

**South West Yorkshire Partnership NHS Foundation Trust**  
**Barnsley Children's Therapy Services**

## Interoception

**Name:**

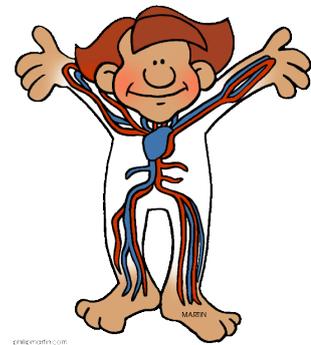
**NHS Number:**

Interoception is the sense of knowing what is going on INSIDE our bodies

There are little receptors located throughout the inside of our body (in our organs, muscles, skin, bones etc.). These receptors gather information from the inside of our body and send it to the brain.

The brain helps to make sense of these messages and enables us to feel things such as:

- hunger, thirst, fullness
- itch, tickle
- pain
- body temperature (feeling hot/cold)
- nausea
- need for the bathroom
- physical exertion, tiredness
- sexual arousal
- heart rate, breathing



Additionally, interoception allows us to feel our emotions.

### **How is interoception connected to our emotions?**

Typically, each emotion feels differently in the body. For example, before speaking in public, your body may *feel* a certain way: the heart may race, muscles may feel tense and shaky, breathing may become shallow, and the stomach may feel fluttery. These sensations let us know that we are feeling a bit nervous. Without clearly feeling these sensations, it is difficult to identify emotions with a high degree of clarity.

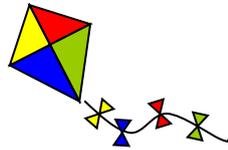
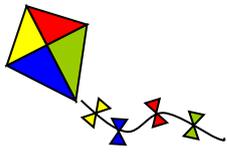
### **How does interoception influence self-regulation?**

When the interoceptive system is properly working, the sensations alert us that our internal balance is off and motivates us to take action, to do something that will restore the balance and help us feel more comfortable.

For example:

- if we feel thirsty – we get a drink
- if we feel full – we stop eating
- if we feel cold – we put a jumper on
- if we feel the need to urinate – we go to the toilet
- if we feel anxious – we seek comfort
- if we feel frustrated—we seek help

Interoception triggers our urge for action & facilitates self-regulation



## Hyper-Responsive and Hypo-Responsive Interoception Reactions

Just like the other 7 sensory systems (vision, taste, smell, touch, auditory, vestibular & proprioception), children can be hyper-responsive or hypo-responsive to interoception sensory input.

Hyper-responsive (also known as over-responsive or hypersensitive)

The slightest sensation of hunger, thirst, or bathroom needs (etc.) can cause anxiety or be distracting. There are some reports of it resulting in sensations of feeling painful.

Hypo-responsive (also known as under-responsive or hyposensitive)

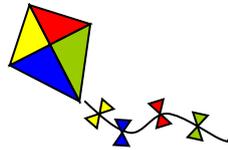
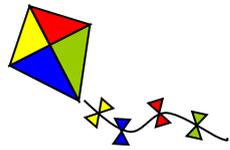
This means a child often needs a large amount of input in order to recognise the type of sensory information their brain is receiving. This means they may not realise the need to use the toilet, or they may not realise they are hungry until they are completely starving (think of those people who get 'hangry'), and the same with feeling thirsty. They might not realise they are in pain or the sensation of pain feels completely different to their peers

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## Activity Strategies for Supporting Interoception Modulation

There is not a lot of research on Interoception that gives definite activity or therapy solutions. However, here are a few ideas that have been suggested to develop awareness of self & support self-regulation.

- Mindfulness activities and meditation (encourages children to be more aware of what is going on inside their bodies)
- Yoga for kids
- Heavy work activities (proprioception)
- Alerting activities (vestibular)
- Creating a sensory diet to address specific sensitivities
- Repetitive and rhythmic vestibular input (such as swinging, rocking etc.)
- Visual prompts, cues or communication devices that encourage children to identify body functions and feelings
- Verbally labeling emotions as we see them and also responding appropriately to encourage functional responses.
- Help your child to communicate wants, needs, emotions, and feelings by first recognizing them and then communicating them appropriately (social stories could be helpful for this)



### Other suggested activities

- Buzzing & Brushing (Burpee Method or Wilbarger Protocol) making sure these are done intensely and consistently for as long as the child needs it. For example, initially The Wilbarger Brushing Protocol is done every two hours for two weeks. After this it can be cut down to whatever frequency is necessary, but done consistently.
- Whole body work in OT and at home using proprioceptive and vestibular techniques and treatments.
- Listening Therapy CD's (such as [Therapeutic Listening](#)) that specifically address regulation.
- Companion programs such as Brain Gym, Interactive Metronome, [Astronaut Training: A Sound Activated Vestibular-Visual Protocol: For Moving Looking & Listening](#), etc. can help too.
- Lastly, a good sensory diet followed consistently every day will be of great therapeutic value. Through the sensory diet the child may "physically" begin to regulate his system, and "mentally" gain insight into how his body is feeling/not feeling, why, and what he can do about it as things happen (or preventative, ideally). The more awareness he has, the better he will be able to help himself. [Introduction to How Does Your Engine Run?: The Alert Program for Self-Regulation](#) is very useful for this in particular.

**Contact Childrens Therapy if further advice or information is required  
01226 644396**