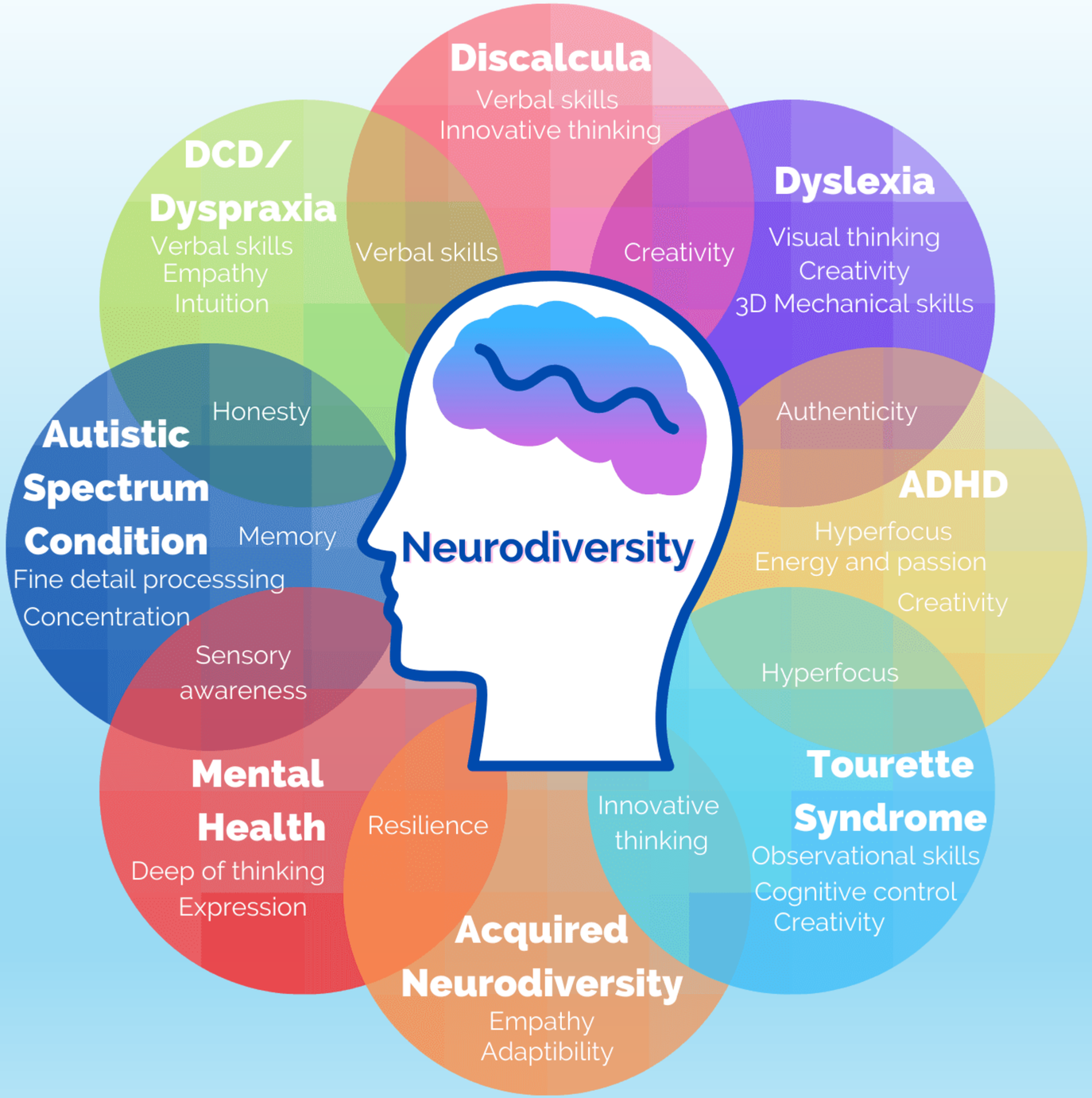
Understanding the Autism Spectrum and Interoception

by A/Prof. Wenn Lawson

Wenn aims to talk about:

- Autism and Terminology (neurodivergent)
- Experiences and developmental differences in autism – (monotropism) and what does support look like?
- Introduction to Interoception – the 8th sense
- Research and results from South Australian schools
- Exploring interoception activities and resources
- Reflection/Question(s)

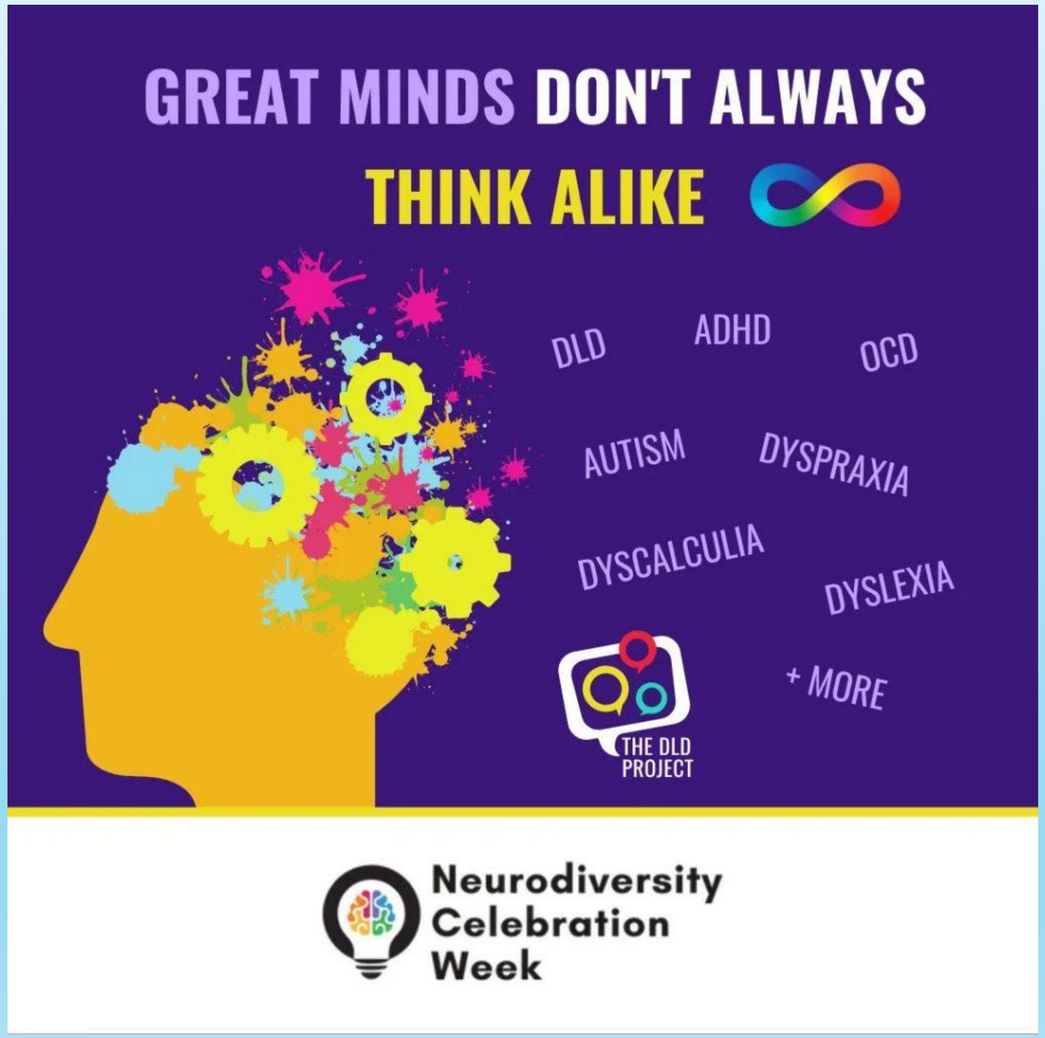


‘Neurodiversity Affirming’ means seeing the whole student, including their humanity, their strengths AND their needs.

‘Dynamic disability’ means that some days some of the symptoms are less intense, and some days they are more intense. When well regulated, students can have higher executive function levels, many neurodivergent people have differences in executive function skills, and may demonstrate these skills in different ways. Even when regulated students will need accommodations, support and kindness for the skills we are lacking.

3 Core Premises of The Neurodiversity Paradigm

1) **Neurodiversity is a natural and inherent part of human variation**
2) **There is no singular 'normal' brain, as neurological diversity is the rule rather than the exception**
3) **Social and power dynamics significantly influence how neurodivergent individuals are perceived and treated in society.**



Neurodivergent

Kassiane Asasumasu coined the term neurodivergent, which refers to people whose brain functions differ from the neuronormative majority e.g. ADHD, Dyslexia and Autism. A person can have an innate (from birth) neurodivergence or acquired (such as in the case of traumatic brain injury or PTSD).

Neurotypical

Neurotypical: a person whose brain functions in alignment with the central, most common range of the neurological spectrum. Their cognitive and social processing styles match what society generally recognizes and accepts as the norm.

Allistic

A non Autistic person. A person can be both neurodivergent and allistic. For example, someone who is ADHD but not Autistic is neurodivergent and allistic.

Neuro-normative

Neuro-normative refers to spaces and structures that are built off the assumption of neuro-normative processing and cognitive style.

What is Monotropism in Autism?

How does it impact Our senses?

How do we work to support monotropic individuals?

Autism is a matter of attention.

We are monotropic, not polytropic.

We are biologically designed to work differently to the allistic population.

We are single focused, but when interest is sparked, we connect more widely.

Using our interests & strengths help us connect.

Monotropism: a key contributor to flow and/or inertia, in autism.

Flow

- **Flow** implies easy, ongoing and happy to be engaged with (an action or activity).
- Flow may also imply a difficulty to stop, even when an action or activity has become tiring or is not appropriate any longer.
- See: **http://monotropism.org**

Inertia

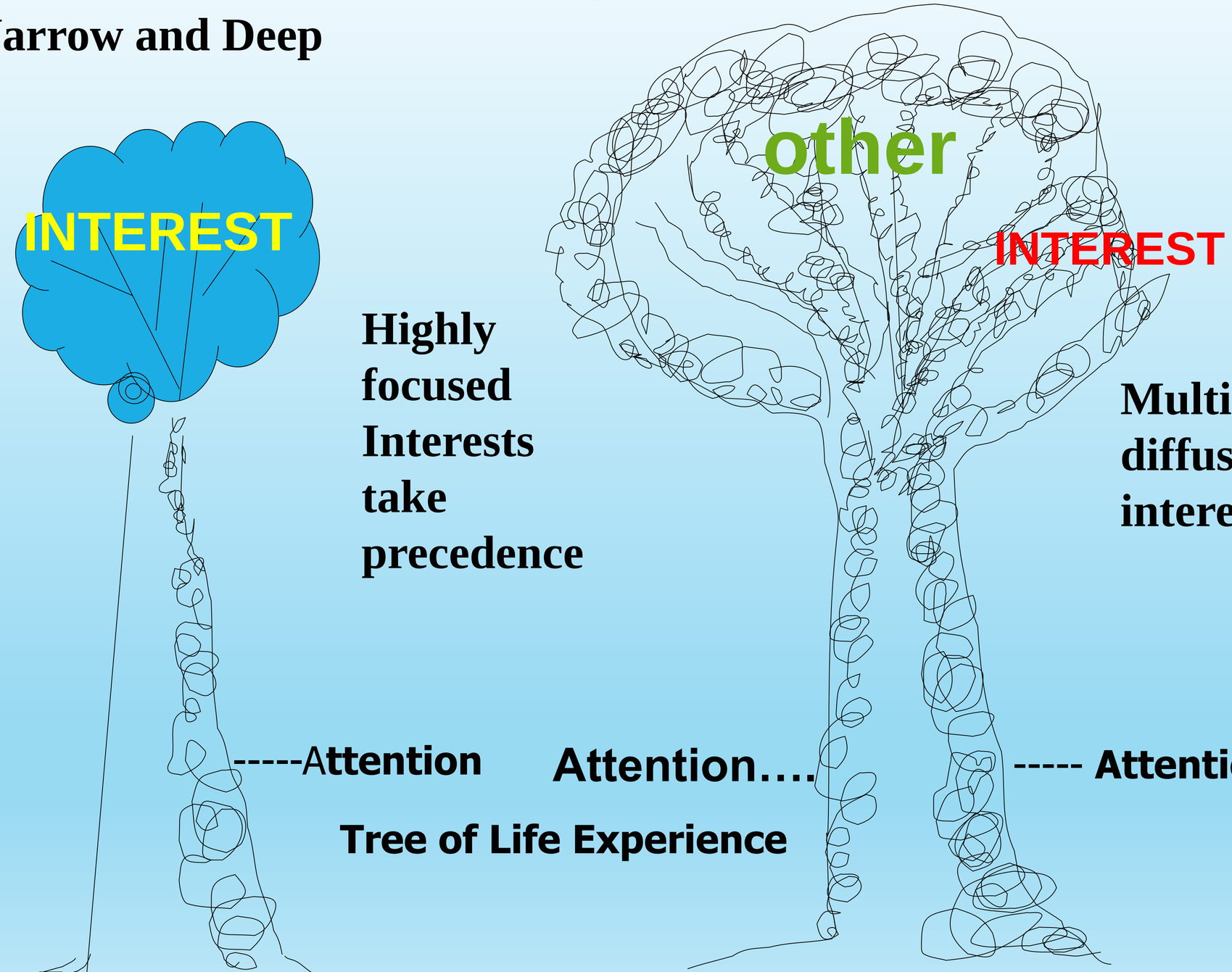
- **Inertia** implies a state of being stuck, not able to start or begin.
- It also implies a disconnection to ability to engage in an action or activity. This can be so even if there are deadlines to meet, appointments to attend and so on.

Being single focused/minded= restricted interests, more rigidity, social communication & sensory differences. **Our senses may be heightened or underdeveloped**.

So, it might be difficult to multi-task, such as look at a person while walking, thinking, drinking a cuppa and processing our next move, because we see part of the picture, not the whole thing.

Mono attention
Narrow and Deep

Polytropic attention broad and shallow



Highly focused Interests take precedence

Multiple diffuse interests

-----Attention

Attention….

----- Attention

Tree of Life Experience

Transition

Autism is: I like it here,
please do let me stay.

Autism is: I know it here,
please don't take me away.

If and when I leave this place
to travel to another space,

I need to know it right away. I
need to know that I'm OK.

Transition is so fleeting, it
leaves not time to stay.

Will I have time to settle, or
will I be whisked away?

I know that change can happen.

I know it can take time.

But how can I know what this will mean?

What this will mean for mine.

Transition is about moving, “to where or what” one asks?

This is my very question, from present or the past.

Time for me is all the same,

I know not of its future.

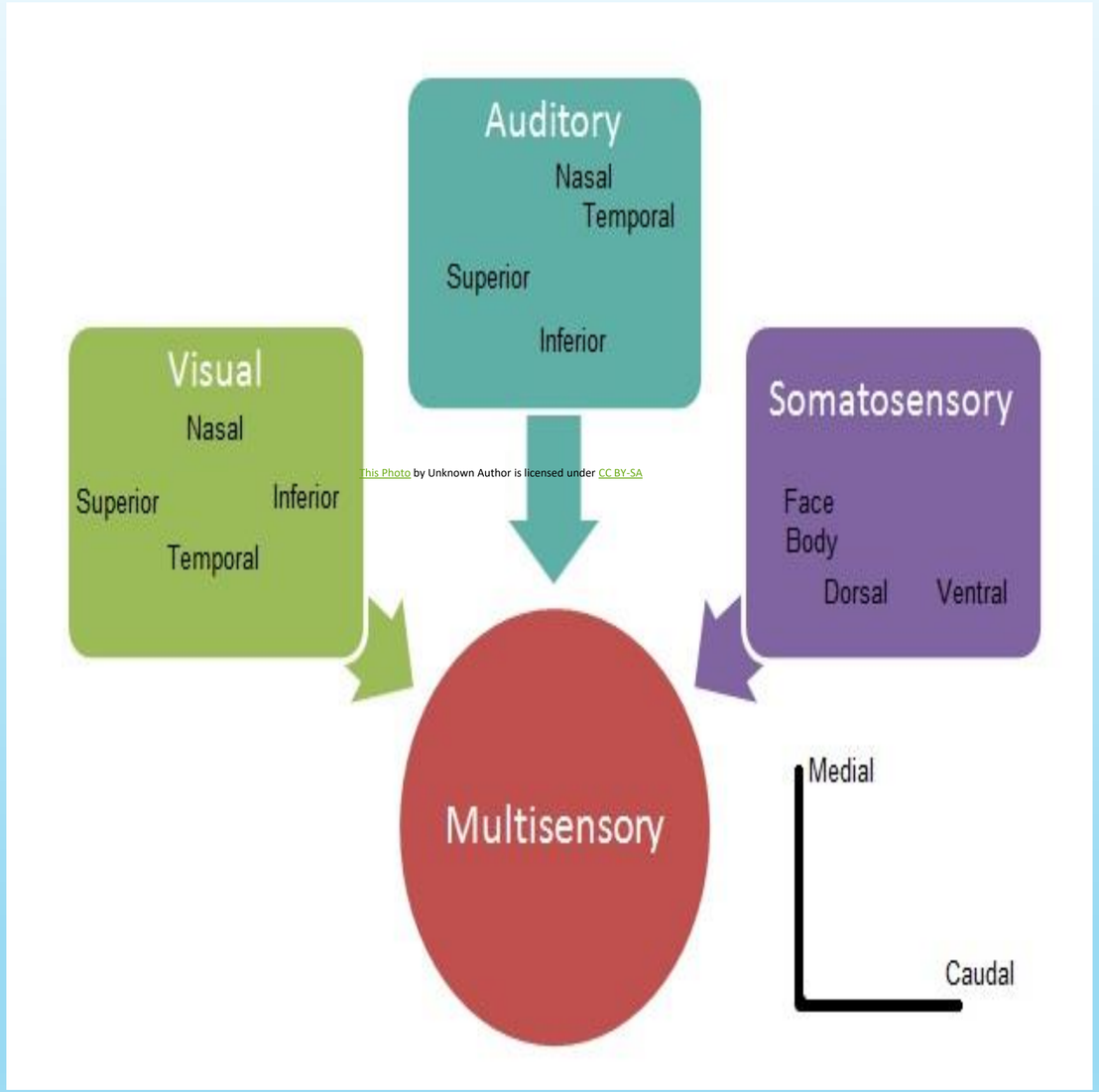
I only know I trust in ‘now’… tomorrow can come, I just need to know how.

DA (Polytropism) Needed to attend to as many different things as possible……

Self, other, emotions, environment, relationships, everyday life, planning, thinking ahead, comprehending the bigger picture =

Allistic

Population (non-autistic)



DA: Divided Attention

In Autism though

Interests dictate

Driven to organise and plan: but will have difficulty, so insist on sameness & will resist change.

Thinking ahead only occurs in connection to interests

Can only attend to one thing at any one time (unless within attention tunnel).

What is Play?

"Wenn, Wenn" I hear the teacher say.

"Wenn, Wenn, look this way".

"Wenn, Wenn", I hear the children say.

"Wenn, Wenn, come and play".

I hear the words that come each day,

"What do they mean?" I hear me say.

Words without pictures simply go away. I turn my head and look instead

at all that glitters; blue, green and red.

You'll like it here" Father speaks,

Come and play with Billy"

Inside my head my brain just freaks,

"How can they be so silly"?

"Why wo“uld I want to do this thing“

My mind can find no reason.

"Please leave me with the sparkly string,

This gives me such a feeling

Flow is monotropism's natural state, so, if we are expected to change attention quickly, we may get 'stuck'

If **our senses** are overloaded (**we tend to experience our senses one at a time**) we may become 'inert' or hindered from activity.

Inertia is the opposite to a flow state.

Properties resulting from monotropism

- Single Focused Interest
- Detail focus
- Interoception may be off-line
- Strength Based Attention

Inertia

- Shifting attention uncomfortable
- Object permanence challenged
- Emotional regulation challenged
- Passionate Interests

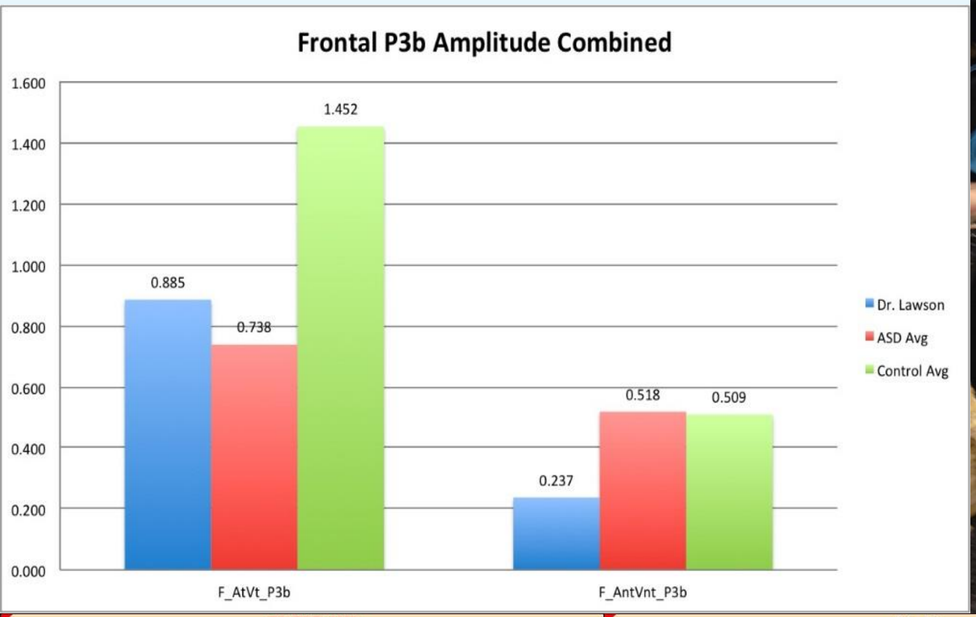
We are a colourful lot!

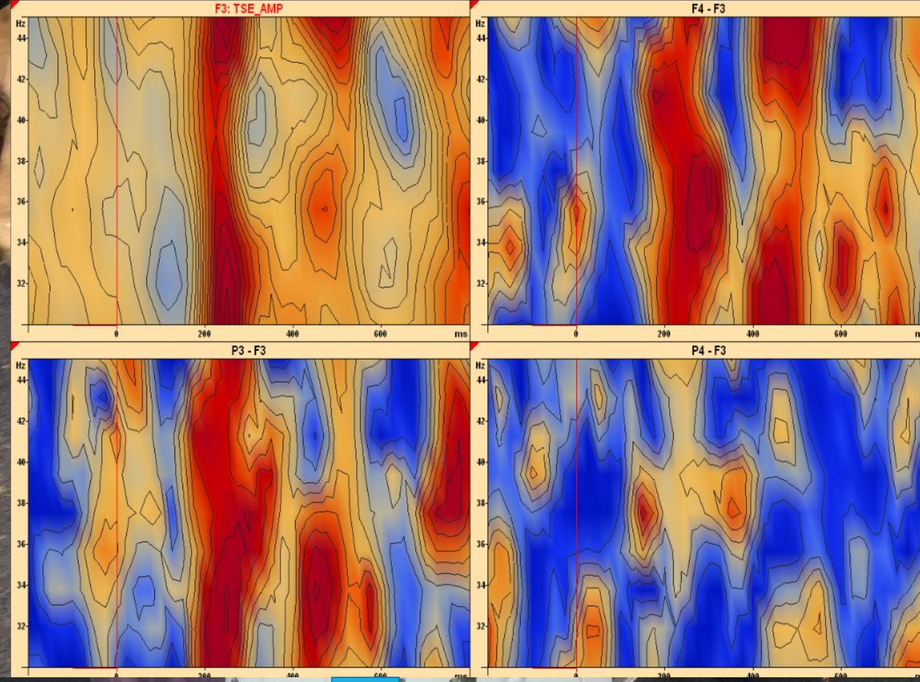
Mono/Single Interest

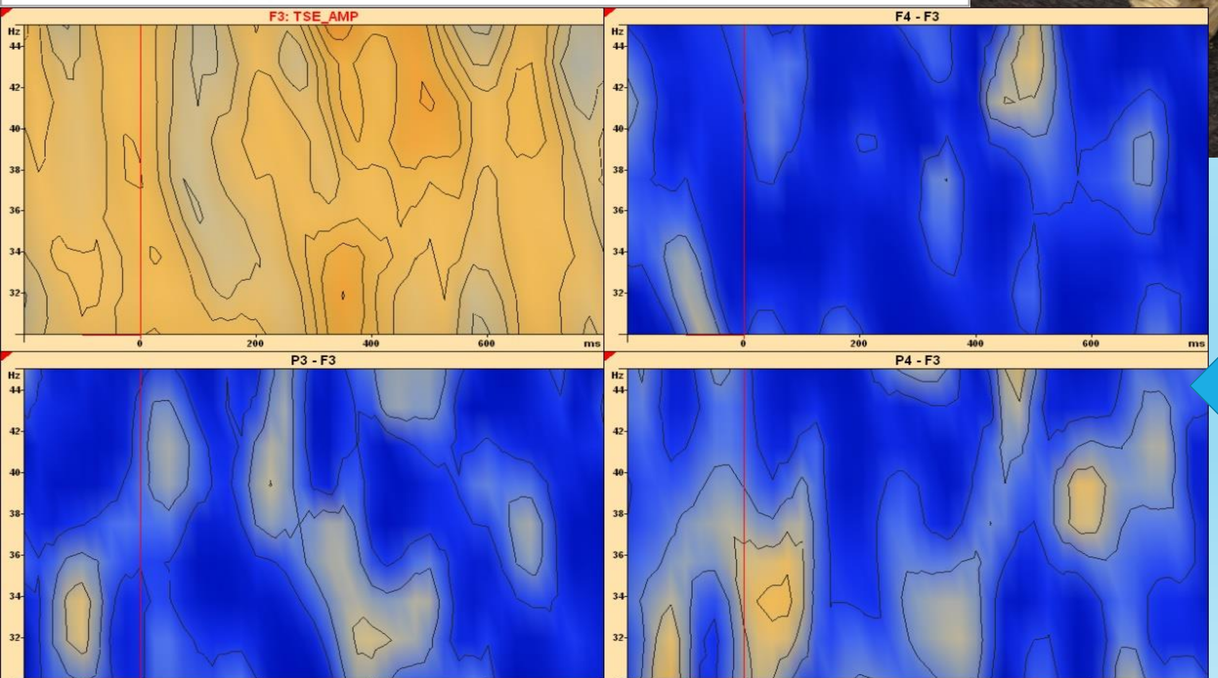
Passion

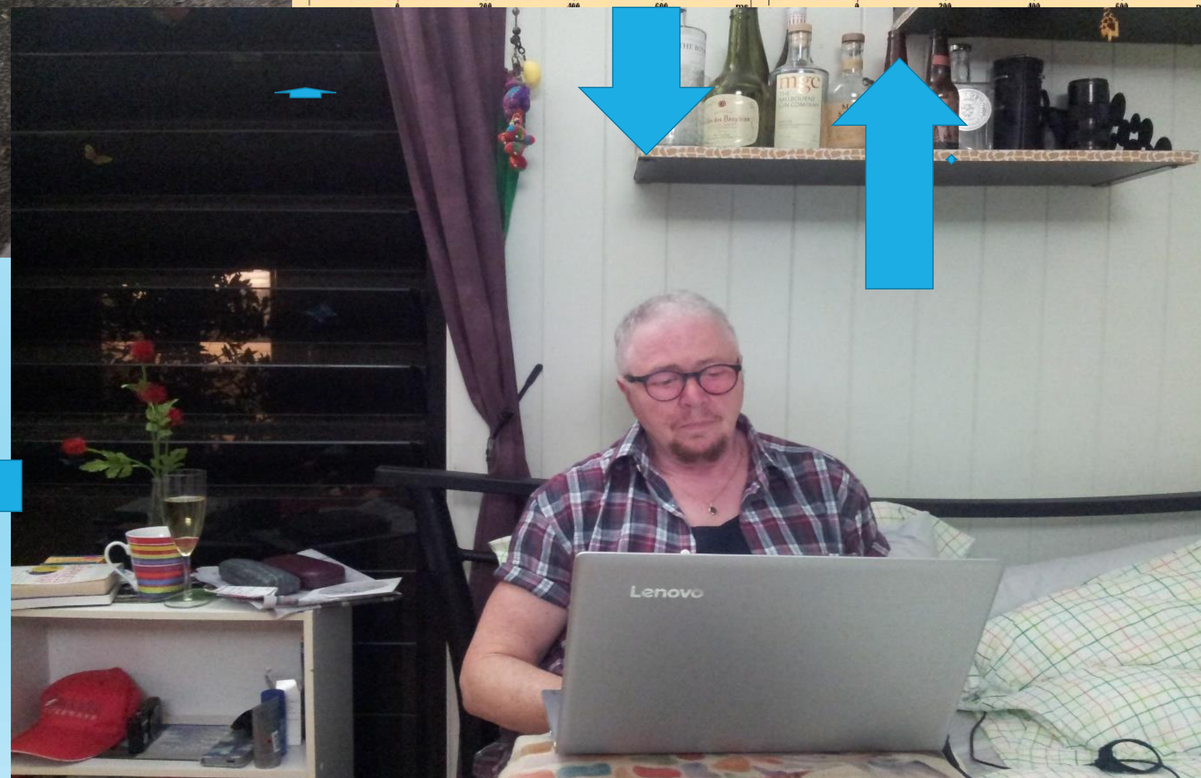
No Interest

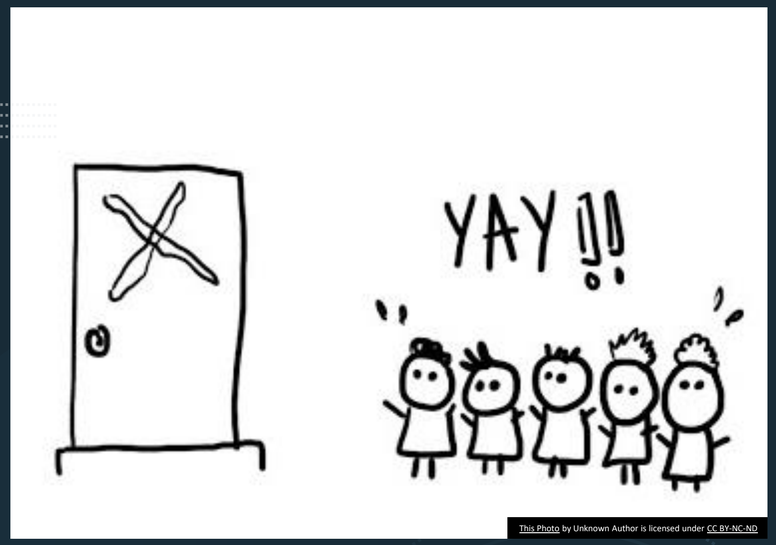
Brain disposition











How can I relax at school if I don’t know home still exists? I need a way in to understand Object Permanence ……

Inertia

Monotropic attention is overwhelmed

Experiencing inertia all motivation is gone. No choice… can’t move

- “Inertia doesn’t mean laziness, or not wanting to do things, or procrastinating – although it can look like it. But sometimes it also looks like mania, obsessiveness, or even a burst of motivation. **Because inertia just means difficulty changing state**, and that original state can be anything. The simplest explanation for how inertia looks and feels: **sometimes an autistic person ends up doing something they don’t want to be doing, or not doing something they do want to be doing.**“

‘When an autistic person has stopped for the day, or taken a break, or taken a vacation, it can be difficult to restart.

This may look like resistance to getting out of bed in the morning, not necessarily because the person is tired, but because **the steps to doing so are overwhelming’.**

This is how Autistic Inertia affects me. I sit in my room. I should be doing something, I want to be doing something, but I just can’t get started on anything. I end up sitting there doing nothing, or sitting and stimming. And it physically hurts, sitting there knowing you have a few hours to do what you want but you can’t get off the chair and start doing anything. And I don’t even know what I want to do. **I literally feel inert, like I can’t move.** My brain feels like it’s being contained or bound, and when I think about doing something it pushes against those bounds….

Sensory Environment

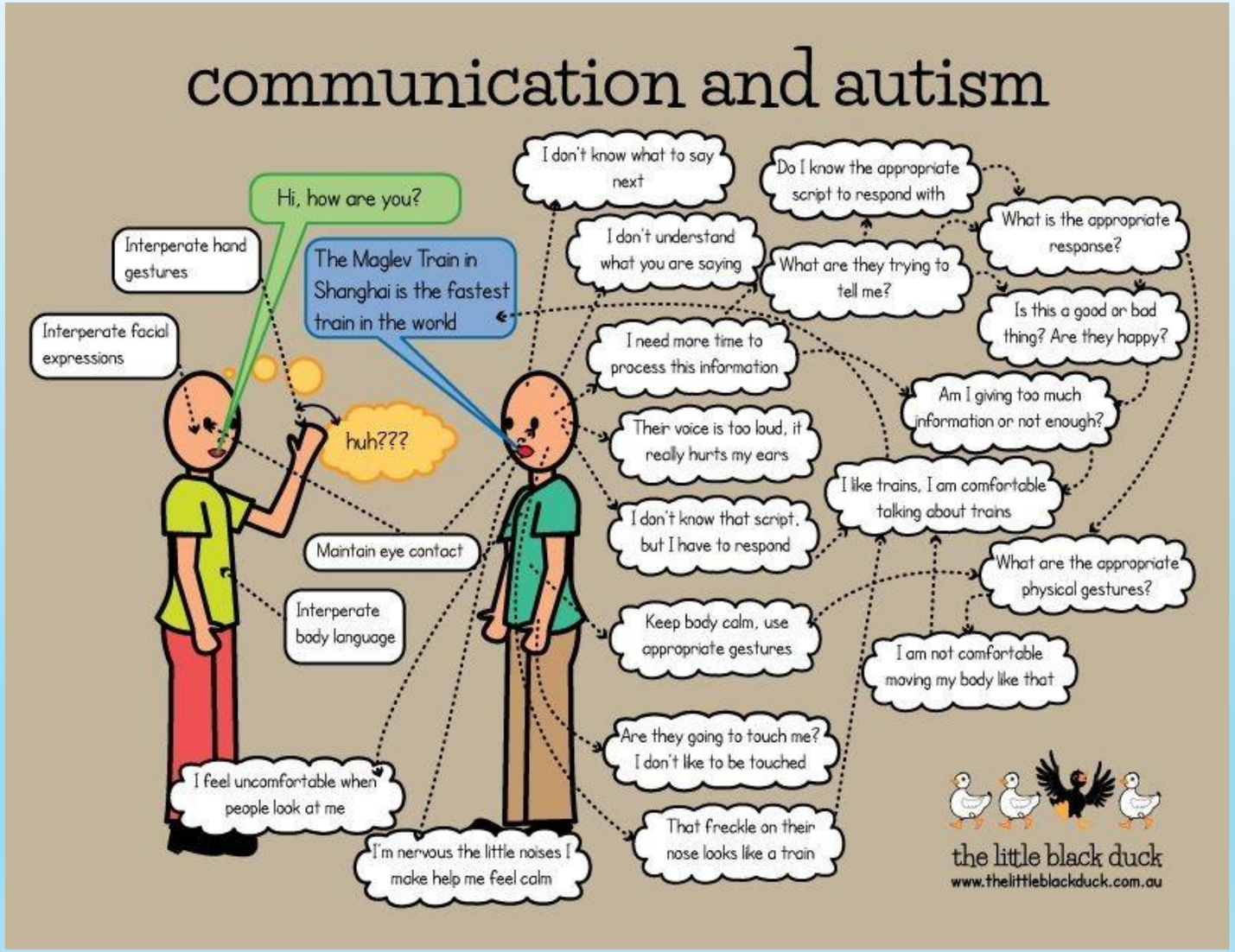
The sensory environment helps or hinders social interaction

In autism individuals with sensory issues (hypo or hyper) if triggered are not ‘available’ to listen.

Addressing sensory needs are essential; ignoring them or hoping they will ‘disappear’ with time is not an option.

What you can do to help me

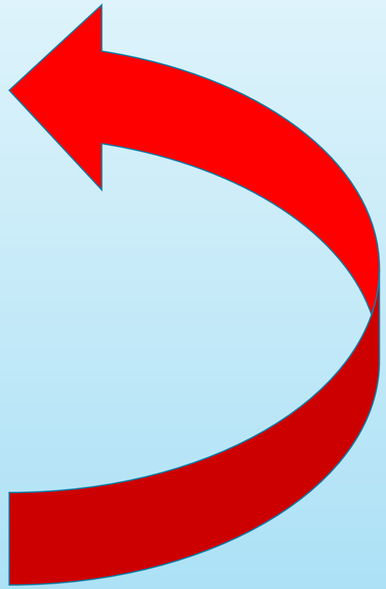
- **Firstly, please accept my difference**
- **Secondly, help me access the world we all live in.**
- **In Summary (my tools are):**
- **Interest**
- **Appropriate mediums that facilitate interest**
- **Accessible language in a form that captures my interest**
- **My strengths motivated by interest**



Examples

Jon is working and it's nearly time for recess…

Teacher: Ok everyone, it's nearly time for recess
Jon: continues working
Teacher: I like the way Ava's group is packing up
Jon: continues working
Teacher: Anyone who hasn't finished will be able to finish off later today
Jon: continues working



Three warnings but all indirect requests

The bell rings. **Jon hasn't packed up**.

LANGUAGE MATTERS, BE DIRECT

The teacher has been talking about recycling…
Teacher: Now, in your groups, I'd like you to come up with three reasons why students should recycle.
Students move into groups. Bob is eager as he knows a lot about recycling. He takes some paper from the middle of the table and starts writing three reasons. The other students in Bob's group, say "**No Bob, that's not what you are meant to do**". **Bob is confused because this is what the teacher has asked for**. The students end up arguing until the teacher approaches for support…

Why did this happen?

What could be changed to avoid this next time?

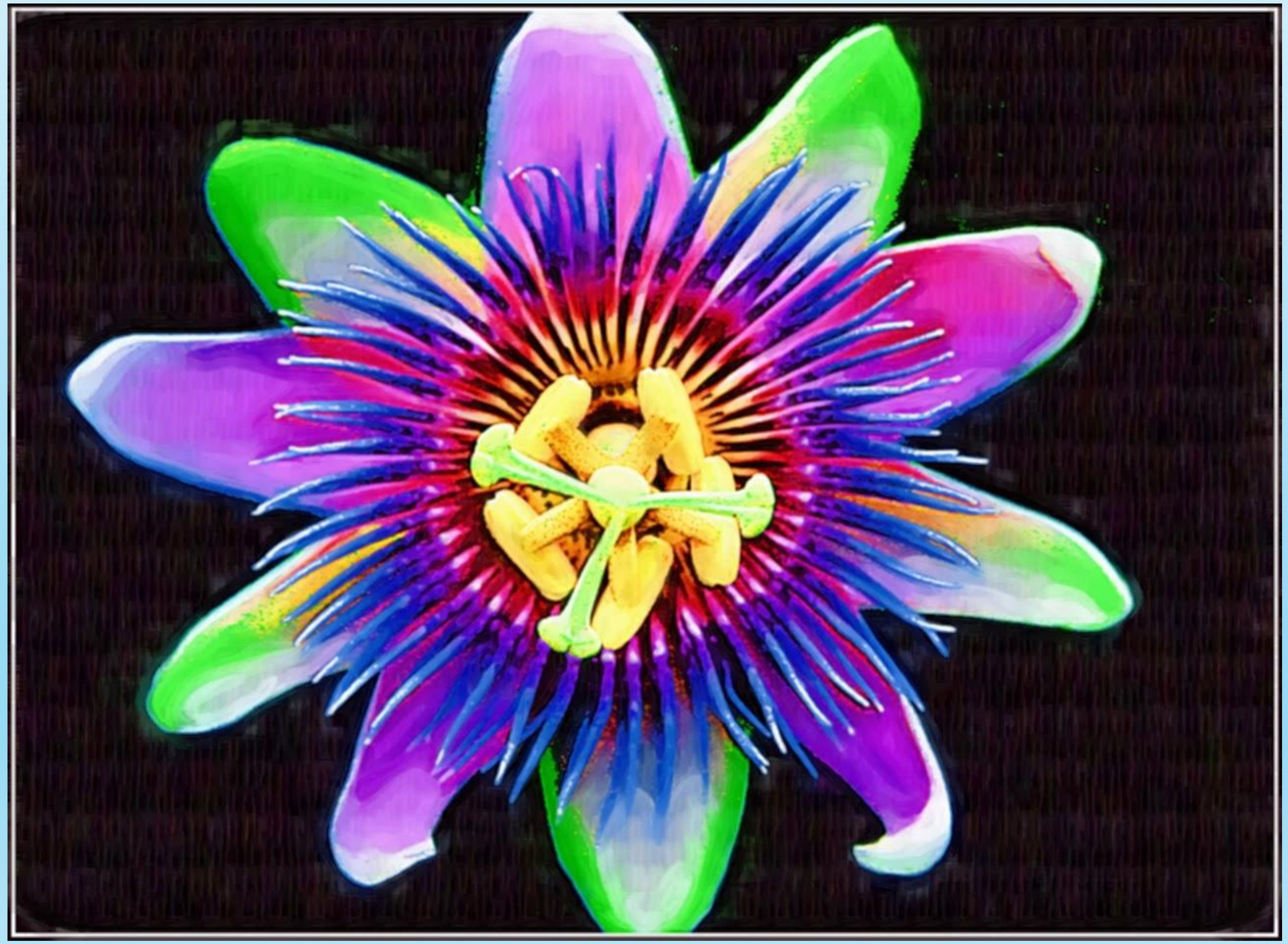
I want to learn; show me how

- How do I understand successful turn-taking?
  - being told ‘it’s not your turn’.. But if I have pushed the other person away and I am now at that station it obviously is ‘my turn’ because I’m there.
- What concepts of a common goal do I have?
  - Group activity = shared interest = ability to divide attention. This is not me. Groups are a nightmare; places to get lost? Telling me to ‘share’, ‘wait’, ‘be thoughtful’ etc. don’t convey meaning

Monotropism and connection summary

- We connect better when it’s one at a time.
- We connect better when we are interested.
- We may have a dominant sense?
- Think how this applies to personal hygiene, eating and being around others?
- Think how this impacts our strengths?

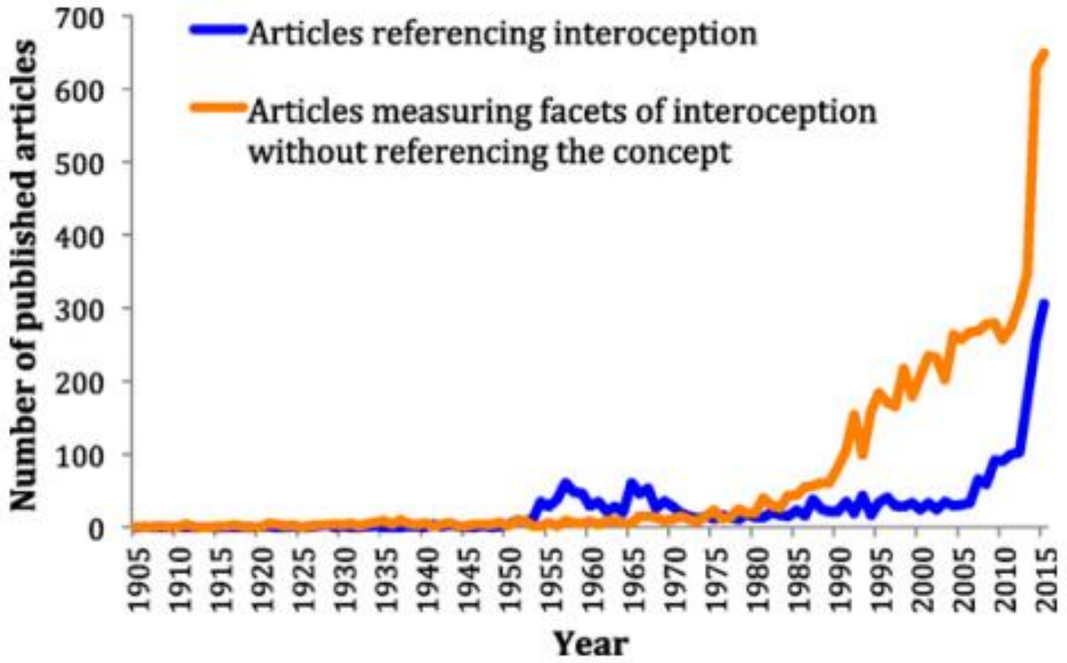
Things are brighter, in our mono connected world!



Video

Click here to watch the video on Vimeo

Interoception Research…



Khalsa S.S., Lapidus R.C. (2016) Can Interoception Improve the Pragmatic Search for Biomarkers in Psychiatry? Frontiers in Psychiatry DOI=10.3389/fpsyt.2016.00121

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

Research by Goodall (2021) indicates increasing interoceptive awareness:

Within 8 to 10 weeks:

· decreases heart rate during the interoception activity

· decreases externalising challenging behaviours

· increases engagement in learning

· increases prosocial behaviours – kindness, helpfulness, connections to others

More than 16 weeks:

· decrease stress

· can help manage anxiety

· promotes caring and empathy

How and When?

- **To improve self-regulation in the classroom effectively, interoception activities must be taught 2-3 times a day.**
- **Most educators find that teaching an activity or two before roll call, and after recess and lunch is the most effective and simplest way to embed interoception in the school day.**
- **Each activity takes 1-5 minutes to implement and teachers simply read the dot points whilst modelling the activity as students follow along.**

Goodall, E. (2020). Interoception as a proactive tool to decrease challenging behaviour. Scan, 39(2).

The Details...

- **An interoception activity focuses on a particular part of the body for 30-60 seconds.**
- **Students observe and label the movement and part of the body involved (for example, toes - stretch and curl up or curl under).**
- **They are then encouraged to identify a change in their body state (for example, hot-cold, soft-hard, stretch-relax) and where they felt that change (arch or ball of foot, on top).**
- **The change in body state is always repeated a second time, and the whole class is asked to focus on noticing what they feel in a very specific part of their body.**

Goodall, E. (2020). Interoception as a proactive tool to decrease challenging behaviour. Scan, 39(2).

What I Wish You Knew: Insights on Burnout, Inertia, Meltdown, and Shutdown From Autistic Youth

Jasmine Phung[1], Melanie Penner[2]*, Clémentine Pirlot[2] and Christie Welch[1,2]**

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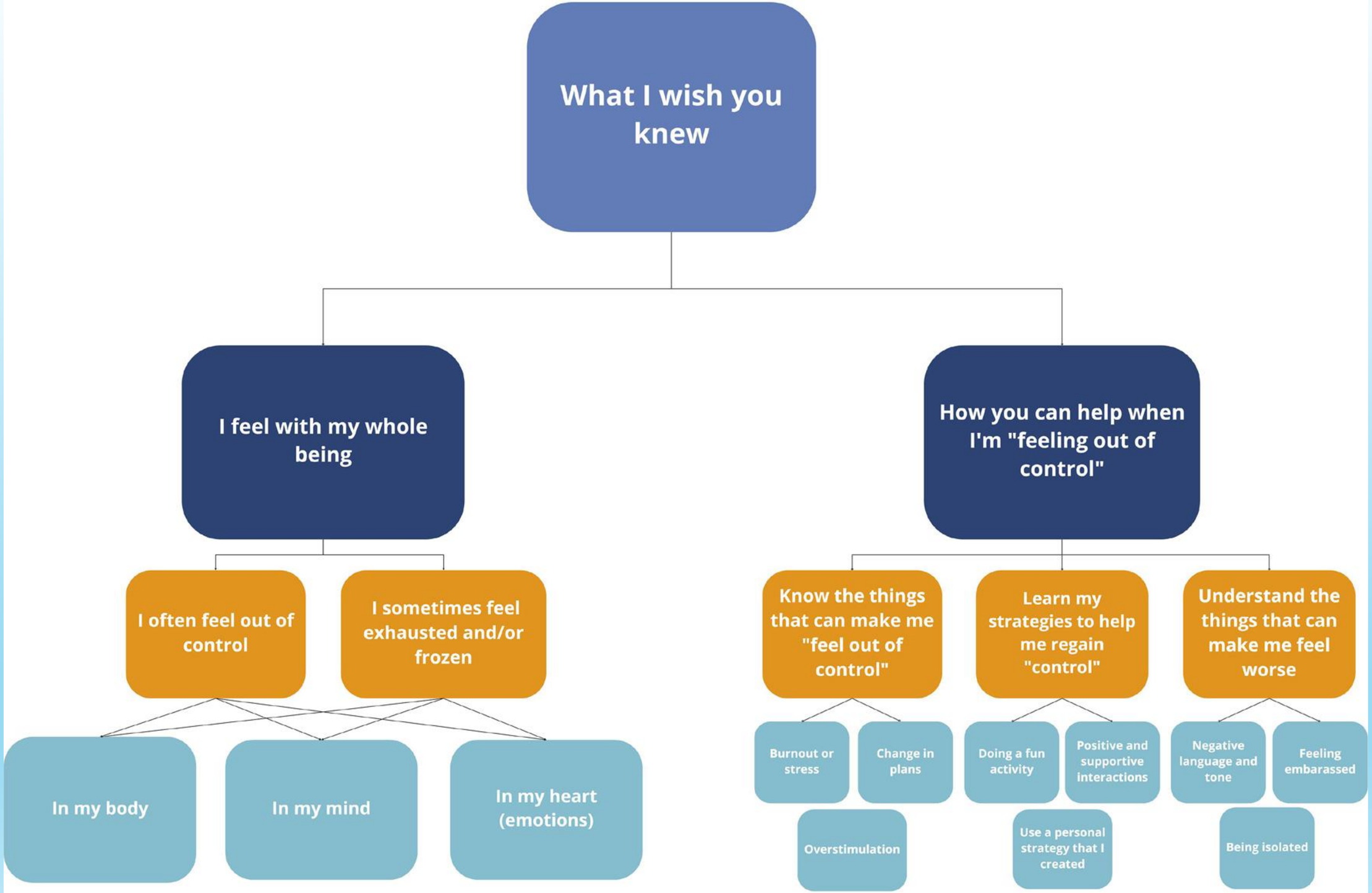
TABLE 1 | Operational definitions of the manifestations of burnout, inertia, meltdown, and shutdown (BIMS) as described by autistic informants of earlier research.

Burnout	Described as a distinct source of severe and chronic exhaustion (Raymaker et al., 2020; Welch et al., 2020b). Autistic bloggers highlighted that the causes of this severe exhaustion are uniquely autistic such as "masking" – the constant need to exhibit appropriate behaviors to complete everyday tasks (Welch et al., 2020b). Informants have explained that this burnout often results in depletion of skills and intolerance to varying stimuli (Raymaker et al., 2020)
Inertia	A prolonged mental state of being "stuck" resulting in the physical inability to engage in activities that the individual wishes to do. Autistic individuals describe the experience of autistic inertia to vary in severity, duration of time and rate of repetition, however, all agree that when it does occur, it has the potential to be debilitating (Welch et al., 2020b)
Meltdown	A phenomenon with varying expressions by which autistic informants feel entirely overwhelmed accompanied by a lack of control and cumulative stress (Welch et al., 2020b). Meltdowns elicit responses of outward anxiety and energy outpour (Schaber, 2014). Some factors that contribute to a meltdown include, but are not limited to: social demands, frustration, embarrassment, challenges with communication, emotional triggers, and overwhelming aversive sensory stimuli (Welch et al., 2020b).
Shutdown	Although similar to meltdowns, shutdowns present as more internal experiences, where the individual withdraws from their surroundings and is accompanied by emotional pain (Belek, 2018). The degree to which one can function during a shutdown ranges from mild (e.g., being able to walk around and talk) to severe (e.g., feeling detached from your limbs and going into a fetal position) (Belek, 2018).

TABLE 3 | Renaming BIMS phenomena using the autistic children and youth's language.

Burnout	Inertia	Meltdowns	Shutdowns
Feeling exhausted	Feeling stuck	Feeling out of control	Feeling frozen


What I wish you knew
I feel with my whole being
I often feel out of control
I sometimes feel exhausted and/or frozen
In my body
In my mind
In my heart (emotions)
How you can help when I'm "feeling out of control"
Know the things that can make me "feel out of control"
Burnout or stress
Change in plans
Overstimulation
Learn my strategies to help me regain "control"
Doing a fun activity
Positive and supportive interactions
Use a personal strategy that I created
Understand the things that can make me feel worse
Negative language and tone
Feeling embarassed
Being isolated

TOOLS TO HELP YOU GET TO KNOW THE STUDENT

HSP431 Sensory overview support plan

Version: 1.0

Date updated: August 2018

Government of South Australia
Department for Education

Sensory overview support plan

for education and care

CONFIDENTIAL

Some children and young people will have complex sensory issues characterised by sensory seeking or sensory avoiding across the range of internal and external sensory inputs.
The sensory overview provides a detailed understanding of the individual sensory issues and assists in developing strategies to minimise sensory overload in the education or care setting.
The sensory overview must be completed by the education and care service in consultation with the parents and child or young person.

This information is confidential and will be available only to relevant staff and emergency medical personnel.

Education or care service:
Overview completed by:

Date of completion:
Review date:

Name of child/young person:

Date of birth:

BODY AWARENESS (INTEROCEPTION)		Observation / explanation	Implication for teaching, learning and wellbeing	Strategy to address / Skills able to be applied in other areas
☐	Able to name own emotions			
☐	Able to recognise own emotions			
☐	Knows when thirsty			
☐	Knows when hungry			
☐	Knows when needs to go to the toilet			
☐	Able to say where hurts (accurately) when injured			
☐	Knows when they feel unwell			
☐	Knows when getting upset			
☐	Gets distressed easily or frequently			
☐	Knows when becoming anxious			
☐	Gets anxious easily or frequently			

Government of South Australia
Department for Education

Autism Spectrum Support Plan

for education and care

HSP430

CONFIDENTIAL

To be completed collaboratively with the education and care service, support services and parent or legal guardian, with input from the child or young person. It is recommended the plan is reviewed and updated 2-4 times per year.
This information is confidential and will be available only to relevant staff.

Affix photo of child / young person (optional)

Education or care service:
Name of child/young person:
DOB: **Next review date:**

Interests, strengths, skills, support needs		
Child or young person description	Interests:	
	Strengths:	
	Skills:	
	Support needs:	
Family description	Interests:	
	Strengths:	
	Skills:	
	Support needs:	
Education service description	Interests:	
	Strengths:	
	Skills:	
	Support needs:	

RT PLAN

Government of South Australia
Department for Education

Autism Spectrum Support Plan

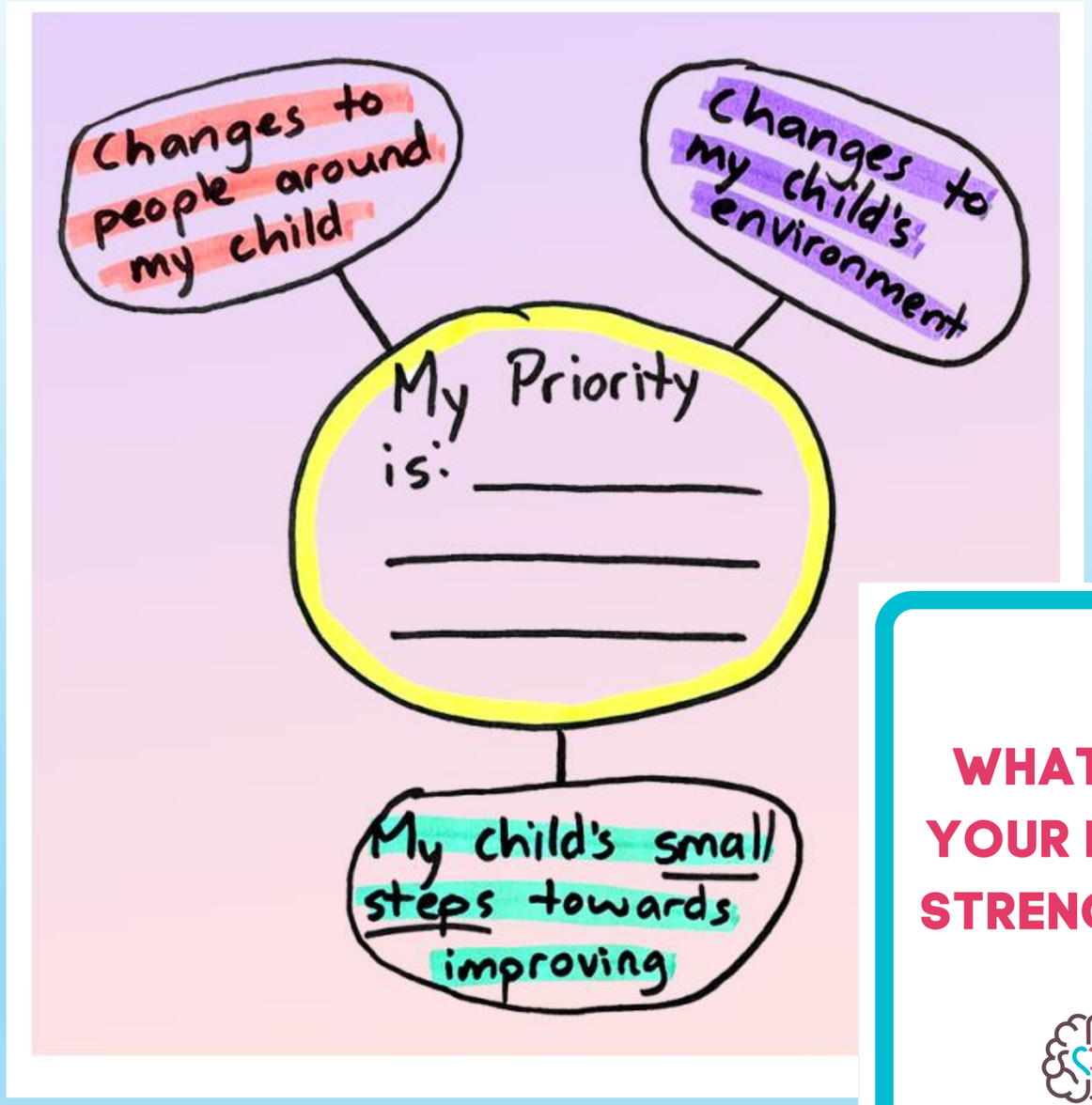
for education and care

HSP430

Personal safety			
Does the child or young have concept of personal safety	☐ at home	☐ in class	☐ in yard
	☐ in community		
Does the child or young person have concept of personal safety around:	☐ younger children	☐ peers	☐ older children
	☐ adults	☐ traffic	☐ water
	☐ trains	☐ fire	☐ electricity
Detail particular issues and strategies including WHO will provide WHAT supports/supervision:			

Additional needs *(detail support strategies if required)*	
☐ ADHD	strategies
☐ ADD	strategies
☐ Dyslexia	strategies
☐ Dyspraxia	strategies
☐ Anxiety	signs to look for/preferred strategies to manage
☐ Depression	signs to look for/preferred strategies to manage
☐ Other	incl. health, medical, allergy, sleep (provide details)

RT PLAN



80 CHECK-IN PROMPTS FOR CHILDREN (6-12)

NEURODIVERSITY EDUCATION ACADEMY

What techniques do you use to calm yourself down?

CHECK-IN PROMPTS FOR CHILDREN (6-12)

WHAT ARE YOUR BRAIN STRENGTHS?

NEURODIVERSITY EDUCATION ACADEMY

What energizes you?

40 STRENGTHS-BASED QUESTIONS

What activities do you easily flow into?

40 STRENGTHS-BASED QUESTIONS

Activity 1: Feeling muscles – hands

Video demonstration

1. Sitting down, rest your hands on the top of your thighs.

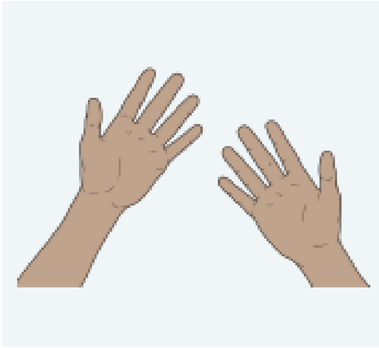
2. Now stretch your fingers as wide apart as possible and hold them stretched out like that for 30 seconds. Then rest them back, so they are relaxed again.

   Where could you feel a difference in your body when your hands were relaxed and when your hands were stretched? (Get students to point/sign/say where they felt something.)

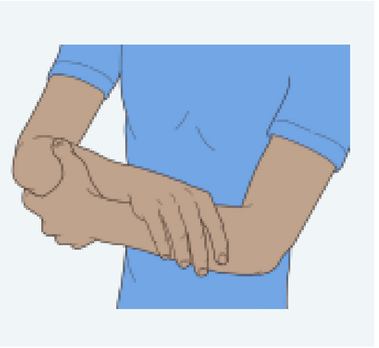
3. Now pick one of the parts of the body identified by a student and repeat 1. and 2. focusing on that body part. For example, focus on the webbing of your hands while your hands are relaxed, now stretch the fingers as wide apart as possible and focus on how the webbing between your fingers feels.

Activity 6: Feeling temperature #1

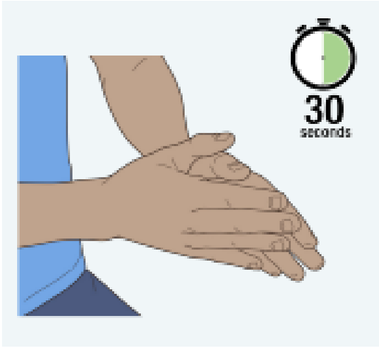
Video demonstration



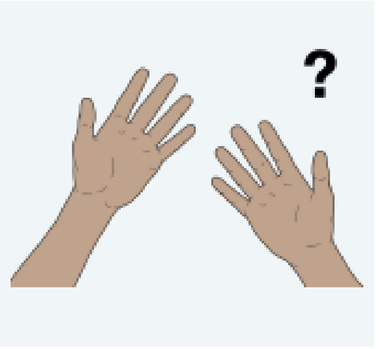
1. Standing still, bring your attention to how your hands feel.



2. Now, touch your arms with your hands. *Are your arms warmer or cooler than your hands?*



3. Now rub your hands together really fast for 30 seconds.



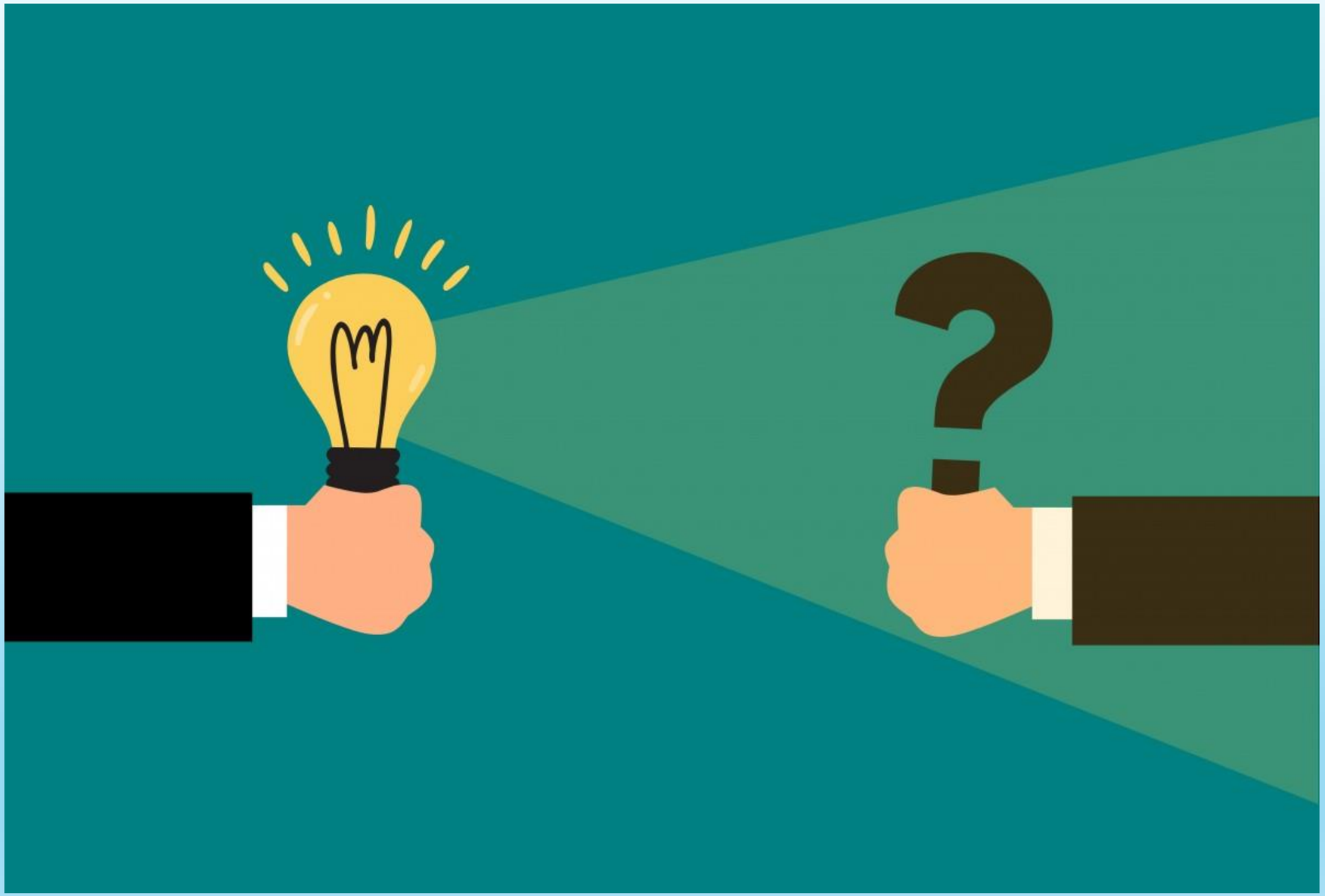
4. Stop after 30 seconds. *Do your hands feel warmer or cooler than before? Touch your arms with your hands. Are your arms warmer or cooler than your hands?*

5. Repeat steps 1–4 but at step 4 touch your face with your hands instead of your arms.

Follow-on activity: *How could you cool your hands down when they are hot? What is the safe temperature range for human bodies? How do humans cool down/warm up?*

Student Wellbeing Hub

GROUP ACTIVITY



REFLECT and QUESTION

Where to from here?

What have you gained?

What would you like to know more about?

http://monotropism.org

https://www.youtube.com/watch?v=wOe1fliDs0I

www.wennlawson.com

https://www.youtube.com/channel/UCD8L-Ht_jSQxBmWe6MzZvJA

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