERAPY FOR INDIVIDUALS WITH IDD

Occupational Engagement	Person supported, family, caregiver, other professionals	Home, clinic, workplace, community
OTs can be involved throughout the timeline (dx or tx)	Evaluation/Occupational profile (routines, interests, and motivations) = occupational performance	Intervention

SCREENING AND REFERRAL TO OT



OCCUPATIONAL THERAPY INTERVENTION

- What happens in Sensory Integration-based Occupational Therapy?
  - Intervention is based on everyone's unique needs
  - It may address difficulties with;
    - Self-regulation
    - Sensory processing of specific stimuli
    - Body awareness
    - Motor planning
    - Gross motor function
    - Fine motor function
    - Trauma responses
    - Behavioral responses

WHAT IS A SENSORY DIET?

The overall goal is to meet the sensory needs of an individual by preventing sensory overload, supporting self-regulation, and helping to have an organized response to stimuli

Sensory diets can also be used to help an individual recover from sensory overload

Steps include; analysis and identification, strategizing, applying strategies, and monitoring effectiveness

*These should not be formed without the expertise of an occupational therapist that specializes in sensory processing.

AN OT'S FAVORITE TOOLS FOR HOME

Movement tools	Muscle tools	Touch tools	Ear tools
Eye tools	Nose tools	Mouth tools	Body tools

MOVEMENT-VESTIBULAR

- Yoga (cosmic yoga)
- Rocking chair
- Spinning in an office chair
- Sitting on a therapy ball
- Standing at a desk
- Windmill arm exercises
- Stretch breaks
- Brisk walks
- Dancing

MUSCLE-PROPRIOCEPTION

- Push-ups in any form- floor, chair, wall, desk
- Yoga poses
- Mindfulness apps (progressive relaxation)
- Weighted lap pad or blanket
- Heavy work (mowing, carrying laundry/groceries, running, gardening, etc.)
- Self-hugging or massage
- Resistance band exercises
- Household chores (trash, wiping down table, sweeping, etc.)
- Mirroring games (follow the leader/Simon Says)
- Dancing to music
- Complete a movement such as animal walks from the car to the front door
- Jumping on the ground or on the trampoline (trampoline video)
- Throwing/catching (Bal-a-vis-x)

TOUCH-TACTILE

- Calm strips, sequin items, textured clothing, etc.
- Use of a stress ball
- Fidget toys
- Applying lotion
- Small massager to hands, arms, or legs

EAR-AUDITORY

- *Therapeutic Listening
- Music and types of music that can be alerting or calming
- White noise can be more predictable to some (calming) or bothersome to others
- Earbuds, ear plugs, noise-canceling headphones
- Running water or natural sounds

EYE-VISUAL

- Lighting (lamp, dimmer switch, etc.)
- Reduce or eliminate visual clutter
- Paint with calming colors
- Patterned rugs for alertness, or more neutral and solid colors for calming
- Work in an open space with views of action for alertness, or go for a partition desk to reduce visual distractions
- Take eye rest breaks
- Blue light blocking glasses, screen filters, etc.

NOSE-OLFACTORY

- Lavender, vanilla, orange, and chamomile to reduce tension or stress and promote relaxation
- Citrus, peppermint, cinnamon, and lemon to promote increased alertness and/or concentration
- Coffee beans for a neutral scent to balance other smells
- Deep breathing strategies
- Memory smells

MOUTH-ORAL

To increase alertness	Calming
• Crunchy • Salty • Sweet • Sour • Spicy • Hard to chew • Cold • Bubbly	• Sucking a thick drink through a straw • Warm liquids; hot tea, warm cocoa, or soup • Soft or softly flavored: cottage cheese, peanut butter, avocado, pudding, oatmeal, freshly baked cookies, or applesauce

BODY-INTEROCEPTION

- Deep breathing
- Mindfulness activities
- Yoga
- Temperature control
- Heavy work and alerting activities
- Understanding of feeling and emotions

EXAMPLE OF A SENSORY DIET FOR AN ADULTS

- Wake up and stretch at the side of the bed.
- Start the day with yoga, exercise, and a cool drink of water with lemon
- Next: bathroom/hot shower, vigorous towel to dry off, compression clothing
- Breakfast: steamy coffee, warm milk, soothing foods
- Transport to work or school: walk or ride to day's events while listening to calming or alerting music, reading, journaling, listening to podcasts, etc.
- Movement breaks during the day: use fidgets, get up and move throughout the day, eat a snack, chew gum, schedule standing breaks during the day, use a standing desk, consistently water drinking, listen to alerting music while working, deep breathing, mindfulness apps, silence notifications, use ear pods while working, etc.

SENSORY DIET CONTINUED

- Afternoon/Evening: go for a walk, read a book, drink tea, grocery shop or complete other tasks while listening to music, call a friend or loved one, listen to audiobooks, calm down yoga, or stretch at night
- Prepare for the next day: write out a schedule or to-do lists, doodle, journal, mindfulness strategies, read, watch movies or television (electronics are visually alerting and should be limited close to bedtime)
- Movement breaks during the day: use fidgets, get up and move throughout the day, eat a snack, chew gum, schedule standing breaks during the day, use a standing desk, consistently drinking water, listen to alerting music while working, deep breathing, mindfulness apps, silence notifications, use ear pods while working, etc.
- Afternoon/Evening: go for a walk, read a book, drink tea, grocery shop or complete other tasks while listening to music, call a friend or loved one, listen to audiobooks, calm down yoga, or stretch at night
- Prepare for the next day: write out a schedule or to-do lists, doodle, journal, mindfulness strategies, read, watch movies or television (electronics are visually alerting and should be limited close to bedtime)

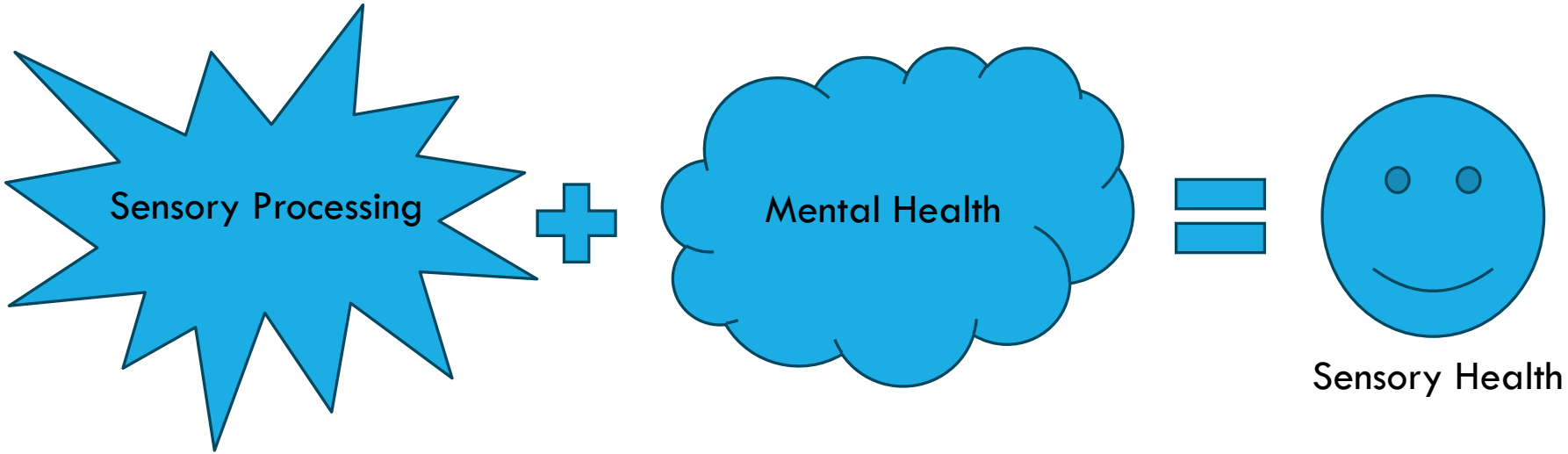
STRATEGIES FOR SPECIFIC ISSUES

- Toilet training; interoception work
- Picky eaters
- Sleep deficits
- Food aggression
- *Neuroaffirming practice

DE-ESCALATION TECHNIQUES: BEHAVIOR VS SENSORY?

- The difference between sensory and behavior (how it can be expressed as a behavior)
- Sensory overload can cause fight or flight
- Remove/reduce sensory input (headphones, remove from situation, lighting, etc.)
- Never act without explaining
- Review the timeline to locate the triggers
- Calming strategies (music, simple/successful task, etc.)

DOES THE SPD AFFECT ENGAGEMENT IN OCCUPATIONS?



CASE STUDY: LUCY

15-year-old girl with ASD, diagnosed at age 3

Special education services, diagnosed through early intervention at school, receives speech and occupational therapy services.

What is the transition plan for Lucy?

CASE STUDY: JERRY

22-year-old male who was diagnosed with ASD when he was 19 years old

Graduated with a journalism degree

Referral to OT for self-regulation issues and workplace modifications

RESOURCES THAT CAN BE USED TO COMMUNICATE SENSORY NEEDS

- Autism Alert Card
- Hidden disabilities lanyard scheme
- Hospital Passport

RESOURCES FOR CLINICIANS AND FAMILIES

- The Out of Sync Child
- The Out of Sync Child Has Fun
- 101 Games and Activities for Children with Autism, Asperger's and Sensory Processing Disorders
- Mindfulness Apps (Finch)
- Fidget Apps or stress relief games
- White Noise apps or fan powered white noise
- Lumie Lights
- www.opgrowth.com

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