

What is Sensory Processing?



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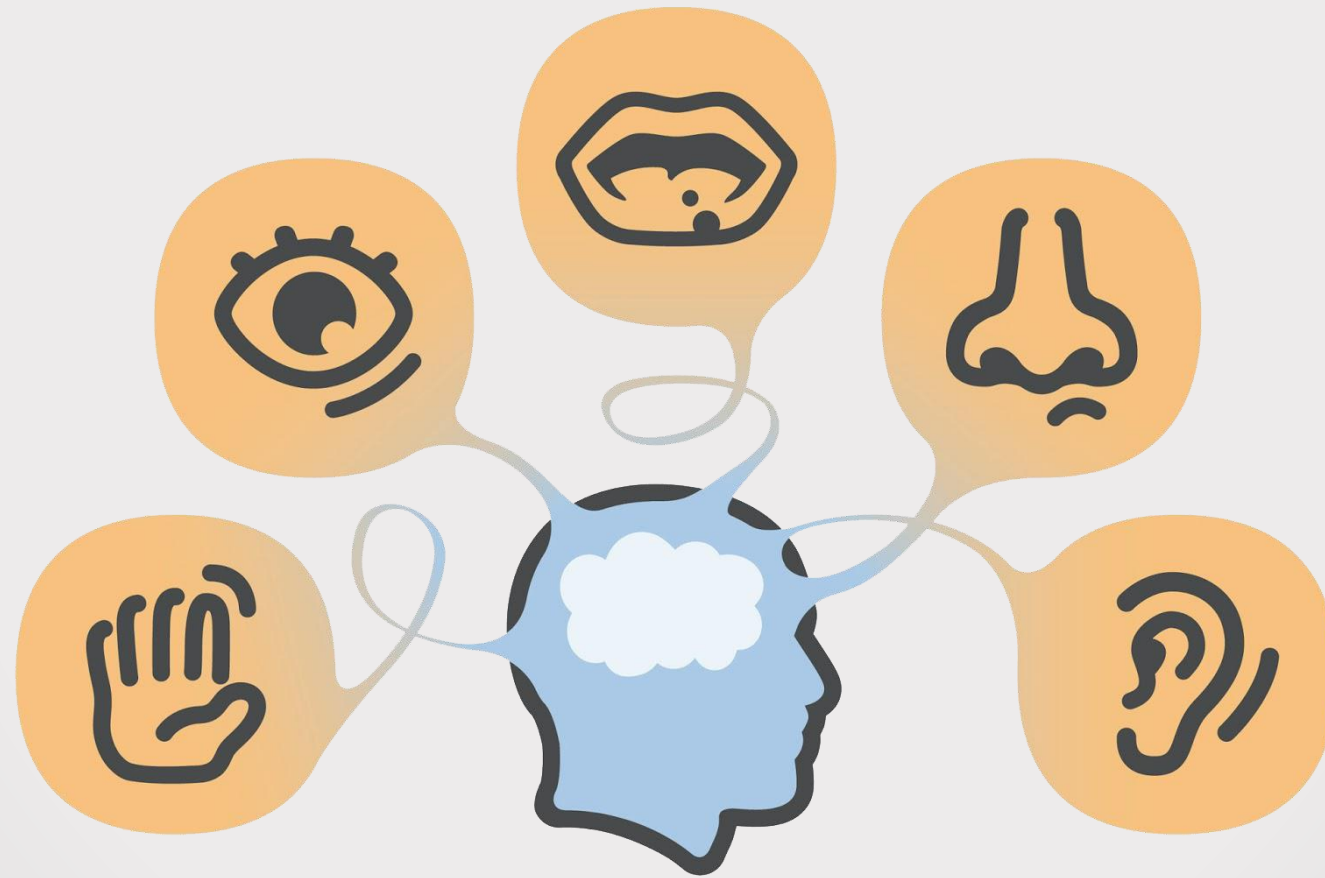
We all take in sensory information constantly. This is from within our body and from outside our body.

Sensory processing is the central nervous system's (spinal cord and brain) acknowledgement of and the organisation of all of this sensory information for our everyday use and for our ability to function.

When our senses are integrated correctly, we are able to respond appropriately to the sensation. For example, we move away from something hot or breathe in deeply to enjoy a favourite scent.



Our familiar senses



The three big senses...

Tactile

Tactile – our sense of touch

- discriminating the physical qualities of external objects, the amount of pressure being used/given
- the temperature of an item
- pain
- very strong emotional and social role
- body and face with neck are taken to the brain in different nerve pathways.



This system is:

- protective
- discriminative
- senses light touch
- senses deep touch
- feels temperature.

The three big senses...

Proprioception

Proprioception - our internal body awareness - tells us where our body parts are including their position and what work they are doing

- this is our body awareness - every muscle, tendon, joint and ligament is used
- a total body sense.

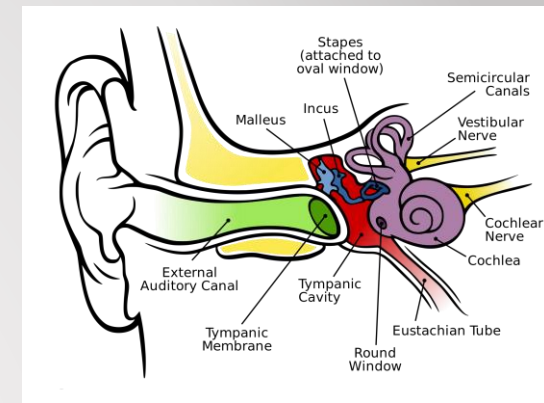


This system:

- helps us sense our body position
- judges and grades the force we need to complete activities – for example, reach for and then pick up an object
- senses deep pressure (alongside the tactile deep touch) and allows us our ‘heavy work’ movements
- dampens down/calms our involuntary nervous system
- gives our body awareness and coordination.

The three big senses...

Vestibular



Vestibular – our internal gyroscope or spirit level – sense of movement

- rotation in any direction
- our posture and organisation of movements
- detects gravity so tells us which way is up
- in our head next to our cochlea for sound

This system:

- tells us where our heads are in space- which way is up
- judges the speed and direction of our movement (with help from our eyes)
- organises our movements
- gives us our posture
- helps us relate to the force of gravity so we can be ‘grounded’ in time and space.

The three big senses continued

These two less familiar senses of proprioception and the vestibular are constantly working in partnership with our tactile sense give us all the information about what our body is doing all of the time.

They work together so we know where we are and where we start and end.

They provide our foundation skills that are needed for all of our play, independence, learning and interaction.

Our eighth sense...

Interoception

Interoception - our third internal sense that allows us to 'feel' our internal organs and skin along with the internal state of our body

- It helps us feel many important sensations that help us know if we need something, need to do something and if we are ok
- It helps us learn how to view and feel our emotions.

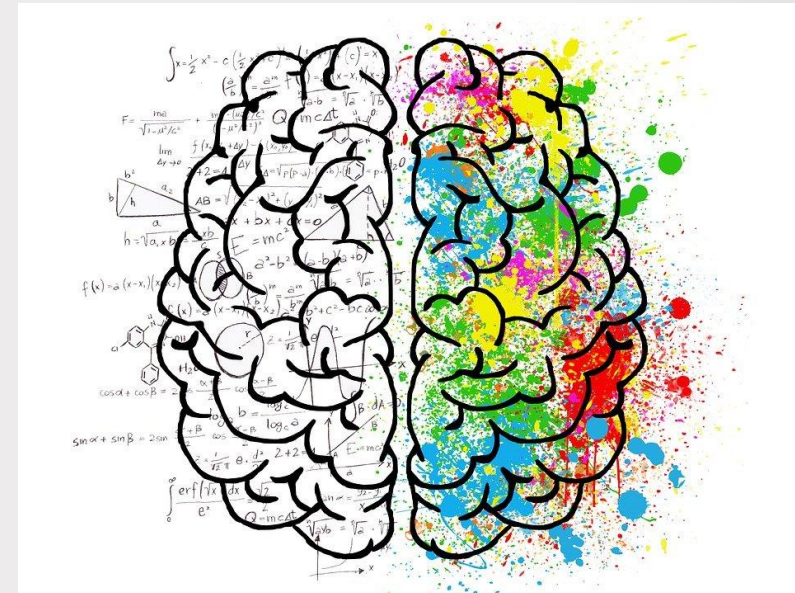
Interoception tells us about:

- Hunger or fullness
- Thirst
- Pain
- Body temperature
- Heart rate
- Breathing rate and pattern
- Muscle tension
- Itch
- Nausea
- Sleepiness
- Tickle
- Physical exertion
- Need for the toilet
- The state of our emotions

Sensory processing

We are receiving sensory information **all** the time from **all** eight senses.

This information tells us all about our current world and how we should respond. However, we only use about 5% of this information and ignore or filter out the other 95%.



Sensory processing dysfunction

Difficulties can arise when:

- We filter out more than 95% of that information
- We let in more than 5% of the information.

This affects our overall arousal level – our whole body's ability to change our level of alertness.

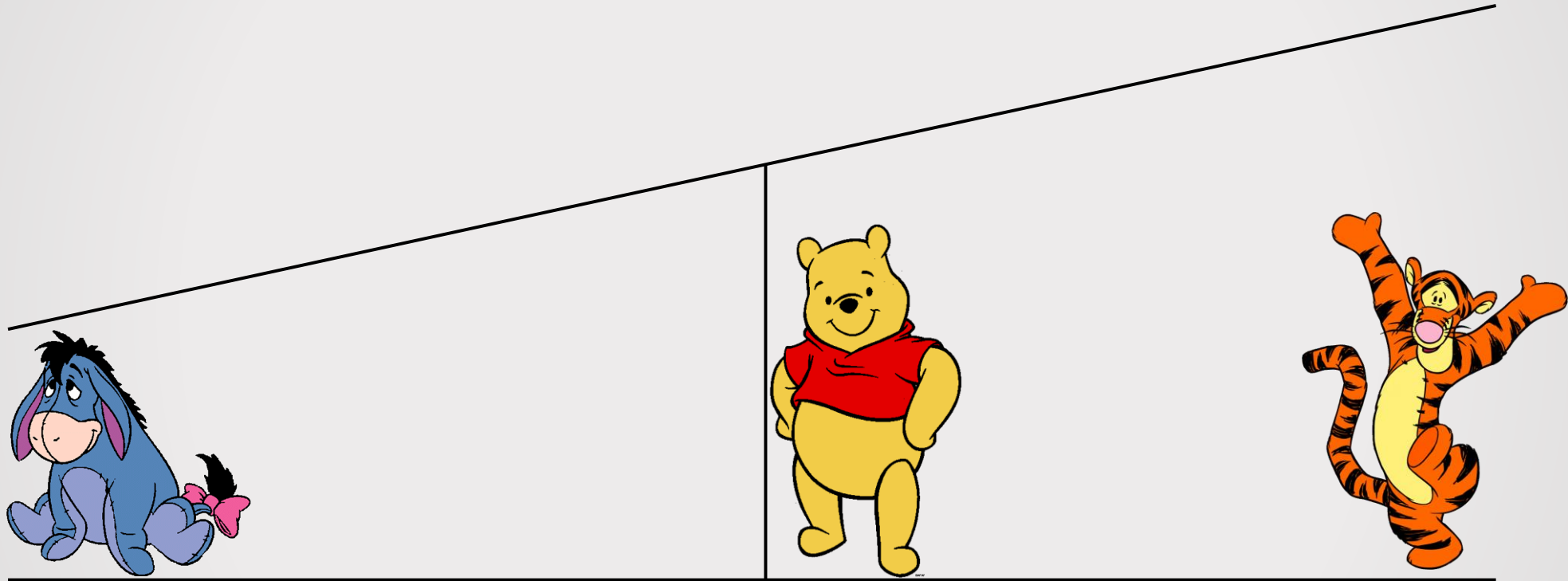
Even small disruptions to sensory processing have an impact on our function, participation and self-esteem.



Our functional hierarchy of skill development



Modulation or regulation of our responses to information



Under aroused – ‘Eeyore’
Grumpy, bored, passive

Just Right – ‘Winnie the Pooh’
Best level of alertness for the
task we are doing

Over excited or overloaded – ‘Tigger’
Giddy or hyper
Fear/freeze/flight/fight