



Strategy toolkit

A sensory lens to help educators consider how the processing of sensory information impacts a student's level of alertness, function, participation and learning.

Are your students **IN THE ZONE** for Learning?

Are they focused, calm yet alert?

There are many factors that affect your student's levels of alertness and capacity to respond appropriately. These include time of day, weather, temperature, pain, emotions, fears, relationships, motivations, brain chemistry, sensory processing challenges, medication, the environment, their learning styles, your teaching style and so much more.

These strategy booklets focus on sensory input that can be calming or alerting and relate to the Student Response Checklist, The Levels of Alertness Data Timeline and The Foundations for Learning framework.

- The Student Response Checklist is designed to focus on your student's processing of sensory information.
- The Levels of Alertness Data Timeline is a tool to record observations of your student's levels of alertness throughout the day.
- The Foundations For Learning Framework provides a tool to consider the internal world of your student from a whole person – whole brain perspective.

All 3 tools are intended to help us better understand our students, their complex needs and their capacity to attain and maintain a calm yet alert state that is appropriate for the task.

These strategies provide general suggestions on how to support your students to manage their sensory processing challenges and develop tools for co-regulation (with help) or self-regulation (on their own).

Please consult your student's occupational therapist for more specific advice.

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting



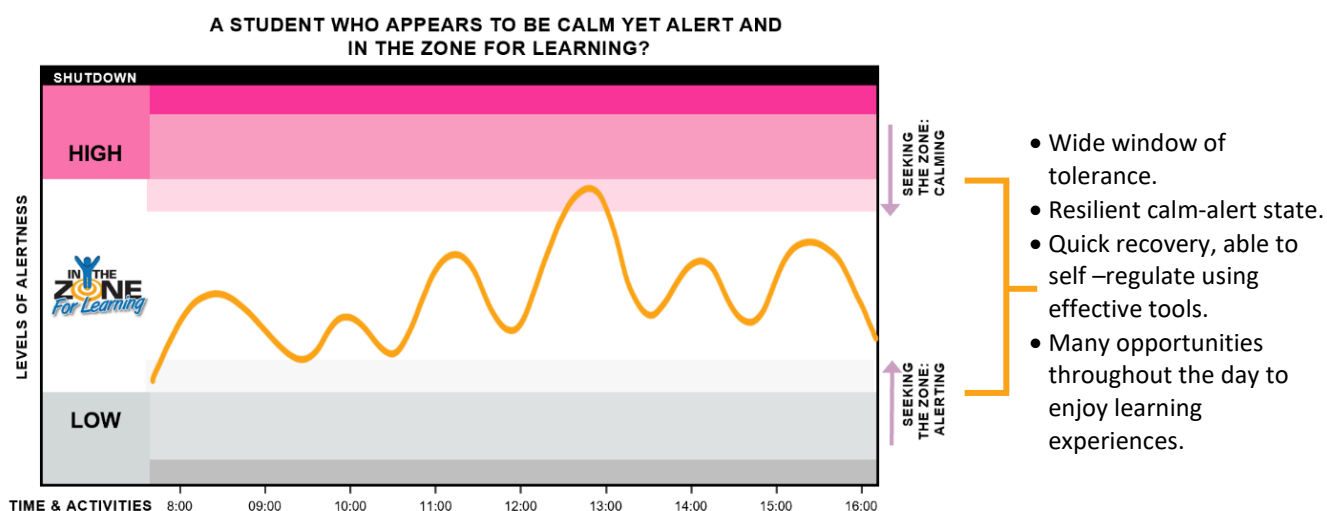
The zone for learning is a regulated state.

Self-regulation is the ability to attain, maintain and change levels of alertness appropriately for a task or situation. Some students with complex learning needs have difficulty reaching their optimum zone for learning. Their nervous system and body are under-responding, over-responding or seeking more sensory input. They therefore find it difficult to be regulated and organized or change their level of alertness.

When students are calm yet alert, regulated and in the zone for learning; they are more likely to be:

- ✓ Focusing on the information you are teaching rather than irrelevant sensory information, thoughts or distractions i.e. being “in the zone” rather than being “zoned out”.
- ✓ Their brain chemistry is more likely to be dominated by “feel good” neurotransmitters (such as endorphins, serotonin, dopamine, GABA and oxytocin) which help them feel motivated, connected and better able to focus and learn; as opposed to stress hormones (such as cortisol or adrenalin) which are active during anxiety, distress, sensory overwhelm, fright/flight/fight or freeze.
- ✓ They feel more grounded and connected to their bodies. They are both physically and mentally ready for learning. (This may not necessarily be sitting still at a desk as some students are kinaesthetic learners and may sometimes need to ‘move and do’ to listen and learn)
- ✓ Their processing time/ response time might be quicker and more appropriate to the task demands.
- ✓ They have greater capacity to have a wide window of tolerance for potentially dysregulating factors such as sensations from within their body (also known as interoception e.g. hunger, temperature), emotions, changes in the environment or educators or teaching styles and methods, changes in routines or expectations, interactions between students and other factors.

This timeline illustrates a student who is able to attain and maintain a regulated state.



The goal: calm yet alert, focussed, attentive, wide window of tolerance, resilient, regulated, in the zone for learning.

- This student may dip into low alertness if the sensory input in the daily events are inadequate and they may also escalate into high level of alertness if experiencing a lot of sensory input or overwhelming events.
- But they have GOOD RECOVERY and return to a calm yet alert level following a dysregulating sensory input or events.
- This student is utilising self-regulation tools or is co-regulated by an educator to attain and maintain a calm yet alert state.

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

GENERAL STRATEGIES FOR ALL STUDENTS WITH COMPLEX LEARNING NEEDS:

Students with complex learning needs who may have multiple challenges sometimes have fluctuating levels of alertness and experience dysregulation throughout the day.

These students may benefit from the following:

- ✓ Strategies that support them to calm and soothe their nervous system response out of a heightened state or a fright/flight/fight state into a calm yet alert state.
- ✓ Regular movement breaks incorporating whole body/heavy muscle work and opportunities to exercise, carry out deep breathing and sensory-motor activities that promote their brain to release positive neurotransmitters such as endorphins, serotonin and dopamine.
- ✓ Co-regulation tools and strategies that are carried out with support and guidance.
- ✓ Self-regulation tools and strategies that are carried out independently e.g. their own sensory box/ bag (which can contain items such as chewy tubes, respiration tools, stress balls, fidget toys, liquid timer, visually motivating item. Items will vary for each student).
- ✓ A nurturing environment that is calm and safe.
- ✓ A “regulation station” or a safe space for the student to retreat to and utilize regulatory tools e.g. a beanbag or cozy space in a quiet corner of the room. For some students marking the physical space in the classroom with masking tape can highlight the area.
- ✓ Consider their posture, the position of the seat and type of seating. Is the student feeling safe and supported? e.g. some students might feel safer with their back to a wall in a corner of the room so they can see what’s going on but be at a comfortable distance so as not to get as overwhelmed as when they are sitting amongst all their peers.
- ✓ Respectful, graded exposure to input/sensations that the student is sensitive to when calm and able to cope e.g. watching others doing the activity (sometimes from a distance), watching a video of the activity, engaging in the activity for a short period of time at the level that is comfortable (e.g. with protective gear such as ear muffs or gloves).
Note: even careful, graded exposure is potentially dysregulating and overwhelming and the effects may be felt and observed immediately or later and can last a long time. Offer the student time to recover with regulatory tools.
- ✓ Educators to be observant and understanding of their sensitivities and sensory needs e.g. if the student is blocking their ears, do not shout louder to get their attention. Figure out what is over-whelming them and consider using gestures or visuals, come closer and speak softly if you need to speak at all. Allow them time to process what you have said before you repeat the words and gestures. Too many instructions can be overwhelming. Wait for a response.

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

- ✓ Connection with a trusted educator who knows and understands them well.
- ✓ Collaboration between home, school and therapy teams.
- ✓ Predictable routines that help them to feel safe and secure.
- ✓ Use of visual timetables, schedules and routines; visual stories; finished signs or finished box and timers to indicate the beginning and end of activities.
- ✓ Warning and preparation about changes to routine, people, place, activity and other unscheduled activities; presented in a way they can understand.
- ✓ Time to recover from episodes of over-responding/dysregulation.
- ✓ Time to process information.
- ✓ Use of explicit teaching strategies such as colour-coded work or curriculum activities placed in different coloured boxes.
- ✓ Encourage the student to perform tasks at a suitable pace, e.g. using an egg timer.

ANTECEDENT EXERCISE

Exercise, deep pressure touch, pleasant sensations and joyful interactions are known to help the brain and body flow with “happy” neurotransmitters such as endorphins, serotonin, dopamine and oxytocin.

A wealth of evidence from various professional backgrounds supports the use of physical activity to improve our overall health and well-being across the lifespan.

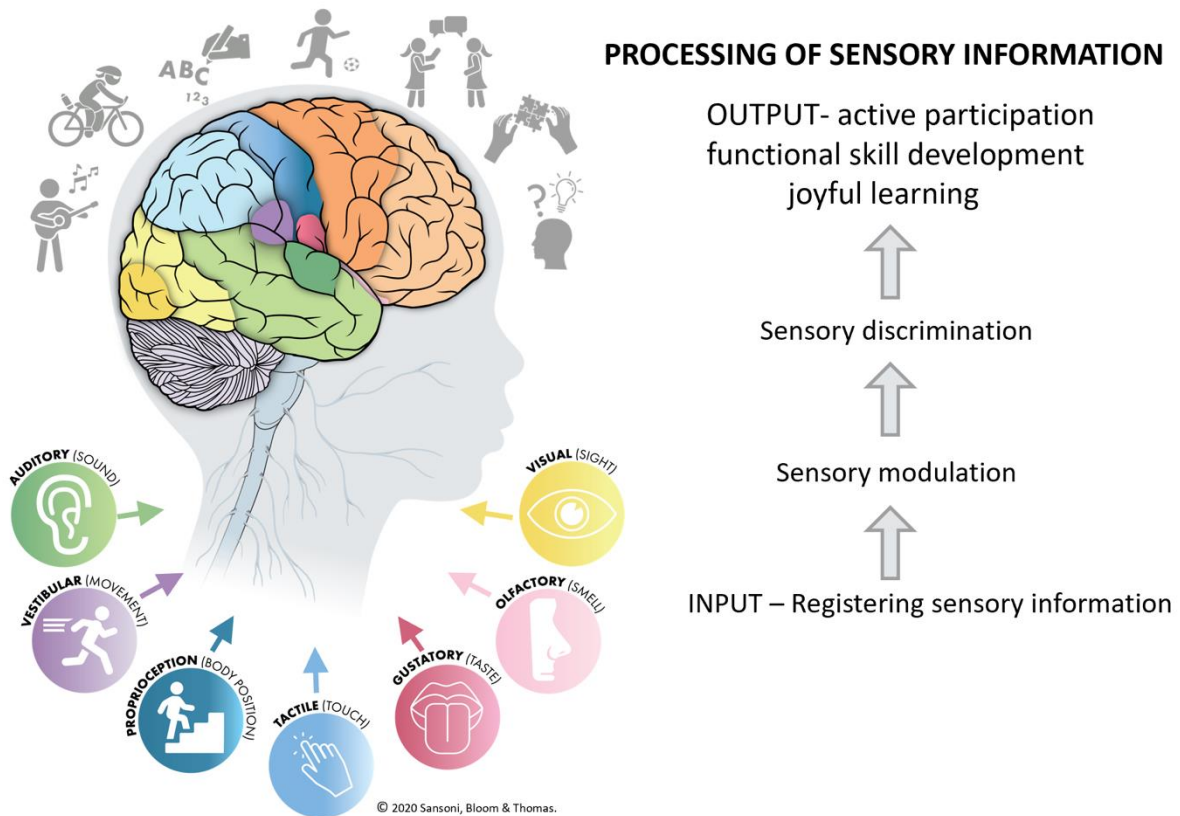
Current research suggests that physical exercise and various sensory-motor activities can support the self-regulation of students at school and reduce dysregulated behavioural responses. It has also been shown to improve on-task behaviours and the learning outcomes for students with disabilities and complex learning needs.

The research indicated that aerobic exercise is one of the most effective tools and best results occurred when students were provided exercise breaks throughout the school day. It also specifies that exercise and safe/correct technique be taught clearly to each student and practiced throughout the week.

It's amazing to think that the routines we create, the tools and environment we engineer and the opportunities for physical exercise we provide can positively influence a student's brain chemistry! Please refer to the online tutorials titled Strategy Toolkit and Research and to the bibliography and Literature review on the ITZ website for more information.

SENSORY-MOTOR STRATEGIES

The following strategies are related to the 7 sensory systems and correspond with the observations made via the ITZ Student Response Checklist and the Foundations for Learning Framework as well as the sensory component to self-regulation considered in the levels of alertness data timeline.



Why focus on the processing of sensory information?

A large proportion of the brain and nervous system is involved in processing and organising sensory input. The brain is a sensory processing machine.

Learning begins with the registering of sensory input, tuning into important sensory information while tuning out what is irrelevant (sensory modulation), discriminating what that sensory information is (e.g. a sweet taste, a round object, a loud sound) and processing that with past experiences, memories and knowledge into functional skills and joyful learning.

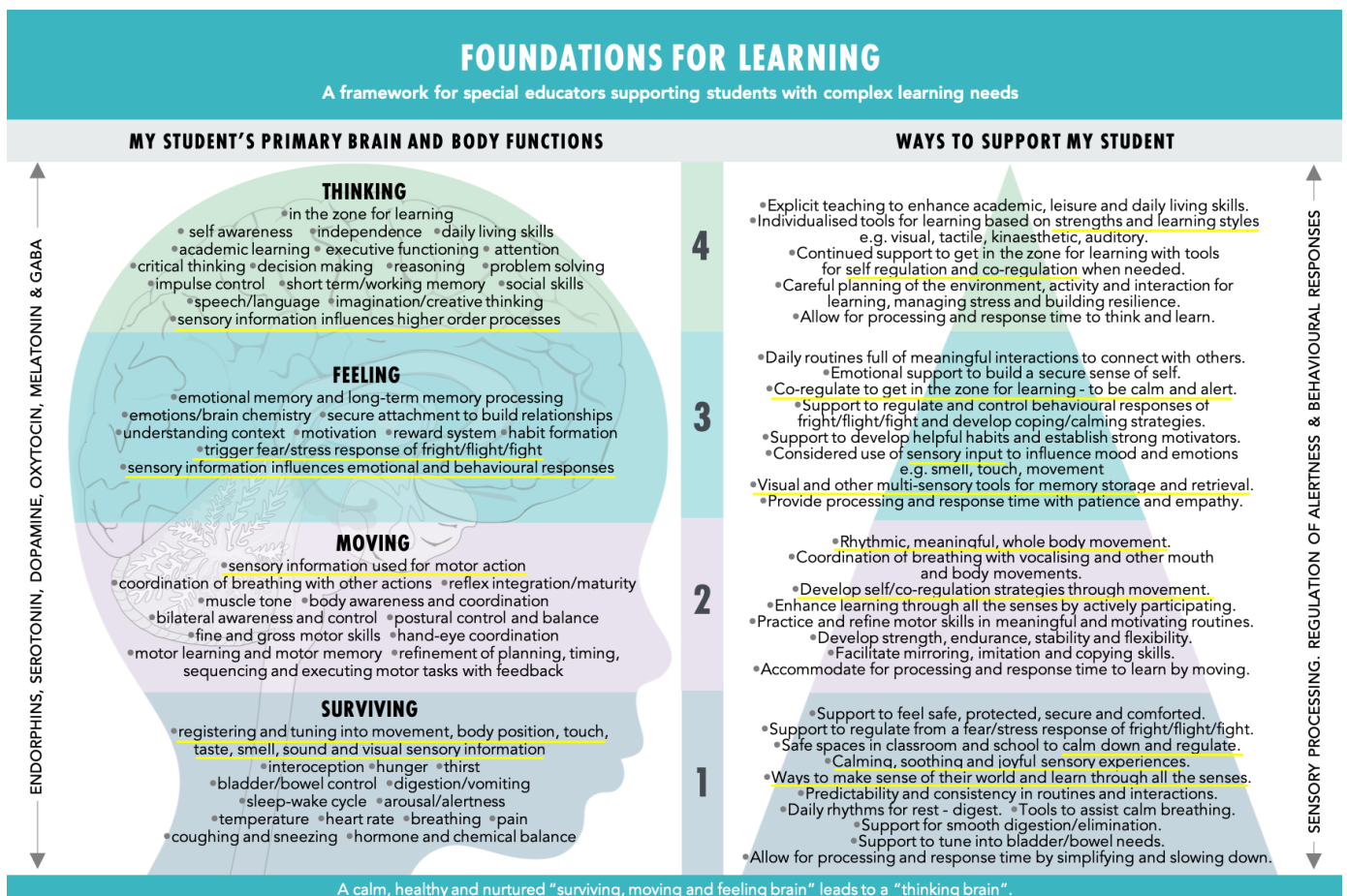
ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

The processing of sensory information influences all aspect of brain and body function. Sensory-motor strategies are powerful for calming, alerting and regulating us all.

Sensory processing challenges are prevalent for students with various diagnoses and complex needs as well as a notable number of the typically developing population.

The accurate processing of sensory information is one of the foundations for learning and development.
Please refer to the Foundations for Learning Framework and tutorials for more information.



Foundations for learning framework. Bloom, Y & Sansoni, N (2020) derived from Arwood, E.L. (2007); Perry, B.D (2009); Siegel, D.J & Bryson, T (2020); Wallis, N (2017); Taylor & Trott (1991) as cited in Williams & Shellenberger (1996); Wilbarger, P (1991)



Sensory processing is complex. At times your students may display behaviours that indicate a sensory processing difficulty. As important people in their lives they depend you to observe and interpret these behaviours in order to help them regulate and function better. Often a vision or hearing test shows up within a "normal range" for a student but we see them squinting their eyes, blocking their ears or not responding to their name. This shows us that their brain may have difficulties processing sensory information from their bodies and the environment or they are stressed or overwhelmed and experiencing sensitivity to that sensory input.

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

Sensory input can vary in intensity, duration or frequency and can be calming or alerting



- **Tactile:** soft, warm, firm, rhythmic touch input.
- **Vestibular:** rhythmic, linear, constant movement.
- **Visual:** dim lighting, soft, natural, stationary visual input.
- “Just-right” input through the 7 senses can promote “feel good” neurotransmitters that can boost mood, motivation and attention.

- Whole body, heavy muscle movement is powerful in regulating and can be both calming and alerting.
- Deep breathing and oral-motor movement such as chewing, sucking and blowing is regulating and can be calming or alerting.

Please refer to the ITZ Strategy Toolkit and Foundations For Learning Framework for more ideas about calming and alerting.



- **Tactile:** light touch, cold, varying input.
- **Vestibular:** arrhythmic, rotary movement; with varying speed and direction.
- **Visual:** bright, colourful, moving, changing, flashing visual input.



Each student has a unique brain and individual needs. They are often giving us clues about their needs through their behavioural responses. At times they are attempting to self-regulate but may be unable to strike a “Just-right” balance.

Through considered trials and liaising with the team; we can support them to find a balance between:

- Type (what specific activity)
- Time (when in the timetable or routine)
- Frequency (how often)
- Intensity (how fast, how high, how heavy etc.)
- Duration (how long)

For example; jumping on a trampoline (type), before desk work (time) for 10 minutes (duration) in a smooth, rhythmic flow (intensity) 3 times a day (frequency) may help a student who is over-responding to feel calmer and better able to manage being in a busy classroom and focus on a task.

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

Calming and regulating strategies for students who are **over-responsive** to sensory input or **seeking calming** input.

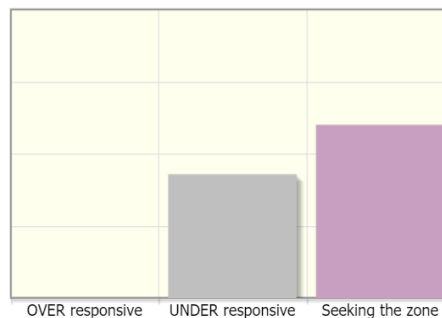
The ITZ Student Response Checklist observations seen in these graphs (**pink columns**) indicate that this student seems to be over-responding to touch, sound, smell and taste and somewhat over-responsive to movement and visual input.

Reading through the specific items you have selected in the checklist will provide more details about which specific sensory input the student is over-responsive to, seeking out or under-responsive to.

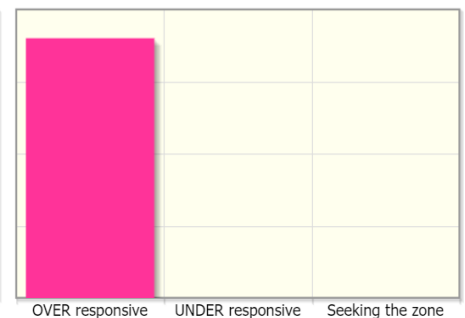
It may also help you figure out which sensory input (sometimes what they are **seeking** – i.e. proprioception/heavy, muscle - whole body work, movement and visual input) is most useful in this student's learning tools to engage, motivate, sustain attention and focus.



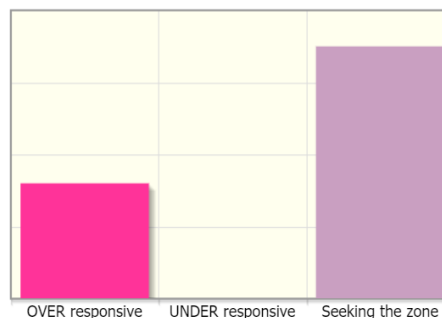
PROPRIOCEPTION – position and awareness of the body



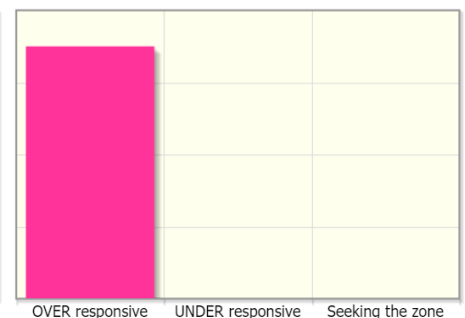
TACTILE PROCESSING – touch



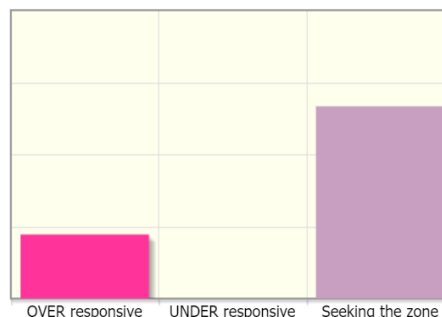
VESTIBULAR PROCESSING – movement



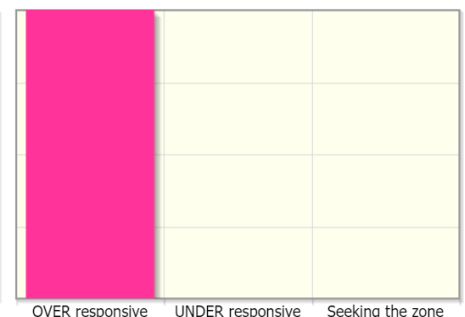
AUDITORY PROCESSING – sound



VISUAL PROCESSING – visual information



GUSTATORY and OLFACTORY PROCESSING – taste and smell



ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

This student's timeline shows they are in a high level of alertness and over-responding to situations and sensory information and is escalating to a stress pattern of fright/flight/fight.

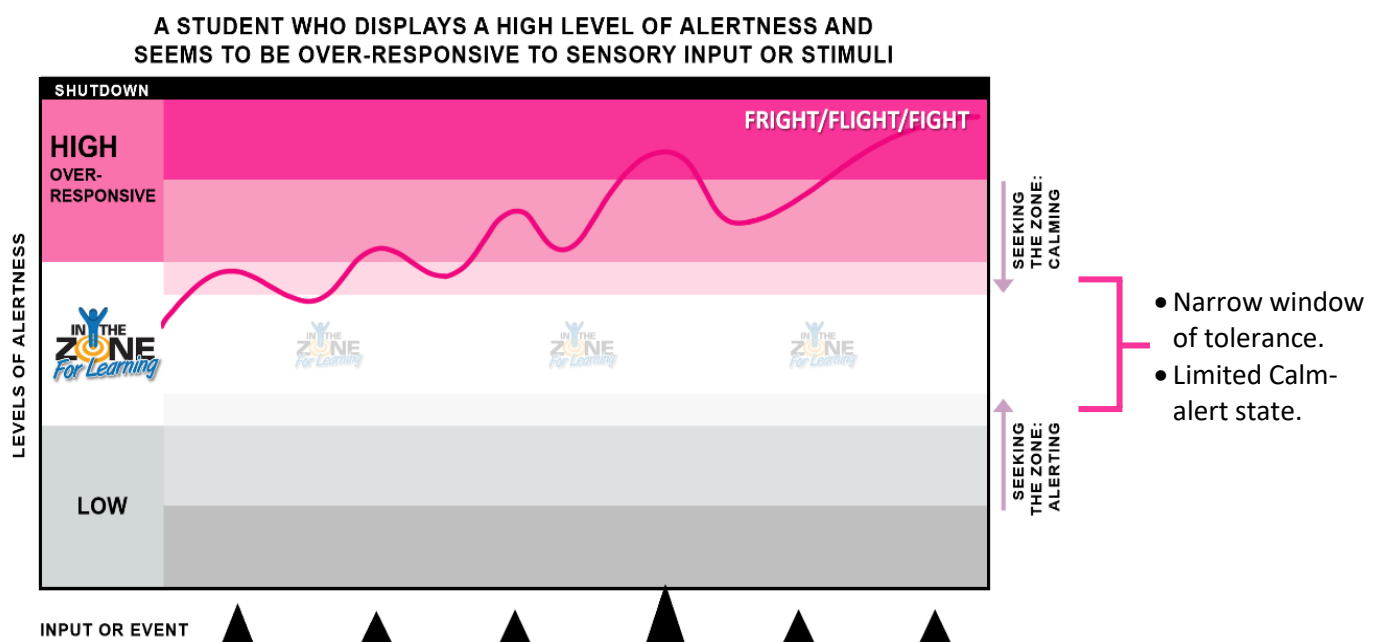
Their brain may be flooding with stress hormones such as cortisol and adrenalin.

This student is finding it difficult to self-regulate and calm down enough to focus, enjoy the experience and learn. They may be taking a long time to recover by which time another stressful situation occurs.

They therefore have limited opportunities to enjoy learning experiences and less chance of producing "positive" neurotransmitters to help them feel calm and resilient for learning.

This pattern of responding can become habitual and the brain can become "wired" this way.

Students who appear to be in a high level of alertness and are over-responsive require regulating input to feel safe, secure and calm.



- Poor sensory modulation
- Over-responsive/dysregulated
- Flighty, fidgety, nervous, easily excitable, distractible
- Sensitive and/or avoiding (defensive) to certain sensory input
- In fright/flight/fight mode
- Cautious, anxious, worried, stressed
- Controlling to protect themselves
- Difficult to engage because their brain is in "surviving mode" not in "thinking mode"
- This student has poor recovery

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

A student in the *high/over-responsive* zone can be sensitive to or avoid certain sensory input which might be indicating a fear or stress response. They may experience sensory overload which can feel like confusion, stress, fear, tension or panic.

This student may benefit from the following strategies:

PROPRIOCEPTIVE INPUT (HEAVY MUSCLE WORK) THAT IS CALMING AND REGULATING:



- ☐ Incorporate whole body heavy muscle work activities:
 - Walking - especially upstairs or up hills or while carrying a weighted object.
 - Running, bike riding, gym equipment.
 - Swimming.
 - Animal walks e.g. bear, snake, kangaroo, dinosaur.
 - Indoor and outdoor obstacle course with balancing, crawling, climbing etc.
- ☐ Incorporate pushing and pulling activities:
 - Pushing a trolley of books to the library.
 - Pushing a shopping trolley on a school trip to the shops.
 - Theraband or elastic on chair legs to push pull with feet.
 - Pushing hands together in prayer pose.
 - Standing and pushing against a wall ('wall push up').
 - The 'chair push up' (lifting one's body off the chair with their hands on the sides of the seat and straight elbows).
- ☐ Give the student jobs that require the student to lift and carry heavy objects:
 - Taking out the garbage or recycling.
 - Raking leaves, sweeping leaves.
 - Watering herbs and plants with a watering can.
 - Holding the door open for their peers.
- ☐ Incorporate heavy muscle work and input to the joints of the hands and upper body:
 - During cooking stirring big pots and kneading dough.
 - Kneading, molding, pinching, poking, squeezing clay or play dough.
 - Incorporate thera-putty with resistance into class activities.
 - Incorporate heavy or weighted toys/ pillows/ blankets.
 - Use large, weighted academic tools such as floor puzzles where the student has to weight-bear while completing the puzzle, weighted counting tools, large block building.

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

TACTILE (TOUCH) INPUT THAT IS CALMING AND REGULATING:



- ☐ Offer touch (tactile) input that is comforting and soothing, e.g. deep pressure input (rollers, massagers, body brushing or constant deep pressure touch through a weighted cushion or blanket. Deep pressure input may be calming, lead the brain to release positive neurotransmitters, reduce sensitivities and make sensory input more tolerable.

*Please consult an Occupational therapist for specific details about weight and size and make sure the student can independently move themselves and the blanket off them.

- ☐ Use different textures such as wool, silk or felt to give the student opportunities to explore these materials in a safe and predictable way, e.g. during art and craft times.
- ☐ Try reading the student books that involve tactile involvement (such as touch and feel books). For older students, develop book boxes which incorporate different textures as part of the story E.g. sand and salt for a beach story.
- ☐ Offer time away from others, away from physical touching, e.g. safe area
- ☐ During activities such as craft, cooking, gardening, offer the student the choice of wearing gloves or an apron, using cutlery, using tools, watching from a distance, watching peers/educators completing the activity before their turn. Provide easy access to be able to wash or wipe their hands when needed, practice and reinforce the routine of washing hands immediately after messy activities which might help them feel more at ease.
- ☐ Consult with an Occupational Therapist with regards to using garments/deep pressure, e.g. calming clothing, weighted vest.

VESTIBULAR (MOVEMENT) INPUT THAT IS CALMING AND REGULATING:



- ☐ Encourage linear (e.g. up and down or forward and back) predictable movements (which provides a steady rhythm and can be calming), e.g.
 - Swinging or Jumping on a trampoline.
 - Rocking on a rocking chair or hammock.
 - Bouncing or rolling on a physio/fit ball.
- ☐ Regular movement breaks may help to release “happy/ feel good neurotransmitters” and maintain a regulated state (In the zone for learning).
 - Plan for whole class movement breaks, e.g. actions songs, animal walks, thera-band exercises, dancing, obstacle course, finger push-ups.
 - If possible, have a dedicated space for individual movement breaks for the student, e.g. If your classroom has a withdrawal room it can be set up with a gym ball, exercise bike, mini tramp, boxing bag, so they do not distract other students.

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

- ☐ Involve the student in classroom jobs that involve movement:
 - Packing away which involves bending and moving in different planes.
 - Take the lunch orders/messages to the office/collect recycling etc.
- ☐ Allow regulating and organising movement (some students require constant movement in order to tolerate other sensations such as sound or because they may be in a state of “flight” – escape/stress):
 - Allow the student to pace at the back of the class.
 - Provide access to a “move & sit”/wobble cushion, a ball chair or a vibrating seat/cushion whilst seating.
 - Provide access to a swivel chair, rocking chair – seating that provides non-disruptive movement in a safe way.
 - Elastic around chair or table legs.
- ☐ Some students are over-responsive to movement and feel nervous, unstable or insecure when they don’t have full control over their own movement.
 - These students may benefit from having more time to process what their body is doing and the movements they are making.
 - They may manage better and feel more secure when surfaces are stable and lower to the ground, even, steady paths rather than unstable surfaces.
 - They might benefit from gradual, graded, respectful exposure to movement outside of their usual experience or comfort zone guided by their physical therapist.

AUDITORY (SOUND) INPUT THAT IS CALMING AND REGULATING:

- ☐ Provide earmuffs or a beanie to block out sounds and to control the volume of sounds.
- ☐ Offer the student access to their own music using headphones and their own music device.
- ☐ Reduce background noise or find a quiet time or space to teach this student.
- ☐ When a student is noticing sounds and getting distracted it sometimes helps to name the sound and then re-direct them back onto the task at hand.
- ☐ Dampen sound in the classroom:
 - Carpeting/rug on hard flooring
 - Room dividers
 - Closing windows that open onto busy roads
- ☐ Use visual cues and prompts and physically model actions to reinforce auditory instructions.
- ☐ Allow extra time to process instructions and information rather than repeating the verbal input several times as this might overwhelm the student who is trying to process the information.



ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

- ☐ Tolerable background music (instrumental, first nation, classical) with a steady beat of 50 to 70 beats per minute can help to create a calming and organising atmosphere.
- ☐ Use appropriate visual (i.e. real object, photograph or pictograph) to prepare/support student for certain sounds/noises.
- ☐ Use respectful, graded exposure to the sounds/noises they are sensitive to with guidance from their occupational therapist.

VISUAL INPUT THAT IS CALMING AND REGULATING:



- ☐ Observe what the student is visually avoiding or seeking (i.e. looking away from or looking at):
 - A student who is looking through the corner of their eye or squinting, looking through fingers or putting items in their visual field could be attempting to filter out visual input; focus on a particular object or figure out visual information such as depth, shape, size, colour, foreground and background.
- ☐ Reduce glare and bright lights that could be visually painful or distracting, e.g. offer hats and sunglasses when student is outside (sometimes these students also experience tactile sensitivities towards wearing these items which might have to be worked through as well).
- ☐ Visual borders/physical barriers, e.g. masking tape on table, dividers between tables, room partitions/dividers, can be helpful.
- ☐ Some students with visual processing challenges may focus on the glare and shine of laminated pictures rather than the picture itself.
- ☐ Seat the student in the least visually distracting position, for example away from the window where they may be distracted by leaves on trees or people moving outside.
- ☐ Natural light is preferable to fluorescent light:
 - Light filters can be fitted onto fluorescent lights or replaced with full spectrum globes to dampen the glare/reduce the flicker.
 - Be aware of glare/sun - knowing where the sun/light/glare is coming from/relocating to another space if appropriate.
- ☐ Introduce something calming to look at such as a bubble column, gel timers or sand timers or leaves blowing in the breeze.
- ☐ Visually present routine activities in the same place every time.
- ☐ Reduce the amount of visual stimuli on a worksheet, e.g. spreading a one page worksheet across two pages.

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

- ☐ Reduce visually distracting elements in the classroom:
 - Remove posters and pictures on the wall that are in the line of sight of the student, e.g. display work in the hallway on display boards you can turn around instead of using classroom walls. Take a photo of all the student's work and display in a less distracting way.
 - Reduce clutter on the student's desk, e.g. use organization systems such as cubby/tub spaces to declutter work areas/reduce visual distraction. Curtains can be placed over cubby spaces; you can turn cubby's around.
- ☐ To reduce eye strain and encourage focus: use a feature wall with appropriate colours that are not too painful or bright, frame the area you want students to focus on.
- ☐ Have different colour surfaces for different focus areas. Use colour coding within a classroom/school. e.g. reading/quiet area- colour coded green. Coloured mat for group time.
- ☐ A student may find making eye contact less intense/ awkward after movement, sensory or fun activity which has released feel good hormones. Eye contact should occur spontaneously and with ease not forced.
- ☐ Some students benefit from time to shut their eyes or be in a darker space to recover from the visual stimuli in a busy school day.

GUSTATORY (TASTE)/OLFACTORY (SMELL) INPUT THAT IS CALMING AND REGULATING:



- ☐ Be aware of the odours and fragrances and try to avoid smells that are noxious to the student, e.g. garbage bin, use of chemical sprays, strong perfumes. Ensure good ventilation in the classroom.
- ☐ Trial using calming fragrances such as strawberry or lavender in learning tools e.g. scented playdough, herb garden. Be aware of how these smells affect your students.
- ☐ Comfort foods and feel good tastes and smells can be helpful to feel calmer and happier. Crunchy and chewy foods can help this student (Please follow any diet student is already following).
- ☐ Sucking through a straw or sports bottle can be helpful to regulate breathing and give strong input to the muscles of the jaw.
- ☐ Chewable jewelry or a chewy tubes can be calming through the provision of deep pressure through the jaw and by regulating the breath. This can be a safe & hygienic option when seeking oral input.
- ☐ Separate lunch boxes for different foods or lunchbox that is divided into sections.
- ☐ Incorporate cooking lessons when possible to encourage handling and exposure to new food even if the student does not eat the food.



ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

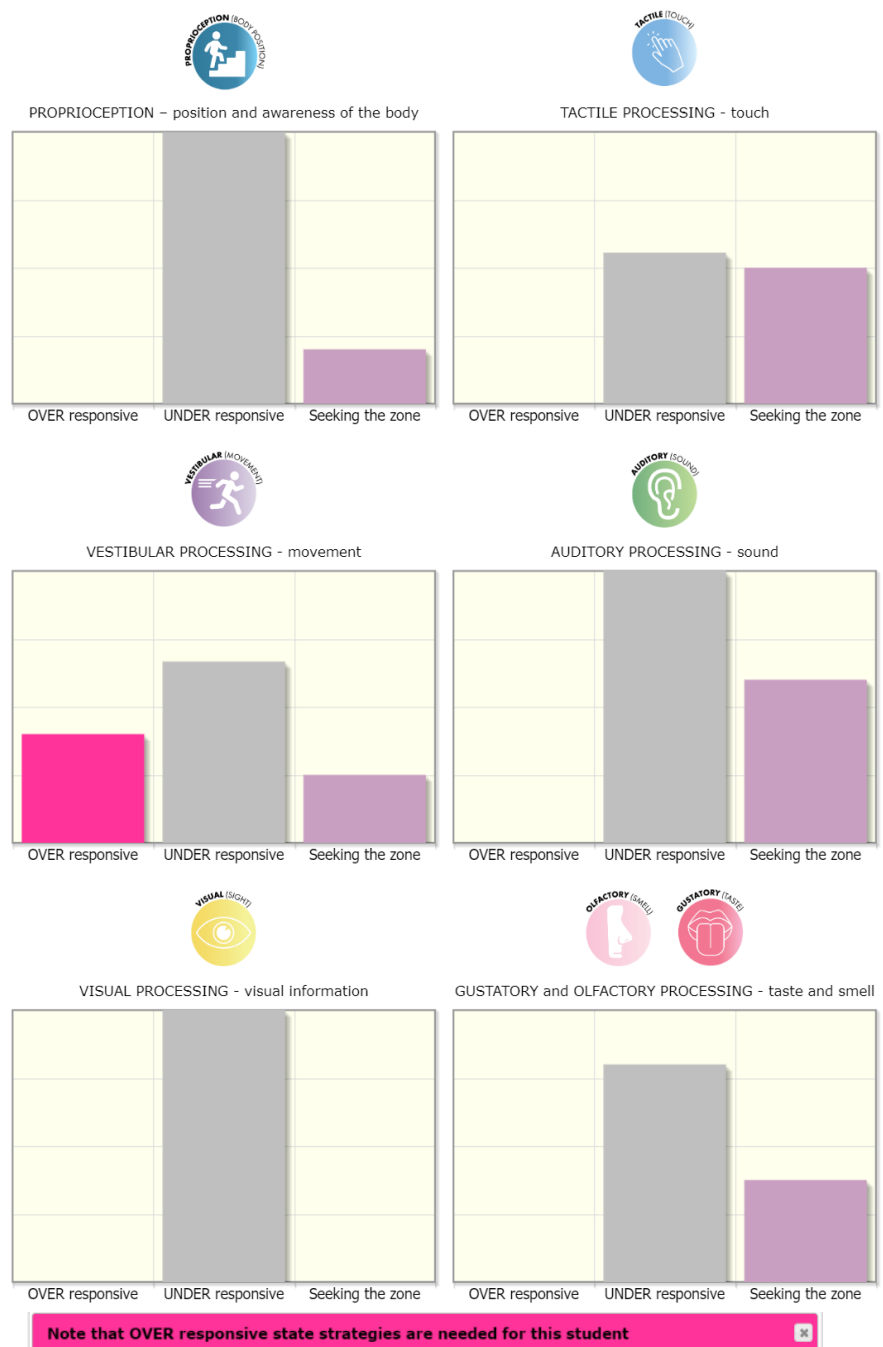
Alerting and regulating strategies for students who are under-responsive to sensory input or seeking alerting input.

Evaluate Print Clear

The ITZ Student Response Checklist observations seen in these graphs (grey columns) indicate that this student seems to be **under-responding** to proprioception (body position and awareness), touch, movement, sound, visual, smell and taste. They are also seeking out touch, movement, sound, taste and smell input (which might be their regulatory strategies for alerting).

They also appear to be somewhat over-responsive to movement so the recommendation is to refer to the over-responsive strategies in addition to these under-responsive strategies in order to support this student through any sensory overload they may be experiencing to do with movement or stress or fright/flight/fight response in general.

Reading through the specific items you have selected in the checklist will provide more details about which specific sensory input the student is over-responsive to, seeking out or under-responsive to. It may also help you figure out which sensory input is most useful in this student's learning tools to engage, motivate and sustain attention and focus. This is often what they are **seeking** i.e. this student seems to be seeking out touch, sound, smell and taste input.



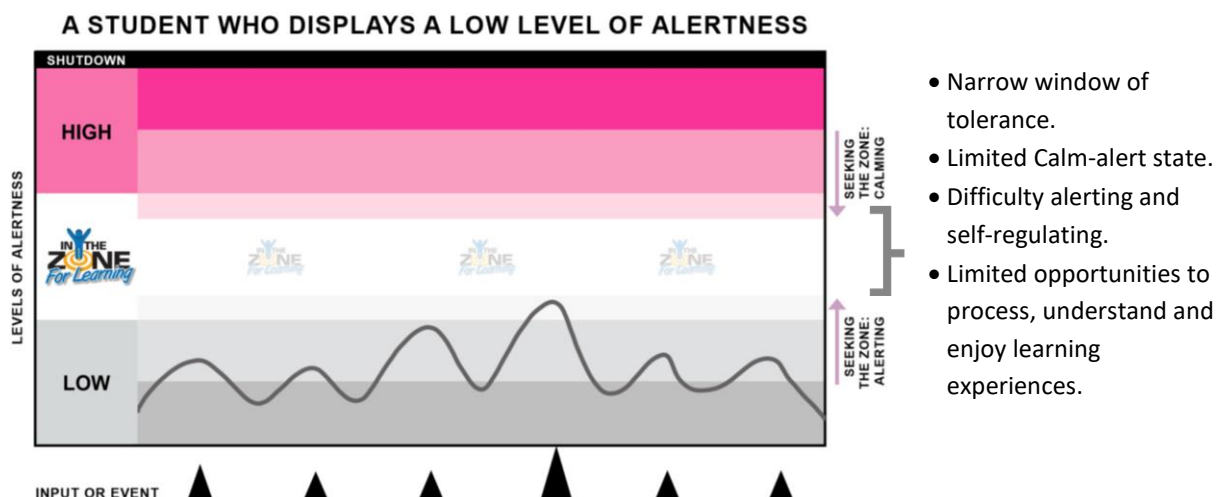
ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

The timeline below depicts a student who is under-responding to situations, input and sensory information throughout the day. This student is finding it difficult to self-regulate and alert themselves enough to focus, attend, enjoy the experience and learn.

This pattern of responding can become habitual and the brain can become “wired” this way.

Students who appear to be in a low level of alertness and are under-responsive require regulating input to alert them into a focussed/optimum level.



This student displays a low level of alertness. Their brain is slow to register sensory input. The sensory input in the daily events might not be intense enough to get this student in the zone for learning.

This student may be:

- Slow to respond
- Slow to move/lethargic
- Difficult to engage
- Missing instruction and not be registering sensory information.
- Focussing on small (sometimes insignificant details) and miss the big picture of the task and context.
- This student needs self-regulation tools or co-regulation from an educator to alert themselves to attain and maintain a calm yet alert state.

Each student has a unique brain and individual needs. They are often giving us clues about their needs through their behavioural responses. At times they are attempting to self-regulate but may not be able to strike a “Just-right” balance.

Through considered trials and liaising with the team; we can support them to find a balance between:

- Type (what specific activity)
- Time (when in the timetable or routine)
- Frequency (how often)
- Intensity (how fast, how high, how heavy etc.)
- Duration (how long)

For example; jumping on a trampoline (type), before desk work (time) for 5 minutes (duration) as high as you can, reaching up to bat a balloon or throw a ball into a hoop (intensity) 3 times a day (frequency) may help increase the alertness for a student who is generally lethargic and/or under-responsive.

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

A student in the ***under-responsive*** zone requires regulatory tools and input throughout the day that are alerting to get in the zone for learning.

They may benefit from the following strategies:

PROPRIOCEPTIVE INPUT (HEAVY MUSCLE WORK) THAT IS ALERTING AND REGULATING:



The heavy muscle/whole body activities below are the same as for the student requiring calming input and are helpful for all students. However, the way they are delivered will differ. The student who requires alerting may need to combine these exercises with lively music or with a fun partner to help them to alert and regulate.

- ☐ Incorporate whole body heavy muscle work activities:
 - Walking especially upstairs or up hills or while carrying an object.
 - Running, jumping, hopping, skipping, marching.
 - Swimming.
 - Animal walks e.g. bear, snake, kangaroo, dinosaur.
 - Indoor and outdoor obstacle course with balancing, crawling, side stepping etc.
- ☐ Incorporate pushing and pulling activities:
 - Pushing hands together.
 - Standing and pushing against a wall ('wall push up').
 - The 'chair push up' (lifting one's body off the chair with their hands on the sides of the seat and straight elbows).
 - Pushing a trolley of books to the library.
 - Pushing a shopping trolley on a school trip to the shops.
 - Theraband or elastic on chair legs to push pull with feet.
- ☐ Give the student jobs that require the student to lift and carry heavy objects:
 - Taking out the garbage or recycling.
 - Raking leaves, sweeping leaves.
 - Watering herbs and plants with a watering can.
 - Holding the door open for their peers.
 - During cooking stirring big pots and kneading dough.
 - Kneading and molding clay or play dough in a craft activity.
- ☐ Incorporate thera-putty with resistance into class activities such as molding, poking, pinching.
- ☐ Incorporate heavy or weighted toys/ pillows/ blankets.
- ☐ Use large, weighted academic tools where the student has to weight-bear while completing the floor puzzles, weighted counting tools, large Lego for building.

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

TACTILE INPUT (TOUCH) THAT IS ALERTING AND REGULATING:



- ☐ Provide alerting tactile input to prepare for learning, e.g. finding tactile items in a feely box, using a loofah or body brush, cool face washer, ice pack, deep pressure, light touch input of a fan to wake up/alert at the beginning or during activities.
- ☐ Use teaching tools with different textures such as sand paper, silk, wool, shaving cream, plasticine or putty, soft/hard, hot/cold during learning activities. *Make sure the student provides permission for any input that is ticklish or noxious.*
- ☐ Provide the student with opportunities to touch different textures during cooking, finger painting, gardening, car washing, bushwalking, break times and curriculum activities.
- ☐ Introduce games and activities with a strong tactile focus such as patting rhythms, clapping and action songs, tactile puzzles, block building, raised letters and numbers, embossed or engraved surfaces.
- ☐ Sports that use equipment which can have enhanced tactile elements e.g. throw + catch ball with spike/knob surface, bounce a rough basketball or furry tennis ball.
- ☐ Fidget spinners and other tactile/visual items can be helpful.
- ☐ Access to 'fidget' tools and tactile tubs with rice, sand, pasta or textures.
- ☐ Velcro or ribbed/textured pencil grip to provide extra tactile input where fingers are on the pencil.
- ☐ Schedule certain times into their day when it is appropriate to have their shoe and socks off e.g. rest time, gym class, sandpit.
- ☐ Sew textured material or tactile items inside school uniform pockets.
- ☐ This student may respond well to touch cues and prompts to emphasize verbal instructions or praise e.g. tap on the leading leg to kick or dominant hand to reach, high 5 to encourage etc.
- ☐ This student may require reminders and redirecting about what is appropriate to touch. Visuals and social stories may help them understand.

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

VESTIBULAR MOVEMENT THAT IS ALERTING AND REGULATING:

(movement of the body and head in space) - please note that some students can become overstimulated by vestibular movement even though they require it to get in the zone for learning. Consultation with an OT would be advised. These students require organizing heavy muscle work, deep pressure touch and proprioceptive input combined with vestibular input.



- ☐ Alert the student through movement of the head in space to stimulate the vestibular system (inner ear) e.g. swinging, running, jumping, dancing with head movement, gym ball exercises, stretching and yoga sequences.
- ☐ Provide opportunities for movement breaks in transitions between activities e.g. stretch, touch toes, turn around, jump up and down at your desk before starting desk work.
- ☐ Encourage changes in direction and pace when transitioning between classrooms areas of the school e.g. animal walks/jumps, marching to different rhythms.
- ☐ Allow access to different seating positions for different activities throughout the day to provide opportunities for movement and to assist with alerting e.g. floor time, bench chair, swivel chair.
- ☐ Provide movement within learning activities (i.e. active participation in the lesson), e.g. coming up to the whiteboard, handing out worksheets, watering the herbs in the science etc.
- ☐ Some students seek out vestibular movement to help focus their eyes or to help them listen. These are complex processes that need to be investigated by a team that understands sensory processing e.g. some students will attend and listen better when pacing up and down or walking, swinging or bouncing on the gym ball.

AUDITORY (SOUND) THAT IS ALERTING AND REGULATING:

- ☐ Alerting rhythms and beats, e.g. dance music, exciting orchestral music, clapping rhythm.
- ☐ Changing beats, pitch, volume to attract and maintain the student's attention: keep them alert.
- ☐ Rhythm and music in daily routines- sing your instructions and stories.
- ☐ Opportunities to listen to high impact music with a full sound and strong beat however they can also experience heightened levels of alertness if music or sounds are high pitched and/or variable in rhythms. Therefore, the effects of the auditory input need to be monitored carefully and music chosen carefully to suit the needs of the student.



ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

- ☐ Opportunities in curriculum activities to incorporate sound and music, e.g. participating in a drumming group, playing musical instruments, creating sound makers for science etc.
- ☐ Music or sounds that signal a transition or a new activity.
- ☐ Access to their own headphones to listen to music or sounds that are helpful to them without disturbing the rest of the class.
- ☐ Some students benefit from reminders to tune into their sense of sound and practice their listening skills e.g. a visual cue or gestural prompt for listening.
- ☐ If a student is under-responsive to sound and spoken instructions:
 - reduce background noise
 - emphasize key words
 - use visual cues and prompts
 - physically model actions to reinforce auditory instructions
 - allow extra time to process instructions and information rather than repeating the verbal input several times and potentially overwhelming the student who is trying to process the information

VISUAL INPUT THAT IS ALERTING AND REGULATING:

- ☐ Increase visual stimulation for this student, e.g. seating the student near the window or bright lights, position the student at the front of the classroom, use contrasting colours, highlighting, stickers and bright arrows to direct attention.
- ☐ Use appropriate lighting, e.g. a lamp if appropriate to help them focus on task in front of them. A torch to go on a word/colour/shape/number search etc.
- ☐ Use auditory input and sounds with a visual cue to catch the student's visual attention e.g. clapping a rhythm or singing the instruction.
- ☐ Be expressive in your face and body language.
- ☐ Encourage students to touch learning materials to support visual processing/learning, e.g. "this is a circle" - give them the touch cue with the word.
- ☐ Use borders/frames around things you want the student to focus on.
- ☐ Have their worksheet in a contrasting colour to their desk.
- ☐ Provide the student with opportunities to interact with and watch moving objects to "wake up"/alert their visual sense such as a ball maze or marble run, water wheel or lava lamp, whistles with moving parts that spin when they blow, bubbles, kites, fidget spinners etc.



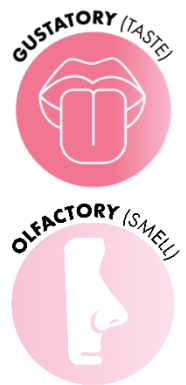
ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

- ☐ Encourage use of mirrors to check face and clothing and provide information about their own body in relation to items and actions.
- ☐ NOTE: Some students who are alerted by visual stimulation may also need movement input to activate their vestibular system. *Refer to under-responsive zone vestibular movement strategies.* Observe and record what the student is visually seeking (i.e. looking at and looking for). Students that are watching moving objects such as fans, leaves, spinning objects may be in need of more movement experiences and input to the vestibular system, e.g. jumping, swinging, dancing with movement of the head (and inner ears) in different directions.

TASTE/SMELL INPUT THAT IS ALERTING AND REGULATING:

- ☐ They may benefit from strong fragrances that are appropriate for the setting e.g. deodorant for their body, smelling herbs and plants when gardening, smelling soap or detergent when washing up or carrying out personal hygiene routines.
- ☐ Add a fragrance such as mint to craft items, paint and play-dough. Closely monitor how these fragrances affect students.
- ☐ Encourage student to explore tastes and smells. Less familiar, distinct tastes and smells can stimulate students who need alerting e.g. use scented markers or scented stickers.
- ☐ Use a fragrance to signal a transition or new activity.
- ☐ In music lessons, encourage the student to play an instrument that uses their mouth, e.g. harmonica or recorder.
- ☐ Opportunities to chew on chewy tubes, chewable jewelry etc.
- ☐ Opportunities to drink from a straw.
- ☐ Opportunities to drink a cold fizzy drink, e.g. carbonated mineral water.
- ☐ Opportunities to eat crunchy, salty snacks, ice cubes.
- ☐ This student may be seeking strong odours (sometimes inappropriate smells such as dirty nappies or sweaty armpits).



REGULATE THEN CONCENTRATE

An example of how these strategies are combined to support a student in the under-responsive zone:
Start the session with a short burst of targeted alerting activity such as bouncing on the fit ball, listen to some lively music via headphones and smell an alerting fragrance such as peppermint. Educators provide extra encouragement and speak in a lively tone of voice with exaggerated facial expressions and body language. Participate in academic activities that include alerting sensory input such as textured letters or a vibrating pen to maintain optimum level of alertness.

Strategies to support students who are seeking the zone to calm or alert themselves.

The timeline graph below shows 2 students who are seeking the zone for learning. The top graph line shows a student seeking calming input and the bottom graph line shows a student seeking alerting input.

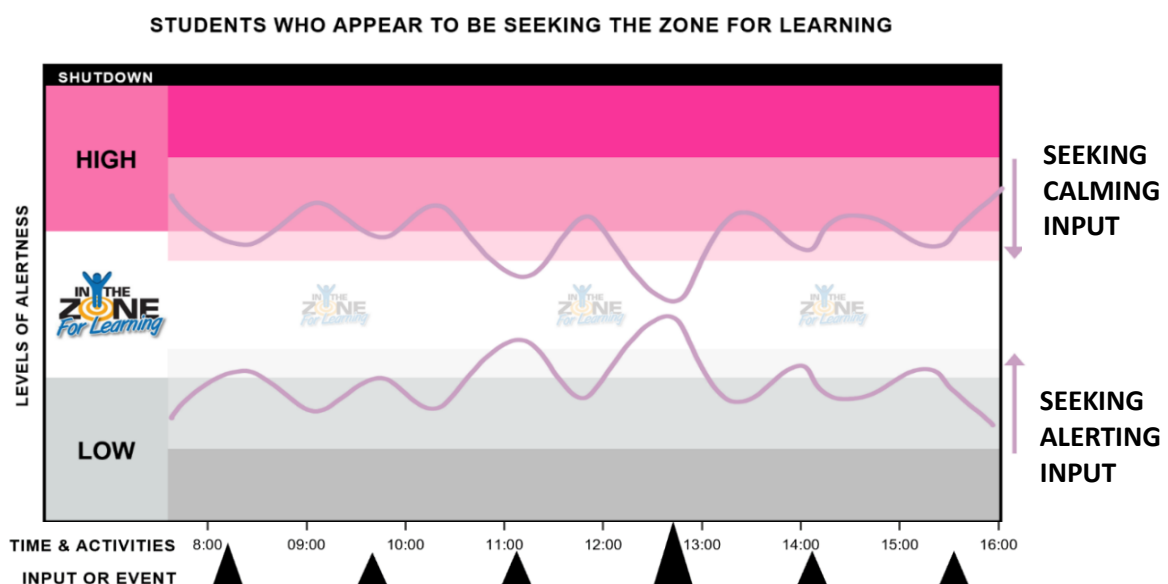
Some students seem to be seeking sensory input throughout the day e.g. moving, touching textures, seeking out smells, or visual input.

Some people refer to this as “stimming” which is short for “self stimulation”. This term can be misleading as sometimes the student is seeking calming or soothing input not stimulation.

In ITZ, we prefer to use the term “regulating” which means they are seeking to feel better in themselves, either calmer or more alert, have better awareness of their bodies in space and feel more regulated.

Scientific research and feedback from students, educators and families affirms that there is a deeper purpose for “seeking” sensory input.

It’s important to take the time to investigate what the purpose is in order to support your students to participate in the curriculum activities and meet their educational goals.



ITZ STRATEGY TOOLKIT

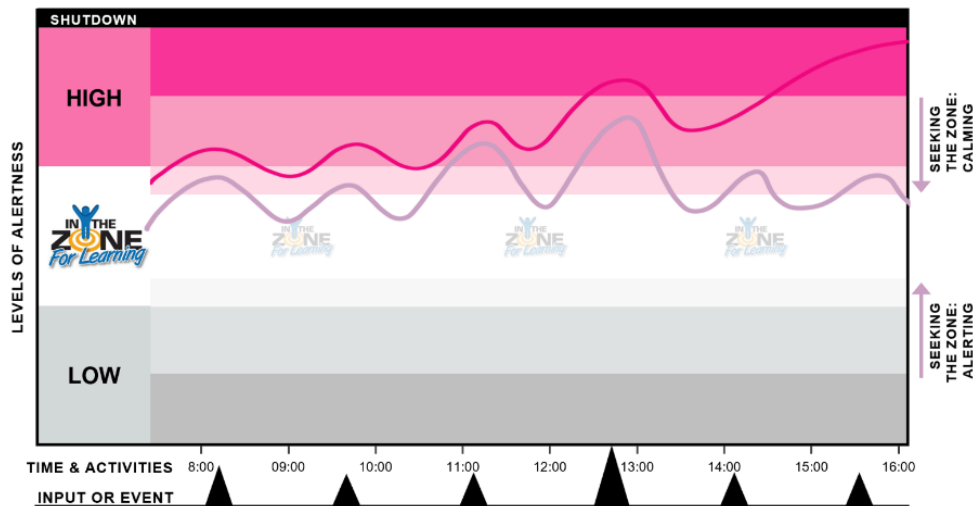
Regulatory tools for calming and alerting

Observations of the student in the graph below show that they are sometimes **over-responsive** (blocking their ears, avoiding touching certain textures and gagging at certain textures).

They are also **seeking the zone** at times through seeking movement (pacing, rocking, seeking tactile input such as water and through fidgeting and seeking strong smells).

This student is most likely to require strategies for calming and regulating found on pages 8 to 14.

A STUDENT WHO APPEARS TO BE SEEKING TO CALM

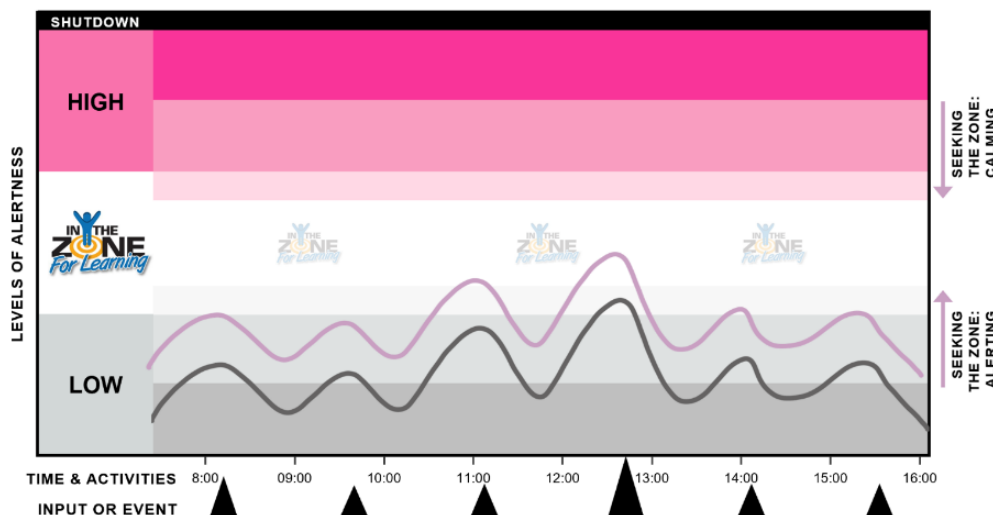


Observations of the student below show that they are sometimes **under-responsive** to input (such as not tuning into the sound of the educator's voice and or the visual input of the learning tool, not noticing messy hands or face etc).

They also appear to be **seeking the zone** at times through seeking movement (spinning, jumping, seeking tactile input such as shaving cream, sand and strong tastes).

This student may benefit from strategies for alerting and regulating found on pages 15 to 21.

A STUDENT WHO APPEARS TO BE SEEKING TO ALERT



ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

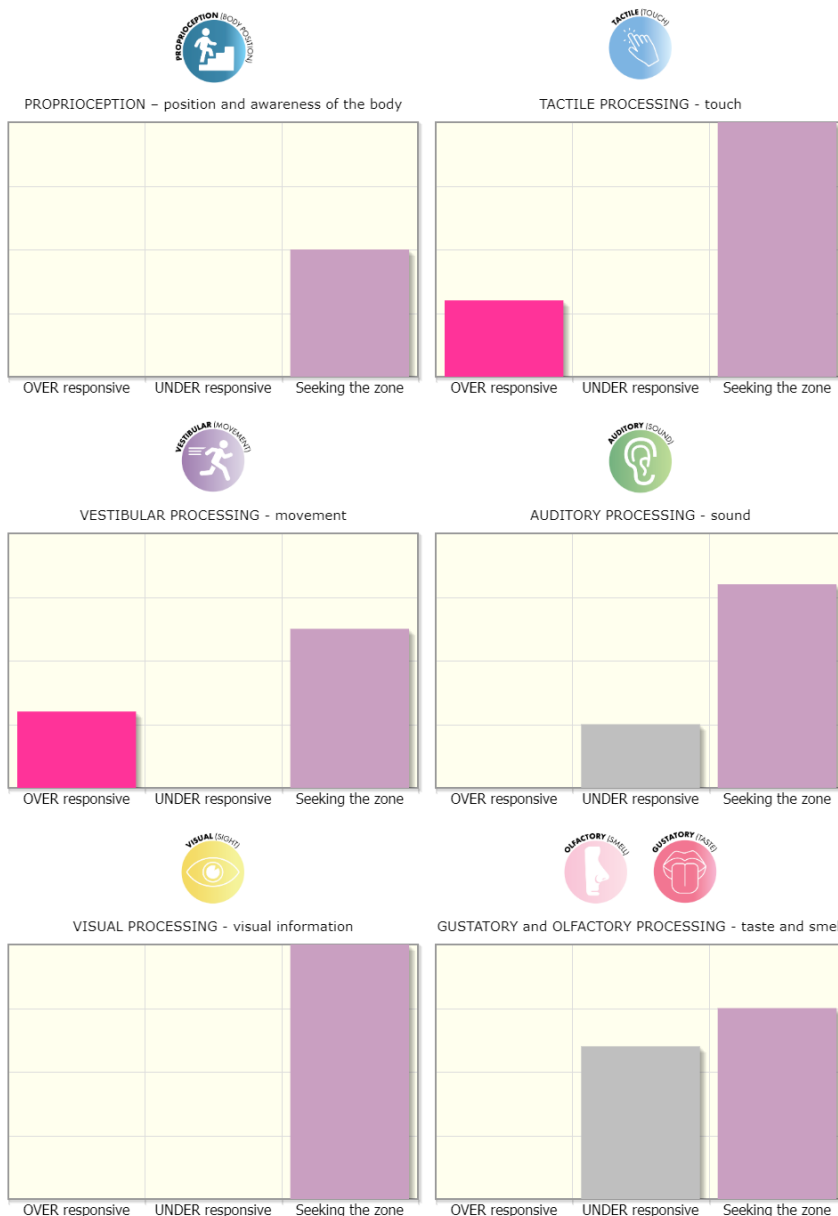
The responses identified in the “ITZ Student Response Checklist” column graphs below describe a student who is **seeking** or craving sensory input to regulate themselves.

These students often give us clues as to what sensory input they require by their actions/behavioural responses and the type of sensory input they seek.

For example, a student who is pacing, rocking, spinning or seeking a lot of movement may be giving us a clue that he or she requires vestibular movement breaks to feel better and regulate themselves. If they are over-responsive e.g. blocking their ears and looking distressed it could be that they are trying to calm themselves by seeking movement.

On the other hand, if they are at times lethargic, “sleepy” and under responsive; it is possible that they are seeking movement to alert themselves.

[Evaluate](#) [Print](#) [Clear](#)



The seeking responses are shown in these purple column graphs.

This student seems to be seeking input through all 7 sensory systems, especially touch, movement, sound, visual, smell and taste input.

We need to figure out:

Are they seeking to alert because they are presenting as under-responsive?

Are they seeking to calm because they are presenting as over-responsive?

Figuring out the answer involves looking at the other observations. This student seems to also be over-responsive to some touch and movement input and a sometimes under-responsive to sound, taste and smell.

Further observation is needed. Combining observations and data collected using ITZ levels of alertness timeline could help figure out if they are in a high level of alertness and over-responding or in a low level of alertness and under-responding or if their seeking serves a different purpose unrelated to their levels of alertness.

The input the student is **seeking** may also help you figure out which sensory input is most useful in this student’s learning tools to engage, motivate and sustain attention and focus.

Note that OVER responsive state strategies are needed for this student

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

It can be tricky to figure out the purpose of the input a student is seeking.

These students have very complex learning needs and their behavioural responses can mean a lot of things. Sometimes our plan of action can be straight forward e.g. if a student is seeking inappropriate tactile input for the school setting such as smearing spit or playing with soap; we can refer to the tactile strategies to find other ways to provide tactile input in the learning activities in productive and appropriate ways.

However, sometimes the situation is more complex. Seeking a particular sensation doesn't necessarily mean the student needs more of that particular sensation e.g. a student who is always moving and pacing doesn't necessarily need to pace more. It could be an indicator that they are anxious or worried and **pacing is calming**. Sometimes the student is **pacing to process** the information because moving while thinking can be helpful. As you get to know your students you can **figure out the purpose** of their behavioural responses.

Some students seek out certain movements because these are the only **actions and motor plans** they have mastered.

Some students may be **sensitive** to environmental noise and sounds made by other students and block out those sounds by humming or vocalizing or seek out sound by making it themselves such as humming or tapping objects. They may also be getting a sense of their bodies in the space around them (i.e. echolocation).

For some students seeking/craving certain input indicates underlying medical issues, constipation, gut issues, relief from pain distraction from discomfort.

We need to work as a team to observe, analyze and interpret to figure out the purpose and function of the behavioural responses we are observing.

Refer to the tutorials and other ITZ resources for information.

Please refer to an occupational therapist who specializes in sensory processing.

To optimize the effectiveness of the strategies you implement for your student who is seeking consider:

- Type (what specific activity)
- Time (when in the timetable or routine)
- Frequency (how often)
- Intensity (how fast)
- Duration (how long)

For example; jumping on a trampoline (type), before desk work (time) for 5 minutes (duration) as high as you can, reaching up to bat a balloon or throw a ball into a hoop (intensity) 3 times a day (frequency) may help increase the alertness of a student craving vestibular/movement sensory input who may usually be fidgeting and unable to sit still to attend to that task.

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

A note about seeking vestibular movement:



Some students seek out movement because they are needing more intensity and information about that sensation.

Many students with sensory processing issues who seek out movement have shared their insights and report (via speech, typing, visuals or signs) that movement can be organizing for their brain and helpful for looking and listening, attending and focusing.

Some feel that vestibular movement can reduce the perception or impact of their sensory sensitivities, especially reduce auditory sensitivities.

Some feel that input such as rocking is deeply calming or input such as spinning is invigorating.

If these students do not receive the vestibular input they require in the intensity that they require, you may find they seek it out more frequently or for longer periods of time e.g. they may need a short burst of extreme movement through swinging or jumping but if they don't get the opportunity for this they are constantly on the move – pacing, walking, rocking or moving in other ways.

These students often crave sensory input to their vestibular system (inner-ear) and therefore seek to move or watch moving objects/people. Examples of strategies that have been helpful in the past:

- ☐ Jumping vigorously on the trampoline then crawling through a long tunnel before sitting to a task.
- ☐ Complete an indoor obstacle course that may involve rolling, crawling and balancing followed by an activity that involves heavy muscle work (pushing, pulling, carrying, lifting), do an activity that involves resistance e.g. stretchy theraband, stress balls etc.
- ☐ Some students require constant movement in order to tolerate other sensations such as sound, therefore allowing them to pace or giving them access to a move and sit cushion, a ball chair or a vibrating seat/cushion can help.
- ☐ Allow access to different seating positions for different activities throughout the day to provide opportunities for movement and to assist with alertness, e.g. floor time, bench chair, swivel chair.
- ☐ Some students require extreme movement to provide adequate input to the vestibular system: trampolining, swinging high, spinning, running fast, summersaults, bouncing and rolling over a gym ball, riding scooter or bike.
- ☐ Provide movement within activities, e.g. active participation in the lesson - coming up to the whiteboard, giving out worksheets, running errands etc.

Please refer to an occupational therapist who specializes in sensory processing.

PLEASE REFER TO THE *OVER-RESPONSIVE/ HIGH ZONE* STRATEGY SECTION FOR STUDENTS WHO REQUIRE CALMING/REGULATING INPUT AND THE *UNDER-RESPONSIVE/LOW ZONE* STRATEGY SECTION FOR STUDENTS WHO REQUIRE ALERTING/REGULATING INPUT.

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

More strategies that may be helpful for all students in the class

IMPROVING RESPIRATION

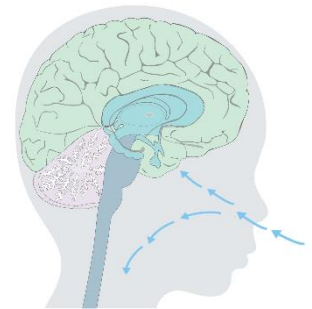
Many of our students experience low muscle tone, postural weakness and have difficulty regulating their alertness levels. These students might be breathing in a shallow way which makes it difficult for them to get adequate levels of oxygen to their brain and body or to be able to take deep centering breaths to calm themselves down. Some students hyperventilate (take short, shallow, rapid breaths) which exacerbates the panic or fright/flight/fight state they may already be in.

Daily respiration (deep breathing) exercises will assist all students to develop an important, lifelong self-regulatory tool that can help them to calm down, refocus and get in the zone for learning.

Encourage deep breathing

Encouraging students to extend their exhalations can deepen their inhalations and supports the cycle of deep calm breathing:

- hissing, humming, buzzing, trumpeting and other animal sounds
- play a game: who can make the longest sound on one breath?!
- songs with long vowels “laaaaaaaaaah”.
- graded resistance whistles and breathing exercises
- heavy muscle work that increases heart rate and encourages deep breathing (e.g. running, jogging, any aerobic activity, chair push-ups, jumping on the spot, bouncing on the gym ball etc.)
- belly breathing
- balloon breathing
- laughter and hearty chuckles



Please refer to the Calm Breathing tutorials part 1 and 2 on the ITZ/Clarke Road School website.

WHOLE BODY RHYTHMIC ACTIVITIES THAT ARE REPETITIVE AND REGULATING

Coordinating and synchronizing movements to a steady beat can be integrating and organizing for the brain and body:

- marching or stomping to the beat
- bouncing on the gym ball to the beat
- dancing and stomping to the beat
- clapping along to the beat of a song
- drumming and playing musical instruments rhythmically
- patting your whole body with the palms of your own hand
- combining touch, visual and other sensory input with rhythmic music can be powerful for learning e.g. tapping a beat with glow sticks or fiber optic wands (visual), tapping the beat with your hands or feet on different textured surfaces such as synthetic grass, wood, water etc. (touch).

Refer to The Foundations for Learning Framework and www.tacpac.co.uk for more information.

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

Additional information to assist educators to understand their student's behavioural responses, motor coordination and levels of engagement.

Many of the strategies that could be useful for students to attain and maintain a calm yet alert state require some degree of motor coordination, strength and flexibility.

Many of our students experience motor and verbal praxis difficulties; often referred to as DCD – Developmental Coordination Disorder or Dyspraxia.

Praxis is the process of forming an idea and creating and executing a motor plan by taking in feedback through the senses. For praxis to occur smoothly all the senses need to be integrating well and providing accurate information.

MEANINGFUL MOVEMENT, PRAXIS, MOTOR PLANNING AND MOTOR IDEAS

This student may:

- Have poor body awareness (left-right, top-bottom, back-front)
- Have poor coordination (eyes-hands, eyes-feet, two hands etc.)
- Have difficulty with tasks that have multiple steps.
- Become confused about the correct sequence of steps.
- Have difficulty imitating or copying actions.
- Have difficulty coming up with ideas during play activities or when manipulating objects e.g. building blocks or drawing.
- Tend to play the same game or interact with the same activity with repeated movements.
- Not seem to be able to figure out what to do with certain objects or how to manipulate them.
- Not notice the impact of his or her actions on others or the environment e.g. knocked over a tower of blocks or dropped an object but didn't notice.
- Go about a task in an inefficient or awkward manner.
- Seem to need adult help and feedback more than other students.

This student may:

- ☐ Need to be in a quiet environment to learn.
- ☐ Be more successful with one-on-one teaching rather than in a group of students.
- ☐ Need help to regulate their alertness level before starting the learning process, e.g. be provided with sensory input to alert or calm themselves so they are in the zone for learning.
- ☐ Need help to tune into the information that is important e.g. focus their eyes on the object or tune their ears into the sound or look at their hands while manipulating items.
- ☐ Need multi-sensory input to learn, e.g. touch, sight, sound, taste combined.
- ☐ Need more feedback through their bodies as well as verbal feedback e.g. writing on sandpaper provides a lot more tactile feedback than writing on paper.
- ☐ Need the task broken down to simple steps (including explicit instructions such as bend your elbow, look down.)
- ☐ Need repetition of the steps to a task and opportunities to practice.
- ☐ Need to watch before trying.
- ☐ Benefit from video modelling and a visual sequence.
- ☐ Need help to generalise the skill into different contexts.

ITZ STRATEGY TOOLKIT

Regulatory tools for calming and alerting

Questions to consider:

Have I learnt anything new about my students?

In which sensory system is my student over-responding?

In which sensory system is my student under-responding?

Through which sensory system is my student seeking more input?

Which sensory system is providing accurate information about the world?

How is the processing of sensory information affecting the way my student learns?

Do I know my student's processing/response time?

When are they calm yet alert, focused and in the zone for learning?

How can I engineer their learning tools to match their needs and capabilities?

Which strategies will I trial for my student and when?

Which learning style is most affective for my student?

Your observations, the ITZ Student Response Checklist as well as information in the Foundations for Learning Framework may help you begin to figure out what kind of learning styles your student uses best:

Physical – kinaesthetic: students who learn best through movement, using their whole body.

Tactile: students who need to touch and feel and mouth learning material.

Oral tactile/olfactory: students who need to smell, feel and taste learning material in their mouth.

Visual: students who learn best with images, written information, objects.

Auditory: students who learn best by listening, using sound and music.

Verbal-linguistic: students who learn best by using words in speech or writing or augmentative/assistive devices.

Logical-mathematic: students who learn best with order, systems, sequences, logic and reasoning.

Social: students who learn best in a group or with other people.

Solitary: students who learn best working alone, quietly or with a supportive educator who knows their sensory needs, sensitivities and learning styles.

Please refer to Bibliography for references used in the development of this strategy toolkit and the ITZ website resource page for Strategy tutorials and more helpful information.