Benefits of Deep Pressure Touch

- Touch receptors are located along the skin and fascia of the body

Deep touch:

- Releases dopamine, which fights stress hormones (cortisol and adrenaline)

Why not light touch?

- Light touch:
  - Travels down same pathway as temperature, pain, and non-specific touch
    - Travels down a cortisol, adrenaline pathway (stress)
  - Notifies you of a likely dangerous situation
  - Slower pathway to dopamine
    - This is a longer pathway to the brain to release dopamine since the brain has to make sure everything is safe

- Deep touch:
  - Releases more dopamine to combat stress
  - Faster pathway to the brain

Types of touch (tactile input):

1. Object touch
   - Easiest for child to accept
2. Self
   - Children often accept touch input more easily when they are in control
3. Other touch
   - May have to work slowly toward for high arousal or defensive children

Activity Ideas:

- Roll up into a blanket
  - Child burrito, hotdog (add toppings such as with pillows for more deep input), or a caterpillar in cocoon
- Steam roller with ball using firm pressure while child lays down
- Crawling through tunnel, couch cushions, etc... make space smaller with added pillows for more deep input and add materials with different textures for more tactile rich experience
- Make a fort or tent with cushions for couch, chairs, and pillows
- Bear hugs

Any questions? Please contact your OT!

- Firm pressure during bath time or washing hands with use of washcloth, loofa, etc...
- Roll materials along arms, hands, legs, feet with rolled play doh or goo
- Lotion massages
- Tactile play with heavy different materials (paint, smooth rocks, play doh, etc...)
    - Smooth consistent materials tend to be more calming
    - Inconsistent materials with different messy consistencies tend to be more alerting

*** Tips:

Always watch for child's reaction! If child looks uncomfortable, slow pace, possibly momentarily pause. Singing and counting can be utilized to help engage child further.

A child who is in a defensive or high arousal state may feel threatened by touch from someone and lead to an aggressive reaction (hitting, kicking, biting, etc...).

Some touch experiences that are registered primarily as light touch can be alerting such as shaving cream, rice, etc...

Start with drier, cleaner materials and progress to messier materials

Each child is unique ☺

What you will see:

- With positive deep touch or tactile experiences, a calm state can arise.
- Effects can last 90 minutes to 2 hours

Any questions? Please contact your OT!

Help! Circle Time is Out of Control!

- You are not alone! Circle time can be one of the most difficult times for children throughout the day, especially children with attention, learning, behavioral, and sensory needs.

1. Start small

- Even if your end goal is for circle time to be 15 minutes, you may want to start with a much shorter goal such as 5 minutes the first couple times to get the group used to the routine and expectations while avoiding power struggles.
- First couple circles can consist of simply introducing the beginning circle song and ending circle song followed by lots of rewards for all appropriate behaviors!!

2. Keep it fun
    - Children will be more likely to participate with rewarding, fun activities.
    - Singing, rhythms, rhymes, and movements are more likely to capture and maintain young children's attention.
    - Add songs, rhythms, rhymes, and movements as often as possible to help with cognitive processing.
        - Songs, rhythms, movements, and rhymes help shorten information for children to understand while adding meaning to words.
3. Add sensory input to increase attention
    - Tactile input provides dopamine which fights stress hormones (adrenaline and cortisol)
        - Circle ideas:
            - Clapping hands, patting floor/legs, rubbing arms, legs, high fives, holding something in hands to touch i.e. straw, pipe cleaner, wikii stix, fidget (something that can quietly be manipulated).

    - Proprioceptive (muscle and joint work-pushing, pulling, carrying, joint compressions, heavy items) input provides serotonin which helps provide a sense of connection and promote socialization.
        - Circle ideas:
            - Pass around something heavy, stomp feet, push hands together, pull apart, or squeeze objects.
            - Weighted items (lap pad, vest, etc...)
            - Sitting in bean bag chair or on pillows.
            - Theraband connected to chair to kick.
            - Whenever children appear to be getting over aroused, revert to proprioceptive input or tactile input.

    - Vestibular (movement involving the inner ear) input provides histamine which wakes up the brain
        - Rocking forward and backward, side to side, turning head side to side, passing objects around the circle.
        - Too much vestibular input can overstimulate children if the intensity is too high for the child. Always watch child's cues and provide proprioceptive input after vestibular input.

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Proprioception

What is it?:

- The sense of where your body is in space. Proprioceptive activities involve pushing, pulling, and resistance.

Function:

- Proprioceptive activities: release serotonin
  - Responsible for a "feel good" response, feeling of safety, or connection
- Gives information about automatic (unconscious) movement
- Info comes from skeletal muscles, tendons, and joints
- Sends info back to the brain (brainstem, cerebellum, thalamus, cortex)
- Can be active or passive:
  - Active (heavy work)=pushing, pulling, carrying heavy objects, working against resistance
  - Passive=joint traction, joint compressions, weighted items

What you will see:

- After proprioception, more eye contact and social interaction may be observed
- Active proprioceptive activity effects last 2-4 hours
- Passive proprioceptive activity effects last 90 min-2 hours

Activity Ideas:

- Provide resistance as child opens doors
- Carrying heavy objects
- Tell child to push the wall down, or floor down
- Hammer nails into play doh
- Hopping, jumping, army crawling, or animal walks
- Row, row your boat with a partner (pushing and pulling with arms and legs)
- Tug-o-war, gentle rough house play
- Pillow fights
- Jumping or crashing into pillows, bed, or mat
- Jumping on trampoline
- Jumping from last couple stairs (with supervision if safe)
- Sleep with heavy blanket or body pillow inside a sleeping bag
- Make tents, obstacle courses in which child must crawl over and under items
- Chair push ups
- Traction or compression of joints (speak to OT for proper technique)
- Yoga
- Deep breathing and blowing activities
- Leap frog
- Wheelbarrow walking
- Running
- Monkey bars, climbing activities
- Pulling, pushing a wagon

Any questions? Please contact your OT!

Vestibular, Vestibular Vestibular!!!

What is it?:

- Movements stimulating the inner ear

Function:

- Vestibular input releases *histamine*
    - The vestibular center acts as a "Fuse box" or orchestrator or the nervous system or a pacemaker
    - Sets all the chemicals to be balanced
    - Wakes up the brain
        - Lights up the nervous system
- Always getting input from this system so we know which way is up
- If this system is off, throws all other sensory systems off (vision, auditory, etc...)
- Dysfunction with this system throws off other systems
    - All other systems depend on it

What you will see:

- Child's brain "waking up"
- Duration of effects:
    - Active vestibular input: (child actively does)2-6 hours (less chance of overstimulation vs passive)
    - Passive vestibular input: (someone does for child) 6-12 hours
- Follow up with proprioception work! This will help keep your child at the just right state. Vestibular input has the greatest chance of overstimulation.
- Always watch for signs of nausea or disorganization. If you see these signs, immediately provide proprioception (muscle and joint work, heavy work).

Activity Ideas:

- Row row your boat, with child's head rocking forward and backward or side to side
- Stretching to reach toes
- Doing head, hand stands, log rolling, or somersaults
- Hanging upside down from couch, monkey bars, etc...
- Rolling a ball under legs, passing a ball to a partner (back to back)
- Running around in a circle
- Arm circles
- Swinging
- Singing songs and rocking forward/backward, and side to side
- Spinning on an office chair, sit in spin, merry go round, or while standing
- Yoga poses involving changes of head position

***Caution!!!

- Always watch for signs of nausea or overstimulation as too much vestibular input can be disorganizing
- Always follow vestibular input with proprioception, especially if signs of over arousal are surfacing
- Child participating actively is less likely to cause overstimulation as passive vestibular input (i.e. swinging in a blanket)
- Watch child's cues to see what intensity they need

Any questions? Please contact your OT!

Trunk Control

The **trunk,** or the core, are the muscles located in the abdomen, back and pelvis. These muscles are necessary for posture, sitting upright, and

*Always make these activities fun to encourage your child ☺

*Make sure child is breathing normally. If the child is holding his/her breath, they may be compensating and not using the core muscles we are targeting.

Exercise 1. **BRIDGING**

- This exercise helps strengthen your belly muscles!
- Have child lay on back with his knees bent and feet flat on the floor. Have them push hard through their heels to raise their bottom up off the floor. Be sure that they are keeping their head and shoulders on the ground. Encourage child to hold it if able.
    - Adaptations: place a stuffed animal between child's knees and have them squeeze while bridging, zoom cars underneath to see how many cars can go underneath, or have stuffed animals crawl underneath, "don't squish the doggy!" Can even have child attempt to lift 1 leg up for extra challenge.

Exercise 2. **SUPERMAN**

- This exercise helps strengthen the back muscles!
- Have child lay on his/her stomach on the floor and lift his/her arms up off of the floor. Encourage the child to lift his/her chest off as well and legs if able.
    - Adaptations: lifting just arms or just legs to make it easier. Hold a ball between his/her hands or feet while lifting up. Place a stuffed animal on child's back and see if the child can lift up to fly without knocking the animal. Encourage child to reach for items such as stickers, puzzle pieces, etc... For added fun, try this on a swing or a large exercise ball.

Exercise 3. **KNOCK ME OVER**

- This exercise can be done with smaller children on your lap, or with bigger kiddos on a large therapy ball or even with them kneeling on both knees.
- The goal is for the child to maintain enough stability through their trunk to stay upright! If you have a small child on your lap, sit on a couch or bed for a soft landing surface. Bounce them up and down a few times (maybe sing "I'm a Little Teapot) and then try to knock them over. The first few times, they will likely fall!

Any questions? Please contact your OT!

- Adaptations: gradually increase the pressure that it takes to knock them down. Every time the child has to get up, this is part of the working out the core too! Gradually decrease the amount of assistance it takes to get them back to a sitting position. Have the child in a tall kneeling position on the floor and play catch with balls of varying sizes and weights. The heavier the ball, the bigger the challenge. Can have child maintain posture while on top of large ball as the ball is rocked in different directions.

Exercise 4. **PLANK**

- This exercise is an overall core strengthener.
- Have your child lay on his/her stomach on the floor with his hands flat on the floor at shoulder level and toes on the floor. On the count of 3, have the child push up on his/her hands to straighten each arm and lift the whole body all the way to his toes off of the floor (above).
    - Adaptations: hold the plank position on forearms with elbows at 90 degrees instead of his hands. If holding his whole body off of the floor is too much, try dropping the knees to the floor for support. While in that position, have child lift an arm straight out in front and hold. How about an opposite arm and leg? Can child hold it long enough for another child to creep underneath or for 3 balls to roll under?

Exercise 5. **CORE STRENGTHENING FOR THE BABIES!**

- Before being born, babies are primarily in tight spaces in a flexed position. Babies need to spend time on their tummies to stretch out their belly muscles and to strengthen the muscles of their neck and back.
- Tummy time will assist the child in being able to crawl, stand, walk, jump, and skip.

Exercise 6. **WHEELBARROW WALKING**

- Have child lay with the stomach on the floor. Have child walk his or her hands forward as you hold his or her knees or ankles (more challenging).
- Have child walk hands forward 10 steps and backward 10 steps. Can child walk forward to a ball and put it in a basket with one hand? How long can child hold this position without pulling their legs away?
    - Adaptations: Place an object on the child's back and see if he/she can get it across the room without it falling off. See if child can tap a balloon.
      -Complete puzzle wheelbarrow walking.
      -For a BIG challenge, try holding the wheelbarrow position in front of a few steps. See if your child can put their right hand up on the first step and then their left. Can they return their hands to the ground?

Any questions? Please contact your OT!

More Core Strengthening Fun!

–Swimming -Negotiating an obstacle course -Climbing up a slide instead of sliding down – Swinging –Crab walking –Playing Row Row Your Boat -Playing tug of war

Bed Time

- Sleep is very important to the development of the brain. Nutrition, sleep, and sensory experiences help develop necessary neurotransmitters and neurochemicals for the brain to mature.
- Avoid any vestibular (activities encouraging change of head position) input prior to bed time. Vestibular input releases histamine into the brain which lights up and wakes up the brain. We want to help the child get to a resting state, so vestibular input should not be included in your routine before bed.

Calming activities:

- <u>Tactile (touch):</u>
  - Can read a book with different tactile (touch input) or textures
  - Lotion massage with slow firm pressure
  - Cuddle or bear hugs while reading a story
- Take a warm bath
  - Showers are more alerting to the nervous system
  - A consistent warm temperature is to be kept as much as possible (keep bathroom door shut)
  - After bath can dry off with a heavy towel and rub with firm pressure, can wrap tightly in towel for added firm pressure
  - Consider use of Epsom salt
    - **magnesium sulfate** is absorbed through the skin, such as in a bath, it draws toxins from the body, sedates the nervous system, reduces swelling, relaxes muscles, is a natural emollient, exfoliator, and much more (google.com).

  *** Always use supervision during bath time

- <u>Proprioceptive:</u>
  - Can use a heavier blanket
  - Wrap tightly in blanket

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Tactile Defensiveness:

- Children who are resistant to touching a variety of materials or sensitive to certain textures can benefit from positive touch experiences to help make changes to their nervous system
- Child starts with looking, smelling, touch with one finger, touch with one hand, touch with both hands
- Can also utilize tools to help child become more comfortable initially
- This is all about letting the child positively exploring the textures
- Child should never be forced to touch materials
- If child continues to be resistant, may need to revert to a less aversive material/texture.

Tactile Discrimination

- A child with decreased tactile discrimination will have difficulty interpreting tactile stimuli in a precise efficient manner.
    - So they have trouble localizing where objects have touched them or manipulating an object out of sight (stereognosis).
- Start initially with grossly dissimilar objects, then progress to more similar objects
    - Ex: Start with spoon and penny, then move toward penny and quarter
- If child can not move the hand, the item can be moved over the child's hand
- Grading task
    - First ask child if object is the same or not
    - How is it the same/different
    - Identify object or material

Localization:

- Child opens eyes and points to place touched

Any questions? Please contact your OT!

Activities:

- Have child distinguish between shapes, sizes (blocks, balls, etc...)

Any questions? Please contact your OT!