

All children with Prader-Willi Syndrome are born with abnormal tone and have physical and sensory deficiencies. The consequences of these dysfunctions may include:

- Trunk/upper and lower extremity weakness
- Sensory integration deficiencies
- Skeletal abnormality (scoliosis and hip dysplasia)
- Oral-motor dyspraxia

BRUSHING AND JOINT COMPRESSION

- Provide DEEP PRESSURE input to skin
- Should feel like a heavy massage
- Brush perpendicular to limb
- Imagine brushing the bone – bristles should bend
- Start with palm of hand, go up the arm (imagine painting a wall up and down)
- Move by turning the arm to match the brush
- Go to the back. You can brush up and down, side to side, or diagonally
- Continue to the other arm, then the palm of the other hand
- Follow this with deep proprioception to the joints
- Move to the foot and legs

What type of brush?

- Bristles should be soft

Do not brush:

- Face
- Neck
- Stomach
- Chest
- Genital regions

How to implement:

- Start with a 2 week trial
- Look for specific behaviors that will be affected
- Implement procedure 4-5/day
- If you see changes, continue for 1 month, then reduce
- This is an intense, specific treatment for a limited time - this is not forever!
- Child may need periodic 2 week “tune ups” around times of stress (after illness, after growth spurts, during holidays, etc.)

ROLLING:

1. Use a simple wooden rolling tool
2. Roll up and down back from neck to bottom
3. Implement procedure 4-5/day
4. If you see changes, continue for 1 month, then reduce
5. This is a treatment that should be maintained daily

Your child has sensory integration problems if you see the following:

- Inability to use eyes and hands together in a coordinated effort (eye-hand coordination)
- Poor balance
- Difficulty paying attention
- Doing the same thing over and over again (distractibility, perseveration)
- Avoiding movement or touch
- Low muscle tone (hypotonia)
- Difficulty maintaining alertness-frequent need to rest
- Unpredictable emotions (outbursts for no apparent reason)
- Difficulty adjusting to change in routine/transitions
- Difficulty organizing self and using self control
- Difficulty concentrating and using reasoning skills
- Poor understanding of relationships to objects in space (visual-spatial relationships)
- Poor understanding of what is being said to them (auditory processing)
- Gets upset at seemingly small changes in their environment (temper tantrums)
- Difficulty sleeping

VESTIBULAR

- Many balance problems can be tracked to the vestibular system
- Provides information about movement, gravity and changing head positions
- Helps us stabilize our eyes when we are moving and tells us if objects around us are moving or remaining still
- Need to accurately process vestibular (movement, gravity, head position) information to see, maintain posture, maintain balance, plan actions, move, calm down and regulate behavior
- A child needs to understand these spatial concepts in order to be able to translate information into the two-dimensional world of paper and pencil

VESTIBULAR - what we see:

- Falls frequently
- Hypotonic
- Clumsiness
- Unpredictable behavior
- Tantrums
- Overly impulsive
- Flicks fingers
- Decrease sense of safety
- Poor attention – vestibular input helps get the brain ready to act, think and participate
- Appears lost in space – vestibular system helps with telling where you are in time and space
- No handedness, delayed emergence of dominance, left/right confusion
- Tend to use longer periods of time to accomplish age-appropriate task
- Decrease in safety awareness

VESTIBULAR - what we do:

- Swinging - linear
- Rocking - rocking chairs or rocking horses
- Amusement park rides
- Bouncing on large balls, old mattress
- Games such as hop scotch, ball catch, soccer, baseball, hockey, tag
- Riding on trikes, bikes, scooters.
- Rolling and sledding down hills
- Roughhousing or wrestling
- Sliding down a slide
- Somersaulting
- Spinning on swivel chair, Sit & Spin, scooter board, tire swing
- Walking, running, hiking, swimming
- Zumba or Aerobic class
- Wii - Fit provides a variety of fun activities

Calming vestibular is slow, rhythmic, linear swinging or rocking, gentle, slow spinning in one direction, gentle bouncing

PROPRIOCEPTION

- Proprioceptive input provides unconscious awareness of body position and tells us about the position of our body parts, their relation to each other, and their relation to other people and objects
- It communicates how much force is needed for muscle contraction and allows us to grade our movements
- This system feeds back information about position, movement and balance from other systems, including the peripheral and central nervous system
- Receptors for the proprioceptive system are located in all of our joints
- Proprioceptive input can have a powerful calming and organizing effect on the nervous system

PROPRIOCEPTION - what we see:

- Bites and chews objects, hands and nails
- Exerts too much or not enough pressure when handling objects
- Grinds teeth
- Mushy speech
- Walks next to walls or gently touches them
- Seeks heavy work activities, jumping, crashing, pushing, pulling
- Poor writing, difficulty with coloring between lines, stopping on time, letter formation, staying in or on line, works hard at writing-pressing to give input to hands

PROPRIOCEPTION - what we do:

- Brushing, rolling, deep massage
- Digging in the garden
- Carrying heavy books, watering flowers, carrying luggage
- Catching and throwing heavy weight balls, beanbags, cushions
- Crawling through tunnels or boxes on the floor
- Gross motor activities - walking with backpack, biking uphill, obstacle course, toning exercises
- Hammering nails into logs or tees into styrofoam
- Hanging from monkey bars
- Jumping on a trampoline, old mattress or air mattress
- Karate
- Pillow fights or squishing between pillows
- Pounding and rolling play-doh or clay
- Pouring beans, sand or water from one container to another
- Pushing or pulling heavy laundry baskets, light furniture, wheelbarrow or weighted wagon
- Silly animal walks or wheelbarrow walking
- Swimming or extra bath time
- Tug of war with blankets or ropes
- Tumbling on the ground
- Sew in washers or pennies into blankets for weighted blankets
- Weight lifting

TACTILE

- Tactile input provides us with information about light touch's lap
- Hideout, fort, or quiet corner
- Neoprene vest, Lycra/spandex clothing, weighted vest
- Lap snake or pillow made from dried beans
- Lavender, vanilla or soothing smells
- Sucking
- Fidget toys
- Hugging a teddy bear, self hug or adult hug
- Reduced noise and light levels (turn off the TV, radio and lights)
- Stretches

ORGANIZING TECHNIQUES

- Sucking (hard candy, long curly straws)
- Vibration (wiggle pen, toy massager, vibrating toys or pillows)
- Proprioceptive activities
- Chewing such as gum, hard licorice
- Swimming

SCHOOL AND CHILDCARE STRATEGIES

- Visual information is easier to organize than verbal
- Minimize visual clutter
- Define their space - Are they in the middle of a class where the distractions are the highest or near a door?
- Encourage the child to be in the front or back of lines
- Build sensory activities into the day so that the child's system can stay in a calm state
- Allow self-soothing behaviors
- Use weight vests, hats, lap snakes
- Build movement into the schedule
- Allow time to switch from one activity to another
- Use color coded folders to keep order
- Use the strongest sensory systems to teach new activities
- Provide a quiet corner, room or place for child to go and relax (bean bag chair to read quietly)
- Have a rocking chair available for calming

SLEEPING STRATEGIES

- Warm bath or shower
- Massage or joint compression prior to bed
- Weighted blankets (blanket with weights sewn into them, horse blankets)
- Body pillows, sleeping bags
- Swaddle an infant
- Try different types of pajamas, tight or loose, silky or cotton, determine which your child prefers
- Bed tent to block out distractions
- Neutral color on the walls
- Dark blinds to cut down on the light
- Back rubs and brushing
- Predictable bed routines
- Organized room, clean and uncluttered

REFERENCES - CATALOGUES

- Abilitations 800-850-8602
- Sammons Presston 800-323-5547
- Sensory Resources 888-357-5867
- Oriental Trading Company Inc 800-228-2269
- Beyond Play Early Intervention Products 877-428-1244
- Super Duper Publications 800-277-8737
- The Learning Shop 800-236-7467
- Therapy Skill Builders 800-228-0752
- Flaghouse Special Populations and Rehabilitations 800-743-7900

REFERENCES – BOOKS

1. The Out-of-Sync Child: Recognizing and Coping with Sensory Integration Dysfunction.
Carol Kranowitz
2. The Out-of-Sync Child has Fun.
Carol Kranowitz
3. How Does Your Engine Run? A Leader’s Guide to the Alert Program for Self-Regulation.
MS Williams and Sherry Shellenberger
4. Smart Moves: Why Learning is Not All in Your Head.
Carol Hannaford