Occupational Therapy

HELPs CHILDREN DEVELOP THE SKILLS NEEDED FOR THE JOB OF LIVING

This includes:

• Playing
• Learning
• Getting along with others
• Taking care of own body

Sensory Integration

Sensory integration is the neurological process of organizing and processing sensory information from our bodies and the environment for purposeful goal-directed responses.

Levels of Sensory Integration

- Academic readiness
- Organized behavior
  - Level 4
- Perceptual motor skills
  - Purposeful activity
  - Level 3
- Perceptual Motor Foundations
  - Level 2
- Primary Sensory Systems
  - Level 1

Dysfunctional Sensory Integration

• Malfunction in the brain’s translation of sensation into meaning and action
• “Traffic jam”
• Poor modulation (e.g. defensiveness)
• Poor discrimination
• One system or many

TACTILE SYSTEM

• Provides information primarily through our skin; about the texture, shape and size of objects in the environment
• Helps us distinguish between threatening and non-threatening touch sensations
• Use touch to explore our world
Problems within touch system
- Decreased protection against temperatures and sharpness
- Takes longer to process pain
- Sensitive to clothing, foods, messy stuff, and/or grooming tasks
- Don’t like unexpected touch
- Fight or flight reaction

Activities for Under-active System
- Hide familiar objects in bin of rice or sand and find them using only touch
- Describe objects
- Play with objects of various textures

Activities to Help with Tactile Defensiveness
- Use firm pressure rather than light pressure
- Adaptations with clothing
- With messy tasks, use a popsicle stick or other adaptations to decrease aversion to participate
- Play with objects of various textures

VESTIBULAR SYSTEM
- Provides information through the inner ear about gravity and space, about balance and movement, and our head and body position in relation to the surface of the earth
- Important in keeping us “grounded”
- The balance center

Over-active vestibular system
- Child dislikes playground activities such as swinging or spinning
- Child is cautious
- Child has a fear of height and/or is fearful of climbing up or going down stairs

Under-active vestibular system
- Seeks out movement
- Difficulty sitting still
- Doesn’t get dizzy easy
- Seems clumsy
### Vestibular Activities
- Movement experiences
- Different postures (lying on stomach, kneeling)
- Swings and other playground activities
- Jumping on a trampoline

### PROPRIOCEPTIVE SYSTEM
- Provides information through receptors in our muscles, tendons and joints about where our body parts are and what they are doing
- Important for body awareness

### Proprioceptive System Problems
- Child has to pay attention to things that should happen automatically and may be less available to attend to classroom activities.
- Uses too much or too little pressure and/or force

### Ways to provide proprioceptive input
- Push/pull activities
- Heavy work
- Weighted items
- Deep pressure input

### Purposeful activity

### Activities that Provide Proprioceptive Input
- Moving furniture, vacuuming, washing tables, carrying heavy objects
- Movement activities: clap hands, hop on one foot, wall or chair pushups, bear crawl
- Weighted items: weighted vest, lap pillow, back packs
- Deep pressure input: ball massage, firm pressure to shoulders/back, hug self
Visual and Auditory Sensitivities

- Overly sensitive child will seek less stimulation (sensitive to light or sound)
  - Child may have poor eye contact, hyper-alert and respond to extraneous visual or auditory stimuli
- Under sensitive child will seek more stimulation
  - Child may ignore sounds, touch a lot, have difficulty modulating voice volume.

Perceptual-Motor Foundations

Level 2

- Body awareness
- Bilateral coordination (teamed use of both sides of the body)
- Lateralization (hand preference)
- Postural control
- Motor planning

Body Awareness

- Awareness of body parts and they relate to one another and to the environment
- Children with decreased body awareness often bump into objects and/or people and have difficulty maintaining personal space

Bilateral Coordination

- One’s ability to use both sides of their body in a coordinated manner
- Hand dominance is related
- One hand is the worker and the other is the helper

Postural Control

- Ability to maintain body positions against gravity to sustain an upright seated posture in a chair or on the floor

Poor postural stability
Suggestions for positioning

Motor Planning
- Inherent automatic “know how”
- Ideation, planning, sequencing, execution
- Impacts ability to master correct pencil grasp and letter formation
- Necessary for learning new skills
- Strategies

Perceptual-Motor Skills LEVEL 3
- Visual perception
- Eye-hand coordination (pencil skills)
- Visual motor integration
- Purposeful activity
**Visual Perception:**
- to perceive and interpret what the eyes see (shape, color, size, and/or position)

**Eye-Hand Coordination**
- Relates to ball skills, handwriting, cutting with scissors, and drawing

**Pencil Skills**
- Eye-hand coordination: the efficient teamwork of the eyes and hands
- Fine motor skills: The ability to use one’s hands and fingers in skilled activities

**Pre-requisites for fine motor skills**
- Postural stability and control
- Control of eye muscles
- Tactile discrimination
- Proprioception

**Pre-requisites for fine motor skills**
- Developmental hand skills
  - Strength and stability of hand arches
  - Separating the two sides of the hand
  - Isolating finger movements
  - Thumb-use
Progression of pencil grasp development

Efficient tripod pencil grasp

Inefficient pencil grasps

Visual Motor Integration

The ability to integrate visual information on a motor level e.g. copying and drawing

Age appropriate VMI sample (5 year-old)
Delayed VMI sample (almost 5 year-old)

Handwriting Without Tears

Cutting with scissors

Level 4 Academic Readiness

- Academic skills
- Complex motor skills
- Organized behavior
- Regulation of attention and activity
- Related to self-esteem and self-control

THE END