

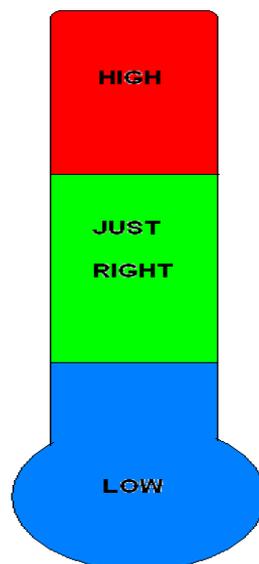
Sensory Processing Information and Advice

Our bodies and the environment send information to us through our senses. Our brains organise and process this information so that we feel comfortable and secure or safe. Sensory processing helps us to respond appropriately to situations and environments we are in and achieve the correct state of arousal for the situation required.

Our 7 senses are:

- **Tactile** - How things feel when we touch them; rough or smooth, silky or coarse.
- **Vestibular** - The vestibular sense relates to how our body balances, stays upright and responds to changes in levels, such as when we go up and down steps.
- **Proprioception** - How we manage our bodies in the space around us; not bumping into things or tripping over.
- **Olfactory** - How things smell; pleasant, bad, spicy or sweet.
- **Gustatory** - How things taste; sweet, spicy, sour, pleasant, bad.
- **Visual** - How we see the world around us; panoramic, detail, light, dark, clear or fuzzy.
- **Auditory** - How we hear sounds; pleasant, unpleasant, loud, quiet, deep or high.

Some children have conditions which mean they find it difficult to concentrate and behave in the same way as other children. This can be due to a number of issues including difficulties with sensory processing.



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How does Sensory Processing occur?

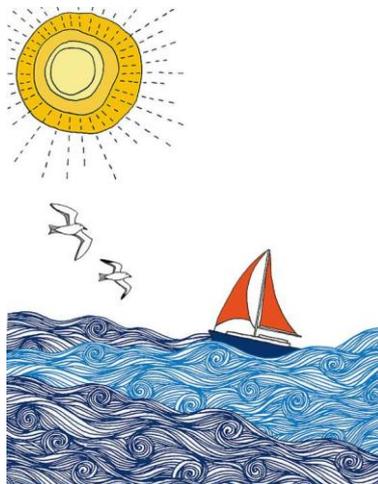
1. The brain organises the information.
2. The brain interprets or modulates the information.
3. The brain organises its response.
4. The brain sends messages back to the body to execute its response.
5. The brain registers the information.

If there is a problem at any one of the five stages of sensory integration processing above, the brain may be over-responsive or under-responsive to sensory stimuli.

An Example of Sensory Processing

You step into a boat on water. The boat starts to rock. You automatically adjust your body to keep yourself balanced and slowly sit down.

When stepping into the boat, your senses send information to your brain, which the brain uses to stop you falling over or becoming frightened.



What each sense is telling you:

- **Tactile:** Your foot is touching the bottom of the boat.
- **Proprioception:** The position of all your muscles and joints.
- **Vestibular:** Your centre of gravity is off - you're on a moving surface.
- **Vision:** The bottom of the boat is lower than the surface you have stepped from.
- **Sound:** The amount of noise from the surrounding environment, both nearby and far away.

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Over-Responsive People

An over-responsive person may be very frightened stepping into the boat. Their feeling of imbalance will be much greater than that of most people. Their brain interprets the stimuli from their tactile/ proprioceptive/ vestibular/ visual/ sound, or combination of these senses, more strongly than most people. They may experience the following difficulties:

- Distress with certain sounds.
- Sensitivity to light.
- Discomfort with certain textures.
- Aversion to certain smells and tastes.
- Irrational fear of heights or certain movements.
- Frequent startle reactions

Over-responsive children may:

- Cry or become aggressive frequently, especially if a classroom is noisy or busy.
- Dislike being picked up or touched.
- Appear to dislike playing.
- Seem disinterested in, or fearful of, other children.
- Seem calmer and happier in quiet places.
- Appear to jump with fright frequently.
- Seem unresponsive to interactions with people.
- Undress frequently or cry when getting dressed.
- Dislike getting wet or changes in temperature.



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Under Responsive People

An under-responsive person may show no fear and over-balance when stepping into the boat. Their body awareness and ability to redistribute their weight in response to the movement of the boat will be less than that of most people. Their brain needs more exaggerated tactile/ proprioceptive/ vestibular/ visual, or a combination of these, stimuli than most people, to respond to the boats movement in the same way as most people would. They may experience the following difficulties:

- Unresponsive to sudden or loud noises.
- Unaware of painful lumps, bumps, bruises and cuts.
- Poor, or no, startle reflex.
- Lack of attention/interest in environment, people or things.
- Lack of dizziness after excessive spinning.
- Delayed responses.

The under-responsive child may:

- Appear not to listen to what is being said in the classroom.
- Appear disinterested in their work.
- Not appear to notice if they hurt themselves.
- Not engage with other children.
- Not engage in physical activities



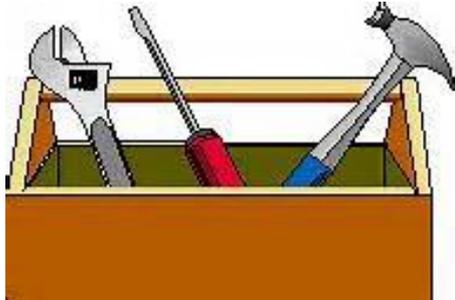
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Sensory-seeking children seek input as they are under-responsive to sensory stimuli. They may appear to:

- Constantly move - spinning, rocking or head rolling.
- Flap their arms or hit their bodies against objects.
- Enjoy swings, jumping and running.
- Become over-excited by minimal stimulation.
- Be orally fixated.
- Be heavy handed or rough with others.
- Hit, bite or pinch themselves or hit objects
- Behave aggressively/inappropriately if upset/excited.

How can we help children achieve the correct level of arousal?



- Therapeutic use of self.
- Environmental modifications.
- Modify the activity.

The Over-Aroused or Sensory-Seeking Child

Therapeutic use of self:

- Use a low, slow voice with a regular predictable rhythm.
- Minimise gestures and movement.

Environmental modifications:

- Clutter and distraction free.
- Dull, muted colours.
- Noise free or calming music.
- Quiet area in the classroom.

Modify the activity:

- Introduce the activity before starting it.
- Ensure the child knows how long it will take.
- Keep the activity as brief as possible, grading it to gradually get longer.
- Use proprioceptive or linear vestibular activities to give sensory feedback to the system and calm the child.

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The Tactile Defensive Child who is Over-Responsive to Tactile Input.



Therapeutic use of self:

- Use low, slow voice and minimise gestures.
- Use deep, positive movements when you have to touch or handle the child.
- If a child dislikes light touch, try to hold the child firmly.

Environmental modifications:

- Find out the types of texture the child can tolerate and try to ensure the child has access to those.
- If the child likes deep touch, try to ensure they do not wear light, loose-fitting clothing.

Modify the activity:

- Children can be desensitised by using massage and vibratory activities before starting the task.

The Under-Aroused Child

Therapeutic use of self:

- Speak in a voice, which is up-beat and use hand gestures.

Environmental modifications:

- Use bright light colours.
- Ensure there is a stimulating environment.
- Use music to wake up and stimulate the senses.

Modify the activity:

- Ensure task is of a manageable length and use activities to stimulate the child whilst they are performing the task, i.e. a Move N Sit cushion.
- Use alerting activities before starting the task.

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Sensory Activities

There are some activities that can provide sensory feedback, to give a child the level of input they require to regulate. These can be carried out regularly during the day and will provide the sensory feedback the child requires to be in a 'just right' state of sensory regulation.

Vestibular Activities



- Lie prone on a gym ball.
- Use trampoline in a controlled way, i.e. sing or recite rhymes and bounce in rhythmic fashion.
- Bounce in sitting position on a gym ball.
- Use equipment such as a Move N Sit cushion to help a child attend to the task.



Important Information to Consider

The effects of these activities can last for 4 – 8 hours, however the effect may be delayed. Children can get over-excited if they get too much vestibular input, therefore perform these activities for short periods of time.

Proprioceptive Activities



- Weighted blankets.
- Weighted belts.
- Neck wraps.
- Using weighted backpacks.
- Carrying books or heavy objects.
- Helping with chores such as brushing the floor, or in the garden.
- Exercises such as wall push ups, press ups.
- Using gym balls to provide deep pressure.
- Oral motor activities; Blowing bubbles, using toys such as party blowers, vibrating toothbrushes, massage the mouth area.

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Food can be used to Regulate Arousal Levels

Child needing Comfort/Nurture

To calm and restore a child, provide foods which require minimal or no effort to eat, such as:

- Shortbread biscuits
- Bite/melt foods
- Warm drinks
- Milk shakes / hot chocolate
- Cheese pieces



Also, you can use actions such as sucking and pressing food against roof of the mouth or to apply deep pressure to the roof of the mouth.

Angry Child

If the child is agitated or angry, provide foods that require maximal, or more effort, to eat or drink such as:

- Toast, chewy bread, fruit leather.
- A drink such as a thickened milkshake to drink through a straw, as the sucking will help reduce arousal levels.



Chewing helps to control anger because the increased effort occupies the mouth and the child focuses on chewing.

Cutting Out / Day-Dreaming Child

Provide foods which will alert and wake up the child's arousal levels, such as:

- Crunchy foods, e.g. apples or carrots.
- Spicy hot curries.
- Hot chilli dip.
- Chilli crisps.
- Ice lollies.
- Wasabi beans.
- Gherkins/pickled onions.