



Feidhmeannacht na Seirbhíse Sláinte  
Health Service Executive

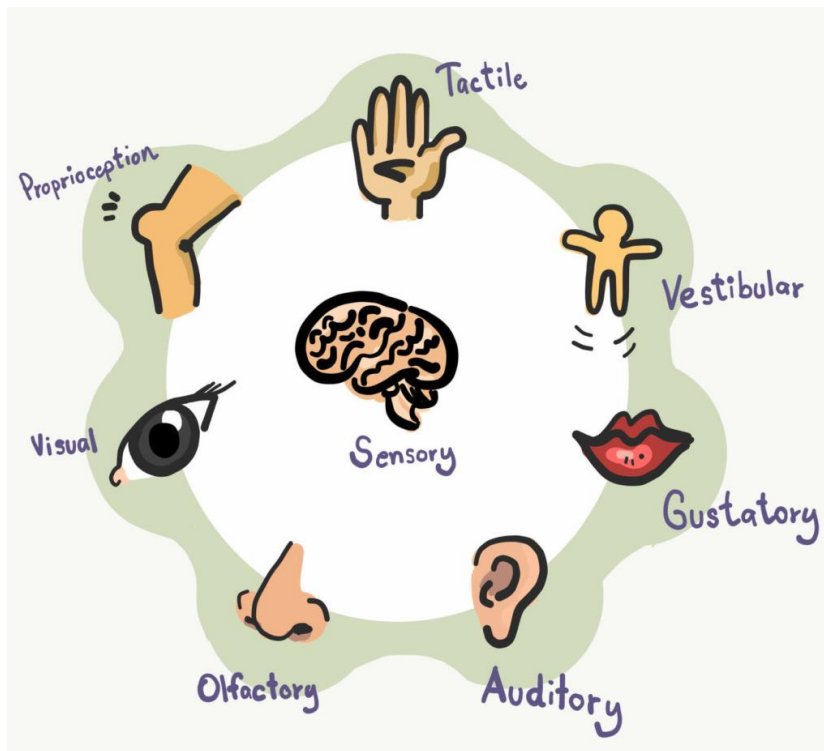


Children's  
Disability  
Network  
Team



# Sensory Processing

## A Guide for Parents



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## Our Senses:



Touch (tactile)



Hearing (auditory)



Sight (visual)



Taste (gustatory)



Smell (olfactory)



Balance (vestibular)



External Body Awareness (proprioceptive)



Internal Body awareness (interoceptive)

# The Hidden Senses

## Balance (vestibular)

- A capsule of liquid in our inner ears sends the message to our brain about how we move in space.
- We use our sense of balance to know how we are moving through space and it also helps us to maintain body posture when we are sitting or standing for example.



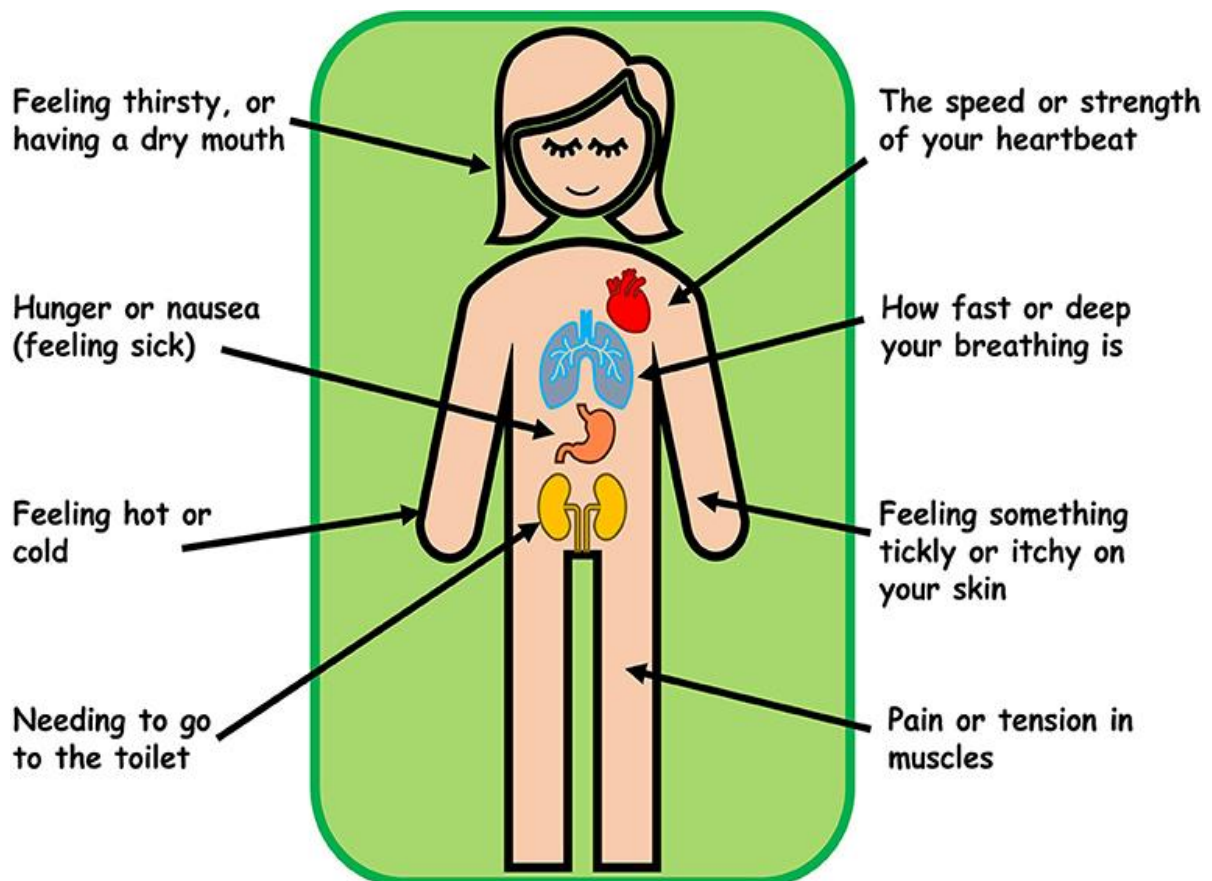
## External Body Awareness (Proprioception)

- Our sensory receptors for proprioception are throughout the muscles of our body. They send information to our brain so that we know where our body is in space.
- Activities that provide deep pressure or make your muscles work provide input to our proprioceptive sense.
- If you close your eyes and think about where your body is, you are able to tell the position of your body without having to look at it. This is because of the proprioceptive input.
- Proprioception allows us to judge how much force to use in our movements. For example, proprioception helps us to know how much pressure to put on a page when handwriting.



## Internal Body Awareness (Interoception)

- Interoception is our self-awareness of our body states. The sensory receptors for this are located within our organs.
- For example, receptors in our gut might be interpreted by our brain as hunger, nausea, that you need to go to the toilet, or that you are anxious.
- This is a complicated sense as it involves a lot of interpretation in our brain to fully understand what our bodies are telling us.



# Sensory Regulation

## The “Just Right State”

- Regulating sensory input is not an easy job. Sometimes we can under-respond and sometimes we over-respond to the sensory input.
- The brain on the very left is a bit like us before our coffee, we are under-responding to our environment so we feel too tired to pay attention to anything.
- The brains on the right might be like us after too much coffee. This is when we over-respond to our environment so we can feel too overwhelmed by all the sensory input.
- What we aim to be in is the “**just right state**” somewhere in between, where we are **both calm and alert enough to pay attention to and participate** in our environment.



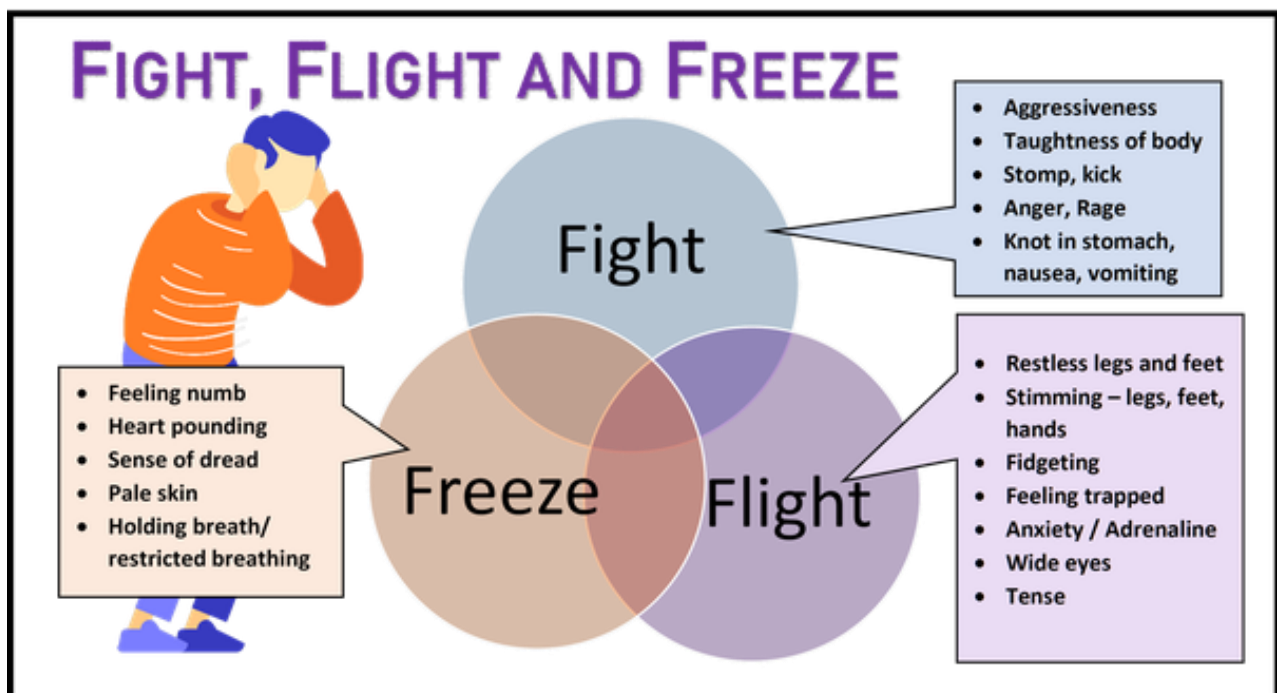
Under-responds/  
underaroused: too tired

Just Right State:  
calm and alert

Over-responds/  
overaroused: too alert

## Sensory Overload

- When your child experiences **sensory overload** they may go into “**fight**”, “**flight**” or “**freeze**” mode.
- This is a body response that happens when we perceive danger. **Sensory overload can trick the body into thinking it is in danger.**
- **Fight** mode: the child may present as aggressive and angry, stomping kicking, biting and having a ‘**meltdown**’.
- **Flight** mode: the child might be **stimming** or trying to escape the situation.
- **Freeze** mode: the child may appear disconnected or **shut-down** from their surroundings. It can sometimes be difficult to figure out whether a child is in “freeze” mode from too much sensory input, or whether they are over-tired and under-responding to sensory input. Using a visual thermometer can help with this (see page 31).





# Sensory Processing and Behaviours

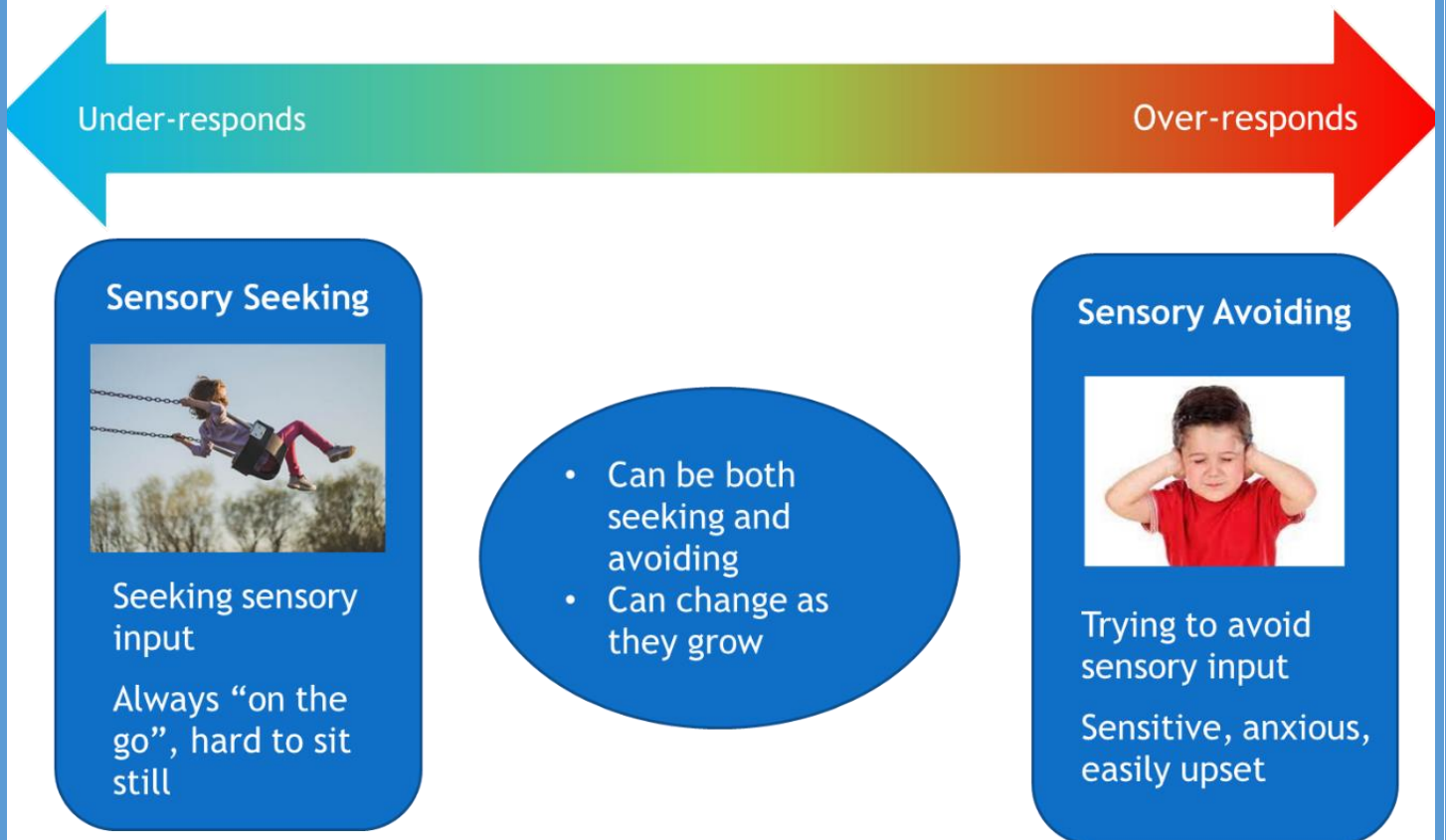
## Stimming (self-stimulatory behaviour):

- A repetitive series of behaviours such as rocking, flapping hands, repeating certain words, tapping surfaces, humming.
- Children often engage in stimming during their “flight” response to sensory overload.
- For these children, **the stimming is an involuntary coping mechanism to help them self-regulate** and navigate their sensory environment.
- It is important that, if the stimming isn’t a danger to themselves or others, **we do not stop them from stimming**. Otherwise, they could go into shut-down or meltdown as they are unable to regulate themselves.
- Create a **safe and judgement-free space for the child to stim**.
- You may look at alternative strategies to replace stimming with behaviours that serve the same function (for example, giving them a chewy to bite on if their stimming is biting).



## Sensory seeking and Sensory Avoiding:

- A child who under-responds to sensory input engages in sensory seeking behaviours (for example, seeking touch input by constantly touching people/objects).
- A child who over-responds to sensory input engages in sensory avoiding behaviours (for example, putting their hands over their ears in response to noises).



Here are some examples of sensory seeking and sensory avoiding behaviours. See if you can identify which behaviours may be sensory seeking and which may be sensory avoiding:



## Become a Sensory Detective

You can use this table to help identify your child's sensory needs.



| <b>Sensations they enjoy or seek</b>                                    | <b>Sensations they avoid or dislike</b>            | <b>Sensations they are slow to respond to</b> |
|---|--|---|
| Example: movement, tight hugs, walking barefoot, mouthing nonfood items | Example: bright lights, loud noises, certain foods | Example: pain, loud noises, strong smells     |

## Building your Sensory Toolkit

- Finding the correct sensory strategies for your child is a process of **trial and error**.
- Every child has **unique** sensory needs.
- Sensory needs **may change** as they grow and they can change throughout the day.
- Use careful **observation** to identify what helps them to achieve the **“just right state”**.
- Be aware of **timing** of sensory strategies, you may want to use more alerting strategies in the morning and calming strategies in the evening. Spending too long doing an alerting activity might become over-alerting and dysregulating for your child.



## Sense: Touch (tactile)



### Calming Strategies:

#### Don't put pressure on them to touch materials

If they react negatively to touch adapt environment/activities to avoid unexpected touch:

- Sit next to wall.
- Make sure people around the child are aware not to touch.
- Give them space.

If they dislike contact games, you could try alternatives:

- Skipping
- Racing
- Throwing and catching
- Treasure hunts
- Nature trails



If they don't like the feeling of clothes:

- They may benefit from wearing a tight undergarment (e.g. lycra).
- Trial alternative fabrics (e.g. seamless socks, different fabrics, cutting off labels).
- Sometimes children prefer socks with a snug fit, as this provides deep pressure.
- Ensure school is aware of this and ask for flexibility in the uniform policy.



**If they are afraid of messy play** you could try **desensitisation** by gradually increasing their exposure and tolerance to a specific touch sensation. For example, fingerprint:

- Let the child wear gloves for the first few times and then slowly cut the fingers of the gloves one at a time.
- Let the child paint with a paintbrush and slowly decrease the length of the brush.
- Gradually increase the amount of time the child spends painting using a visual timer.
- Provide calming input during and after the activity.



**If your child is sensitive to light touch**, deep pressure activities can be calming and desensitize your child to light touch:

- Massage your child's head before washing their hair to make them less aware of the feeling of water on their head.
- Brush fingernails with a nailbrush before cutting nails to make them less aware of light touch of cutting nails.
- **More calming deep pressure activities listed on page 28.**





## Calming OR Alerting Strategies:

**If your child has difficulty noticing touch or is frequently seeking touch:**

- Provide tactile activity before fine motor tasks such as handwriting.
- Tactile box – fill box with a mixture of tactile materials. Can start with dry materials (for example, sand, rice, lentils, seashells, brushes, branches, waterbeads) and progress to wet materials (for example, mud, slime).
- If your child is seeking input on their feet by constantly taking their shoes off and walking on their tiptoes, they could walk on a tactile tray with materials such as popcorn, cornflakes, rice.
- Hand fidgets
- Have them dress in front of a mirror so that they can see if their clothes are twisted
- Messy play/water play (for example, shaving cream mixed with water, water and cornstarch, spaghetti and food colouring).
- **Deep pressure activities (listed on page 28)**





## Sense: Hearing (auditory)



### Calming Strategies:

If your child responds negatively to loud/unexpected noises or can hear background noises that others can't hear:

- Allow them to control the noise (for example, using the hairdryer, adjusting the volume of music).
- Allow access to ear defenders.
- Let them listen to music.
- Go to supermarkets during Autism hour.
- Have a quiet time or quiet space for your child to go to.
- Use visual prompts (for example, visual schedule, "first, then", social story) to prepare your child for loud noises.





## Calming OR Alerting Strategies:

If your child is seeking sounds by humming/singing to themselves and doing activities that make noises (for example throwing items on the floor):

- Let them listen to music or nature sounds.
- Try fidget toys such as the rainmaker.
- Sing to or with your child.



If your child appears not to hear instructions:

- Provide visual cues (for example, visual schedules, “first, then”, visual timers, demonstration of task).
- Rule out any hearing problem with audiologist.



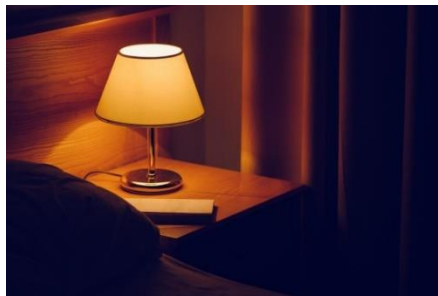
## Sense: Sight (visual)



### Calming Strategies:

#### If your child doesn't like bright lights:

- Change the lighting to dimmer lights/lamp lighting.
- Allow your child to wear sunglasses or a baseball cap.
- Prepare your child for changes in lighting (for example, using social stories).



#### If your child is easily distracted by visual stimuli (for example, movement, clutter, decorations, windows):

- Reduce clutter and visual distractions and use visual aids.





## Calming OR Alerting Strategies:

**If your child seeks out bright, spinning or reflective objects:**

- Use visual fidget toys
- Use water/oil/beaded toys (for example, lava lamp)



## Sense: Taste (gustatory)

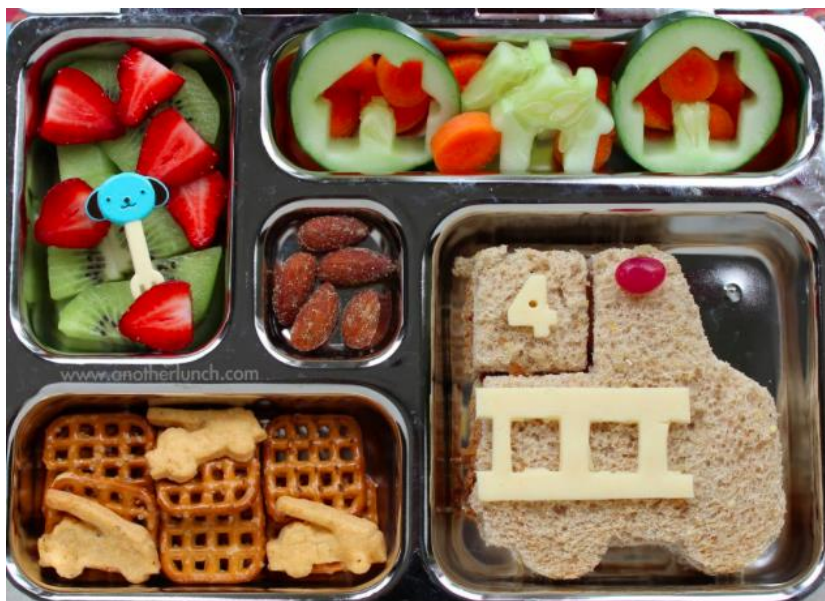


### Calming Strategies:

**Don't put pressure on them to eat different foods.**

**If they eat a limited range of foods and refuse to try new foods:**

- Eating food involves many senses (taste, touch, hearing, smell, sight). It is important not to force them to eat different foods.
- Consult your occupational therapist to explore goals related to mealtimes.
- See if they will join in activities involving food without pressure to eat the food. For example, involving them in cooking or bringing food items into play.
- Consult a dietician or GP if you are worried about your child's weight.





## Calming OR Alerting Strategies:

**If your child is frequently mouthing on non-food items or seeking strong flavours:**

- Provide crunchy or cold foods.
- Provide strongly flavoured foods.
- Try vibrating toothbrush or Z-vibe.
- Allow child to engage in oral motor activities during daily routine (for example, blowing bubbles, blowing up a balloon, blow football i.e. blowing cotton wool across a table to score goals, playing a wind instrument, drinking through a straw)
- Apply deep pressure to the mouth area through massage.
- Use chewy tubes or chewlery.
- Check with GP to rule out a deficiency in nutrients (vitamins and minerals).



## Sense: Smell (olfactory)



### Calming Strategies:

Scented candle/aroma diffuser with:

- Vanilla
- Lavender



Avoid strong perfumes



### Calming OR Alerting Strategies:

Scented candle/aroma diffuser with:

- Citrus scents



## Sense: Balance (vestibular)



### Calming Strategies:

**If your child is afraid of movements involving balance (for example, going on a swing):**

- Do not put pressure on your child to do the activity – see if there is a way to adapt the activity so that they feel more safe (for example, sitting on gym ball WITH feet on the ground, providing a scooter board instead of a scooter)
- Try slow rocking on a rocking chair .
- Practice repetitive and rhythmic movements (for example, rolling back and forth on a gym ball).
- Practice activities that incorporate gentle movements (for example throwing and catching, kicking a ball).
- Try **deep pressure activities (see page 28)**.







## Calming OR Alerting Strategies:

If your child is constantly “on the go”, finding it difficult to sit still in their chair and fidgeting, swinging, and moving:

- Allow movement breaks when performing a tabletop activity.
- Time on a T-stool (a stool that requires constant movement to sit in) or Tilo Motion Stool.
- Time on a trampoline, seesaw, swing (note that too much time may become over-alerting for your child).
- Activities which involve crawling and climbing.
- Animal walks (for example, frog jump, crab walk).
- Wheelbarrow walk.
- Try **deep pressure activities after periods of movement (see page 28)**.



## Sense: External Body Awareness (Proprioception)



### Calming Strategies:

Children who are seeking proprioceptive input are always “on the go”. They love running around and find it hard to sit still.

**Proprioceptive strategies are usually calming. They include:**

- Tug-of-war
- Rough and tumble play
- **Deep pressure activities (see page 28)**
- Weighted blankets/jackets/vests (Consult your Occupational Therapist about recommendations for this. Weighted blankets should be no more than 10% of your child’s body weight and weighted vests or lap pads should be no more than 5% of their weight. They should not be used for more than 20 minutes at a time.)
- Heavy jobs, pushing, pulling, dragging (for example, helping with the laundry basket, pushing a wheelbarrow)
- Any physical exercise



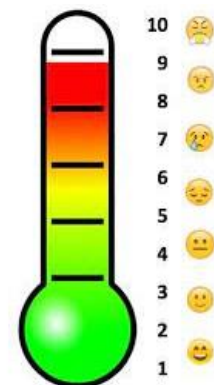
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## Sense: Internal Body Awareness (Interoception)

### Strategies:

If your child has difficulties identifying when they are hungry, thirsty, tired, angry, upset, happy, anxious, nauseous, hot, cold, or need to go to the toilet interoceptive strategies may help:

- Use a visual thermometer to help them identify how they are feeling (see page 33)
- Provide a choice board of calming activities if they are becoming upset.
- Use verbal prompts and modelling (for example, you might say “I had this rumbling feeling in my stomach and I felt grumpy, so I ate and now I feel much better”, “I had a prickly feeling on my skin because I was too hot so I took off my jumper and now I feel a nice cool breeze”)
- Can use a visual toileting schedule if your child doesn't know when they need to use the toilet.
- Mindfulness and deep breathing



# Deep Pressure Activities

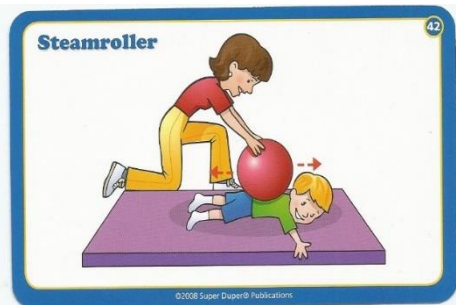
**Deep pressure activities can calm an over-responsive/sensory avoiding child AND increase input for a under-responsive/sensory seeking child.**

**When to use these strategies?**

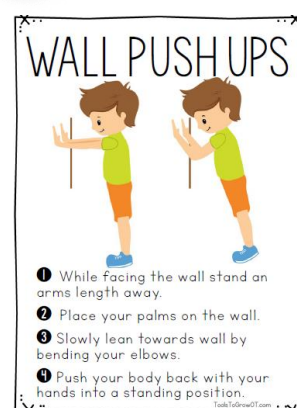
- Can use deep pressure activities to **calm** your child when they are anxious or to prevent them from becoming anxious.
- Can use deep pressure activities before your child does another activity as this can **alert** them and help them to pay attention.

**Deep pressure activity ideas:**

- Roll your child in a blanket to make a “burrito”. Always ensure that it is not too tight and that their head and airway is visible.
- “Sandwich” child between two soft pillows. Always ensure that it is not too tight and that their head and airway is visible.
- Roll a gym ball on top of child’s back and legs.



- Vibrating massage bug (available on Thinking Toys website).
- Deep massage – gentle but firm
- Bear hugs (for example, wrapping tightly with a towel after their shower).



- Weighted blankets/jackets/vests (Consult your Occupational Therapist about recommendations for this. Weighted blankets should be no more than 10% of your child's body weight and weighted vests or lap pads should be no more than 5% of their weight. They should not be used for more than 20 minutes at a time).

- Body socks to pull against.
- Playdoh or theraputty
- Squeezing a stress ball.
- Wall push-ups and chair push-ups.
- Heavy jobs



# Creating a Cosy Area

## What is it?

- A safe calm space for your child to access throughout their day. It can be used when your child is upset, distressed or when they need some time to chill and relax

## How do I make it?

- There is no set recipe or instructions for making a cosy area.
- You can make your cosy area fit your home, working with whatever space you have available. For example, you could block off a corner of a room, using a pop-up tent, using sheets & blankets to create a den etc.

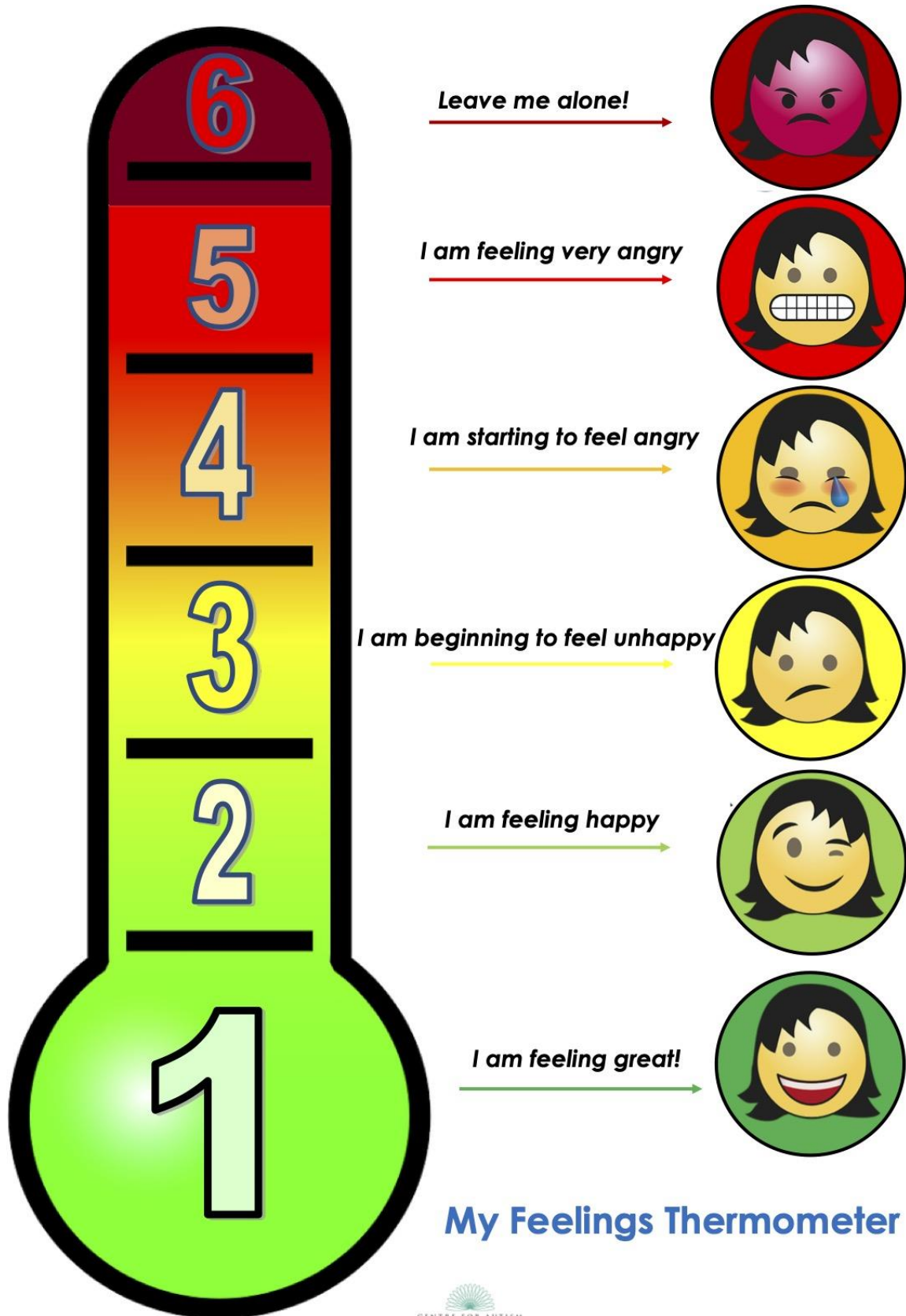
## What could I include?

- Textures
- Things to look at
- Things to listen to
- Things to smell
- Oral Activities

What you include will depend on what is regulating for your child. Use your imagination and together create your own unique cosy area!



# Visual Thermometers



**My Feelings Thermometer**





*Leave me alone!*



*I'm feeling very angry*



*I'm starting to feel angry*



*I'm beginning to feel unhappy*



*I am feeling happy*



*I am feeling great!*

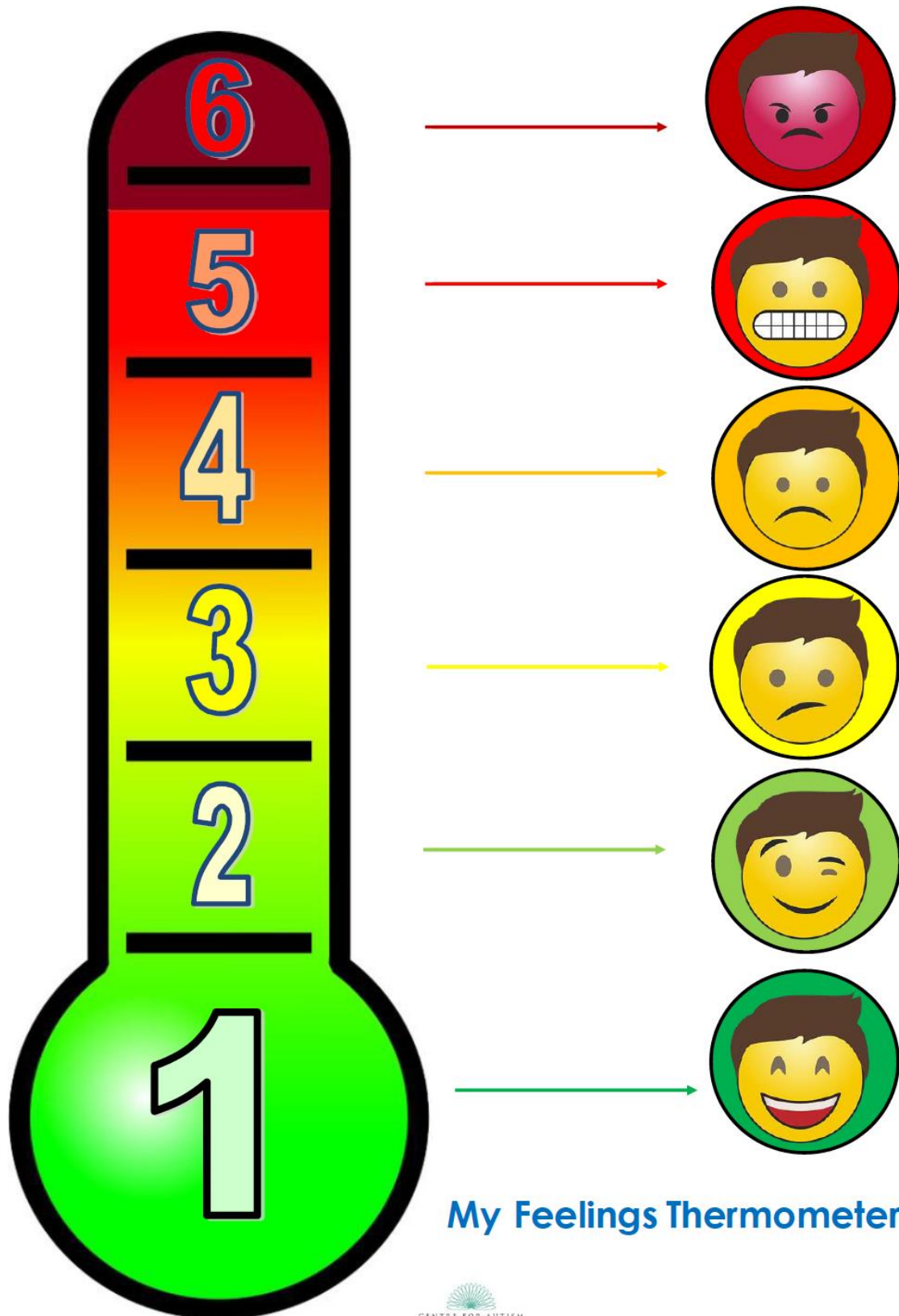


## My Feelings Thermometer



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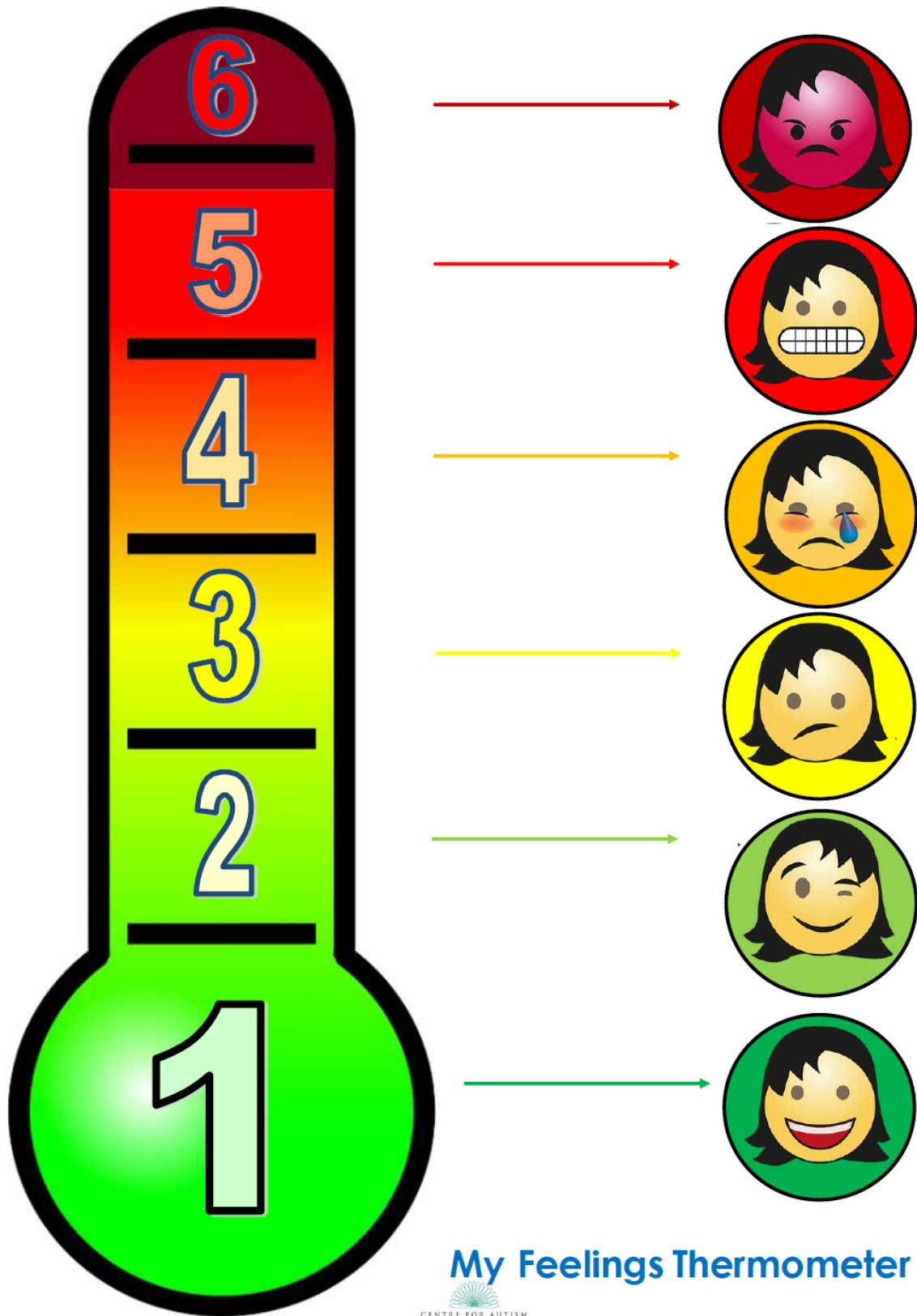




**My Feelings Thermometer**



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## My Feelings Thermometer



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# Glossary of Terms

|                               |  |
|-------------------------------|--|
| <b>Sensory input</b>          | The information that our brain receives from our senses.   |
| <b>Sensory Processing</b>     | How we receive and understand sensory information.   |
| <b>Behaviour</b>              | The output of how we act after our brain has made sense of sensory input.  |
| <b>Tactile sense</b>          | Sense of touch   |
| <b>Auditory sense</b>         | Sense of hearing   |
| <b>Visual sense</b>           | Sense of sight   |
| <b>Gustatory sense</b>        | Sense of taste   |
| <b>Olfactory sense</b>        | Sense of smell   |
| <b>Vestibular sense</b>       | Sense of balance   |
| <b>Proprioceptive sense</b>   | Sense of where your body is in space.  |
| <b>Interoceptive sense</b>    | Sense of internal organs (for example: hunger, thirst, sickness, anxiety).   |
| <b>Sensory regulation</b>     | How we organise information coming in from our senses so that we can make sense of the world and stay in a “just right state”. |
| <b>The “Just Right State”</b> | A state where of being calm and alert enough to participate in our environment.  |

|  |   |
|--|---|
| <b>Under-responsive (sensory seeking)</b>    | When someone does not respond sufficiently to sensory input. They may appear tired or disengaged or they may be seeking more sensory input by being always “on the go”.                   |
| <b>Over-responsive (sensory avoiding)</b>    | When someone is sensitive to sensory input and they experience some sensations more intensely than their peers. They may appear anxious or upset and they may try to avoid sensory input. |
| <b>Sensory Overload</b>                      | When someone experiences sensory overload the sensory input is too much for them to process and they go into fight/flight/freeze mode.  |
| <b>Fight/flight/freeze mode</b>              | A body response where our brain is tricked into thinking it is in danger. Can result in a meltdown, stimming or shutdown.   |
| <b>Stimming (self-stimulatory behaviour)</b> | A series of involuntary repetitive actions (for example: hand flapping, rocking, humming) that children with sensory processing difficulties use to regulate themselves.                  |

# Resources and Websites

## **Middletown Autism**

<https://www.middletownautism.com>

Has resources on sensory processing, life skills, building capacity, best practice, teenage resources, managing change, pathways to resilience, and severe learning disability. Also has resources on interventions such as TEACHH, attention autism, anxiety management, sensory processing, positive behavioural strategies, social stories and differentiating the curriculum. Also has a range of informative videos and online training.

## **Autism Resource Centre**

[https://www.aacap.org/aacap/families\\_and\\_youth/resource\\_centers/autism\\_resource\\_center/home.aspx](https://www.aacap.org/aacap/families_and_youth/resource_centers/autism_resource_center/home.aspx)

A range of articles and resources on the topic of autism

## **As I Am**

<https://asiam.ie>

An Irish charity that is working to create a society in which every autistic person is empowered to reach their own potential and participate in society. Contains many useful resources

## **Sensory Integration Education**

<https://www.sensoryintegrationeducation.com>

Has a range of accessible courses on sensory processing for parents, caregivers, teachers and healthcare professionals. Introductory courses are free of charge.

## **Lemon Lime Adventures**

<https://lemonlimeadventures.com/>

Useful website for parents to find resources and read about stories from other parents.

## **Thinking Toys**

<https://thinkingtoys.ie>

Irish website with a range of sensory toys

## **Sensational Kids**

<https://www.sensationalkids.ie>

Irish website with a range of sensory toys