



# Sensory Activities

to improve attention in  
neurodivergent children

PENNY ROGERS



WHEN IT COMES TO THE OVERALL SENSORY SYSTEM,

VESTIBULAR, PROPRIOCEPTIVE , AND INTEROCEPTIVE INPUTS PLAY A HUGE ROLE IN ITS FUNCTION.

WITHOUT UNDERSTANDING IT, MOST KIDS HAVE ISSUES THAT ARE EITHER BRUSHED OFF, MISDIAGNOSED, OR SEEN AS A CHARACTER FLAW, WHICH CAN CAUSE HUGE PROBLEMS. LEARNING WHAT VESTIBULAR AND PROPRIOCEPTIVE INPUTS ARE AS WELL AS LEARNING HOW IT CAN AFFECT YOUR CHILD'S EDUCATION IS CRUCIAL TO SETTING YOUR CHILD UP FOR SUCCESS.



# Vestibular Input

## What is it?


- THE SENSATION CAUSED BY ANY CHANGE IN POSITION (DIRECTION OR MOVEMENT) OF THE HEAD
- THIS SENSORY SYSTEM IS MADE UP OF CANALS FILLED WITH TINY HAIRS AND A BIT OF FLUID.
- WHEN OUR HEAD MOVES, THE FLUID ACTS AS TRIGGERS THAT WHEN TOUCHED BY THE HAIR BECOME RECEPTORS THAT TELL THE BRAIN THE BODY IS MOVING.

## What do kids averse to this input look like?

- USUALLY A SENSORY AVOIDER
- GETS MOTION SICK EASILY
- OVERWHELMED BY FAST MOVEMENTS
- MAY AVOID OR DISLIKE MOVEMENTS LIKE SWINGING, SPINNING, BEING UPSIDE DOWN, ETC

## What do kids seeking this input look like?

- USUALLY A SENSORY SEEKER
- NEVER GETTING DIZZY.
- ALWAYS RUNNING AND MOVING.
- FREQUENTLY SPINNING.
- CLIMBING EXTREMELY HIGH
- FIRST TO THE SWING SET
- LOTS OF MOVEMENT BASED SELF SOOTHING LIKE ROCKING, PACING, JUMPING, ETC

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- BALANCE AND POSTURE: THE VESTIBULAR SYSTEM IS FUNDAMENTAL FOR MAINTAINING BALANCE, STABILITY, AND AN UPRIGHT POSTURE, ESPECIALLY DURING MOVEMENT. IT WORKS WITH OTHER SYSTEMS LIKE VISION AND PROPRIOCEPTION.
  - SPATIAL AWARENESS: IT PROVIDES THE BRAIN WITH INFORMATION ABOUT THE HEAD'S POSITION AND MOVEMENT IN SPACE, WHICH IS ESSENTIAL FOR UNDERSTANDING OUR BODY'S ORIENTATION IN THE ENVIRONMENT.
  - COORDINATION OF MOVEMENT: VESTIBULAR INPUT HELPS COORDINATE HEAD AND BODY MOVEMENTS, AS WELL AS EYE MOVEMENTS (VESTIBULOCULAR REFLEX) TO STABILIZE VISION DURING MOTION.
  - SENSORY INTEGRATION: IT PLAYS A ROLE IN HOW THE BRAIN ORGANIZES AND INTERPRETS SENSORY INFORMATION FROM VARIOUS SOURCES, INFLUENCING OUR RESPONSES TO TOUCH, SOUND, AND OTHER STIMULI.
  - MOTOR SKILLS DEVELOPMENT: PROPER PROCESSING OF VESTIBULAR INPUT IS CRUCIAL FOR DEVELOPING MOTOR SKILLS LIKE WALKING, RUNNING, CLIMBING, AND RIDING A BIKE.



Vestibular input also affects  
other areas, such as  
developing visual motor skills  
and body awareness

ALL CHILDREN NEED TIME ROLLING AND SPINNING AROUND TO  
TEACH THEIR BRAINS HOW THEIR BODY MOVES THROUGH SPACE



# Types of Vestibular Input

- LINEAR - MOVEMENT IN A STRAIGHT LINE, LIKE PACING
- ROTARY- SPINNING OR CIRCULAR MOVEMENT
- ORBITAL - A COMBINATION OF SPINNING AND MOVING AROUND AN AXIS, LIKE RUNNING IN A CIRCLE, SPINNING WHILE JUMPING, CARTWHEELS, ETC ETC
- INVERSION - UPSIDE DOWN
- LATERAL - MOVEMENT ON ONE SIDE (LITERALLY SIDE LYING) LIKE SHIFTING YOUR WEIGHT, ROCKING, AND SWINGING





# Vestibular Input Activities

- ROCKING ON AN EXERCISE BALL.
- PRACTICE YOGA TECHNIQUES.
- PRETEND TO ROW IN A BOAT (ROCKING BACK AND FORTH).
- SKIPPING.



- GALLOPING.
- RUNNING.
- JUMPING ROPE
- RIDING IN AN ELEVATOR
- HANGING UPSIDE DOWN



- RIDING A BIKE.
- SWIMMING
- HORSEBACK RIDING
- SWINGING
- ROLLING ON YOUR SIDE



- HAND STANDS WITH FEET AGAINST THE WALL.
- CARTWHEELS.
- JUMPING ON A TRAMPOLINE
- ROLLER SKATING.

# Proprioceptive Input

## What is it?

- THE SENSORY INPUT GAINED FROM JOINTS, MUSCLES, AND CONNECTIVE TISSUES.
- PROPRIOCEPTIVE RECEPTORS TELL THE BRAIN WHERE THE BODY IS IN SPACE.
- PROPER DEVELOPMENT OF THIS INPUT IS CRUCIAL FOR MOTOR FUNCTION, MOTOR CONTROL, AND BODY AWARENESS.

## Are there kids adverse to this input?

NOT USUALLY, KIDS MAY BE ADVERSE TO CERTAIN WAYS TO GET PROPRIOCEPTIVE INPUT, BUT NOT THE INPUT ITSELF.

THIS INPUT CAN BE OVERWHELMING, OR YOUR CHILD DOESN'T ENJOY SPECIFIC PROPRIOCEPTIVE ACTIVITIES. DON'T BE AFRAID TO EXPLORE UNCONVENTIONAL WAYS TO WORK ON THIS INPUT!

## What do kids needing this input look like?

- CONSTANTLY ASKING FOR HUGS, LEANING ON PEOPLE, NOT GIVING PEOPLE PERSONAL SPACE.
- PLAYS TOO HARD
- STRUGGLES WITH COMPLEX GROSS MOTOR SKILLS LIKE WALKING UP STAIRS, KICKING A BALL, DOING JUMPING JACKS ETC ETC
- TOE WALKS.
- CLUMSY AND UNCOORDINATED





Proprioceptive input plays an important role in the development of self-regulation, posture, body awareness, coordination, speech, and the ability to focus.

While this input can be calming for many neurodivergent people, it can be stressful for those who are sensitive to sensory stimulation. Watch your child closely while doing proprioceptive activities because they may become overwhelmed quickly.

# Proprioceptive Input Activities

- JUMPING ON A TRAMPOLINE
- SWIMMING
- PLAYING FRISBEE
- CHEWING GUM
- DRINKING MILKSHAKES OR ANY THICK LIQUID WITH A STRAW
- GARDENING
- SWINGING
- CRAWLING.
- PUSH UPS.
- PLAYING TUG-OF-WAR
- CARRYING BOXES OR BOOKS.
- BOWLING
- BLOWING BUBBLES.
- TIGHT HUGS
- DANCING
- ROLLER-SKATING





# Interoceptive input

## What is it?

- THE SENSE THAT ALLOWS INDIVIDUALS TO PERCEIVE AND UNDERSTAND INTERNAL BODILY SENSATIONS.
- IT INVOLVES THE BRAIN'S AWARENESS OF SIGNALS COMING FROM THE BODY, SUCH AS HEARTBEAT, BREATHING, HUNGER, AND THE NEED TO GO TO THE TOILET
- CRUCIAL FOR UNDERSTANDING ONE'S EMOTIONAL STATE AND REGULATING BEHAVIOR.

## Examples of interoceptive sensations

- HUNGER, THIRST, AND FULLNESS
- FEELING HOT OR COLD
- HEARTBEAT, BREATHING, AND MUSCLE TENSION
- PAIN, NAUSEA, DIZZINESS, AND THE NEED TO USE THE RESTROOM
- ABILITY TO REGULATE EMOTIONS





IN ESSENCE, INTEROCEPTION IS A KEY SENSE THAT HELPS US  
UNDERSTAND AND RESPOND TO OUR INTERNAL WORLD, IMPACTING  
OUR EMOTIONS, BEHAVIORS, AND OVERALL WELL-BEING.

A BRAIN THAT IS WIRED DIFFERENTLY CAN STRUGGLE TO RECEIVE,  
INTERPRET, AND RESPOND TO THE SIGNALS THEIR NERVOUS SYSTEM  
IS GIVING.

IT'S VERY COMMON FOR NEURODIVERGENT PEOPLE TO HAVE  
LITTLE TO NO INTEROCEPTION, WHICH MEANS WE JUST HAVE TO DO  
SO MANUALLY!

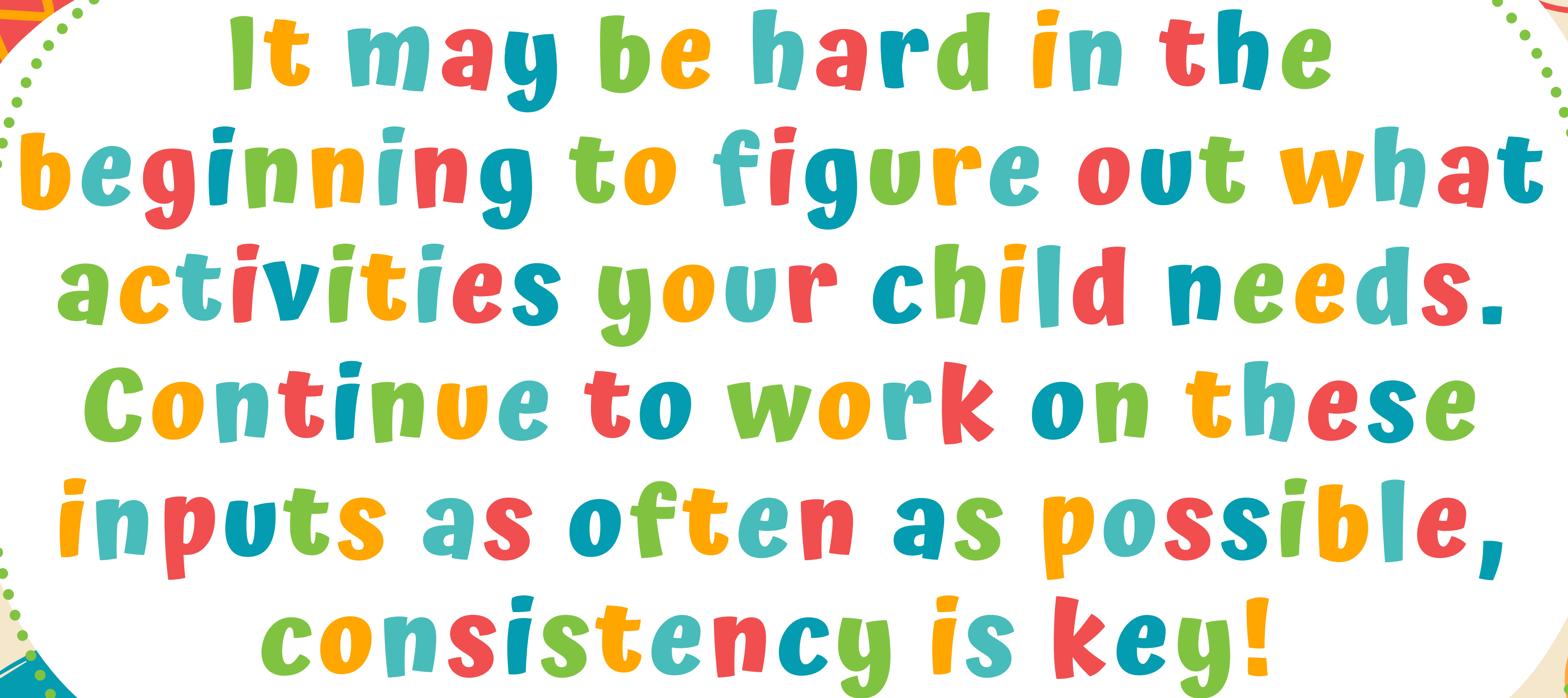
# Interoceptive Input Accommodations

- WE CAN USE EXTERNAL, OR INTERNAL, SIGNALS AND SUPPORTS TO HELP DEVELOP INTEROCEPTION AWARENESS
- SMART WATCHES – THESE CAN BE USED TO MEASURE HEART RATE, AND CAN BE USED WITH PHONE APPS TO PROMPT EATING/DRINKING
- WEATHER APPS – THIS CAN GUIDE A PERSON'S AWARENESS OF TEMPERATURE AND SUPPORT THEM TO CHOOSE APPROPRIATE CLOTHING.
- HYDRATION AND BRISTOL STOOL CHARTS TO CHECK PEE AND POO
- APPS THAT PROMPT YOU TO DRINK/EAT AT REGULAR INTERVALS
- VERBAL OR VISUAL PROMPTS TO EAT, DRINK AND/OR GO TO THE TOILET.
- SOMATIC ACTIVITIES LIKE YOGA, BREATHING EXERCISES, AND SELF TALK.
- EMOTIONAL REGULATION EXERCISES LIKE JOURNALING, USING MOOD CARDS, AND TAKING BREAKS WHEN FRUSTRATED

# When should you do these activities?

- INCORPORATE ACTIVITIES NATURALLY INTO YOUR CHILD'S EVERYDAY SCHEDULE
- TRY TO START THE ACTIVITIES YOUR CHILD NEEDS BEFORE YOUR CHILD BECOMES ANXIOUS OR DISTRESSED.
- WATCH YOUR CHILD FOR SIGNS THAT THEY MAY NEED A SENSORY BREAK, SO THEY DON'T GET OVERWHELMED AND OVERSTIMULATED
- GIVE YOUR CHILD CUES THEY CAN USE TO HELP IDENTIFY WHEN THEY MAY NEED TO START OR STOP THESE ACTIVITIES, LIKE FLASH CARDS, OR A VERBAL CODE WORD
- ACTIVITIES CAN LAST ANYWHERE FROM 30 SECONDS TO A COUPLE OF MINUTES, THERE'S NO TIME LIMIT
- YOU KNOW YOUR CHILD BEST!





It may be hard *in* the  
beginning to figure out what  
activities your child needs.  
Continue to work on these  
inputs as often as possible,  
consistency is key!

# Meet The Author!

HI! I'M PENNY!

I'M THE AUTISM/HOMESCHOOL ADVOCATE,  
SPEAKER, AND CONSULTANT AT  
OUR CRAZY ADVENTURES IN AUTISMLAND  
& SPECIAL NEEDS HOMESCHOOLING.

I'VE BEEN RUNNING MY BLOGS AS A SOURCE OF  
ENCOURAGEMENT AND A RESOURCE FOR AUTISM  
AND HOMESCHOOLING PARENTS SINCE 2007.



Find us here at AFHE  
in booth #304

MY DAUGHTER, MADI, AND I WILL BE  
HAPPY TO SEE YOU THIS WEEKEND!



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