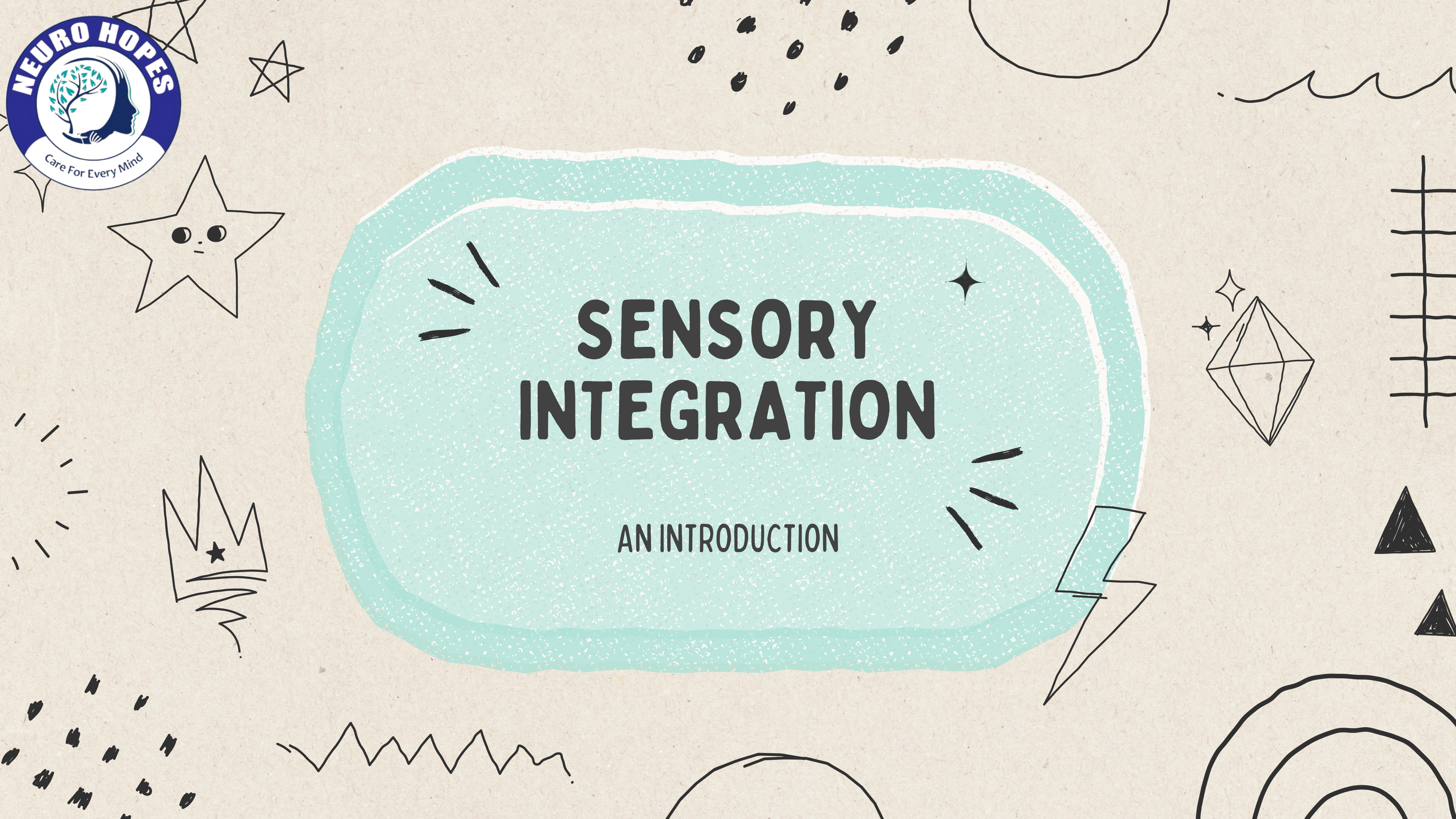
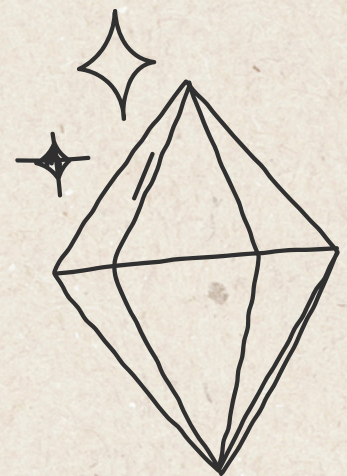


SENSORY INTEGRATION

AN INTRODUCTION





INTRODUCTION TO SENSORY INTEGRATION

- **SENSORY INTEGRATION, SIMPLY PUT, REFERS TO HOW WE EXPERIENCE, INTERPRET AND REACT TO OR IGNORE INFORMATION COMING FROM OUR SENSES**
- **SENSORY INTEGRATION IS IMPORTANT FOR ALL THE THINGS WE NEED TO DO DAILY**
- **IT DEVELOPS NATURALLY DURING ORDINARY CHILDHOOD ACTIVITIES**
- **THE CONCEPT WAS INITIALLY DEVELOPED BY DR A JEAN AYRES IN THE 1970**



THE SENSORY SYSTEMS

01

VISION

- SEEING
- EYES
- OCCIPITAL LOBE

02

AUDITORY

- HEARING
- EARS
- TEMPORAL LOBE

03

OLFACTORY

- SMELLING
- NOSE
- OLFACTORY BULB

04

GUSTATORY

- TASTING
- TASTE BUDS
- INSULAR CORTEX



THE SENSORY SYSTEMS

01

TACTILE

- TOUCH AND PAIN
- SKIN
- PARIETAL LOBE

02

VESTIBULAR

- BALANCE AND ORIENTATION
- SEMICIRCULAR CANALS
- BRAINSTEM

03

PROPRIOCEPTION

- SENSE OF MUSCLE AND JOINT MOVEMENTS
- INNER EAR
- CEREBELLUM AND BRAINSTEM

04

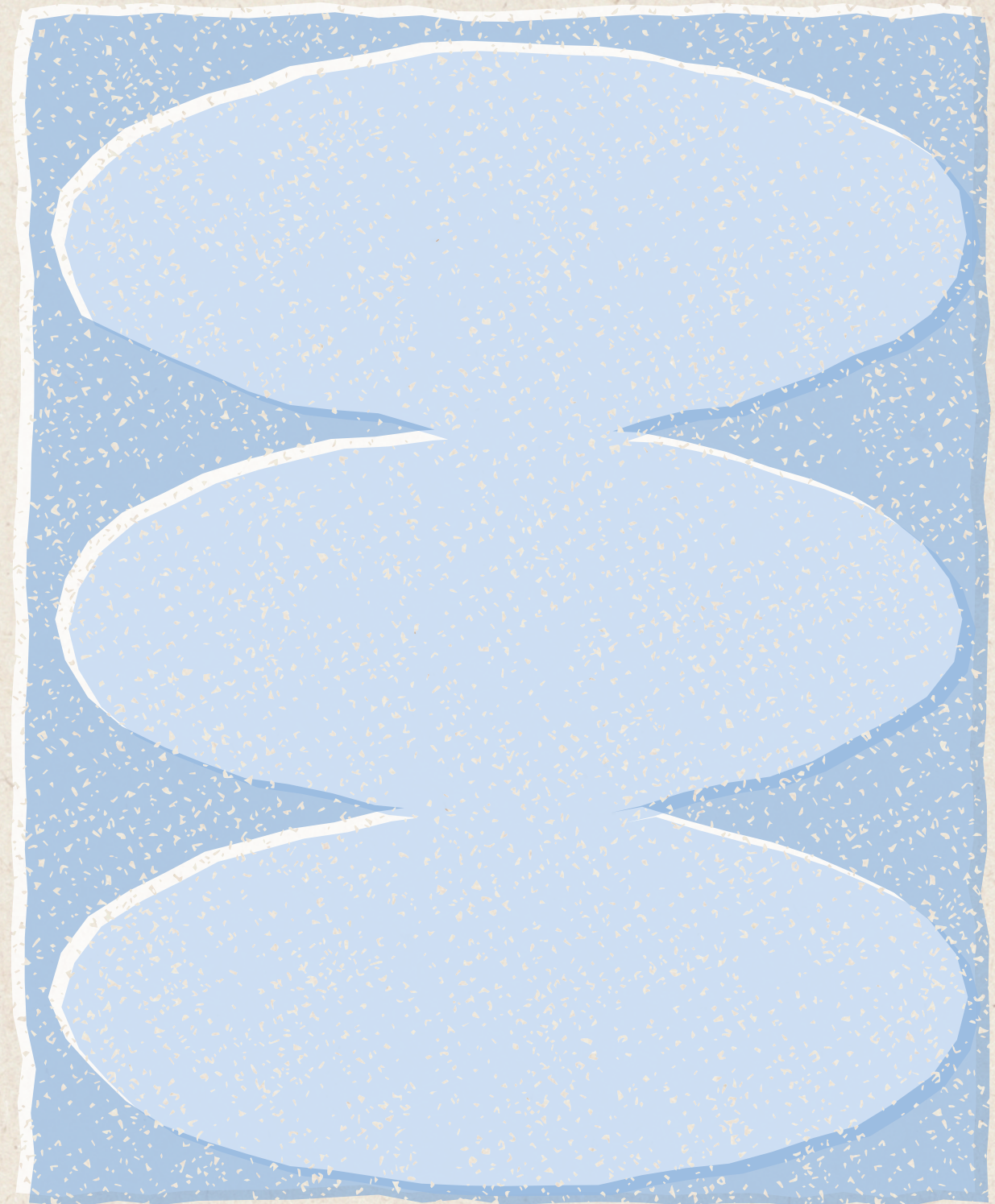
INTEROCEPTION

- PHYSICAL BODY CONDITION
- INTERNAL ORGANS
- INSULAR CORTEX



HOW SENSORY INTEGRATION WORKS

- **AYRES PROPOSED THAT**
 - **LEARNING TAKES PLACE AS A FUNCTION OF REWARD AND REINFORCEMENT**
 - **ONE LEARNS WHAT ONE DOES**
 - **LEARNING TAKES PLACE BECAUSE THERE IS A PURPOSE FOR ITS TAKING PLACE**
- **DEVELOPMENT OF THE BODY SCHEME, DEVELOPMENT OF POSTURE AND MOTOR TASKS, AND EVEN ACADEMIC SKILLS ALL NEED THE INPUT OF SENSORY INFORMATION**
- **SENSORY SYSTEMS DEVELOP IN RELATION TO AND BECAUSE OF ONE ANOTHER.**



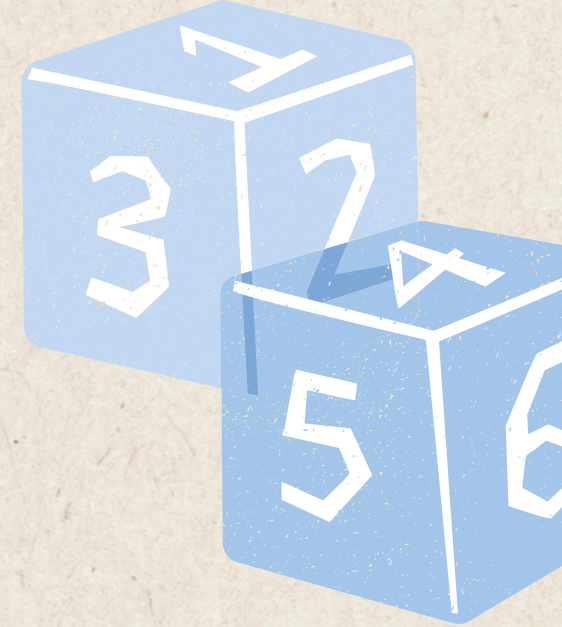


- **EVERYONE OCCASIONALLY FEELS UNDER-OR OVERSENSITIVE TO SENSORY INPUTS, BUT THESE ARE TEMPORARY AND WOULDN'T AFFECT YOUR DAILY ROUTINE.**
- **SENSORY INTEGRATION PROBLEMS ARE LONG-TERM AND HAVE A BIG IMPACT ON DAILY FUNCTIONING.**
- **DURING HER CAREER AS AN OCCUPATIONAL THERAPIST, AYRES DISCOVERED THAT CHILDREN WITH LEARNING DISABILITIES INTERPRETED SENSORY MESSAGES DIFFERENTLY FROM THEIR PEERS**
- **SHE BEGAN TO FOCUS ON TOUCH, VESTIBULAR, PROPRIOCEPTIVE AND VISION SENSES**
- **CHILDREN WITH LEARNING DISABILITIES DIDN'T INTEGRATE OR COMBINE THE MESSAGES FROM THESE SENSES VERY WELL.**





SENSORY PROCESSING DISORDERS



SENSORY INTEGRATION DIFFICULTIES CAN BE GROUPED INTO TWO MAIN CATEGORIES:

- **SENSORY MODULATION DYSFUNCTION - SENSORY MODULATION REFERS TO THE BRAIN'S ABILITY TO FILTER OUT AND TUNE INTO THE SENSORY INFORMATION THAT IT NEEDS TO MAKE SENSE OF THE INFORMATION REQUIRED FOR PARTICIPATION IN A TASK.**
 - **OVER-RESPONSIVENESS - PEOPLE WITH OVER-RESPONSIVITY MAY HAVE HEIGHTENED REACTIONS TO SENSORY INPUT.**
 - **BE SENSITIVE TO TOUCH, FINDING ACTIVITIES LIKE NAIL CUTTING, MESSY PLAY, OR HAIR CUTTING UNCOMFORTABLE**
 - **REACT STRONGLY TO LOUD OR SUDDEN SOUNDS**
 - **AVOID PLAYGROUND EQUIPMENT LIKE SWINGS AND SLIDES BECAUSE THEY FIND THEM OVERWHELMING**
 - **BE PICKY ABOUT CERTAIN FOODS BASED ON THEIR TEXTURES, COLOURS, TEMPERATURES, ETC.**
 - **UNDER-RESPONSIVENESS - PEOPLE WITH UNDER-RESPONSIVITY MAY HAVE A REDUCED REACTION TO SENSORY INPUT.**
 - **APPEAR FEARLESS OR DO NOT NOTICE WHEN THEY ARE IN PAIN**
 - **SEEK OUT MORE SENSORY INPUT, SUCH AS FIDGETING, ROCKING, OR RUNNING AROUND**
 - **FREQUENTLY MOUTH OR CHEW ON OBJECTS**
 - **SHOW POOR ATTENTION TO THEIR SURROUNDINGS OR THE PEOPLE AROUND THEM.**



SENSORY PROCESSING DISORDERS

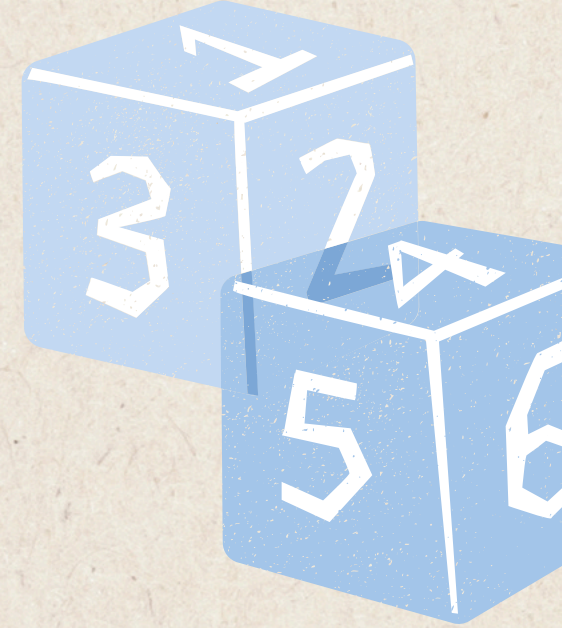


- **DYSPRAXIA - DYSPRAXIA REFERS TO DIFFICULTIES WITH MOTOR PLANNING AND EXECUTION, WHICH CAN AFFECT A PERSON'S ABILITY TO PERFORM COORDINATED MOVEMENTS.**
 - **VESTIBULAR BILATERAL INTEGRATION AND SEQUENCING (VBIS) - DIFFICULTIES IN PROCESSING VESTIBULAR AND PROPRIOCEPTIVE SENSATIONS. IT AFFECTS THE ABILITY TO CONTROL BODY EXTENSION, BALANCE, BILATERAL INTEGRATION, SEQUENCING OF MOVEMENTS AND MOTOR PLANNING OF MOVEMENTS.**
 - **APPEAR CLUMSY**
 - **STRUGGLE WITH SKILLED COORDINATION OF ACTIONS THAT REQUIRE SMOOTH AND EFFICIENT TIMING AND SPATIAL ACCURACY,**
 - **HAVE DIFFICULTY CROSSING THE MIDLINE**
 - **HAVE DIFFICULTY COMPLETING MULTI-STEP ACTIVITIES**
 - **HAVE DIFFICULTY WITH TASKS THAT INVOLVE THE INTEGRATION OF VISION AND MOVEMENT**





SENSORY PROCESSING DISORDERS



- **SOMATODYSPRAXIA - SOMATODYSPRAXIA RELATES TO DIFFICULTIES IN COORDINATING AND EXECUTING NEW, RATHER THAN HABITUAL, MOTOR TASKS.**
 - **APPEAR CLUMSY**
 - **HAVE DIFFICULTY PLANNING AND ORGANISING THE SEQUENCES OF MOVEMENTS IN ACTIVITIES**
 - **HAVE DIFFICULTY WITH DAILY ACTIVITIES SUCH AS GETTING DRESSED, USING A KNIFE AND FORK**
 - **BUMP INTO AND/ OR TRIP OVER THINGS FREQUENTLY**
 - **TAKING LONGER TO LEARN SKILLS SUCH AS TYING SHOELACES, WRITING OR BALL SKILLS**
 - **HAVE POOR GROSS MOTOR CONTROL WHEN RUNNING, CLIMBING, JUMPING, AND GOING UP AND DOWN STAIRS**
 - **HAVE DIFFICULTY WHEN TRANSITIONING FROM ONE ACTIVITY TO ANOTHER**
 - **HAVE LOW SELF-ESTEEM**





ASSESSMENT AND DIAGNOSIS

ASSESSMENT TOOLS

- **AYRES' SENSORY INTEGRATION AND PRAXIS TEST (1989)**
- **ADULT/ADOLESCENT SENSORY HISTORY (2021)**
- **SENSORY PROCESSING MEASURE 2 AND QUICK TIPS (2021)**
- **STRUCTURED OBSERVATIONS OF SENSORY INTEGRATION – MOTOR (2021)**
- **COMPREHENSIVE OBSERVATIONS OF PROPRIOCEPTION - REVISED (2021)**



ASSESSMENT AND DIAGNOSIS

- **DIAGNOSIS OF SENSORY PROCESSING DISORDER WILL NORMALLY FOLLOW A THOROUGH SCREENING PERFORMED BY EITHER AN OCCUPATIONAL THERAPIST OR A PHYSIOTHERAPIST. THE SCREENING WILL NORMALLY CONSIST OF AN EVALUATION OF STANDARDISED TESTING AND STRUCTURED OBSERVATIONS OF THE CHILD'S RESPONSE TO SENSORY STIMULATION, BALANCE, COORDINATION, POSTURE AND EYE MOVEMENTS.**
- **EARLIER DIAGNOSIS ALSO LEADS TO AN INCREASED CHANCE OF SUCCESSFUL INTERVENTION, AS INTERVENTIONS ARE EASIER TO ADMINISTER TO YOUNGER CHILDREN WHILE THEIR BRAINS ARE STILL DEVELOPING.**



SENSORY INTEGRATION THERAPY

- **SENSORY INTEGRATION THERAPY SHOULD ONLY BE CARRIED OUT BY A QUALIFIED SI PRACTITIONER**
- **SI THERAPY (OR SI INTERVENTIONS) INCLUDES STRUCTURED EXPOSURE TO SENSORY INPUT, MOVEMENT THERAPY, BALANCE TREATMENTS, AND CAREFULLY DESIGNED AND CUSTOMISED PHYSICAL ACTIVITIES AND ACCOMMODATIONS**
- **AN SI PRACTITIONER MAY WORK WITH THE CLIENT, THEIR FAMILY, CARERS, SCHOOL, OTHER ALLIED HEALTH PROFESSIONALS OR EMPLOYER (AS APPROPRIATE) TO CREATE A 'SENSORY DIET' FOR THAT SPECIFIC CLIENT.**
- **THERAPY SESSIONS ARE PLAY-ORIENTED AND MAY INCLUDE USING EQUIPMENT SUCH AS SWINGS, TRAMPOLINES, WEIGHTED VESTS, AND SLIDES.**
- **SENSORY INTEGRATION ALSO USES THERAPIES SUCH AS DEEP PRESSURE, BRUSHING, JOINT COMPRESSION, ORAL MORAL EXERCISES, AND BODY MASSAGE. THESE THERAPIES APPEAR TO SOMETIMES BE ABLE TO CALM AN ANXIOUS CHILD.**
- **IN ADDITION, SENSORY INTEGRATION THERAPY IS BELIEVED TO INCREASE A CHILD'S THRESHOLD FOR TOLERATING SENSORY-RICH ENVIRONMENTS, MAKE TRANSITIONS LESS DISTURBING, AND REINFORCE POSITIVE BEHAVIORS.**
- **THE ACTIVITIES INCLUDED IN SI PROVIDE VESTIBULAR, PROPRIOCEPTIVE, AUDITORY, AND TACTILE STIMULI, WHICH IN TURN ORGANIZE THE SENSORY SYSTEM.**
- **THE ULTIMATE GOAL OF SIT IS TO IMPROVE THE NERVOUS SYSTEM'S SENSORY PROCESSING, ORGANIZATION, INTEGRATION, AND MOTOR PLANNING.**



SENSORY INTEGRATION THERAPY

KEY PRINCIPLES OF THE SENSORY INTEGRATIVE APPROACH

- **THE JUST RIGHT CHALLENGE - ACTIVITIES PERFORMED OFFER A CHALLENGE, BUT ARE ALWAYS ORIENTATED FOR SUCCESS.**
- **THE ADAPTIVE RESPONSE - THE INDIVIDUAL OR CHILD WILL ADAPT THEIR BEHAVIOUR WITH NEW AND USEFUL STRATEGIES IN RESPONSE TO THE THERAPEUTIC CHALLENGE**
- **ACTIVE ENGAGEMENT - THE INDIVIDUAL / CHILD WILL ACTIVELY PARTICIPATE IN THE ENVIRONMENT AND CHALLENGE DEVELOPED BY THE THERAPIST.**
- **CHILD DIRECTED - THE THERAPIST CONSTANTLY OBSERVES BEHAVIOUR AND BEHAVIOURAL CUES IN THE SESSION. THESE CUES PROVIDE LEADS TO CREATING ENTICING AND SENSORY-RICH ACTIVITIES. THE THERAPIST FOLLOWS THE LEAD AND SUGGESTIONS OF THE INDIVIDUAL / CHILD.**



ROLE OF OT IN SENSORY INTEGRATION

- **OCCUPATIONAL THERAPISTS ARE THE PRIMARY PROVIDERS OF THERAPEUTIC INTERVENTIONS RELATED TO SENSORY INTEGRATION**
- **COLLABORATE WITH FAMILIES AND PROFESSIONALS TO DETERMINE THE NEED FOR SPECIALIZED EVALUATION AND INTERVENTION.**
- **IDENTIFY AND MODIFY SENSORY AND ENVIRONMENTAL BARRIERS THAT LIMIT PERFORMANCE AND PARTICIPATION IN EVERYDAY ACTIVITIES, AS WELL AS IDENTIFY INDIVIDUAL STRENGTHS AND SUPPORTS.**
- **TEACH AND MODEL ACTIVITIES TO SUPPORT SENSORY, MOTOR, AND BEHAVIORAL NEEDS.**
- **HELP RAISE AN INDIVIDUAL'S SELF-AWARENESS OF THE IMPACT OF SENSORY AND MOTOR FACTORS ON EVERYDAY ACTIVITIES AND REAL LIFE SITUATIONS, AND PROVIDE WAYS TO COUNTER SENSORY PROCESSING CHALLENGES.**



HOW TO OBSERVE SENSORY NEEDS AT HOME

- EASILY DISTRACTED BY NOISES/SMELLS
- RESTLESSNESS
- ROCKS/SHAKES
- EASILY IRRITABLE
- FLINGS LIMBS AROUND
- SPINNING
- OVER-SENSITIVE TO LIGHT
- DIFFICULTY HOLDING OBJECTS
- STRUGGLES TO IDENTIFY THE CHANGE IN TEMPERATURE



HOME BASED SENSORY DIET

A "SENSORY DIET" IS A TREATMENT STRATEGY USED TO MANAGE SENSORY PROCESSING DYSFUNCTION

- **PHYSICAL ACTIVITIES**

- WHEELBARROW WALKING
- ANIMAL WALKS (E.G BEAR WALKS, FROG JUMPS)
- TRAMPOLINING
- CYCLING OR USING A SCOOTER
- SWINGS
- ROUGH AND TUMBLE PLAY
- DEEP PRESSURE SQUISHING OR SANDWICHING WITH PILLOWS/
BALLS
- WEARING A HEAVY BACKPACK FOR MOVEMENT
- PLAYING WITH WEIGHTED ITEMS
- JUMP ROPE
- BALLOON TAPPING

- **TACTILE ACTIVITIES**

- PLAY DOH
- SHAVING CREAM
- SLIME
- FINGER PAINTING
- RICE, ETC.

- **VISUAL ACTIVITIES**

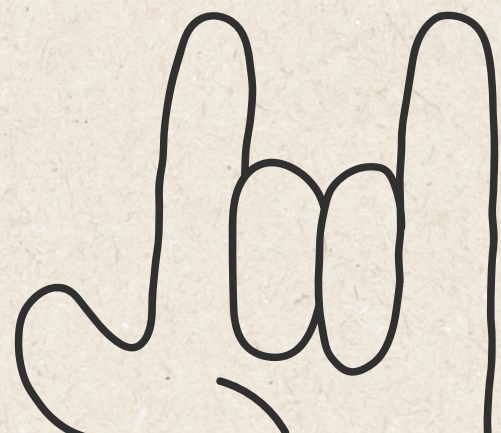
- USING A TORCH TO LOOK AT BOOKS
- CONNECTING DOTS
- MAZES

- **ORAL ACTIVITIES**

- CHEW TOYS
- CHEWY FOODS

- **AUDITORY ACTIVITIES**

- WHITE NOISE/ FAVOURED MUSIC





ROUTINE SENSORY ACTIVITIES AT HOME

- **BATH TIME**

- **SCRUB WITH A WASH CLOTH OR BATH BRUSH**
- **TRY A VARIETY OF SOAPS AND LOTIONS FOR BATHING**
- **PLAYING ON THE WALL WITH SHAVING CREAM**
- **RUB BODY LOTION AFTER BATH TIME (DEEP MASSAGE)**

- **MEAL PREPARATION**

- **MIXING INGREDIENTS TOGETHER**
- **KNEADING AND ROLLING DOUGH**
- **CARRYING POTS AND PANS**

- **MEAL TIME**

- **EATING CHEWY FOODS**

- **CLEANING**

- **HELPING WITH PICKING THINGS AND PUTTING THEM IN THEIR PLACE**
- **HELPING MOVE FURNITURE**
- **CARRYING LAUNDRY**



HOW TO HANDLE MELTDOWN DUE TO SENSORY OVERLOAD

- **SIGNS OF SENSORY OVERLOAD**

- **POOR EYE CONTACT**
- **COVERS EYES OR EARS**
- **AVOIDS TOUCH**
- **IRRITABILITY**
- **NAUSEOUS**
- **FLUSHED OR SWEATY**
- **RAPID OR SHALLOW BREATHING**
- **TREMORS**
- **GLAZED LOOK**





HOW TO HANDLE MELTDOWN DUE TO SENSORY OVERLOAD

• WAYS TO CALM DOWN

- ESTABLISH PREDICTABLE ROUTINES
- BREATHING EXERCISE
- CREATE A CALMING ENVIRONMENT
 - QUIET SPACE
 - SOFT LIGHTING
 - COMFORT ITEMS
- SENSORY SUPPORT
 - WEIGHTED BLANKETS
 - FIDGET TOYS
 - NOISE CANCELLING HEADPHONES
- DE-ESCALATION TECHNIQUES
 - DISTRACTION
 - CALMING TECHNIQUES





HOW TO MAKE SENSORY FRIENDLY HOME ENVIRONMENT

- **LIGHTING**
 - SOFTER LIGHTS
 - NATURAL LIGHTS WHEREVER POSSIBLE
- **SOUND**
 - MINIMISE BACKGROUND NOISE
 - SOUNDPROOFING MATERIALS (CARPETS, CURTAINS) TO REDUCE ECHO
 - DESIGNATE QUIET SPACES WITH CALMING TOOLS, LIKE WEIGHTED BLANKETS AND FIDGET ITEMS
 - WHITE NOISE AND EAR DEFENDERS



- **SMELL**

- **DO NOT USE STRONGLY SCENTED CANDLES, CLEANING PRODUCTS AND PERFUMES**
- **HAVE PROPER VENTILATION**

- **VISUAL**

- **KEEP SPACES ORGANISED AND FREE OF VISUAL CLUTTER**
- **SIMPLIFY LAYOUT TO REDUCE OVERSTIMULATION**
- **OPT FOR CALMING COLOURS**
- **PROVIDE CLEAR PATHWAYS TO AVOID CONGESTION AND ALLOW EASY NAVIGATION**

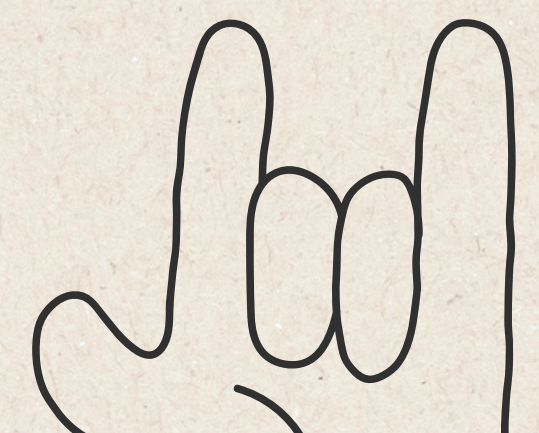
- **TACTILE**

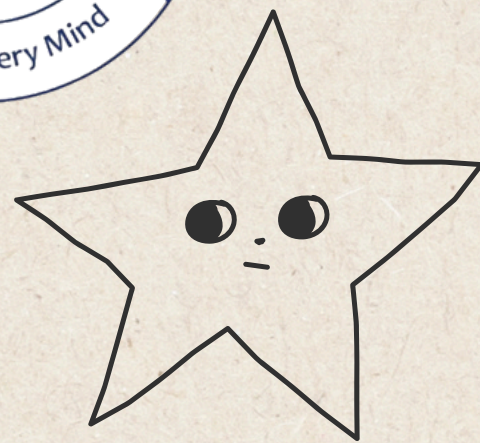
- **TRY HAVING A VARIETY OF TEXTURES THROUGHOUT THE HOUSE**
- **HAVE A SPACE FOR SENSORY TOYS**
- **IF POSSIBLE, MAINTAIN A COMFORTABLE ROOM TEMPERATURE**



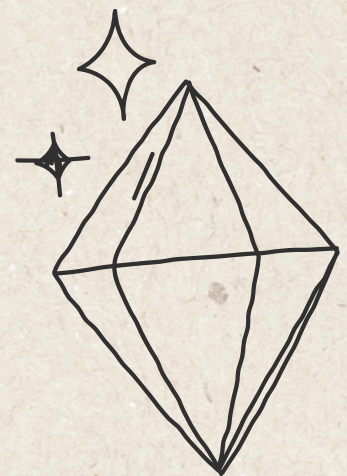
CONCLUSIONS

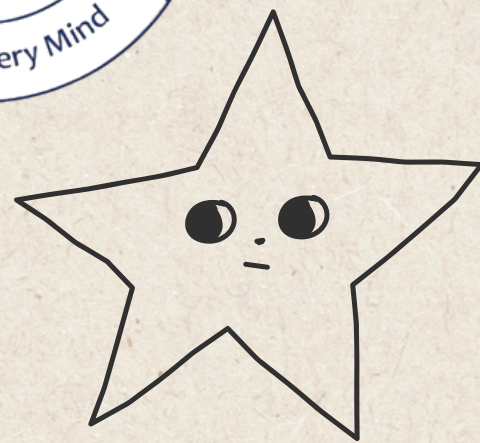
SENSORY INTEGRATION IS THE FOUNDATION OF HOW WE EXPERIENCE AND RESPOND TO THE WORLD: WHEN IT FUNCTIONS SMOOTHLY, IT SUPPORTS EVERYTHING FROM LEARNING TO EMOTIONAL REGULATION. DISRUPTIONS IN THIS PROCESS ARE NOT SIGNS OF WEAKNESS, BUT SIGNALS FROM A NERVOUS SYSTEM NEEDING SUPPORT. BY UNDERSTANDING IT, WE CAN CREATE ENVIRONMENTS THAT DON'T JUST ACCOMMODATE DIFFERENCE, BUT ENVIRONMENTS THAT EMPOWER IT.



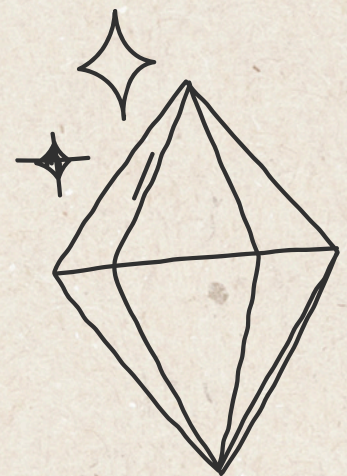


Q & A





**THANK
YOU VERY
MUCH**





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