

# Sensory Integration BY SHELLEY MARTIN REG NZOT

# About Sensory Integration (SI)

Sensory Integration provides a way of understanding how the sensory system contributes to learning and development. Jean Ayres developed Sensory Integration in 1972, to understand the relationship between neurological patterns and the bodies interaction with its environment. The theory developed assessments and identified dysfunctional integration systems. The definition of Sensory Integration is defined as "the organisation of sensation for use" Ayres. 1979.



WHAT WE SMELL





#### WHAT WE SEE

#### WHAT WE HEAR





SENSATIONS MUST BE PERCIEVED, ORGANISED AND INTERPRETED TO:

Ensure individuals : Organised and able to maintain attention Emotionally regulated Interacting socially Coordinated motor planning and praxis Organised behaviour patterns and responses

The importance of SI

# The Tools in SI



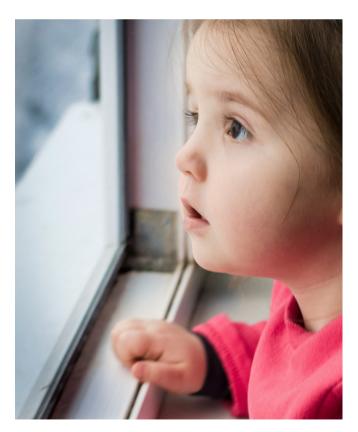
OCCUPATIONAL CHOICES

Support to help individuals understand who they are and why they enjoy the occupations they choose to engage in by identifying how individuals:

Distinguish and interpret sensory input (meaning of sensation) React to sensory input (modulation, arousal and reactivity) Process sensory information (the way sensory information goes through your nervous system)

Register sensation (notice sensation)





### Target Group People who have:

### Cordination issues

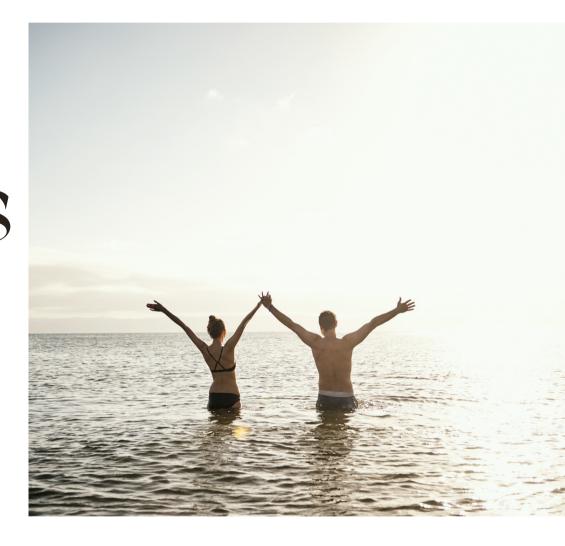


Poor ability to conceptualise, plan and organise novel actions

Poor awareness of body in space

Poor coordination of eye and body movements

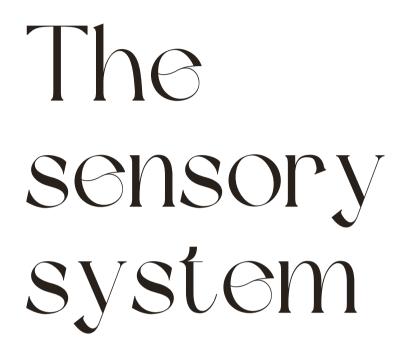
### The sensations we process



### INTERIOCEPTION Inside your body - pain, tioleting, blood pressure

### PROPRIEOCEPTION Awareness of body in spcae

EXTEROCEPTORS Taste, smell, touch, vision, hear





There are actually 7 senses: Touch, smell, taste, hearing, sight, vestibular (balance), and proprioception (awareness of body in space







### Sensory Reactivty





Our brains are constantly processing sensory information. Sensory Integration identifies when we have a hyper or hyporesponsive sensory system, and assists to identify the "Just right" sensory challenges. SI helps individuals to develop our adaptive responses to the sensory challenges in our environment

### Tactile Perception



Tactile perception is essential in the early development, attachment, and social relationships. Touch is important in the development of motor control. Vestibular perception is important for the development of our bodies against gravity, head neck and eye control, our abiiity to stand up straight and our ability to make coordinated movements.

### Vestibular Peception



### Proprioception Perception

The proprioception system is the sensory system that supports our understanding of where our body is in space. It helps us to not bump into things, to stand up straight and to make coordinated movements.



# Taste and smell Peception

The ability of our sensory system to tolerate strong tasting foods and different smells.



### Seeing and hearing Perception

Our ability to tolerate sound, light and fast moving visual stimuli.



### What is Praxis?

Fine and gross motor skills including the ability to plan and organise movement. It is the ability to figure out how to use our bodys in skilled tasks such as playing with toys, building, straightening the room. It is also the ability to be organise yourself to complete the tasks. (Ayres, 1985)



### Praxis

It is essential to perceptually understand the body and the environment in order to be able complete tasks and meaningful adabptive responses to the activities we are wanting to complete, such as play, toileting, dressing, getting ready to learn.



## Dyspraxia

Dyspraxia is difficulty with completing new motor tasks. Children with dyspraxia can learn motor task but have difficulty generalising those tasks in their environment.

Dyspraxis children know what they want to do they just cant remember how to do it. They find the environment difficult and often become avoidant.

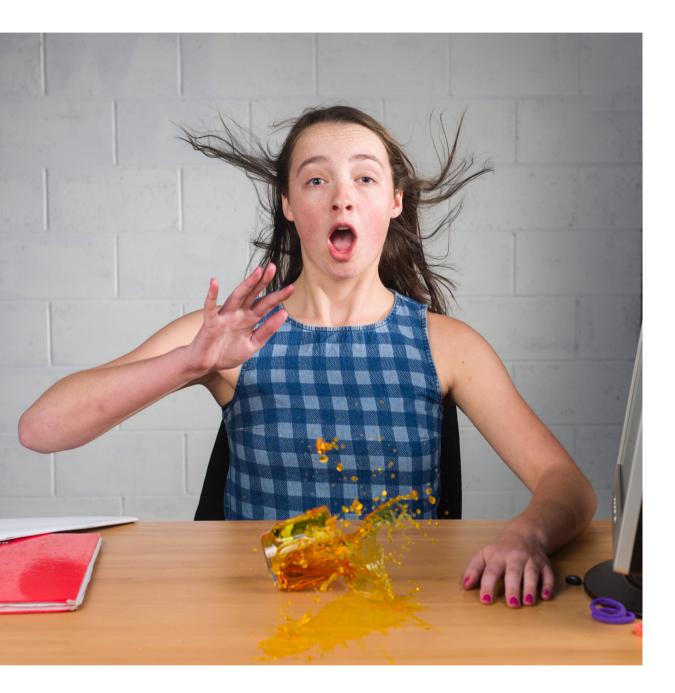


### Motor deficits and praxis

Muscle weakness Reduced muscle patterns

Ataxia

Dyspraxia - inability to complete complex muscle movements not explained by the above



### Praxis & SI

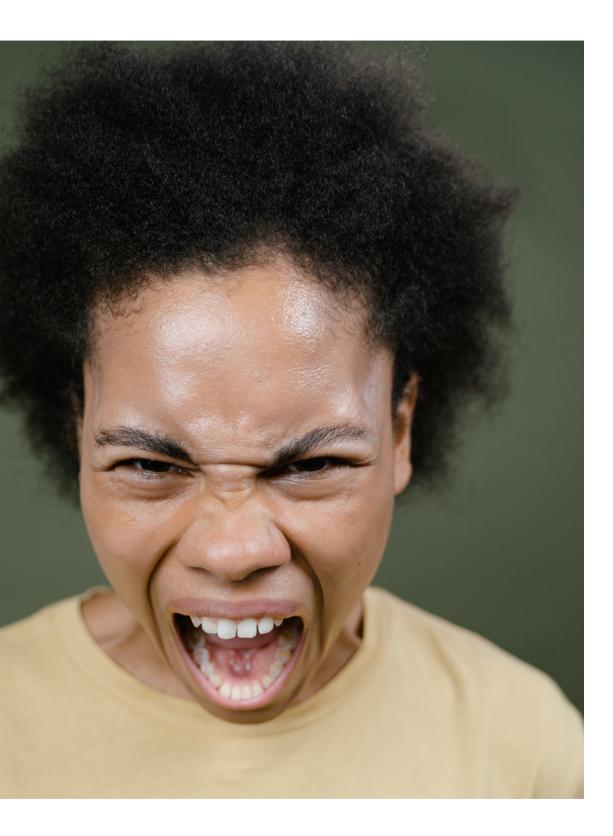
Their is a relationship between Tactile discrimination and praxis Visual infomation supports construction abilities Ideation supports the sensory integration that informed language and ideas





### Sensory Reactivity

The responses to sensory information in a graded way. The reaction and intensity of response is in context to the incoming sensation intensity. The ability to: pay attention, to get up and go, to focus and shift attention, screen out unwanted information, avoid unpleasant things.



### Populations with a-typical reactivity

Autism Attention Defecit Hyperactivity Disorder Failure to thrive Regularatory disorders High risk trauma children Environmental deprivation Undiagnosed with sensory sensitivity



### Under and over reactivity to sensation

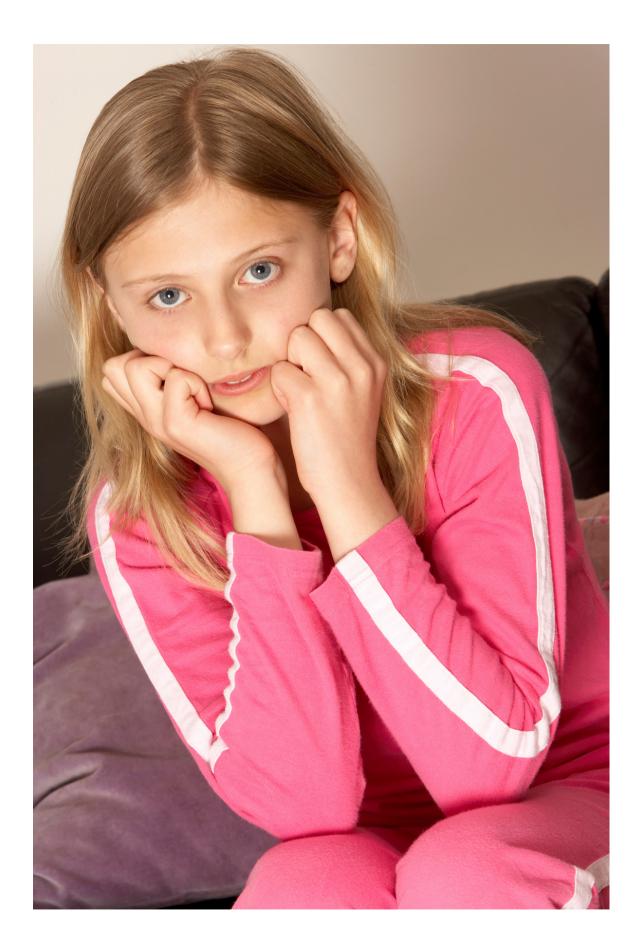
OVER REACTIVITY Avoidant Defensive Antisocial Senstivity to light, sound and messy environment Low threshold to sensory informaiton

UNDER REACTIVITY Reduced awareness of sensation Sensory seeking Reduced pain response Crashing, bumping, jumping, looking for excessive amounts of Vestibular input High threshold to sensory information



### Anxiety and self regulation

The ability to manage the emotional response such as anxiety, in context to the environment stimulus. seeing a better regulated state, where someone is not over or under reacting to stimulation. Self regulation is choosing behaviours that are appropriate so there is no aggression or self harm, anxiety goes down, and executive functioning goes up, and someone has better effortful control of impulsive behaviours



# Sensory Interventions

Sensory Diet - customised Graded sensory activity plans Inhibitory activity identification Alerting activity identification Heavy work activities Developing routines and activities for high and low arousal times Education of children, family and teachers Regulatory programs such as alert program and zones of regulation, identifying when strategies are needed. Environmental modification Sensory equipment, such as wobble cushion, weighted

vest, therapy ball, theraband, compression garments

