

Sensory Processing Disorder

Facts:

Sensory processing disorder is a condition in which the brain has trouble receiving and responding to information that comes in through the senses. The condition used to be called sensory integration dysfunction. Sensory Processing involves the brain's ability to organize and understand an array of incoming sensory information entering the brain at the same time. Sensory processing is fundamental to the development of all motor and social skills. This is a filtering system to determine pathways for incoming sensory information. There are the familiar senses of sight, taste, smell, and hearing, but sensory processing involves 3 additional specialized sensory systems, which are very influential with regard to how effectively we recognize and organize incoming sensory information.

These are:

- Tactile System: how our body perceives touch
- Proprioceptive System: how our body perceives where we are in space
- Vestibular System: how our body perceives directionality and sense of movement.

Some people with sensory processing disorder are oversensitive to things in their environment. Common sounds may be painful or overwhelming. The light touch of a shirt may chafe the skin. This could manifest in:

- Being uncoordinated
- Bumping into things
- Being unable to tell where their limbs are in space
- Being hard to engage in conversation or play

Sensory processing problems are usually identified in children. But they can also affect adults. Sensory processing problems are commonly seen in developmental disorders like autism. Sensory processing disorder is not recognized as a stand-alone disorder. But many experts think that should change.

Sensory processing disorder may affect one sense, like hearing, touch, or taste. Or it may affect multiple senses. And people can be over or under responsive to the things they have difficulties with. Like many illnesses, the symptoms of sensory processing disorder exist on a spectrum. In some children, for example, the sound of a leaf blower outside the window may cause them to vomit or dive under the table. They may scream when touched. They may recoil from the textures of certain foods. But others seem unresponsive to anything around them. They may fail to respond to extreme heat or cold or even pain. Many children with sensory processing disorder start out as fussy babies who

become anxious, as they grow older. These kids often don't handle change well. They may frequently throw tantrums or have meltdowns. Many children have symptoms like these from time to time. But therapists consider a diagnosis of sensory processing disorder when the symptoms become severe enough to affect normal functioning and disrupt everyday life.

Please understand the "Five Caveats" that Carol Stock Kranowitz points out in her book, "[The Out-of-Sync Child](#)" (1995), about using a checklist such as this. She writes:

1. "The child with sensory dysfunction does not necessarily exhibit every characteristic. Thus, the child with vestibular dysfunction may have poor balance but good muscle tone."
2. "Sometimes the child will show characteristics of a dysfunction one day but not the next. For instance, the child with proprioceptive problems may trip over every bump in the pavement on Friday yet score every soccer goal on Saturday.
Inconsistency is a hallmark of every neurological dysfunction. "
3. "The child may exhibit characteristics of a particular dysfunction yet not have that dysfunction. For example, the child who typically withdraws from being touched may seem to be hypersensitive to tactile stimulation but may, instead, have an emotional problem."
4. "The child may be both hypersensitive and hyposensitive. For instance, the child may be extremely sensitive to light touch, jerking away from a soft pat on the shoulder, while being rather indifferent to the deep pain of an inoculation."
5. "Everyone has some sensory integration problems now and then, because no one is well regulated all the time. All kinds of stimuli can temporarily disrupt normal functioning of the brain, either by overloading it with, or by depriving it of, sensory stimulation."

As PATH Intl. professionals and volunteers it is important to understand why our clients seem to have sensory difficulties. Then learn how to help them adapt in our sensory laden environment This would focus on a client acquiring the ability to learn and exhibit behaviors necessary for them to live independently and to function safely and appropriately in daily life.

These experiences will hopefully assist our PATH Intl. professionals and volunteers to become more sensitive by seeing into the world of sensory processing difficulties challenging our clients every day. This insight will improve lesson plan delivery and success through suggested adaption to presentation, execution and environmental concerns.

Intro in conference brochure.

Are you interested in gaining a greater understanding of how sensory information is processed? Do you wonder how individuals with different abilities perceive information from our environment? This interactive session – complete with stations for experiential learning – will give you an opportunity to experience sensory information in different ways and send you home with strategies to address participant's needs in the Equine Assisted Activities and Therapies setting.

Sensory Processing

- involves the brains ability to organize and understand an array of incoming sensory information entering the brain at the same time. Sensory processing is fundamental to the development of all motor and social skills as well as acquiring the ability to learn and exhibit behaviors necessary for people to live independently and to function safely and appropriately in daily life.
- Is a filtering system to determine pathways for incoming sensory information.
- There are the familiar senses of sight, taste, smell, and hearing, but sensory processing involves 3 additional specialized sensory systems, which are very influential with regard to how effectively we recognize and organize incoming sensory information.

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Ten Fundamental Facts About SPD

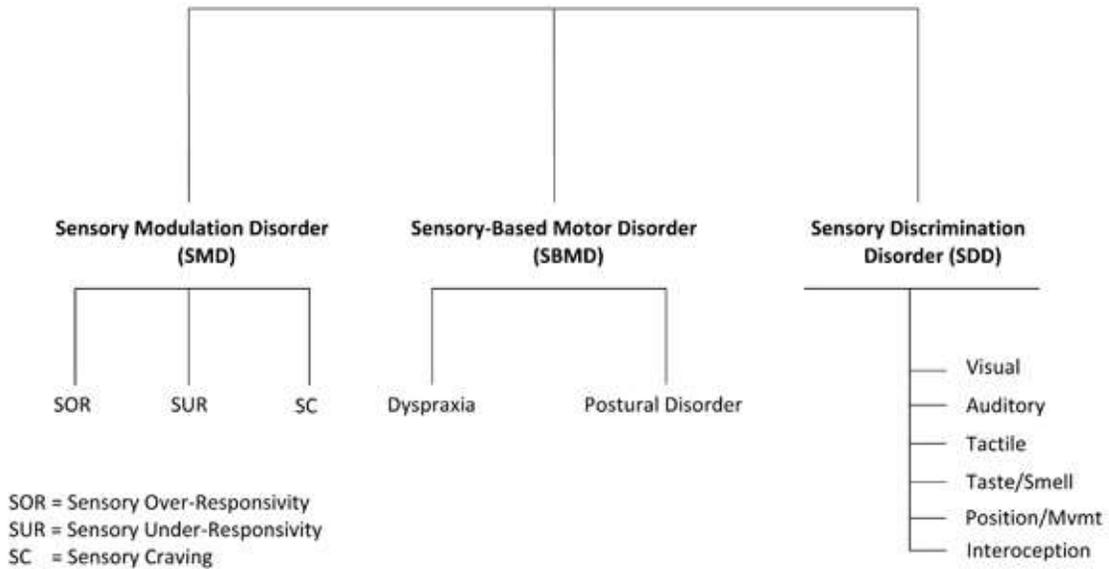
- Sensory Processing Disorder is a complex disorder of the brain that affects developing children and adults.
- Parent surveys, clinical assessments, and laboratory protocols exist to identify children with SPD.
- At least one in twenty people in the general population may be affected by SPD.
- In children who are gifted and those with ADHD, Autism, and fragile X syndrome, the prevalence of SPD is much higher than in the general population.
- Studies have found a significant difference between the physiology of children with SPD and children who are typically developing.
- Studies have found a significant difference between the physiology of children with SPD and children with ADHD.
- Sensory Processing Disorder has unique sensory symptoms that are not explained by other known disorders.
- Heredity may be one cause of the disorder.
- Laboratory studies suggest that the sympathetic and parasympathetic nervous systems are not functioning typically in children with SPD.

Preliminary research data support decades of anecdotal evidence that occupational therapy is an effective intervention for treating the symptoms of SPD.

There are eight sensory systems:

- **Visual**
- **Auditory**
- **Tactile**
- **Olfactory**
- **Gustatory**
- **Vestibular**
- **Proprioception**
- **Interoception**

Sensory Processing Disorder (SPD)



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Miller LI et al., 2012

Summary of Sensory Processing Disorder Subtypes Pattern 1: Sensory Modulation Disorder

Sensory Over-Responsivity

Individuals with sensory over-responsivity are more sensitive to sensory stimulation than most people. Their bodies feel sensation too easily or too intensely. They might feel as if they are being constantly bombarded with information. Consequently, these people often have a “fight or flight” response to sensation e.g. being touched unexpectedly or loud noise, a condition sometimes called “sensory defensiveness.” They may try to avoid or minimize sensations, e.g., withdraw from being touched, or cover their ears to avoid loud sounds.

Sensory Under-Responsivity

Individuals who are under-responsive to sensory stimuli are often quiet and passive, disregarding or not responding to stimuli of the usual intensity available in their sensory environment. They may appear withdrawn, difficult to engage and or self absorbed because they do not detect the sensory input in their environment. Their under-responsivity to tactile and deep pressure input may lead to poor body awareness, clumsiness or movements that are not graded appropriately. These children may not perceive objects that are too hot or cold or they may not notice pain in response to bumps, falls, cuts, or scrapes.

Sensory Craving

Individuals with this pattern actively seek or crave sensory stimulation and seem to have an almost insatiable desire for sensory input. They tend to be constantly moving, crashing, bumping, and/or jumping. They may “need” to touch everything and be overly affectionate, not understanding what is “their space” vs. “other’s space”. Sensory seekers are often thought to have Attention Deficit Hyperactivity Disorder (ADHD) and Attention Deficit Disorder (ADD).

Pattern 2: Sensory-Based Motor Disorder

Postural Disorder

An individual with postural disorder has difficulty stabilizing his/her body during movement or at rest in order to meet the demands of the environment or of a motor task. When postural control is good, the person can reach, push, pull, etc. and has good resistance against force. Individuals with poor postural control often do not have the body control to maintain a good standing or sitting position.

Dyspraxia/Motor Planning Problems

Individuals with Dyspraxia have trouble processing sensory information properly, resulting in problems planning and carrying out new motor actions. They may

have difficulty in forming a goal or idea, planning a sequence of actions or performing new motor tasks. These individuals are clumsy, awkward, and accident-prone. They may break toys, have poor skill in ball activities or other sports, or have trouble with fine motor activities. They may prefer sedentary activities or try to hide their motor planning problem with verbalization or with fantasy play.

Sensory Discrimination Disorder

Sensory discrimination refers to the process whereby specific qualities of sensory stimuli are perceived and meaning attributed to them. Discriminate means understanding accurately what is seen, heard, felt, tasted, or smelled. Individuals with SDD difficulties have problems determining the characteristics of sensory stimuli. The result is a poor ability to interpret or give meaning to the specific qualities of stimuli, or difficulty detecting similarities and differences among stimuli. (Do I see a “P” or a “Q”? Do I hear “cat” or “cap”? Do I feel a quarter or a dime in my pocket? Am I falling to the side or backwards?). Individuals with poor sensory discrimination may appear awkward in both gross and fine motor abilities and/or inattentive to people and objects in their environment. They may take extra time to process the important aspects of sensory stimuli.

Pattern 3: Sensory Discrimination Disorder

SPD may occur in each sensory system: Visual, Auditory, Tactile, Smell, Taste, Vestibular, Proprioception, and Interoception

The symptoms of SPD vary greatly depending upon the sense that is affected, how that sense is affected, and the severity of the condition.

People with SPD misinterpret everyday sensory information, such as touch, sound, and movement. They may feel bombarded by information, they may seek out intense sensory experiences, or they may be unaware of sensations that others feel. They may also have sensory-motor symptoms such as a weak body, clumsiness or awkwardness or delayed motor skills.

If a person has SPD often the symptoms result in emotional, behavioral, social, attentional, or motoric problems.

Our current knowledge suggests that there are six subtypes of SPD. Almost all individuals with SPD have a combination of symptoms from more than one subtype. The chart below shows the three major patterns and the six subtypes of SPD.

Resource:

STAR Center Sensory therapies and Research

Purpose:

As PATH Intl. professionals and volunteers it is important to understand the why our clients seem to have sensory difficulties. Then learn the how to help them adapt in this sensory laden world.

Acquiring the ability to learn and exhibit behaviors necessary for people to live independently and to function safely and appropriately in daily life.

Description of content/methods

Sensory Processing involves the brains ability to organize and understand an array of incoming sensory information entering the brain at the same time. Sensory processing is fundamental to the development of all motor and social skills as well as acquiring the ability to learn and exhibit behaviors necessary for people to live independently and to function safely and appropriately in daily life. This is a filtering system to determine pathways for incoming sensory information. There are the familiar senses of sight, taste, smell, and hearing, but sensory processing involves 3 additional specialized sensory systems, which are very influential with regard to how effectively we recognize and organize incoming sensory information.

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Description of Content Results

An introduction into the sensory system will be presented. The science behind our ability to adapt and filter throughout life will be compared to what our clients contend with when they have sensory processing difficulties. This comparison will be taken into the experiential area with multiple hands on stations highlighting what our client's experience.

STATIONS:

1. Poor Tactile Dysfunction

Difficulties buttoning zipping

Does not know body parts

Mouths objects even after age of two

2. Vestibular Dysfunction

Hypersensitivity to Movement (Over –Responsive)

Fearful of feet leaving ground

Looses balance easily

Avoid rapid or rotating movement

Hyposensitivity to Movement (Under-responsive)

Can't seem to sit

Rocks body while sitting

Is a "thrill-seeker"; dangerous at times

Poor Muscle Tone And/Or Coordination

Limp floppy body

Difficulty catching themselves if falling

Poor body awareness; bumps into things, trips, and/or appears clumsy

Poor gross motor, catching a ball

Poor fine motor skills, difficulty using "tools"

3. Proprioceptive Dysfunction

Sensory seeking behaviors

4. Auditory Dysfunction (no hearing problem)

Hypersensitivity to sound

Distracted by loud or unexpected sounds

Runs away, cries, and/or covers ears with loud or unexpected sounds

May decide they like certain people by the sound of their voice

Hyposensitivity to sound

often does not respond to verbal cues or to name being called

Appears to "make noise for noise's sake"

seems to have difficulty understanding or remembering what was said

appears oblivious to certain sounds

needs directions repeated often, or will say, "What?" frequently

Signs Of Olfactory Dysfunction (Smells):

1. Hypersensitivity To Smells (Over-Responsive):

reacts negatively to, or dislikes smells, which do not usually bother, or get noticed, by other people

tells other people (or talks about) how bad or funny they smell

refuses to eat certain foods because of their smell

offended and/or nauseated by bathroom odors or personal hygiene smells

bothered/irritated by smell of perfume or cologne

bothered by household or cooking smells

may refuse to play at someone's house because of the way it smells

decides whether he/she likes someone or some place by the way it smells

2. Hyposensitivity To Smells (Under-Responsive):

- has difficulty discriminating unpleasant odors
- may drink or eat things that are poisonous because they do not notice the noxious smell
- unable to identify smells from scratch 'n sniff stickers
- does not notice odors that others usually complain about
- fails to notice or ignores unpleasant odors
- makes excessive use of smelling when introduced to objects, people, or places
- uses smell to interact with objects

Signs Of Visual Input Dysfunction (No Diagnosed Visual Deficit):

1. Hypersensitivity To Visual Input (Over-Responsiveness)

- has difficulty keeping eyes focused on task/activity he/she is working on for an appropriate amount of time
- easily distracted by other visual stimuli in the room; i.e., movement, decorations, toys, windows, doorways etc.
- avoids eye contact

2. Hyposensitivity To Visual Input (Under-Responsive Or Difficulty With Tracking, Discrimination, Or Perception):

- difficulty controlling eye movement to track and follow moving objects
- has difficulty telling the difference between different colors, shapes, and sizes
- difficulty with consistent spacing and size of letters during writing and/or lining up numbers in math problems
- confuses left and right
- difficulty judging spatial relationships in the environment; i.e., bumps into objects/people or missteps on curbs and stairs

Auditory-Language Processing Dysfunction:

- difficulty identifying people's voices
- difficulty filtering out other sounds while trying to pay attention to one person talking
- bothered by loud, sudden, metallic, or high-pitched sounds
- difficulty attending to, understanding, and remembering what is said or read; often asks for directions to be repeated and may only be able to understand or follow two sequential directions at a time
- looks at others to/for reassurance before answering
- difficulty putting ideas into words (written or verbal)
- often talks out of turn or "off topic"
- if not understood, has difficulty re-phrasing; may get frustrated, angry, and

give up

difficulty articulating and speaking clearly

ability to speak often improves after intense movement

Social, Emotional, Play, And Self-Regulation Dysfunction:

Social:

difficulty getting along with peers

prefers playing by self with objects or toys rather than with people

does not interact reciprocally with peers or adults; hard to have a "meaningful" two-way conversation

self-abusive or abusive to others

others have a hard time interpreting child's cues, needs, or emotions

does not seek out connections with familiar people

Emotional:

difficulty accepting changes in routine (to the point of tantrums)

gets easily frustrated

often impulsive

functions best in small group or individually

variable and quickly changing moods; prone to outbursts and tantrums

prefers to play on the outside, away from groups, or just be an observer

avoids eye contact

difficulty appropriately making needs known

The science behind our ability to adapt and filter throughout life will be compared to what our clients contend with when they have sensory processing difficulties. This comparison will be taken into the experiential area with multiple hands on stations highlighting what our client's experience.