



## **VESTIBULAR/SENSORY EXERCISES**

A child's brain is like a sponge, ready to soak in sensory experiences from conception forward. The body is a vehicle for brain development. Knowledge is acquired through the body. The body is dependent on all senses. None of the senses develop in isolation. There are very strong connections among sensory systems affecting Attention, Reception, Analysis and Expression of sensory experiences. Children begin their learning process through sensory systems.

The sensory pathways require efficient modulation (timing) so that sensory experiences can be "switched on" or "switched off", as necessary, dependent upon the degree of attention necessary for learning at a specific time (ie. alert states/sleep states). When pathways among the sensory systems are not working together, inefficient development of "switch on's/switch off's" occur.

All senses pass through the vestibular system/balance system. The vestibular system is located in the inner ear and works closely with all sensory pathways, aiding in balance and coordination, body control, and higher order learning such as memory, language, reading and writing. The vestibular system is the only sensory system mature at birth. Think of it as providing the fetus with direction in the womb. The vestibular system helps the child's relationship with gravity. Every movement sets fluid in the ear in motion, which stimulates hair cells in the ear, signaling the vestibular nerve (affecting auditory, visual, especially eye motor and tactile connections) and the cerebellum (governing movement and memory of movement). Together, these coordinate sensory information.

Our sensory systems develop from early stages in utero. Approximately 5 weeks after conception, the embryo responds to external stimuli. During the first few months of life, a child learns to interact with sensory stimuli. During infancy, taste and smell are also very important pathways because the mouth and face are the major sources of information at that time. Connections among all sensory pathways are strongly developed during the first year of life and continue to develop, aiding learning.

### **GOALS OF VESTIBULAR/SENSORY EXERCISES**

- Develop alertness, multisensory attention, relaxed alertness
- Train eye to move independent of the head
- Increase Right/Left coordination and balance, and body control
- Strengthen multisensory pathways
- Develop awareness of the "sensory self", encouraging self esteem

### **EXERCISE DIRECTIONS**

These exercises increase vestibular/sensory awareness. If a developmental delay exists, as you seek out and practice movements of the sensory pathways associated with the delay, the more readily your body will adjust and aid in development.

- Make your exercise pathway comfortable and safe. Check your surroundings. Children should be with an adult while using the exercises.
- Have fun as your awareness of your senses becomes keener.
- One time per day, more if you wish. The exercises usually take approximately 15 minutes. You can practice them separately or as whole.
- Begin each exercise very slowly and progress gradually to more rapid timing/pace, returning to a timing/pace which feels relaxing to you.
- Many people readily sense the body feeling better. Some people state that it takes a few trials of exercises for them to experience relaxed alertness. If there is no change after a few trials or if you do not feel alert and relaxed, discontinue the exercises.

## VESTIBULAR SENSORY EXERCISES using above directions

1. SITTING POSITION:
  - EYE/HEAD EXERCISES:
    - Move eyes up and down with head moving. Repeat keeping head steady at midline
    - Move eyes side-to-side with head moving. Repeat keeping head steady at midline.
  - SHOULDER EXERCISES:
    - Move Right shoulder forward to the Left and back
    - Move Left shoulder forward to the Right and back
    - Move shoulders together forward and backward
  - FEET FLAT ON FLOOR, HANDS ON TABLE:
    - Keeping head steady at midline with eye gaze following your movements, take Right hand and touch Left hand and back; Left hand touch Right hand and back
    - Repeat exercise with eye gaze steady at midline
  - FEET FLAT ON FLOOR, HANDS ON LAP:
    - Keeping head steady at midline with eye gaze following your movement, take Right hand and touch Left knee and back; Left hand touch Right knee and back
    - Repeat exercise with eye gaze steady at midline
  - AS ABOVE, WITH ELBOW TOUCHING OPPOSITE HAND (HANDS ON TABLE)
  - AS ABOVE, WITH FOOT TOUCHING OPPOSITE ANKLE
  - CRAWLING helps cross the midline, focus distance and develop eye/hand coordination
    - While crawling, keeping your head steady at midline, allow eyes to gaze at alternating hand movements
    - Repeat exercise with eye gaze steady at midline
  - THROW A BALL HAND-TO-HAND (Right to Left; Left to Right)
    - Eyes gazing at the ball and head steady at midline
    - Repeat exercise with head/eyes steady at or above midline
2. STANDING POSITION: as above, using only Eye/Head exercises and Shoulder exercises
3. ALTERNATING FROM SITTING TO STANDING:
  - First, eyes open with eyes/head steady at midline
  - Repeat with eyes closed
  - Repeat with eyes open, eyes/head steady at midline
4. WALK ACROSS THE ROOM (short distance): Eyes open with eyes/head steady at midline
5. STAND ON ONE FOOT:
  - With eyes open for a few seconds and eyes/head steady at midline
  - Opposite foot for a few seconds with eyes open and eyes/head steady at midline
  - Same as above, but with eyes closed
  - Repeat with eyes open and eyes/head steady at midline
6. GO BACK TO NUMBER 1: Only Sitting Position-Eye/Head Exercises
7. ENJOY GAMES WHICH HELP YOUR BODY MOVE (ie.bowling, shuffleboard, hopscotch, horseshoes)

Well developed vestibular/sensory systems can also aid in developing higher order learning such as reading and writing. The rate, accuracy, fluency and comprehension of reading and writing is largely dependent upon head movement, eye movement, body movement as well as phonology/speech-sound perception, and tactile awareness. Healthy development of vestibular/sensory systems aids in developing the learning process throughout life.

Following your appointment, to discuss these home-based exercises, please do not hesitate to contact us with any questions. Enjoy the keen awareness of your sensory systems, increased attention and relaxed alert states.