sensory integration network
The historical development of sensory integration and its models that inform current practice
Sensory Integrative Processes

**The senses**

- Auditory (hearing)
- Vestibular (gravity & movement)
- Propriaceptive (muscles & joints)
- Tactile (touch)
- Visual (seeing)

**Integration of their inputs**

- The senses (first level)
  - eye movements
  - Posture
  - Balance
  - Muscle tone
  - Gravitational security

- The senses (second level)
  - Sucking
  - Eating
  - Mother-infant bond
  - Tactile comfort

**End products**

- Speech
  - Body perception
  - Body perception
  - Motor planning

- Language
  - Eye-hand coordination
  - Visual perception
  - Purposeful activity

- Ability to concentrate
- Ability to organise
- Self-esteem
- Self-control
- Self-confidence
- Academic learning ability
- Capacity for abstract thought and reasoning
- Specialization of each side of the body and the brain

**First level**
- Second level
- Third level
- Fourth level

Published by WPS® 1979, 2005
Sensory Integrative Processes

Adapted from Taylor, Trott 1991
Revised Representation of S.I. theory

Expressions of Modulation Dysfunction
- Avoidance
- Aversive Response
- Gravitational Insecurity
- Defensiveness
- Tactile
- Auditory
- Visual
- Under responsiveness

Central Nervous System Sites of Processing for
- Limbic/Recticular
- Proprioceptive
- Vestibular
- Visual
- Tactile
- Auditory

Expressions of Dyspraxia
- Bilateral Integration & Sequencing Difficulties (feedforward-dependent)
- Posture
- Discrimination
- Sensation
- Clumsiness
- Clowning
- Avoidance of motor behavior
- Exaggerated or diminished force

Bundy, Lane, Murray 2002
Sensory Processing Disorders - SPD

Sensory Modulation Disorders (SMD)
- SOR  Sensory Over Responsivity
- SUR  Sensory Under Responsivity
- SS   Sensory Seeking/Sensory Craving

Sensory Based Motor Disorder (SBMD)
- Posture
- Praxis

Sensory Discrimination Disorders (SDD)
- Vestibular
- Proprioception
- Tactile
- Auditory
- Visual
- Olfactory
- Gustatory

Proposed New Nosology - Miller et al 2007
International Classification of Function

Part 1
Functioning & disability

Components
Body function & Structure
Changes in function
Changes in structure

Capacity

Part 2
Contextual factors

Components
Activities & Participation
Facilitators
Hindrances

Component Environment

Components
Personal Attributes

World Health Organization 2001
Dunn’s Model of Sensory Processing

Interaction between neurological thresholds & behavioral responses

Self Regulation continuum

- Passive Behavioural Response
- Active Behavioural Response

Neurological Threshold Continuum

- Low threshold
  - Low Registration (Bystander)
  - Sensory Sensitivity (Sensor)
- High threshold
  - Sensation Seeking (Seeker)
  - Sensation Avoiding (Avoider)

Awaiting logos

Infant/toddler Sensory Profile

Sensory Profile & School one

Adult Sensory Profile

Dunn’s Model of Sensory Processing, 1997
Thank you for your time