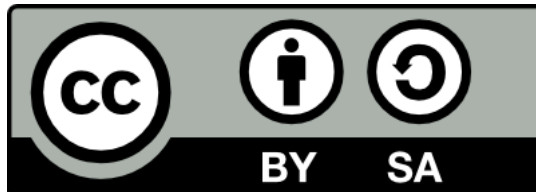


Interoception 101



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REVISION RECORD

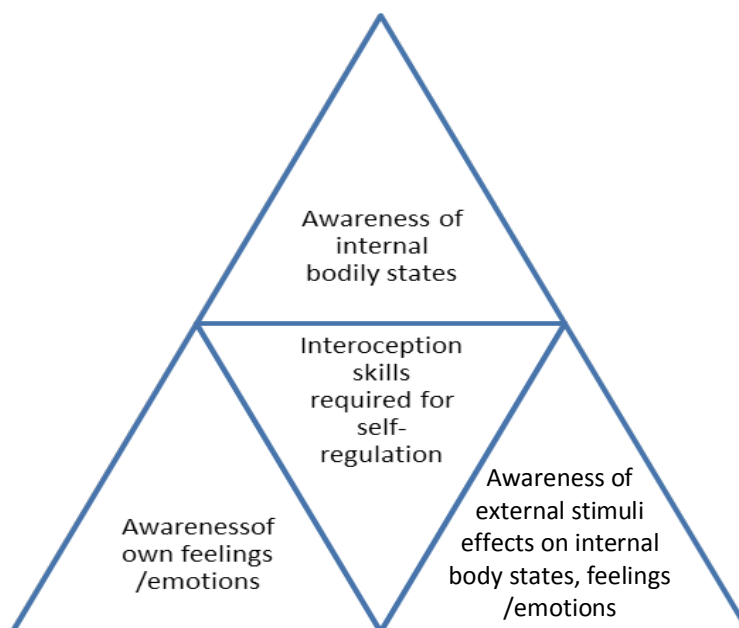
Version	Approved by	Approved date	Review date	Amendments
V2.1	Dr Emma Goodall	March 2019	March 2022	Updated template
V2.0	Dr Emma Goodall	2019	2022	Reviewed and minor updates
V1.0	Dr Emma Goodall	2016	2019	Guideline developed



1. Interoception explanation

Interoception is an internal sensory system in which the internal physical and emotional states of the body are noticed, recognised/identified and responded to. Interoception skills are required for a range of basic and more advanced functions such as knowing when to go to the toilet, being aware that you are becoming angry or upset and being able to manage your emotions proactively. When children and young people have not yet developed interoception skills they will struggle with not only their own emotions but with social interactions and even just being around others may be difficult for them to manage.

Children and young people with well-developed interoception are able to use both logic and emotions to respond to their environment, whereas those without tend to rely on logic and have to carefully think through their possible responses to each situation. Thinking through each situation long term can be extremely tiring and can contribute to overload, shutdown, meltdowns, anxiety and depression.



Goleman (1995) suggested that emotional intelligence, sometimes known as social intelligence is composed of three skill sets; emotional skills, cognitive skills and behaviour skills. When these theories are looked at in conjunction with metacognition; thinking about thinking (Moses & Baird, 1999, Wellman 1985) the key role of interoception can be identified. Without interoception, it is not possible for children and young people to develop metacognitive abilities. The following table illustrates the links between metacognition, social-emotional intelligence and interoception.

Metacognition (Wellman, 1985)	Emotional intelligence as foundation to social-emotional skills (Goleman, 1995)			Interoception (mindful body awareness)
	Emotional skills	Cognitive skills	Behaviour skills	
1. Knowledge that mental states exist	Labelling feelings	Self-talk	Non-verbal communication	Noticing internal body states
2. Knowledge that there are distinct mental processes	Expressing feelings	Understanding social cues and how others perceive you	Effective verbal communication	Recognising and naming internal body states
3. Knowledge that these distinct processes are a function of cognition	Identifying feelings as responses to stimuli	Being able to problem solve in response to impulses and anticipating consequences. Understanding the perspectives of others and societal norms.	Control of impulses	Understanding the link between internal body states and feelings/emotions.
4. Knowledge that cognition is influenced by context (internal and external)	Understanding and responding to intensity of feelings			Understanding the effects of others and the wider environment on self, internal body states and feelings/emotions.
5. Being able to self-assess cognitive process to direct personal behaviour.	Emotional self-regulation	Self-awareness	Behavioural self-regulation	a. Managing responses of internal body states to external stimuli b. Socio-emotional self-regulation

Another way of understanding interoception is to describe it as mindful body awareness. Someone who is skilled in this can for example tell when their heart beat is signalling fear versus excitement because they can notice and recognise or identify all the other internal bodily signals that they are experiencing which help them to process and respond to their overall emotional state. On a more basic level, interoception enables people to know when they are hungry, thirsty, tired etc, all of which are necessary precursors to positive development and self-regulation.

Each child or young person should keep a record of their developing body awareness using either visual or written records. In this way, children and young people who require extra support to self-regulate can be guided to develop skills in the areas that they still need to ensure that the possibility for long term self-management is optimised. Self-awareness on the interoceptive level is a pre-requisite for accurate self-awareness of self in terms of strengths, abilities and support needs in the long term.

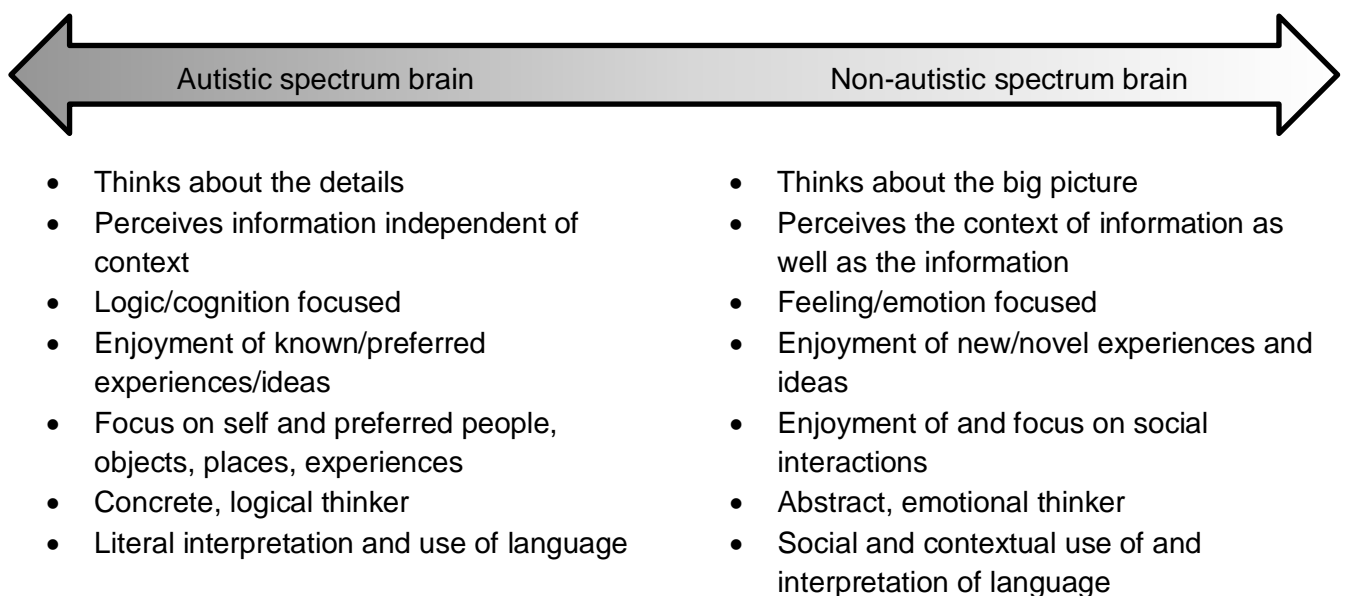
Where children and young people are still developing interoceptive skills the use of visuals or verbal prompts are effective support tools. Below is a table with some examples of visual and verbal prompts and their rationale.

Issue	Example visual prompts	Example verbal prompts	Rationale & use
Still developing bladder/bowel control	Toilet icon placed in visual timetable at regular intervals (placing to be agreed with family & child or young person).	Verbal reminder to go to the toilet when child or young person is observed with body language that the family have indicated shows they are about to go to the toilet.	Toileting accidents can be embarrassing for some children and young people, other children and young people can be very unkind following these and it is important to ensure the use of respect at all times and to be very aware of how others are reacting. NB – for some bladder/bowel control is not possible due to physical issues.
Still developing awareness of thirst	Water bottles to be kept on desks or easily accessible in classroom. Photo of the child or young person drinking from their water bottle to be either timetabled regularly or to be presented when they lose focus on tasks.	'Have a drink.' 'Remember how we learnt that drinking water helps your brain to focus, have a drink break and then go back to work.'	Hydration is vital for good focus, physical health and avoiding headaches. Children and young people may not be able to adequately track their hydration. A simple way to teach this ability to track hydration is the colour of urine, which becomes more concentrated and darker in colour as someone become more dehydrated. Refer hydration chart .
Still developing awareness of hunger	Fruit snack visual Snack visual Listen to story and eat visual	"What would you like to eat from your lunch box?" (asked whilst offering lunch box) "You seem hungry, have a snack" (if exhibiting sign described by family)	Hunger can make people agitated, easily angered or aggressive. Stable blood sugar levels help maintain stable moods. As each person is different some children and young people may need small frequent snacks, whilst others prefer to eat less frequently. Free access to food with visual or verbal prompting is the ideal to maximise focus and concentration throughout the day.
Does not yet recognise when getting angry etc	Choice board with two or three known calming activities to be presented when signs of anger are appearing. 5 point scale not to be used during meltdown or tantrum Refer regulation scale .	"You seem to be getting angry, have a drink of water then come and let me know what the problem is." (enables calming prior to explanation which would otherwise cause more heightening) "Could you please..." (where ... is a known calming activity)	Children and young people who do not yet recognise when they are getting angry they can verbally or physically lash out BEFORE they were aware that they were going to. At the point of meltdown these strategies are too late and the child or young person must be left to calm down before being spoken to. ONE visual can be presented during a meltdown that directs them to their safe or calming space or activity.
Uses very loud voice	'Noise-o-meter' Whisper visual Silence visual Talking visual Loud voice visual - displayed by child or young person in front of them on their workspace as appropriate.	Using a VERY QUIET voice, request the child or young person 'please talk more quietly' or 'not so loud please'.	Some children and young people cannot hear how loud their own voices are and/or use their voice to cover up other sounds that they find distressing/painful. Others may use loud vocalisations to signal distress in which case the DISTRESS must be responded to and not the loud voice.

Mindfulness is known to improve people with disabilities' experience of depression, anxiety, self-compassion and compassion for others (Idusohan-Moizer, Sawicka, Dendle, & Albany, 2015). In a pilot study, researchers from the [Center for Investigating Healthy Minds](#) (CIHM) at the Waisman Center, University of Wisconsin-Madison taught teachers and children and young people in the Madison Metropolitan School District mindfulness. Children and young people in the research group "reported feeling more in control and responsible for their actions, made fewer errors, and improved in their use of strategy on a problem solving task involving working memory. Additionally, teachers observed improved emotion regulation in these children and young people after the training." CIHM also looked at preschools and teaching kindness and compassion through mindfulness. The research has been published indicating that these children and young people showed greater improvements in social competence as well as higher levels of learning, health, and social-emotional development, whereas the control group exhibited more selfish behaviour over time (Flock et al, 2015).

2. Interoception and the autism spectrum

Self-awareness on the interoceptive level is a pre-requisite for accurate self-awareness of self in terms of strengths, abilities and support needs in the long term. Research confirms the neurological basis for many differences inherent in the autistic spectrum (Lovett 2005). Older autistic spectrum young people may find it helpful to understand the internal processing and response to external stimuli differences between autistic spectrum brains and non-autistic spectrum brains. An overview of the differences between autistic spectrum and non-autistic spectrum brains is given below (adapted from Baker-Ericzen, 2013 and Lovett, 2005).



These differences are a continuum and non-autistics may have some of the traits of the autism spectrum or be able to learn to think in some of those ways and vice versa. No one way of thinking or being is superior to another.

Refer to the Department for Education [autism spectrum](#) webpage for further information and resources.

3. Developing interoception

Children and young people can learn a range of appropriate responses once they are able to notice and recognise internal signals.

Prior to having well developed interoception teaching responses to feelings and emotions and even external stimuli will be very difficult and is unlikely to support the children and young people effectively.

3.1 Responding to external sensory input

A child or young person who runs out of the classroom may well be reacting to external sensory input that they find extremely distressing but without an awareness of what being distressed 'feels like' they are unable to recognise that they are distressed and therefore they may not actually realise that that sensory input is problematic for them.

Once a child or young person can recognise and understand their internal body signals for distress, they can begin to work out what distresses them and then how to respond to these stressors. The adults around that child or young person may well have a good idea of what they are feeling and why, but without learning it for themselves the child or young person will never be able to learn to self-regulate independently. If you are unsure of the level of interoception of a particular child or young person it will be easiest to start off with activities that help them to gain an awareness of their bodily reactions (internal signals) to noise and heat/cold (refer [interoception support plan](#)).

3.2 Responding to noise

Start off with some mindful listening activities that are suitable for the children and young people that you are working with. Mindful listening is where the children and young people stop all other activities and focus on actively listening to something or someone with a goal to hear as much as they can. Some ideas of things to listen to and for include:

Listen TO	Listen FOR
Music from The sorcerer's apprentice	Which instruments they can hear
The general classroom or playground environment	Natural and created sounds
A poem or short story	Language rhythms and rhymes, number of words
Special effects eg from http://www.acoustica.com/sounds.htm	Different sounds

Recordings of different environments	Natural and created sounds to try and identify the soundscape (place)
Contemporary music at different volumes	Instruments, voices, pitch, tone

Once the children and young people have developed their active listening skills, these mindful listening activities can be followed up with questions relating to how different body parts feel or respond to different sounds. For children and young people with strong physical or emotional reactions to some sounds, the aim is to try and help them to identify what sounds trigger what reactions so that you can develop a collaborative plan to minimise stress, distress and anxiety in regards to those sounds whilst responding in a safe and effective manner.

Some strategies for responding to noise that may already exist are:

- Making noise to cover other noises
- Covering ears with hands
- Using headphones
- Running or moving away

Other possible strategies to explore are:

- Physical placement of children and young people in relation to noise in class
- Pre-warning of known trigger sounds when possible
- Use of comforting sensory activities to compensate for uncomfortable noise eg using a fiddle toy to distract from class noise. (This must be a specific strategy for each individual child or young person)

3.3 Responding to temperature (cold and heat)

Some children and young people may experience quite strong emotional reactions to changes in temperature that may have become apparent during prior interoception activities. For example becoming hot or cold can lead to distress, anger and even rage in some children and young people, who may not be aware of their temperature reactions themselves. Because clothing can be used to keep warm or cool it is one strategy that should be employed but it is unlikely to be enough for children and young people with strong emotional reactions. In addition these children and young people may need support to develop a good sense of temperature both internal and external, so that they can effectively use strategies.

Hands, feet, face and body trunk may all feel at quite different temperatures in some people. For example, moving up from toes which are so cold they have turned purple, feet may be very cold, but above the ankle may be warmer and the trunk quite warm. In other people this is not the case. Temperature regulation is complex and affected by a large number of individual factors. Seating should take temperature sensitivity into consideration as some children and young people will learn most effectively close to the air conditioner or heater whilst others will find that highly problematic.

Younger children should be explicitly taught about why and when to wear hats, coats, scarves, summer clothing etc, whilst older young people may need reminding that it is hot and the sun can damage their skin, so they need to wear a hat etc.

Some strategies for responding to cold/heat that may already exist are:

- Wearing gloves inside
- Keeping hand warmers in pockets
- Sitting under the air conditioner and setting it to full fan

Other possible strategies to explore are:

- Having an indoor option at recess/lunch
- Keeping wet flannels frozen in zip-lock bags for children and young people to hold to cool down

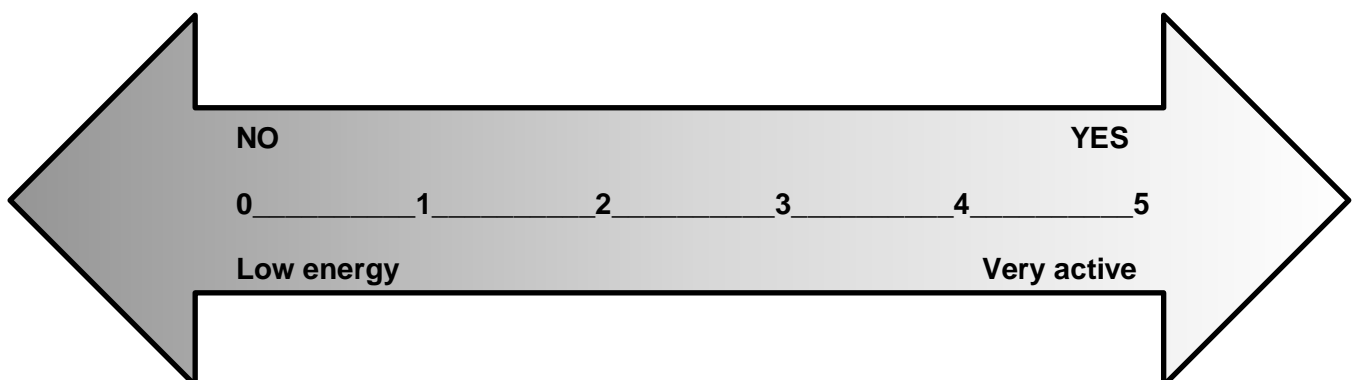
3.4 Default energy level

Children and young people have their own individual default energy level, some are very high energy or active, whilst others are more passive or low energy. It is important to help them identify and understand their typical energy level so that they can begin to develop an awareness of how their energy levels change and what effect this has on them. Only with an understanding of their own energy levels can children and young people learn how and when to apply strategies to maximise their ability to learn as well as be comfortable in themselves and around others.

Introduce the concept of energy levels through a simple quiz:

- *Do you find it difficult to sit still at your desk/table?*
- *Do you struggle to wait patiently for things?*
- *Do you have difficulty sitting in the car or bus during long trips?*
- *Do you enjoy sports requiring lots of movement, like soccer and bike riding?*
- *During every day activities, like brushing teeth and getting dressed, do you like to move around rather than stand in one spot?*

No scores 0 and yes 1 for each question



3.4.1 Energy level – mind and body #1

One way to help children and young people identify their perceptions of their default energy levels is to ask them to choose photographs that they think are most like the inside of their brain and most represent their energy levels; these can be selected from mind photos ([section 3.4.3](#)) and body photos ([section 3.4.4](#)) or to bring in or choose their own images. A discussion about why they chose those particular images will help model the interaction between expression of self (communication) and awareness of self (interoception).

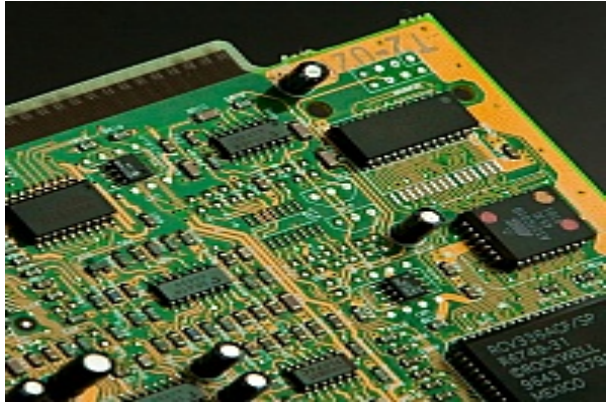
Repeat this activity when children and young people are energetic and again when they are tired, asking them to choose the photographs that they think are most like the inside of their brain and most represent their energy levels **AT THIS MOMENT IN TIME**. Direct the discussion to enable them to see the changes in their picture choices from default to energetic and tired, as well as to compare and contrast how these states are represented or experienced by their peers.

3.4.2 Energy level – mind and body #2

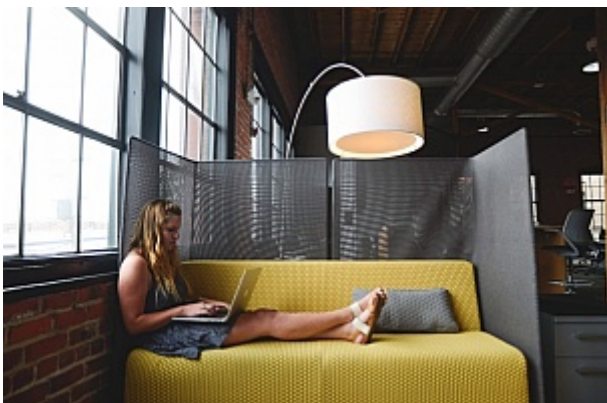
Provide the children and young people with their body outline ([section 3.4.5](#)) and/or the word bank ([section 3.4.6](#)) words first thing in the morning, preferably on a cold, wet, dark winter morning or after a long weekend in other seasons. Ask the children and young people to identify some of the descriptors that match how their bodies feel right now. Repeat activity when they are energised and get them to compare and contrast.

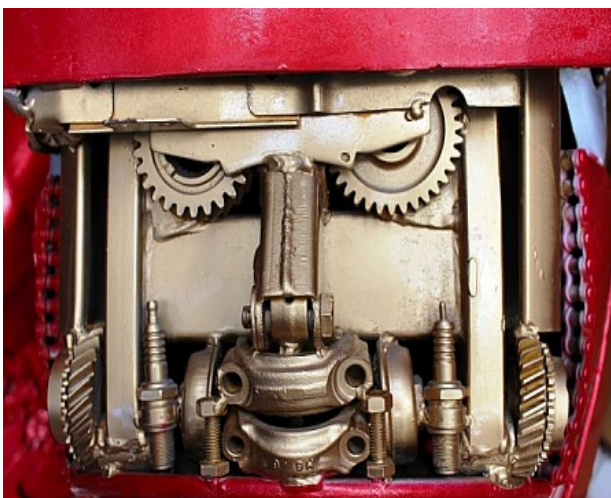
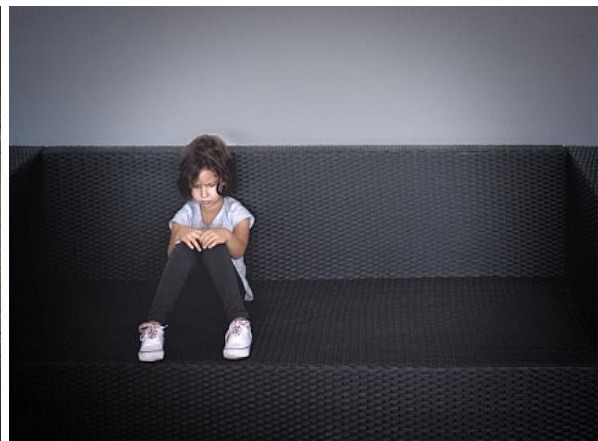
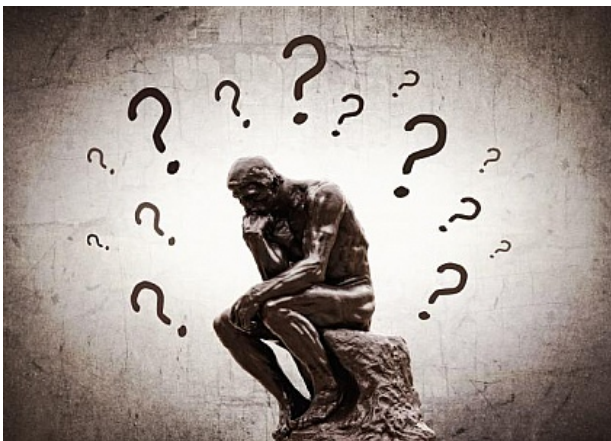
3.4.3 MIND PHOTOS





3.4.4 BODY PHOTOS

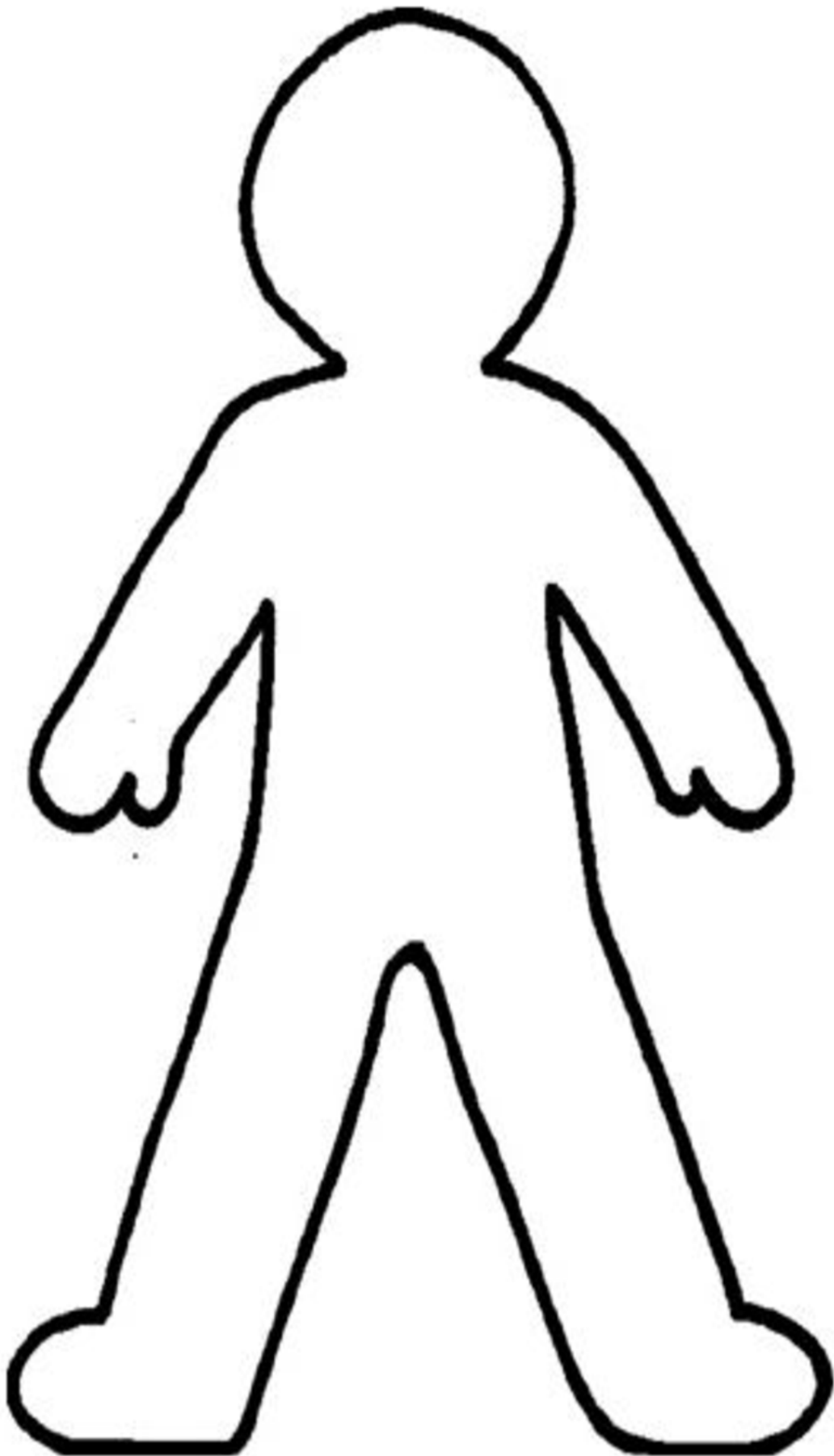




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3.4.5 BODY OUTLINE



Body parts

head	forehead	eye brows
eyes	nose	nostrils
mouth	lips	teeth
tongue	jaw	ears
ear lobe	neck	shoulder
ribcage	ribs	diaphragm
arm	elbow	hand
fingers	thumbs	palm
leg	knee	ankle
foot	toes	heel
sole	skin	veins
artery	heart	lungs
throat	stomach	bladder
bowel	breath	voice
muscles	bones	tendons
mind	brain	shin

Associated adjectives

boiling	hot	warm
cool	cold	freezing
stiff	tense	relaxed
tight	loose	floppy
stretched	light	heavy
wet	dry	itchy
runny	busy	cluttered
full	empty	blank
closed	open	still
moving	wiggling	jerking
flapping	fidgeting	twirling
twisting	squeezing	pacing
clenching	shaking	tapping
short	fast	thin
quiet	loud	sore
sweating	sweaty	tired

3.5 Anger

Ask the child or young person to describe how their body feels when they get angry. You may need to help them to identify when they were angry to prompt memory of what was happening. Children and young people can do this through drawings or choosing images, or by completing their body outlines ([section 3.4.5](#)) with words from the word bank ([section 3.4.6](#)). This can be done as a whole class, in groups or 1:1, but should **never** be attempted during a meltdown.

If you can see a child or young person becoming angry, you could engage in this activity by saying; *“I can see that you are getting angry, can you explain how your body is letting you know you are angry?”* If they are unable to do this, you can further explain why you think they are angry, what the physical clues are for you.

Below are some physical indicators of anger taken from <https://www.mentalhelp.net/articles/recognizing-anger-signs/>

- clenching your jaws or grinding your teeth
- headache
- stomach ache
- increased and rapid heart rate
- sweating, especially your palms
- feeling hot in the neck/face
- shaking or trembling
- dizziness
- rubbing your head
- cupping your fist with your other hand
- pacing
- getting sarcastic
- losing your sense of humour
- acting in an abusive or abrasive manner
- raising your voice
- beginning to yell, scream, or cry

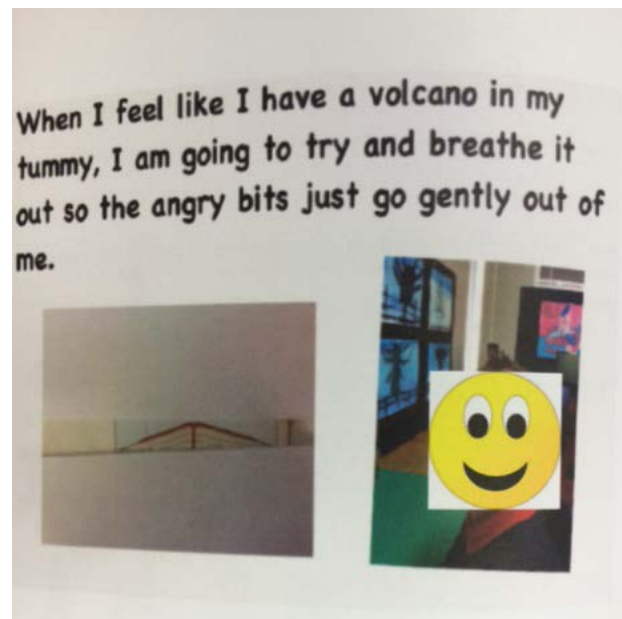
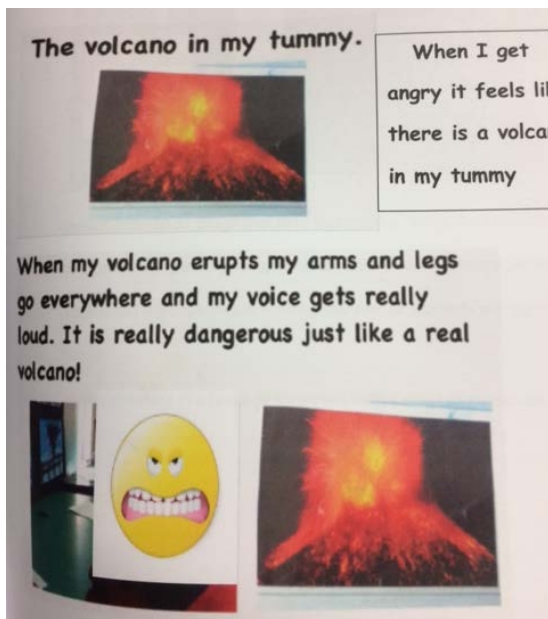
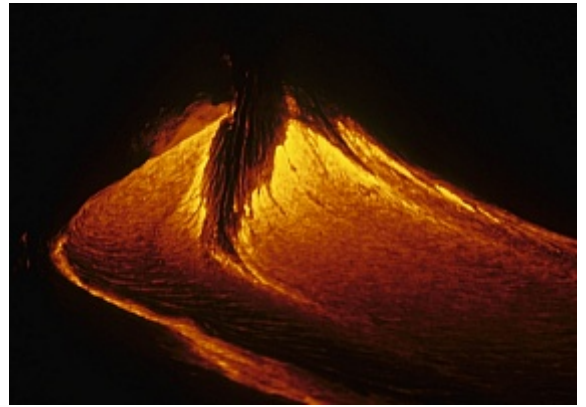
3.5.1 Responding to anger with volcano breathing

This is most useful with children at primary school or younger, young people may respond better to being prompted to use mindful breathing when angry.

Volcano breathing works on the principle that anger is like lava inside a volcano and that it is going to come out sooner or later, so it would be safer for the lava to run down the sides rather than explode into the wider atmosphere!

This technique should be taught when children and young people are calm and prompted when they are becoming angry. If children and young people use the technique independently, it is helpful to compliment them for managing their anger positively.

The technique essentially consists of two parts; a story/visual and a breathing exercise. The following example is taken from Goodall (2013) pages 135-136.



4. Interoception activities

An interoceptive activity focuses on creating and noticing a change in some aspect of one's internal self, such as, one's **muscular system, breathing, temperature, pulse or touch**. People with atypical interoception are not able to identify the physiological changes that signal mood changes or bodily self-regulation needs. Interoception activities teach us to connect with these.

An interoception activity focuses on a particular part of the body for at least 30 seconds.

- It enables a change to occur in one's body state while labelling the movement and part of the body involved (e.g. toes, stretch and curl up or curl under)
- **Repeat the same activity for a second time**
- The individual is encouraged to identify a **change** in their body state (eg hot-cold, soft-hard, stretch-relax) and where they felt that change (arch or ball of foot, on top).

The following pages provide practical application of interoception.

Interoception activity

4.1 Feeling muscles (hands)

1. Sitting down, just rest your hands on the top of your thighs (demonstrate)
2. Now stretch your fingers as wide apart as possible and hold them tense like that for 30 seconds
3. Rest them back again, now they should be relaxed
4. *Where could you feel your muscles when your hands were stretched?*



1. Hand relaxed, resting on thigh



2. Hand stretched out



3. Hand relaxed, resting on thighs



4. Hand stretched out with question mark

Interoception activity

4.2 Feeling muscles (feet)

1. Sitting down, just rest your feet flat on the floor (demonstrate)
2. Now stretch your toes as wide apart as possible and hold them tense like that for 30 seconds
3. Now curl your toes under and hold them curled for 30 seconds
4. Rest them back again, now they should be relaxed
5. *Where could you feel your muscles when your toes were stretched and when they were curled?*



1. Feet and toes relaxed



2. Toes stretched out



3. Feet with toes curled under



4. Feet, one stretched, one curled, with question mark

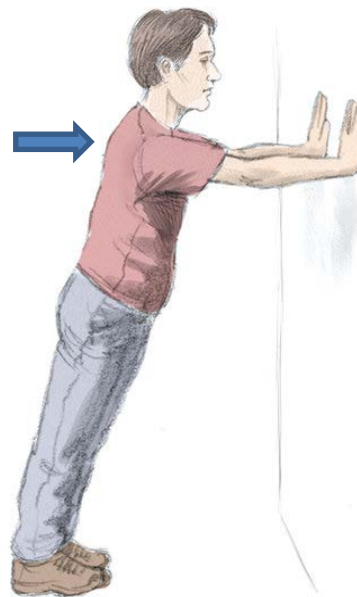
Interoception activity

4.3 Feeling muscles (arms)

1. Standing up, put your hands flat on the wall and just hold them there (demonstrate)
2. Now push the wall as hard as you can for 30 seconds
3. Stop pushing and relax your arms by your side
4. Rest them back again, now they should be relaxed
5. *Where could you feel your muscles when you were pushing against the wall?*



1. Arms out, hands flat on the wall, relaxed posture



2. Arms out, hands flat on the wall, pushing on wall



3. Arms down by side, relaxed



4. One arm out pushing on wall, one arm relaxed by side, with question mark

Interoception activity

4.4 Feeling muscles (legs)

1. Standing up, put one foot in front of the other with both feet facing forward and legs hip width apart, both feet flat on the floor (demonstrate)
2. Now move the front foot so that it only has the heel touching the floor. *Where can you feel something?* That is your muscle stretching on the back of your calf.
3. Now point your toes on that front foot so only your toes are touching the floor. *Can you feel something in your foot as well as your leg?*
4. Put your feet back flat on the floor and change which leg is in front, then repeat the heel touch and toe touch. *Does it feel the same or different?*
5. What about if you stretch your leg behind and do heel touch or toe touch? *Does that feel the same or different?*



1. Standing up, put one foot in front of the other, both feet facing forward, legs hip width apart, both feet flat on floor



2. Front foot heel touching floor



3. Front foot toes touching floor in point



4. Back foot heel, back foot toes

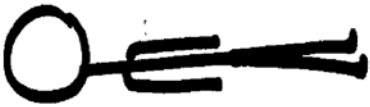






Follow on activity/exploration:

*Can you have one foot pointed and one heel touching the floor at the same time?
Can you move your legs in other ways to feel other muscles in your legs?*

Interoception activity

4.5 Feeling muscles (whole body)

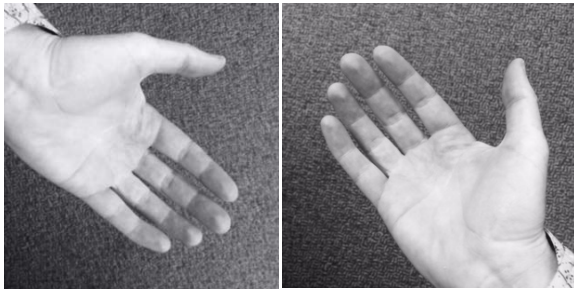
1. Lie down in a space on the floor, with your arms relaxed by your side, you can close your eyes if you want to. Breathe slowly.
2. As you breathe in scrunch your eyes and forehead and then as you breathe out relax them again.
3. As you breathe in open your mouth as wide as possible then as you breathe out relax your mouth.
4. Keep breathing slowly.
5. As you breathe in stretch your fingers apart as wide as possible, then as you breathe out, relax your fingers.
6. Now stretch your fingers and your arms as you breathe in, stretch as much as possible.
7. As you breathe out, relax your arms and fingers.
8. As you breathe in curl your toes up to scrunch your feet, then relax your feet as you breathe out.
9. Now as you breathe in scrunch your toes up and pull your feet in towards your body just using your leg muscles, and relax as you breathe out.
10. Breathe slowly in and out for a few breaths and then when you are ready, breathe in and tense up your face, hands, arms, feet and legs and then slowly breathe out and relax all the muscles.
11. Stay relaxed and breathe in and out slowly for a few more breaths.

	
	
	
	<p style="text-align: center;">Tense everywhere then relax</p>

Interoception activity

4.6 Feeling temperature #1

1. Stand still, concentrate on how hot, warm, cool or cold your hands feel. Touch your arms with your hands.
2. *Are your arms warmer or cooler than your hands?*
3. (after 10-30 seconds) Now rub your hands together really fast for 30 seconds, I will tell you when to stop.
4. (after 20 seconds) Ok, stop now. *Do your hands feel warmer or colder than before?*
5. Touch your arms with your hands.
6. *Are your arms warmer or cooler than your hands?*



1. Hands



2. Hands touching arms



3. Rubbing hands together (30 seconds)



4. Hand touching arms

Follow on activity/exploration:

How could we cool our hands down when they are hot?

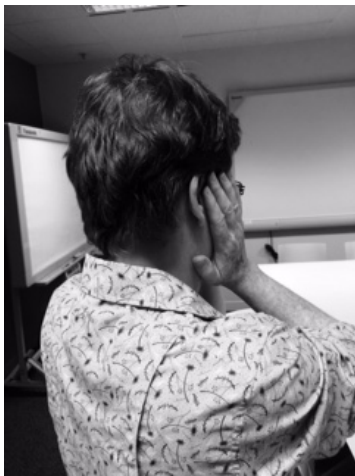
What is the safe temperature range for human bodies?

How do humans cool down/warm up?

Interoception activity

4.7 Feeling temperature #2

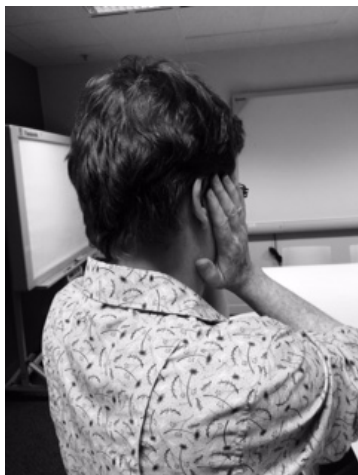
1. Stand still, concentrate on how hot, warm, cool or cold your body feels. Touch your face with your hands.
2. *How warm or cool does your face feel?*
3. (after 10 -30 seconds) Now, run really fast on the spot for one minute, I will tell you when to stop.
4. (after 1 minute) Ok, stop now. Touch your face with your hands.
5. *Does your face feel warmer or colder than before?*



1. Hands on side of face



2. Running on the spot for one minute



3. Hands of side of face



4. Thermometer

Follow on activity/exploration:

How can we measure body temperature?

Does your face get hotter or colder if you go outside?

Interoception activity

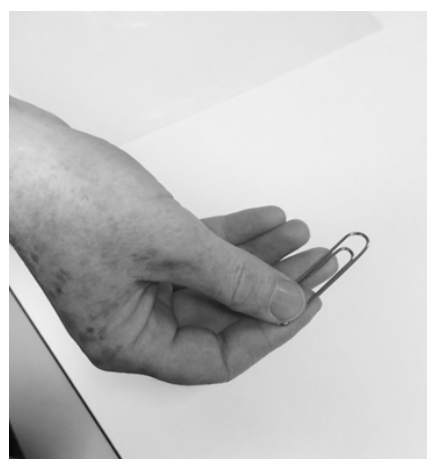
4.8 Feeling temperature #3

Note: this activity requires a box of paperclips, half of which have been in the freezer

1. Give each child or young person a room temperature paper clip.
2. *How does the paperclip feel? Is it hot, warm, cool or cold?*
3. Ok put the paper clip down and come and get one out of the box (from the freezer).
4. *How does this paper clip feel? Is it hot, warm, cool or cold?*
5. Now pick up the other paper clip in your other hand
6. *Does it feel warmer or cooler than it did before?*



1. Hand holding paperclip



2. Other hand holding other paperclip



3. Hands each holding paperclip



4. Thermometer

Follow on activity/exploration:

*Would the cold clip feel less cold if you wear gloves?
How does having cold fingers make your body feel?*

Interoception activity

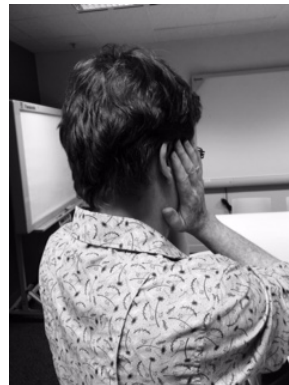
4.9 Feeling temperature #4

Note: this activity can only be done when the outside temperature is quite different to the classroom temperature (can be done inside by turning off air-conditioning or heat instead of going outside)

1. Stand still, feel the air on your skin. *Is it hot, warm, cool or cold?*
2. Try and feel how your hands and face feel. *Do they feel the same temperature or different? Is it comfortable or uncomfortable?*
3. Now let's go outside for a few minutes (or turn the air conditioning or heating off for 5 minutes)
4. Stand still and feel the air on your skin. *Is it hot, warm, cool or cold?*
5. Try and feel how your hands and face feel. *Do they feel the same temperature or different? Is it comfortable or uncomfortable?*
6. *Which air temperature did you prefer?*



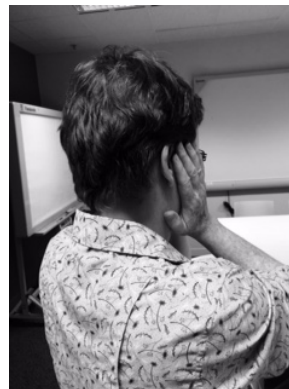
1. Person in classroom



2. Hand on face



3. Person in sunshine



4. Hand on face

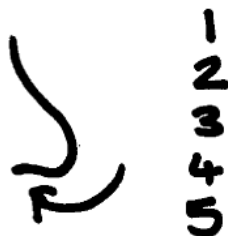
Follow on activity/exploration:

*Why do people wear some clothes in some weather and not others?
Explore clothing and response to temperatures across cultures.*

Interoception activity

4.10 Feeling breathing #1

1. Sit comfortably, on your chair or on the floor, close your eyes
2. Breathe in through your nose whilst counting to 5 in your head (teacher to count out loud to support this initially)
3. Then open your mouth and breathe out through your mouth
4. Close your mouth and breathe in through your nose again whilst counting to five (teacher can say In, two, three, four, five, and open mouth breathe out)
5. (Keep doing this for about a minute) *How do you feel? Which parts of your body moved when you were breathing in? Did it feel different breathing in from breathing out?*



1. Arrow showing air going into nose, counting to five



2. Arrows showing air coming out of mouth



3. Arrows showing air going into nose, counting to five and air coming out of mouth



4. Person sitting with question mark

Follow on activity/exploration:

*Blowing balloons up – as they **inflate** explain that is like the air being breathed **INTO** our lungs and when the balloon lets air out, it is like us **exhaling** which is the other word for breathing out.*

What are we breathing? What is air? What is air made of? Why do we need it?

Can you make your breathing faster or slower? How? What happens when you breath fast? How does it make the rest of your body feel?

Interoception activity

4.11 Feeling breathing #2

1. Place your hand over the centre of your ribs or just below your ribs (demonstrate).
2. Lie down, relax and feel comfortable, close your eyes and keep your mouth closed.
3. Make sure your hand is just resting on your ribs or just below and not pressing hard.
4. Breathe in slowly and deeply through your nose, you should feel your hand rising as your lungs fill with air.
5. Now breathe out slowly through your nose, keep breathing out, you should feel your hand moving back down as the air goes out of your lungs and your body deflates with your lungs.
6. Keep practising this breathing in and out for about a minute, see if you can feel your body moving even if you move your hand off your ribs.



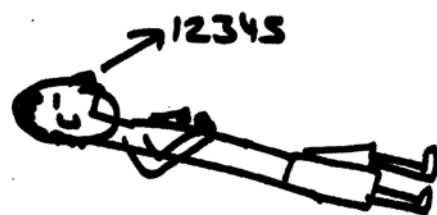
1. Hands on ribs



2. Lying down with hands on ribs



3. Arrows showing air going into nose, counting to five and body inflated



4. Arrows showing air going out of nose, counting to five and body deflated

Follow on activity/exploration:

*Does your body rise and fall differently when you breathe in and out through your mouth?
What do our lungs do? Where are they?
How can we keep our lungs healthy?*

Interoception activity

4.12 Feeling breathing #3

1. Sit comfortably, on your chair or on the floor, close your mouth and your eyes
2. For this exercise we are going to breathe in and out through our nose slowly and quietly
3. Whilst you are breathing in and out focus on the feeling the air entering and exiting your nostrils, if you can't feel it yet, just keep breathing
4. When you can feel the air going in and out of your nose, see how far into your nose and/or body you can feel the air entering
5. If you get distracted, just return to focusing on your breathing, slowly and quietly and feeling the air passing into your nose and leaving your body



1. Person sitting with eyes and mouth closed



2. Arrows showing air going into and out of nose

Follow on activity/exploration:

Do this breathing exercise after recess and lunch for a week – did it help you to focus on your work?

Interoception activity

4.13 Feeling pulse #1

1. Your heart is a pump which pumps blood around your body through your arteries. Where the arteries are close to your skin you can feel the blood moving, the movement of your blood is called your pulse. You can feel your pulse in several places, by gently feeling an artery with your fingertips. You can also count how fast your heart is beating.
2. The easiest place to feel your pulse is on your wrist. Sit down and rest your hand on your leg with your thumb up in the air and your palm facing up.
3. With the first two fingers of your other hand, stroke from the top of your thumb down the side until your fingers reach your wrist.
4. Move your fingers slowly onto the inside of your wrist, and gently feel for your pulse.
5. When you have found your pulse you can count how many beats in 15 seconds (Teacher to time 15 seconds).
6. Children and young people who are able to can times their score by 4, which gives them their pulse rate per minute.



1. Finding pulse on wrist



2. Timing for 15 seconds

Follow on activity/exploration:

How does your breathing change when you are trying to find your pulse?

Interoception activity

4.14 Feeling pulse #2

1. Sit down and rest your hand on your leg with your thumb up in the air and your palm facing up.
2. With the first two fingers of your other hand, stroke from the top of your thumb down the side until your fingers reach your wrist.
3. Move your fingers slowly onto the inside of your wrist, and gently feel for your pulse.
4. When you have found your pulse you can count how many beats in 15 seconds (Teacher to time 15 seconds).
5. Children and young people who are able to can times their score by 4, which gives them their pulse rate per minute.
6. Now jump up and down or run on the spot for one minute



7. Now find your pulse again and count the beats for 15 seconds (Teacher to time 15 seconds)
8. Children and young people who are able to can times their score by 4, which gives them their pulse rate per minute.
9. *Is your pulse higher or lower than before you started jumping or running?*



Follow on activity/exploration:

When else does your heart rate/pulse change?

What happens if you run and/or jump for longer?

What happens to your heart rate if you lie down and relax for a minute?

What can you do to lower your heart rate/pulse? Why would you want to?

Does your breathing change when you run/jump? Does it change again after you have stopped running/jumping?

Interoception activity

4.15 Feeling firm versus light touch #1

1. Sit down on a chair or on the floor.
2. Rest two fingers on the top of your leg.
3. *What can you feel in your leg and in your fingers?*
4. Now push the two fingers into your leg hard.
5. *Are the feelings in your leg and/or fingers different?*



1. Fingers resting lightly on leg



2. Fingers pressing hard into leg

Follow on activity/exploration:

What happens if you do this on your shin?

Does this feel different on your arm to your leg?

Interoception activity

4.16 Feeling firm versus light touch #2

1. Sit down on a chair or on the floor.
2. With one finger stroke your cheek.
3. Now stroke the back of your hand.
4. *Was the feeling in your finger tip the same or different?*
5. *Did each body part feel the same temperature?*
6. *Can you still feel anything in your body after these light touches?*
7. Now try dragging your finger hard across your cheek and then hard across the back of your hand.
8. How did that feel?
9. *Can you still feel anything in your body after these firm touches?*

Follow on activity/exploration:

What happens if you do this on the side of your leg?

Does this feel different on your hand to your leg?

5. Further information

Kids Matter have evaluated a number of programs and service providers and suggest that Mindful Schools may be useful. On their website they have some helpful free resources and links to their training: <http://www.mindfulschools.org/resources/explore-mindful-resources/#resources-starter-lesson>

Short video in which junior children and young people demonstrate good interoception and an explanation of the benefits of mindful body awareness and breathing exercises: <https://www.youtube.com/watch?v=RVA2N6tX2cg>

Short video from [Smiling Mind](#) an Australian mental health through meditation program - Mind the Bump - Mindfulness and how the brain works, which explains how negative emotions can lead to more negativity and how meditation links to interoceptive skills and other skills useful for learning and being a positive community member suitable for staff and children and young people (may need to explain some of the vocabulary): <https://www.youtube.com/watch?v=aNCB1MZDgQA>

Short video for upper primary or high school children and young people - One-Moment Meditation: "How to Meditate in a Moment", explanation of how to do a very short meditation in situations of immediate stress/anger etc via learning a 1 minute breathing meditation: <https://www.youtube.com/watch?v=F6eFFCi12v8>

Upper Primary (age 7 on) guided mindfulness from smiling mind

<http://smilingmind.com.au/blog/#!/category/background/what-is-smiling-mind> – first two sessions:

<https://youtu.be/1QEYE7VS8ak?list=PLp3vpYbUmlqcqMrdfj4vCvxUHrQB857m>

<https://youtu.be/AvQb0gre5KE?list=PLp3vpYbUmlqcqMrdfj4vCvxUHrQB857m>

Mindful body awareness of taste – need a piece of fruit or chocolate to do this activity:

<https://youtu.be/SAWSYefLEcg?list=PLp3vpYbUmlqfFkalWKK1jbcearpKKpL8F>

Mindful body awareness activity, starts with breathing activity:

<https://youtu.be/eHjYmfvJK5Q?list=PLp3vpYbUmlqfFkalWKK1jbcearpKKpL8F>

Guided 5 minute daily mindfulness activity (video is 6.09 mins):

https://youtu.be/y1dmKZg13Yw?list=PLp3vpYbUmlqMWF7Gr_imkJvbuoTU87u

High school (could be used with upper primary) mindful body awareness related to emotions guided activity: https://youtu.be/KTaA6ZiBtg8?list=PLp3vpYbUmlqMWF7Gr_imkJvbuoTU87u

High school (could be used with upper primary) mindful thought awareness guided activity:

https://youtu.be/KGPNMtHgenk?list=PLp3vpYbUmlqMWF7Gr_imkJvbuoTU87u



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7. Department forms and resources

The Department for Education public [neurodiversity](#) website has the following resources available that are recommended to be used to support children and young people in education and care services and will assist educators and support staff to develop individualised strategies to support children and young people to develop interoception.

The neurodiversity webpages also provide additional information for education staff and parents including how we support children in education and care services with atypical neurodiversity, educational implications and suggested educational adjustments; as well as further resources and external services that can support education and care staff, parents and children and young people.

7.1 Interoception support plan (HSP421)

An [interoception support plan](#) is completed by the education or care service, family and the child or young person (where possible) to provide a detailed understanding of the interoception issues and support the development of individualised strategies to increase interoception.

7.2 Interoception activity plan (HSP422)

An [interoception activity plan](#) can be used as a template by education staff to plan for the inclusion of interoception activities into daily class activities.

7.3 Personal best tracking sheet (HSP423)

A [personal best tracking sheet](#) can be used by children and young people to record their personal bests for different interoception activities. Education staff can also use to record for children and young people.

7.4 Interoception in the Australian Curriculum (HSP424)

[Interoception in the Australian Curriculum](#) provides detailed information for education staff on how interoception can be incorporated into the curriculum to support children and young people's learning.

7.5 Sensory overview support plan (HSP431)

A [sensory overview support plan](#) is developed by the education or care service, family and the child or young person (where possible) to provide a detailed understanding of the sensory issues and support the development of strategies to minimise sensory seeking or avoidance.

7.6 Regulation scale (HSP432)

The [regulation scale](#) is a tool that can be used for any child or young person to identify what is happening around them that is impacting on their mood change, what signals their body is giving them, and ways to respond to their body's signals that will help them manage the change in mood.

7.7 Understanding behaviour template (HSP433)

The [understanding behaviour template](#) is a useful tool to assist in determining the reason behaviour is occurring and to plan and implement replacement behaviour. This worksheet is used for a single behaviour and works most effectively when education staff, families and the child or young person work together to develop.

7.8 Emotional wellbeing care plan (HSP400)

An [emotional wellbeing care plan](#) is completed by a health professional in consultation with parents or legal guardians for children and young people requiring additional care or support for their mental health and emotional wellbeing.

7.9 Autism spectrum support plan (HSP430)

An [autism spectrum support plan](#) is completed by education and care services in collaboration with the child or young person and their family. The plan includes a description of the child or young person's interests, strengths, skills and support needs from the perspective of the child, family and education or care service.

7.10 Constipation and dehydration

To support wellbeing in education and care services the department promotes free access to water and encourages the display and discussion of the [urine colour chart](#) and [bristol stool chart](#).