

Self-Regulation/Sensory Processing

A brief overview

Jennifer Boggett Carsjens
Occupational Therapist

What is self-regulation?

Self-regulation is the nervous system's ability to attain, maintain and change levels of arousal to suit the needs of specific situations and activities (Williams and Shellenberger, 1994). Arousal is our level of alertness. The ability to maintain appropriate states of arousal develops from our ability to balance (regulate or modulate) sensory input from our environment.



But *how* does self-regulation work?

The Brain



Sensory strategies helps
better than thinking strategies

A quick overview of how the brain works for self-regulation:

- Reticular formation: regulates our arousal levels (the 4 As - asleep, awake, alert and attending). Located in the brain stem.
- Limbic system: affects arousal through feelings, anticipation and motivation.
- Cortex: involved in arousal and helping with selective attention and orientation to specific stimuli.

= sensory

= self talk

2 Ways We can Self-Regulate

1. We use our cortex to send messages to the brain stem and talk ourselves through it ("I have to listen to this workshop and not fall asleep because I don't want to be rude").
2. Use the cerebellum to send messages to the brainstem. One way we do this is through heavy work (proprioception) and the use of other sensory input.

Alertness

- "Alertness" refers to the state of the nervous system.
- To attend, concentrate, and perform tasks in a manner suitable to the situational demands, one's nervous system must be in an optimal state of arousal for that particular task.
- A good analogy that can be used to help children describe their state of alertness is: "engine levels".

Engine running on high:

- Excited
- Hyper
- Anxious
- Angry
- Scared
- Overwhelmed by sensory information



Engine running on low:

- Sleepy
- Sick
- Irritable
- Quiet



Engine running just right:

- Focused
- Calm
- Able to learn



The importance of self-regulation?

A normal state of arousal is essential for the development of the following abilities:

- Attention
- Affect i.e. Regulation of Emotions
- Frustration tolerance
- Impulse control

*Our state of arousal varies throughout the day.

Kids w/ ocd ~~have~~ need
to self regulate.

Assessment

The most common tools used for assessment include:

- The Sensory Profile (Dunn 1999) (this includes the School companion, the Adult/Adolescent checklist etc.)
- Clinical observations by a trained professional

* The main goal is to get an idea of the child's sensory needs and to assess the child's responses to sensory input.

too much light / sound may
cause ↑ problem

The Seven Senses

- Touch
- Taste
- Hear
- See
- Smell

- Proprioception
- Vestibular

The most comprehensive assessments include:

- Assessment of an individual across a variety of settings e.g. recess, lunchroom, school tasks, gym, community and home activities
- Observation of the child with different individuals (teachers, peers, parents)
- Examination of the student's performance under varied task demands i.e. independent activities, group work and unstructured activities
- Observation of the student at different times of the day
- Information from multiple respondents
- Assessment of the student in a variety of potentially stress invoking situations e.g. a change in routine, instructions with a high level of verbal content
- Consideration of the environment or assessment setting
- Talking to the student (if possible)

Sensory Sensitivities

- If a child is sensitive to sensory stimulation, then his body may go into an automatic nervous system response of "fight, flight or fright" when presented with the sensation.
- This can often result in a child looking like they have "behaviour difficulties" - they may become aggressive (fight), may run away (flight) or shut down and stop talking (fright).

noise sensitivities -
cause can be aggressive

Sensory seeking or under responsive

- These kids are in constant need of sensory experience in order to self-regulate.
- They may appear to be aggressive, rough or out of control. The child may unintentionally (because of poor body awareness) or intentionally (seeking more input) bump or crash into peers or objects.

What is a Sensory Diet?

- A planned and scheduled activity program that is designed to meet a child's specific sensory needs.
- Is a dynamic versus static intervention approach (a snapshot in time).
- When sensory needs are met, the nervous system feels properly organized and the child is able to attend, learn, play and interact.

A sensory diet can be used to:

- Calm an over-aroused or overly active child
- Increase the level of alertness or the activity level of an under-aroused or passive child
- Prevent sensory overload or uncomfortable reactions to sensory input
- Reduce sensory seeking self-stimulatory behavior
- Increase the child's productivity and comfort in the environment
- Reduce flight / fight / fright reactions
- Reduce / manage anxiety
- Reduce self-injurious behavior
- Teach self-regulation strategies

Calming Activities

Sensations that calm the nervous system:

- Slow, rhythmic movement
- Linear movement (back and forth)
- Continuous movement
- Deep pressure input
- Sweet tastes
- Vanilla, lavender scents

Alerting Activities

Sensations that alert the nervous system:

- Quick movement
- Start and stop movement
- Multi-directional movement
- Spinning
- Light or unexpected touch
- Extreme temperatures
- Sour, spicy or bitter flavours
- Strong lighting or changes in lighting
- Strong scents

Heavy/Muscle Work

- "Muscle work" is often the best sensory input to use as it works when we are running on high or low (think of stretching).
- Muscle work sends a message to our overstimulated brain that says "chill out, calm down...we are not in danger. We can relax and focus."
- Muscle work sends a message to the understimulated brain that says "be alert! Wake up! We need to get going and focus!"

* stretch

Heavy/Muscle Work

- Any activity that uses muscles – pushing, pulling, lifting/carrying heavy objects, deep pressure massage, etc.
- Being “squished” is another way to get deep pressure input – big hugs, heavy blankets, etc.
- Don't forget about the mouth muscles – drinking from a straw, chewing gum, eating crunchy/chewy foods

have regular muscle work throughout day

- medicine ball

- heavy blanket

- body sock

- for chewing -

A sensory diet can include:

- A Formal Schedule of Time Based Activities
- Activities Embedded into Daily Routines
- Environmental Adaptations / Accommodations
- Suggestions for Leisure Activities
- Interaction Strategies

*Think about the 7 senses when creating a sensory diet.

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An example of a sensory diet:

For this particular child, the goals of the sensory diet are:

- 1) To prevent sensory overload and prevent uncomfortable reactions to sensory input.
- 2) To improve the child's ability to play and interact with peers.

* Please refer to your Sensory Diet outline

Part One: A Formal Schedule of Events

Provide regular "Body Breaks" (every 30-45 minutes). Incorporate activities that are calming. These include:

- **Movement activities** that incorporate slow rhythmic, swinging, rocking, bouncing, rolling
 - e.g. rocking in a rocking chair, scooter board activities, lying prone, swinging on a playground swing
- **Heavy Muscle Work activities** that involve resistance or movement against gravity
 - e.g. push-pull games such as tug of war / push of war, seat or wall push ups, body stretches, weight lifting
- **Deep Touch-Pressure activities**
 - e.g. deep pressure massage on the back, feet, hands or arms area; activities that provide joint compression such as trampoline activities; and games such as *Steam Roller*, *Hot Dog* and *Chewing Gum*
- **Oral Motor activities** that involve sucking, pressure through the jaw and breath regulation
 - e.g. sucking on hard candies, drinking from a water bottle, blowing bubbles, breathing exercises and play with musical instruments

body break room
set-up at school

-do "chores" at school

Activities Embedded into Daily Routines

- Frequent natural movement breaks
 - e.g. removing chairs from desk chairs
- Snacks of crunchy and chewy foods
 - e.g. fruit, raw vegetables, and dried fruit.
- Play that involves heavy muscle work
 - e.g. playdough, drawing at the black board, pumping self on a swing, climbing
- Heavy muscle work gym, recess, and transition activities
 - e.g., have the children do different animal walks or jump to transition.

Suggestions for Leisure Activities

- Swimming
- Horseback riding
- Bicycle riding
- Martial arts
- Weight lifting

Interaction Strategies

- Provide firm touch when touching the child.
- Do not wear strong perfumes around a child who is sensitive to smells.
- Be aware of voice volume when talking to a child who is sensitive to noise.

Environmental Adaptations/Accommodations

- Have a rocking chair available in the room the child is most often in.
- Do not have the radio on if the child is sensitive to noise.
- Keep the area free of clutter for the child who has visual sensitivities.

Other Strategies often Implemented

- Collaborative Problem Solving
- Breathing strategies
- Mindfulness

Collaborative Problem Solving (CPS)

Promotes the understanding that challenging kids lack the skill, not the will, to behave well – specifically skills related to problem solving, flexibility and frustration tolerance. Unlike traditional models of discipline, the CPS approach avoids the use of power, control and motivational procedures and instead focuses on building helping relationships and teaching at-risk kids the skills they need to succeed.

www.thinkkids.org

Breathing Strategies

- Breathing slowly and mindfully activates the hypothalamus, connected to the pituitary gland in the brain, to send out neurohormones that inhibit stress-producing hormones and trigger a relaxation response in the body. The hypothalamus links the nervous system to the endocrine system, which secretes the hormones that regulate all activities throughout the body. (Livestrong.com)

One Breath Relaxation



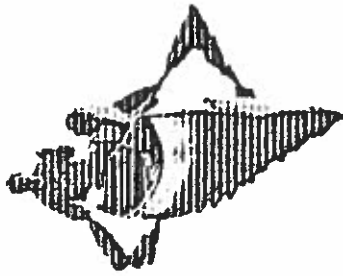
Breathing

- Lazy 8s breathing
- The six sides of breathing

Mindfulness

- See attached handout
- Group mindfulness activity

Questions?



Mapping Basket 'B' Worksheet

Adult B

Empathy
Problem
Definition
Invitation

Child B

Ask for help
Do it different
Share your
ideas

1a) I've noticed that.....What's up? (Empathy)



1b) Clarify Youth Concerns:

The thing is My concern is... (Problem Definition)



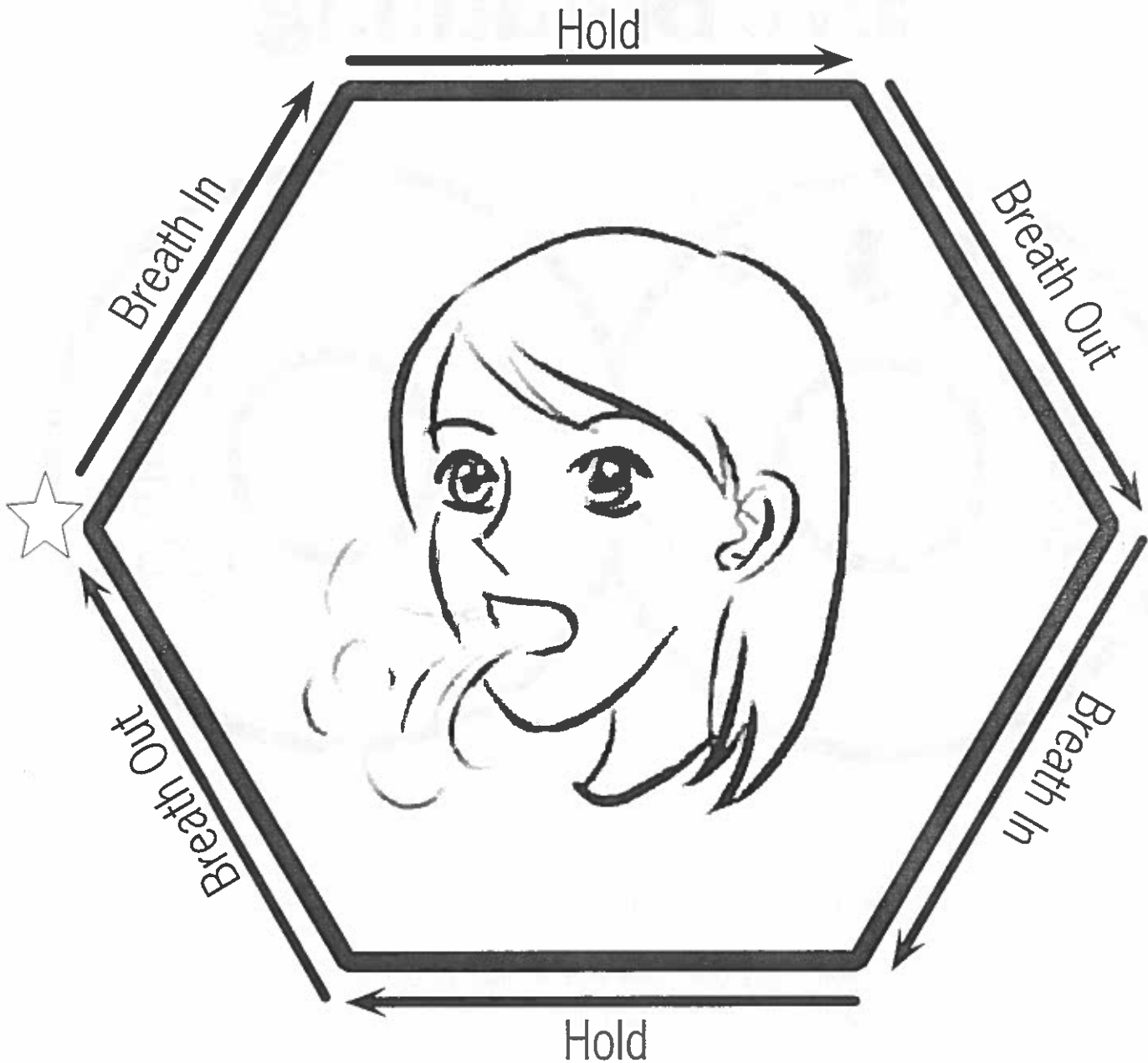
"Let's see if we can solve this problem together" (Invitation)

- 1.
- 2.
- 3.
- 4.
- 5.

AND THE WINNER IS:

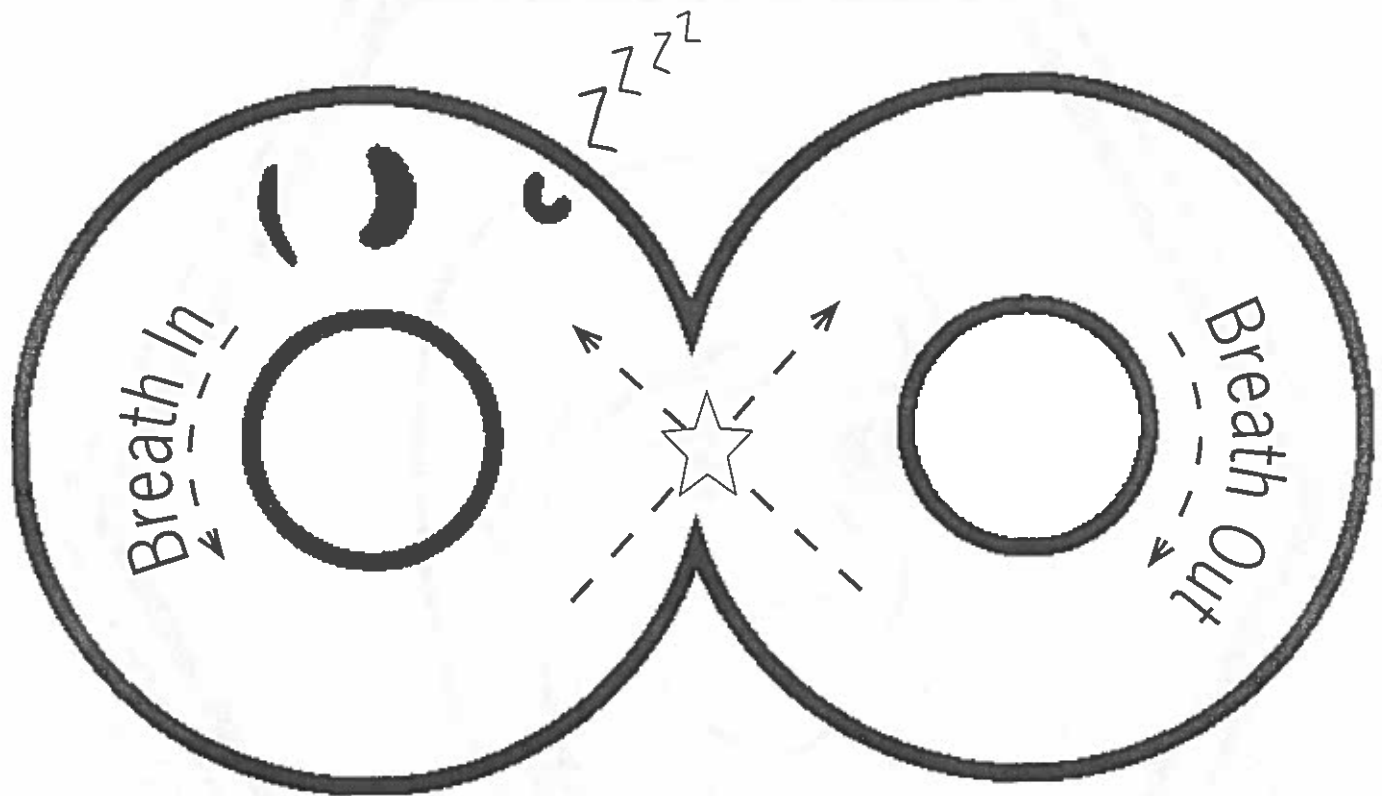
**** Remember: Winners are doable, realistic, and satisfy both of you!**

The Six Sides of **Breathing**



Starting at the yellow star trace with your finger the sides of the hexagon as you take a deep breath in, feeling your shoulders rise as the air fills you. Trace over the next side as you hold your breath for a moment. Slowly breathe out as you trace the third side of the hexagon. Continue tracing around the bottom three sides of the hexagon as you complete another deep breath. Continue The Six Sides of Breathing cycle until you feel calm and relaxed.

Lazy 8 Breathing



Trace the Lazy 8 with your finger starting at the star and taking a deep breath in.

As you cross over to the other side of the Lazy 8, slowly let your breath out.

Continue breathing around the Lazy 8 until you have a calm body and mind.



Lives IN THE Balance

Changing the conversation about behaviorally challenging kids
and with

Are you wondering why a canoe -- with an adult and child paddling together -- is the symbol of *Lives in the Balance*? Because it symbolizes adult-child collaboration. The CPS model has its roots in the treatment of kids with social, emotional, and behavioral challenges...in other words, kids who are in very treacherous waters already. When it comes to helping these kids move in the right direction, many adults have a tendency to take control of the canoe and paddle alone. The problem, of course, is that challenging kids aren't the type to sit idly by while the adult takes charge. They often respond to "control" strategies in ways that increase the likelihood that the canoe will tip. By contrast, CPS is a process by which adults and kids resolve problems together. When they approach problems collaboratively and work together toward solutions that are mutually satisfactory, things head in a positive direction. It's very hard work, but it's a lot better than the alternative.

Taken from; <http://www.livesinthebalance.org/>

