

Sensory Diet

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Definition of Sensory Diet. "The daily total of sensorimotor experiences needed by a person to adaptively interact with the environment." -Hanschu-

Purpose of the Program. To assist child in self-regulation. Unusual behaviors may be a result of poor regulation from the nervous system.

Goal. To utilize sensorimotor strategies to attain an appropriate state of readiness (calm alert state) to learn during the day.

Types of input utilized. Vestibular, Proprioceptive, Oral Motor, and Tactile

DEFINITIONS.

1. **VESTIBULAR.** The vestibular system affects balance, muscle tone, equilibrium responses, the ability to use both sides of the body together, coordination of the head, neck and eye movements, auditory language, and plays a role in arousal. Vestibular stimulus involves the movement of head through space and can include linear, angular, orbital, or rotary directions.

Considerations. Input typically lasts 12-14 hours after 15 minutes of movement. Never force vestibular input; enable individual to control speed, direction of input, and stopping. Peripheral vision is alerting. Watch for undesirable side effects such as flushed face, nausea, decreased balance.

2. **PROPRIOCEPTION.** The proprioceptive system gives the nervous system input on the position of muscles, joints and tendons. This is important as it provides the person with information on how far to reach, how much pressure, where we are in space, and what our body scheme is. Proprioceptive stimulus involves movement, compression, or stretching at a joint.

Consideration. Special care for individuals who have poorly articulated joints, joint deformities, or arthritic joints; give extra support and stop if there is pain or discomfort. For individuals who have low tone or too much slack in joints give slow stretch or alternate compression and stretch in rhythmic pattern and avoid quick changes of joint position. Pay attention to proper joint alignment. Be aware of poor reflex integration and lack of protective responses. The strongest, fastest, and most dramatic affects are activities which involve the spine, head/neck, or hip joints. Heavy work tasks are great for proprioceptive input; add weight, promote reaching and stretching during these activities.

3. **ORAL MOTOR.** Oral motor skills are used to regulate state of arousal. Infant and toddlers use sucking as a

way to fall asleep or calm down; children and adults may use the oral motor area to concentrate (chew gum, suck through straw or bite nails), and comfort (foods).

Considerations. Oral motor activities must be constantly and consistently monitored for safety. Be aware of food and non-food allergies when considering oral motor activities.

4. TACTILE. The tactile system is designed to alert us to threats, gives us body boundaries, and combined with proprioception, gives us our basis for body image.

Considerations. Light touch is easily misinterpreted as pain and can cause the nervous system – to go onto a state of fight or flight (autonomic nervous system; sympathetic). Always provide deep pressure when in contact with the child.

GENERAL GUIDELINES.

1. HOW TO KNOW WHEN IT IS APPROPRIATE TO GIVE VESTIBULAR INPUT.

Vestibular input can be placed in two different categories calming and excitatory.

Vestibular input that is calming is most often utilized when a child is over-aroused (decreased attention, moving around the room with little or no purpose, unable to follow simple and familiar directions, self-abusive behaviors, self-stimulating behaviors). Vestibular input that is calming are those that provide linear (back and forth) movements on suspended equipment or those that provide a slow rocking motion. Proprioceptive activities can be used with calming vestibular activities to further help the child to calm.

A therapist most often utilizes excitatory vestibular input when a child appears under aroused. (i.e. listless, floppy, unmotivated). Vestibular activities that are excitatory are those that involve fast movements on suspended equipment and may include quick changes of direction and speed; as well as those activities that have a rotary or orbital movement component.

Contradictions to excitatory vestibular input. It is with extreme caution that excitatory input is imposed on a child by a therapist. Some children who appear under-aroused are actually in a nervous system state known as shutdown. These children are so over-aroused that their nervous systems, as protection, have turned them “off” to input and they appear quiet, listless, and unmotivated. Excitatory input at this stage can cause deeper levels of shutdown. For the purpose of this sensory diet, imposed excitatory vestibular input should never be given.

Excitatory vestibular that is driven by the child should be monitored carefully for the following:

1. Is this a child that needs excitatory input or is he or she already too excited to follow directions?

♣ If already too excited – impose proprioception

♣ If child-driven excitatory input is appropriate monitor child for symptoms of over load: – Nausea, vomiting
– Pupils dilated – Dizziness – Flushed or pale skin

Stop activity at first sign of above symptoms and give calming proprioceptive input.

A child that is truly under-aroused and not seeking child-driven excitatory input to increase arousal state should be allowed to bounce on a ball or trampoline quickly to help alert. Stimulating environment with lights on and upbeat music will also help to increase arousal level. Also, consider increasing the volume and speed of your voice and your own arousal level to help stimulate the child.

2. HOW TO KNOW WHEN IT IS APPROPRIATE TO GIVE PROPRIOCEPTIVE INPUT.

Much like vestibular input, proprioceptive input can also be excitatory or calming. Excitatory proprioceptive activities are activities that have an excitatory vestibular component (like fast bouncing on a ball to increase muscle tone) or proprioceptive activities that are done in an excitatory (stimulating) environment. For example, one child jumping on a trampoline can be calming; three children jumping together on a trampoline can be excitatory. Excitatory proprioceptive activities should be utilized for an under-aroused child that is not seeking child-driven excitatory vestibular input (as previously mentioned under General guideline #1).

Remember:

1. If you are unsure if a child is in shut down or truly under-aroused give calming input first.

2. If the child continues to be inactive move to more excitatory proprioceptive activities.

3. If child becomes excited by calming proprioceptive activities, they are moving out of shutdown into over aroused, continue to impose calming activities until the child is in a state of calm, alert, and ready to work.

4. Most proprioceptive activities are calming and should be imposed if a child is over-aroused (decreased attention, moving around the room with little or no purpose, unable to follow simple and familiar directions, self-abusive behaviors, and self-stimulating behavior).

5. Calming proprioceptive input and calming vestibular input can be utilized together or independently.

3. HOW TO KNOW WHEN IT IS APPROPRIATE TO GIVE ORAL MOTOR INPUT.

As previously mentioned, oral motor activities help children and adults to calm, focus, and concentrate, and

can be utilized either immediately before fine motor task or during fine motor tasks to help the child come to midline and concentrate.

Experience has taught that oral motor activities (like lollipops) may also become a distraction (as the child pulls the lollipop in and out of mouth usually with dominant hand and therefore stops the fine motor activity). If food is the oral motor activity of choice, choose foods that remain in the mouth to help decrease distractions.

4. HOW TO KNOW WHEN IT IS APPROPRIATE TO USE TACTILE INPUT:

Tactile input can also be excitatory or calming. Generally speaking, light touch (including tickle, itch, scratch) is excitatory, especially to a sensory defensive child, and should be avoided at all times.

Tactile input that is calming involves firm pressure touch and is commonly called "brushing" or "Wilbarger Technique." It is highly recommended that you learn this technique directly from Patricia Wilbarger or a professional trained by Ms. Wilbarger.

Activities that have a tactile component are frequently utilized in therapy as part of a "multisensory approach." By bringing in a tactile component, a child is more likely to remember and sequence the activity more efficiently. Media's like shaving cream, rice, finger paint, can also help a child with decreased attention to concentrate. Making letters in shaving cream is more motivating, for example, than familiar pen and paper activities and most times a more effective learning tool. However, a child with sensory defensiveness may not tolerate these tactile activities and instead they can over excite the child. Follow a child's lead with tactile activities. If not tolerated, a firm pressure touch protocol should be utilized first, to help reduce sensory defensiveness.

SUMMARY:

1. Assess the child's current state of arousal, by observing motor behaviors: Under-aroused, over-aroused, or calm alert. Calm alert is used to refer to the optimal state of arousal to perform work.

♣ If under-aroused (not shutdown) impose excitatory proprioceptive activities, monitor child - driven excitatory vestibular input, provide a stimulatory environment.

♣ If over-aroused, provide calming proprioceptive activities and/or calming vestibular activities and/or firm pressure touch protocol.

♣ If in shut down, impose calming proprioceptive and/or calming vestibular input.

Remember, if unsure if child is under-aroused or in shutdown impose calming activities first and then reassess the state of the nervous system.

2. If calm alert, child is ready to perform fine motor tasks, sequencing/praxis activities, and new learning can occur.

3. Usually gross motor activities lead into fine motor activities.

ACTIVITIES:

The following is a list of vestibular, proprioceptive, oral motor and tactile activities that can be used throughout the day to help prepare a child's nervous system for work. It is by no means a complete list of activities and not all activities may be appropriate for all children or for a particular environment. Use what experience has taught you works for the child and his or her environment, add, and delete activities as needed.

Some activities have components of more than one sensory input (bouncing for example has both a vestibular component and a proprioceptive component). You may find an activity duplicated under two or more sensory inputs. In most cases, an activity will be found under that sensory input that is its biggest component per discretion of the author.

Excitatory vestibular activities will not be listed as it is not appropriate for this sensory diet to impose such activities (please see General Guidelines #1 for more information).

1. CALMING VESTIBULAR ACTIVITIES (V)

V-1 Rock in rocking chair

V-2 Scrub floor (real or pretend)

V-3 Run/Jog

V-4 Ride bike

V-5 Dance

V-6 Do yard or house work

V-7 Stretch/shake body

V-8 Rolling (make sure head is uncovered and clear)

V-9 Swinging- platform, hammock, net, horse, inner tube, tire, glider, playground swing in
linear direction

V-10 Scooter board in linear direction

V-11 Wagon rides

V-12 Bounce on mini trampoline, cushion, mattress (with supervision)

V-13 Marching

V-14 Imitate head movement

V-15 Movement activities/exercise

V-16 riding on moving equipment (wheelchair, elevator, car)

V-17 Climbing up and down steps

- V-18 Therapy ball/hippity hop ball- bounce, lay over it and roll (with supervision)
- V-19 Roller skating/blading
- V-20 Sledding
- V-21 Lie on couch or chair with head down and look up at the ceiling. Pretend the ceiling is the floor! How calm and clean it looks! (Having head lowered calms - having the head erect alerts.)
- V-22 Slide and climb on playground equipment
- V-23 Jump rope
- V-24 Log rolling on carpet, grass, flat surfaces, or down inclines
- V-25 Pretend swimming on carpet or floor mat with textures trying to pull or push self around

2. PROPRIOCEPTIVE ACTIVITIES (P)

Remember proprioceptive activities can become excitatory when coupled with a strong vestibular component or a stimulating environment.

P-1 Steam roller, roll large ball over and back of child, or another person roll over top of back (gently)

P-2 People sandwich: children lying on top of each other can add blankets or furniture cushions or pillows or bean bags to the sandwich.

P-3 Play catch with large ball or heavy ball

P-4 Horseback riding

P-5 Snow angel- begin this exercise by lying down on the floor. Keep your toes pointed toward the ceiling as you slide your legs out to the side. Do not let your legs roll so that your feet point out to the side. Now pull your legs together (but do not let them roll so your feet point in.)

P-6 Hand pressed together

P- 7 Table pushes

P-8 Chair pushups

P-9 Chair pushes

P-IO Wall pushes with shoulders

P-11 Wall push with back

P-12 Wall push with arms

P-13 Theraband stretches

P-14 Therapy putty or modeling clay

P-15 Neutral warmth -such as snuggling in a blanket

P-16 Slow back stroking with firm pressure or constant firm pressure on back with no movement.

P-17 Weighted backpack, fanny pack, wrist weights, or weighted vest at 20-30 minute intervals.

P-18 Heavy work activities -vacuum, moving furniture, digging in the garden

P-19 Pushing or carrying heavy objects -wagon, shopping cart, grocery bags, laundry basket, books, etc.

P-20 Bar on playground that he/she can hang from

P-21 Stacking chairs at the end of the day

P-22 Weight bearing activities, i.e. working over a chair or wedge while on stomach

P-23 Animal Walks

A) Frog jump -Squat on the floor, placing hands on floor in front of you. Move both hands forward, then bring feet up to hands in jumping motion (remain in squatting position)

B) Bear Walk -With hands and feet on floor, move right arm and leg forward simultaneously, then move left arm and leg. If this is too difficult, try it on hands and knees.

C) Inchworm -Squat on floor with hands in front. Keeping feet stable, walk hands forward as far as you can so that you are stretched out. Then keep hands stable and walk feet up to hands back to squatting position.

D) Elephant walk -Bend over with arms dangling toward floor. Clasp hands together to form trunk. Maintain position while walking, swinging trunk from side to side.

E) Kangaroo jump -Squat on floor, hands at sides, raise up and jump forward, sinking back into squatting position as you land.

F) Crab walk -Lean back and put hands on floor (supine with buttocks off floor) walk backwards, using hands and feet alternately.

G) Duck walk- Squat on floor with hands at sides. Remain in position while walking (waddling) forward.

P-24 Cooking- making ice cream with a hand crank, churning butter, kneading bread. The planning as well as the activity are good for organizing and sequencing, and the end product is very rewarding

P-25 "Stack em up and knock em down"

Use taped up cardboard shoeboxes, used spice containers, cereal boxes, wood, or plastic blocks
Have child stack blocks from various positions i.e. standing, side sit, half kneel, cross leg sit, kneel stand, side laying, hand and knees, squat, prone on elbows, sitting on small ball or adult's lap.

Find various sizes and weights of balls to throw and kick to knock down "tower" using the different positions listed above.

Add sand to some of the boxes to add variety and challenge.

Have child stack from biggest to smallest box and heaviest to lightest box.

P-26 Gardening is a great sensory experience. Some may enjoy covering seeds with dirt, digging, using a watering can, or moving dirt in a wheelbarrow from one place to another.

P-27 Car wash -all you need for this is a bucket of water and a sponge. Your child can help wash/wipe (good for range of motion and coordination) your car or bike/kiddy car, etc. Let them try operating the nozzle on the hose to rinse.

P-28 Wash table, chairs, blackboard

P-29 Hot dog game -Have the child lie on stomach: rub arms, legs, back. Roll the child up snugly in a blanket, and then rock gently with one hand on child's shoulder, other on hip. You can hum or sing with rhythm of the movement.

P-30 Wheelbarrow walk -hold you child's legs securely while they walk on their arms.

P-31 Jump up and down in place. Jump rope.

P-32 Play wrestling.

P-33 Play Rock of Gibraltar by getting down on all fours position next to each other and trying to push each other over.

P-34 Martial arts with appropriate discussion with teacher.

P-35 Tug-of-War.

P-36 Crawling (army crawl or on "all fours" through and/or over an obstacle course

P-37 Playing in a ball pit

P-38 Pushups -Lie down on your stomach with your body in a straight line and your hands flat on the floor next to your shoulders. Push down and lift you body up with you arms, Try to keep your body stiff as you do this. If you can't do a pushup with your body stiff, then lift your shoulders first, or bend your knees as you come up so you end up on your hands and knees.

P-39 Bear hugs (full body)

P-40 Squeeze toys

P-41 Sanding wood

P-42 Sit on hands or feet

P-43 Climbing rope, suspended ladder, or stairs.

P-44 Swimming

P-45 Tap toe, heel, foot, in sitting

P-46 Therapy ball/hippity hop ball for bounce

P-47 Scrub floor (real or pretend)

P-48 Joint compressions as part of Wilbarger technique –firm pressure touch protocol

P-49 Vibration– Vibration runs on the same pathway in the nervous system as conscious proprioception and therefore can be calming. However, vibration has an element of light touch that can be noxious to the sensory defensive child. Let the child lead vibration activities. Vibration activities include:

A) Vibrating hand held toys

B) Massagers/pillows

C) Electric toothbrush

D) Vibrating pens and electric scissors

E) Vibrating games (“Cut it out” and “Bed Bugs”)

CONTRAINICATION FOR VIBRATION: Low vibration: can be nauseating–keep batteries charged and replace frequently.

3. ORAL MOTOR ACTIVITIES (O)

O-1 Blowing bubbles

O-2 Blow Ping-Pong or cotton ball across table with straw.

O-3 Tugging/biting washcloth, therapy tubing.

O-4 Crunchy snacks.

O-5 Blow toys, i.e. windmills, Kazoos, whistles

O-6 Blow up balloons

O-7 Chewing gum

O-8 Vibrating toothbrushes

O-9 Resistive sucking– i.e. sports bottle, drink boxes, straw, crazy-straws, thicker liquids

O-10 Foods: popcorn, crackers, bagel, beef jerky, fruit rollups, tootsie rolls, starburst fruit chews, and pretzels

O-11 Chewing crushed ice, fruit (non-sugar) Popsicles, frozen bananas

O-12 Chew on coffee swizzle sticks

O-13 Suck on sugarless hard candy

O-14 Suck on sugarless gummy candy

O-15 Suck on sugarless jawbreakers

O-16 Slow, deep breaths; about twenty

REMEMBER: Monitor for safety and always check for food and non-food allergies.

4. TACTILE ACTIVITIES (T)

T-1 Rub child's body all over "With towels.

T-2 Rub lotion or powder on child while identifying body parts.

T-3 Pretend to paint body with clean paintbrush, then rub part off with towel.

T-4 Water play -pouring water on child.

T-5 Find hidden shapes and objects (i.e. small game pieces, coins, buttons) in dry beans or rice
in a tub or container

T-6 Playing with foam soaps in bathtub.

T-7 Blowing bubbles and "popping them".

T-8 Papier-mâché

T-9 Make collages using fabric pieces, yarns, and papers

T-10 Squeeze cheese in can dispensers~ squeeze in fingers and eat.

T-11 Feely-Meely game- use bag or box filled with a variety of objects, then reach in and try to
identify.

T-12 Chalkboard: cover with chalk, and then rub out objects, numbers, letters, and shapes. One
could also use chalk on carpet squares -then "erase" with hands for additional tactile
input.

T-13 Soap paint on body (available at children's toy stores).

T-14 Sandbox play -May also use container of dried beans, peas, macaroni noodles and
Styrofoam packing balls.

A) Hide toys throughout box and have child find them, i.e. parts to a puzzle, game pieces, stacking rings, pop
beads, then have child complete the task, game puzzle, etc.

B) Place cups, bowls, and spoons in box and have child scoop, pour, and spoon sand from one container into
another. Add water to double the challenge and fun.

C) Allow child to play in sandbox "With only shorts on to get good tactile input all over body. Encourage
weight bearing positions on hands/feet, prone on elbows, kneel stand to give additional tactile stimulation.

T-15 Pudding and Finger Painting or shaving cream

-Tack white trash bag to ground or table

- Place child in swimsuit on a warm day.
- Place various colors of water-soluble finger paint or pudding on plastic surface and let your child go to it.
- Encourage making lines, circles, squares, faces, houses, etc.
- Add dried beans, rice, sand, and noodles to vary texture
- Make finger or feet prints on paper
- Wash off outside with water hose or sprinkler

T-16 Coloring with crayons on sandpaper

T-17 Shaving cream on bathtub wall

T-18 Dot spot-put "dots" of powder or chalk on child and have him/her rub it off

T-19 Wilbarger Technique -Firm pressure touch

T-20 Fidget with a Koosh ball or other small tactile toys.

T-21 WATER PLAY

A) Identify body parts when rinsing sand off you.

B) Just sit and play at the waters edge. Just letting the waves come up and cover your legs, watching the water rush back to the lake is not only fascinating but a great tactile experience.

C) Swimming or pre-swimming motions are excellent for building up muscles as well as maintaining range of motion and overall endurance. This also helps the child learn to coordinate both sides of the body.

D) Playing motorboat is fun and good for those children who need to strengthen their trunk muscles; support child several ways i.e. one arm under the child's armpits and the other under his/her hips, both hands on each side of the child's underarms. Place the child on the surface of the water on back or tummy and move through the water in circular movements, as the child feels more comfortable, you may hold his forearms or hands and pull through the water. (Blow "raspberries" to make a motor sound while doing this.)

E) Ball or Frisbee is also fun in the water and good exercise for the shoulders and arms.

F) Try throwing stones or shells into the water.

G) Playing at sink in cold or cool water. Look for hidden objects -pretend you are at the North Pole. Use variety of objects, such as textured dish scrubbies, "octopus" soap holders.

T -22 PLAY DOUGH ACTIVITIES

- A) Pinch off small pieces between thumb and index finger
- B) Roll out long snakes on the table or between palms.
- C) Make different size balls of play dough on the table, between two palms, between two fingers in one hand.
- D) Use rolling pins and cookie cutters to cut out shapes.
- E) Place pegs, beads, blocks, and puzzle pieces to pick out and complete.
- F) Add objects to add texture i.e.: raisins, nuts, and rice.
- G) Make bracelets and rings to place on hands and feet.

PLAY DOUGH RECIPE

- 1-cup flour
- 1-cup water
- 1 cup flour
- 1 cup water
- ½ cup of salt
- 1 Tbsp. Cooking oil
- 2 tsp. Cream of tartar Food coloring

Mix all ingredients and stir constantly over medium heat. While stirring, add food coloring to desired color. Mixture will quickly turn into dough-like substance and form a ball. Take out of pan and knead with fingers. Store in an airtight container or plastic bag.