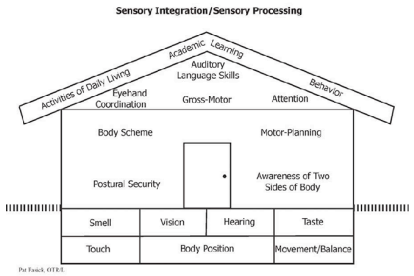
Hey ! My Brain Doesn't Work That Way !

or

Using the Body to Lead the Mind

Understanding Sensory Processing, Developing Self Regulation, Implementing Sensory Diet



Marc Landry
occupational therapist
marclandryot@gmail.com
www.marclandry.ca

Jan 26, 2017

space provided by:
Glenn & Charity Tait

HEY! My Brain Doesn't Work That Way!

What we covered last week:

Toxins & Our Species - Profits trump Health

Brain Differences – Neuroscience -Boy/girl differences - How basic neurology affects learning

Neuroplasticity - How it Works and How to Promote it

The Stress System - The Sensory Side of Stress

Using Sensory Strategies to Manage Stress

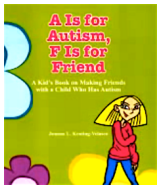
HEY! My Brain Doesn't Work That Way!

The Sensory Systems- How **Sensory Processing** Works, The importance of Modulation and Neurological Threshold

Self Regulation – How to Influence Level of Arousal, Teaching Self Regulation, Supporting it's AUTOMATIC nature.

Sensory Diet – Using Sensory Motor Strategies to prepare kids brains and bodies for learning

https://www.youtube.com/watch?v=D1G5ssZlVUw&index=82&list=WL



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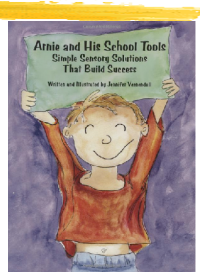


The Senses are important to learning !

EXTEROCEPTORS v Interoceptors

vibration

light period/rhythm

AUDITORY

burning freezing

pressure(cut)

proprioception

irritation(chem) pain

liquid antenna sensing systems

taste

tactile

the felt sense

oral input

itching

first "pain"

second "pain"

intuition

warmth

cold

nociception

VISUAL

chemoreception

electric field

vestibular

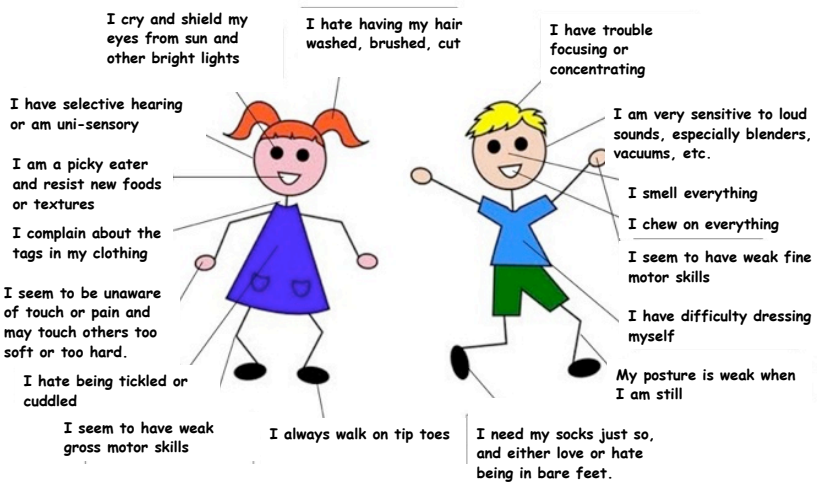
smell

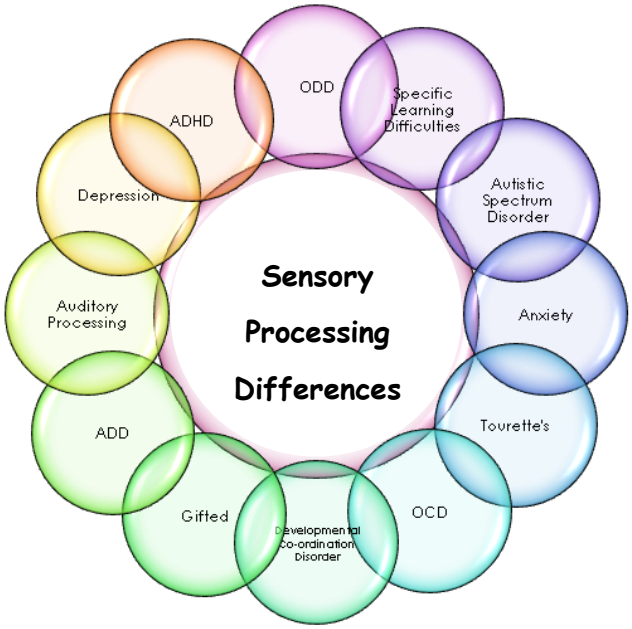
kinesthesia

magnetism

accessory olfactory system

Signs of Sensory Processing Differences:





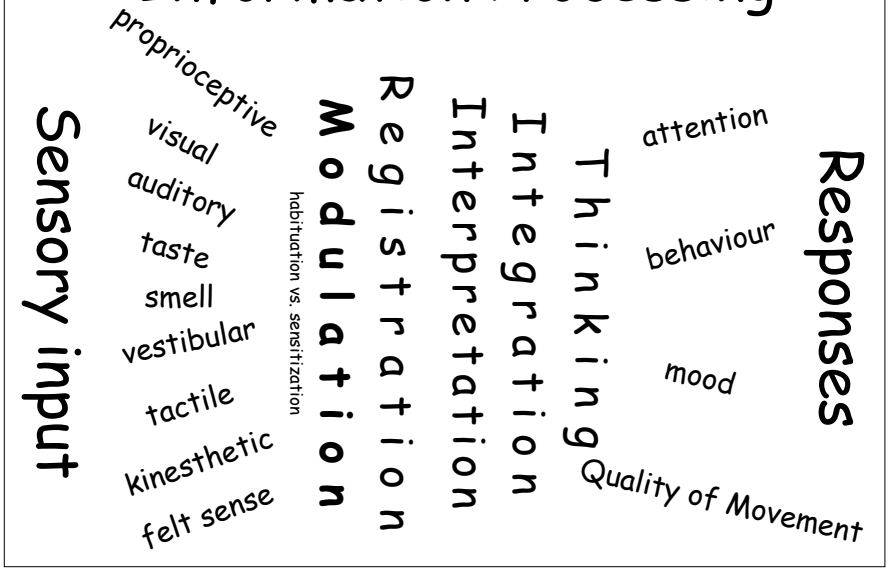
Additional Senses - These are really systems rather than organs. They are hidden, automatic, we are not aware of them and have little control over them.

The Vestibular System - Balance/Gravity

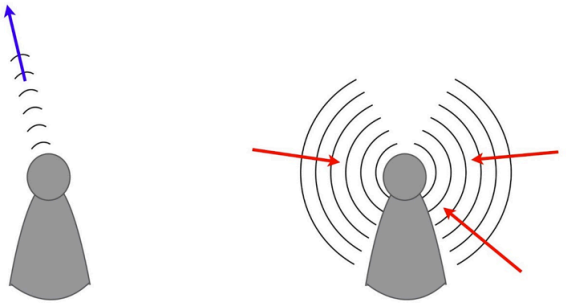
Processes information about movement and the position of the head in relation to gravity. This enables us to maintain our balance while still or in motion. Information is processed via the tiny fluid filled semicircular canals in the inner ear, as well as utricle and saccule via the medulla. Vestibular nucleii communicate with reticular activating system, limbic system, as well as cerebellum, motor areas, visual cortex. Vestibular processing anomalies are common in persons with autism. vestibulocochlear nerve carries mvmt/sound.

The Proprioceptive System - Pressure/Force/Position

Processes information about body position through the muscles and joints. Application of regular proprioceptive feedback to the muscles through firm, deep pressure and heavy work, is recommended for many people, because it has been shown to have an organizing effect on the central nervous systems.



Attention focuses Modulation
Modulation seeks to inhibit 'Involuntary Attention'

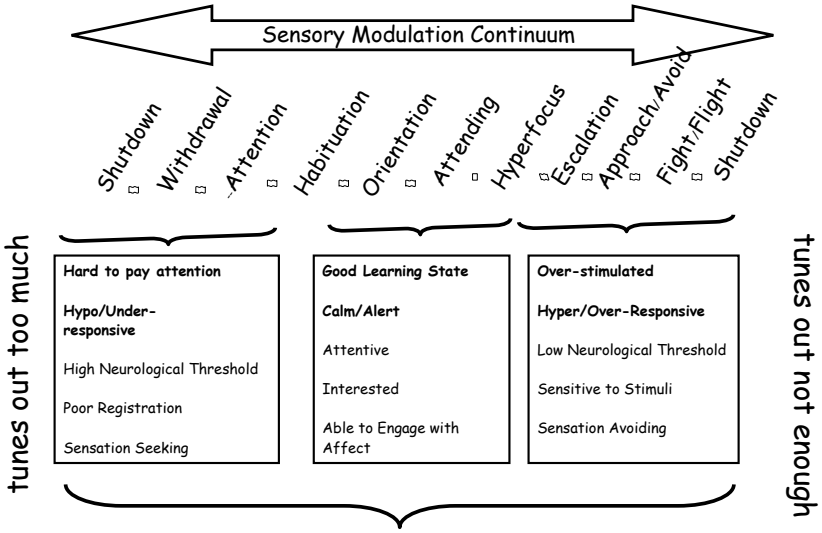


Goal-directed Attention
(curiosity, motivation, focus)

Stimulus-driven Attention
(reaction, fear, pop-up ads)

Focused Attention

Involuntary Attention



Full Range of Responses to Internal/External Sensory Input

Hypo-responsive Behaviors involve:

- A slow response to a sensory stimuli, requiring high intensity or increased duration of the stimulus to invoke an observed behavioral response.
- the person does not respond easily
- frequently you will see accompanying signs of low tone
- the child may appear disinterested or lethargic

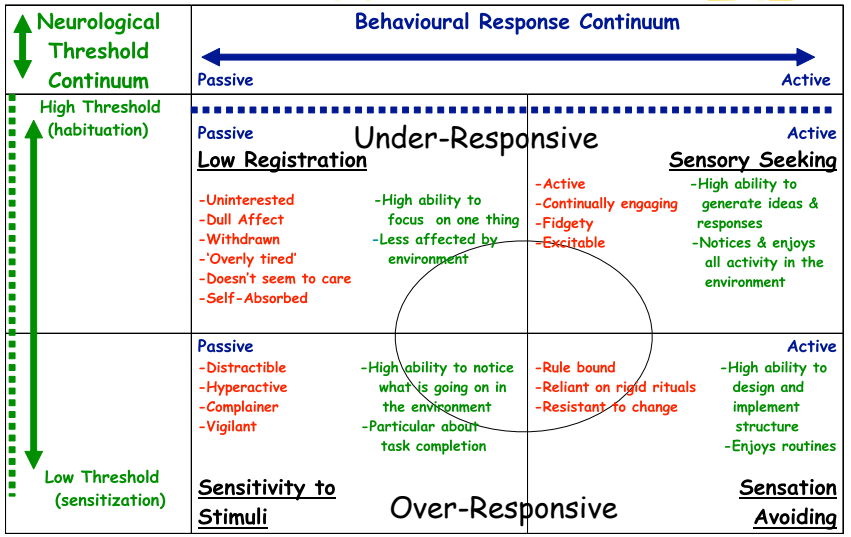
Hyper-responsive Behaviors involve:
A quick or intense response to a sensory stimulus that most other persons perceive as benign. This response results in "fight, flight, fright or freeze).

A sensory defensive response is an "emotional" or "visceral" reaction, mediated by the sympathetic nervous system and not under conscious control.

- Begins with a dump of adrenaline and stress hormones
- In more extreme cases the child may be aggressive in response to a gentle touch, or may cry excessively or withdraw when there is too much noise or activity around them.

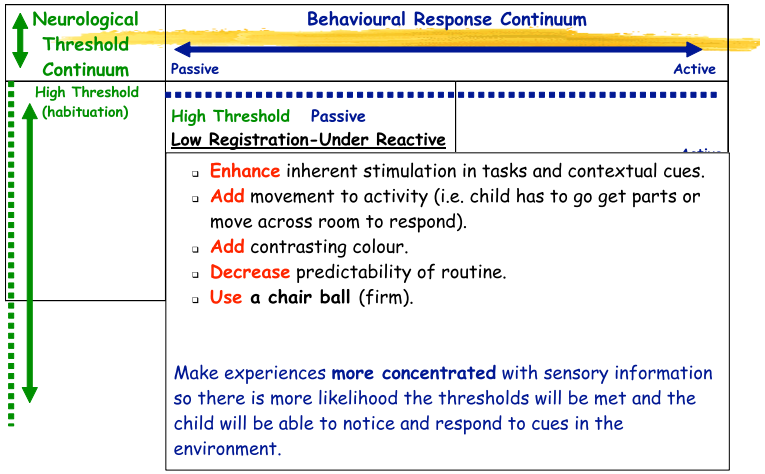
Sensory defensiveness is a descriptor of the aversive or defensive reactions that one may exhibit to sensory stimuli that is not usually considered noxious or overwhelming. The child may respond protectively even though he may consciously know that the stimulus is not a threat.

Relationships between Neurological Thresholds & Behavioural Responses

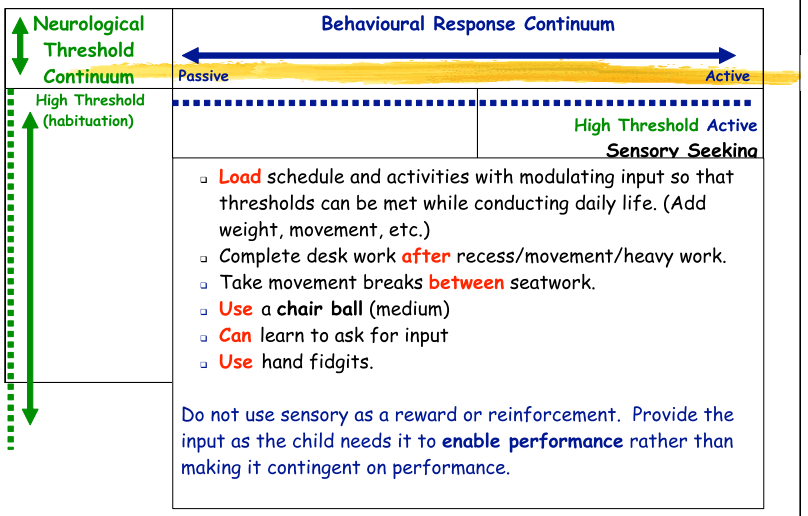


Model by Winnie Dunn PhD, OTR, FAOTA

Strategies and Ideas



Strategies and Ideas



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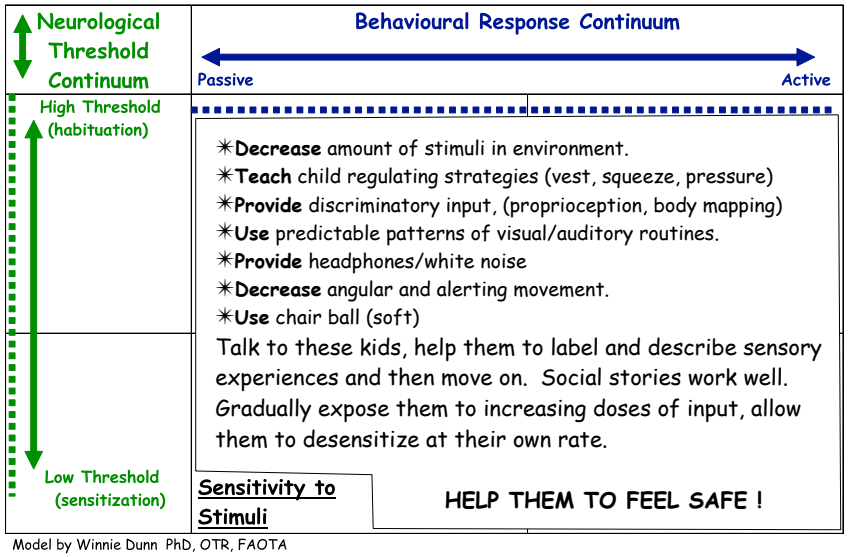

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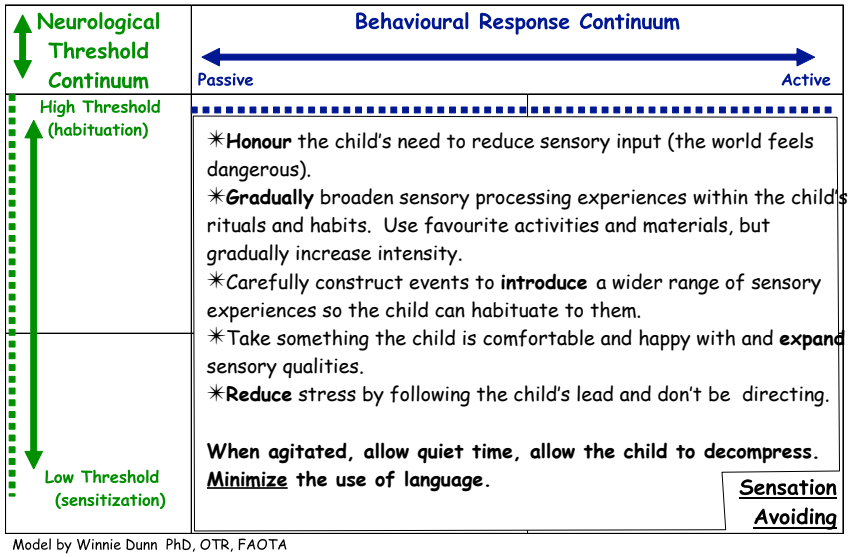
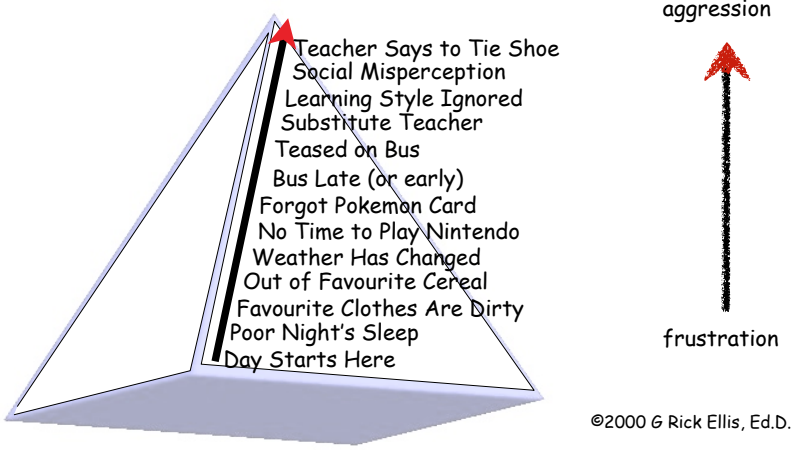
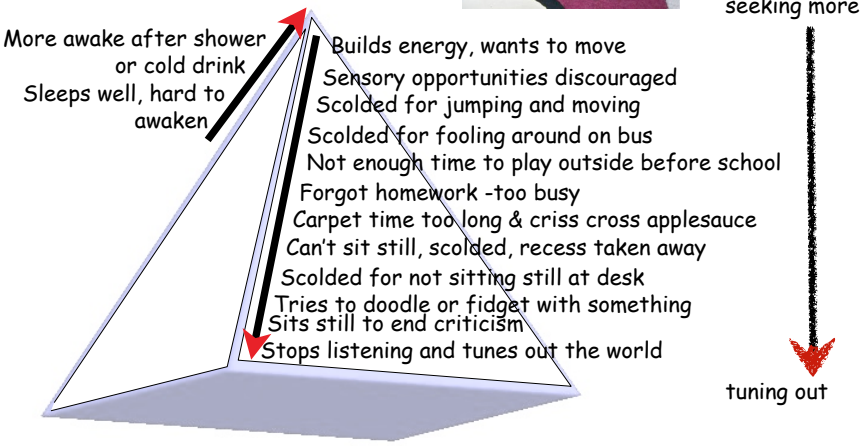


Model by Winnie Dunn PhD, OTR, FAOTA

A Day in the Life of a child with Sensory Sensitivities



A Day in the Life of a child with Low Registration



Oetter's Stages of Self Regulation

First order - self regulation is dependent on our senses, the autonomic nervous system, and our interconnections with the brainstem, the reticular formation, and the limbic system. The ANS functions to regulate temperature, tone, sleep/wake, monitor for survival, etc. When the brainstem is overly stimulated by sensory input, stress hormones are released, can lead to loss of cognitive control. Typically, no conscious control over this area. Automatic, except we can leave or alter the environment.

Second order - self regulation is reflected in sensorimotor strategies to achieve, maintain and change situation appropriate states. Sensorimotor input and feedback help organize states, ie. Foot tapping, rocking, fidgeting, doodling. **Using the body to lead the mind.**

Third order - emergence of higher level cognitive (cortical) skills. At this stage, problem solving abilities and the use of verbal and internal language for organization allow the individual to monitor, plan and evaluate regulatory strategies. "Just this much more and then I will treat myself to…" or "If I don't get it done, such and such will happen." **Using the mind to lead the body. This can also be called Emotional Regulation, as it is referred to in psychological and educational jargon.**

"Second Order" Self regulation = strategies a child uses:

to increase attention to a task,
to self calm and,
for impulse control.

During early development, the parent or caregiver provides sensory stimulation to the child. This sensory stimulation (touch, movement, visual and auditory) helps the child to develop control, to calm, to attend to salient stimuli and to organize his or her own body.

This then contributes to the child developing his or her own strategies to develop control, to calm, to attend to salient stimuli and to organize his or her own body.

This enables the child to develop internal regulation and to control his or her level of arousal and therefore voluntary behaviour as well.

Thus, self-regulation is the ability to achieve, monitor and change a state of arousal to match the demands of the environment or situation.

Input to midline structures give stability and comfort. Sensory rich – nose, mouth, genitals

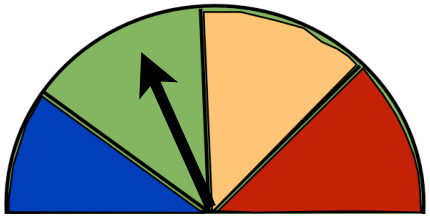
You can't self soothe through the mind, the body must be involved to change internal chemistry

What are Your Subconscious Regulatory Strategies?

- Chew gum
- sip water
- hard candy
- crunchies
- bite nails
- smoke
- popcorn
- coffee
- mints
- sweets
- rub tongue inside mouth
- chew on pencil/ straw
- Rock, spin on chair
- squirm/shift in chair
- roll head
- rock body
- run, jump
- tap objects or body parts
- stretch
- isometrics
- balance chair on 2 legs
- shake feet, etc.
- Twist hair
- fidget in pocket
- cool shower
- warm bath
- rub fingers or clothes on skin
- hands about mouth area
- play with ears, nails, necklace, sleeve, chin, pencil, pocket contents
- stare at movement (fire, fish, rain, clouds, sand and oil toys, spinning things, etc.)
- Avoid bright light
- listen to calm or lively music?
- Sing or talk to self
- gravitate toward rhythm
- avoid loud noises
- more intense reactions than others to unexpected sensory input around you.

"How Does Your Engine Run?" A Leader's Guide to The Alert Program™ for Self-Regulation

Mary Sue Williams
Sherry Shellenburger



The Zones of Regulation by Selosoft, Inc
zonesofregulation.com

TherapyWorks Inc.
www.alertprogram.com

Teaching Self Regulation (The Alert Program™)

Stage One: Identifying Engine Speeds
1. Child learns engine words or zone colours
2. Adults label their own engine levels
3. Child develops awareness of the feel of engine speeds, using adult's labels as guides
4. Child learns to identify and label levels for himself
5. Child labels levels for himself

Stage Two: Experimenting with Methods to Change Engine Speeds
6. Adults introduce sensory-motor methods to change engine levels
7. Adults identify sensory-motor preferences and sensory hypersensitivities
8. Child begins experimenting with choosing strategies

Stage Three: Regulating Engine Speeds
9. Child chooses strategies independently
10. Child uses strategies independently, outside of sessions
11. Child learns to change engine speeds when options are limited
12. Child continues receiving support.

I.E.P. Break

Stage One: Identifying Engine Speed

In the classroom, the student will correctly identify which of the 3 zones s/he is in, when asked, with a visual gauge, 80% of the time.

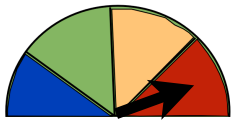
Stage Two: Experimenting with Methods to Change Engine Speeds

In the classroom, the student will correctly identify what zone s/he is in and engage in an activity which is regulating, during ¾ of scheduled observations.

Stage Three: Regulating Engine Speeds

In all settings, the student will request and engage in activities that allow him to get all classwork done during school, 75 % of the time.

Red Zone – How Does it Feel?



How does my head feel	How does my neck/shoulder feel?	How do my arms and hands feel?
How does my chest feel?	How does my stomach feel?	How do my legs feel?
How does my breathing feel?	What else do I feel?	What seems to be easiest to notice?

This is half of self regulation - noticing when I am leaving the green zone

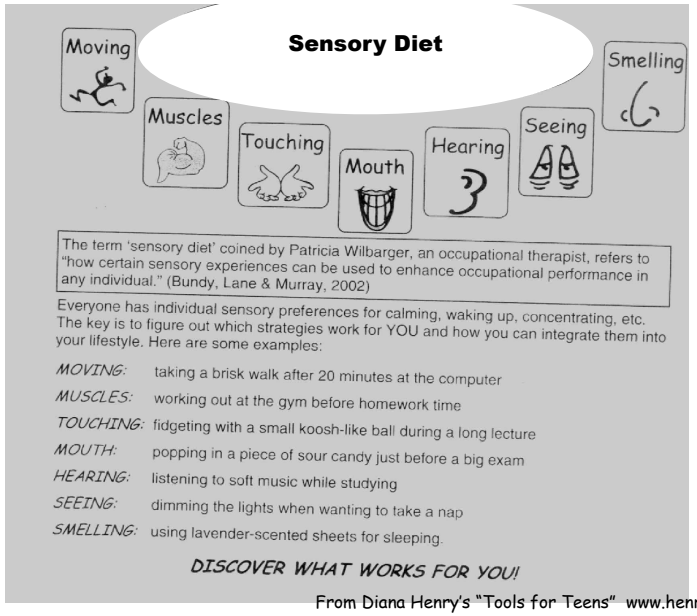
Sensory Diet

•A sensory diet is a balance of activity, exploration and sensation, unique to an individual, which meets the needs of that individual's sensory system and allows for calm-alert state and wide-brain activation.

•Its purpose is to help the person become more focused, adaptable, and skillful.

•Most people are able to seek and get tactile, proprioceptive, and vestibular input through their day, as needed, meeting their own sensory needs. That is, most people get their sensory diet met by choosing from the sensory buffet that is always around us in the sensory world.

•When an individual has not been able to do this, his/her sensory needs have not been fully met, and this makes it difficult to regulate one's own state of being and to be available for age appropriate learning and functioning.



From Diana Henry's "Tools for Teens" www.henryot.com

When I want to keep my engine running "Just right"

What Works?	What Bothers Me?
Mouth	Mouth
Move	Move
Touch	Touch
Look	Look
Listen	Listen
Smell	Smell
Pressure / Heavy Work	Pressure / Heavy Work

The other half of self regulation - what will help and what will not

Sensory Diet

Calming slow, rhythmical, pressure, warmth, sweet

Alerting fast, changing, cold, sour

Organizing deep, heavy, sustained, pulling, pushing

Calming activities help to decrease hyper-responsiveness to stimulation.

Deep pressure to head, trunk, shoulders, hands
Heavy work as in dragging and pushing or
Carrying a weighted backpack
Swinging slowly and rhythmically
Slow controlled rocking
Cuddling & backrubs with pressure
Mat sandwich or bean bag press
Heavy Work/Proprioception

Calming is slow, rhythmical, pressure, warmth, sweet

Self-Calming activities can be initiated by the child or done independently

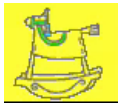
Specifically asking for or initiating any of the above Calming activities

Sucking on a frozen fruit bar or spoon of peanut butter

Rubbing hands together Using Palms to press on the sides of the head

Wrapping self in a rug or blanket Hugging self (around knees and trunk)

Learning to use a rocking chair and swing



Going to a quiet area and hugging a blanket or stuffed animal

Snuggling into a beanbag chair

Brushing hands, sitting on hands

Organizing activities help the child to attend and to regulate responses.

Examples include:
Pushing or pulling heavy loads
Hanging from the hands
Being upside down
Longer periods of jumping on a trampoline
Heavy chewing (gum, fruit roll up, licorice)

Organizing is deep, heavy, sustained, pulling, pushing

Alerting activities help the child to focus longer and be more alert.

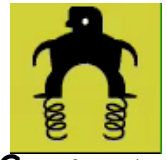
Examples include:

Bouncing on the therapy ball

Brief jumping on a trampoline

Crunchy chewing

cold/sour in the mouth



Alerting is fast, changing, cold, sour

Some Sensory Diet and Self Regulation Equipment

Sensory TOOLS for grounding and regulating

Can improve listening, thinking, language functions, focus.
These only work when kept to the self.
They provide the body with movement and touch input.
Older students can create their own inventories.

In Your Mouth !

Alerting Foods

cold, sour, tart, spicy, minty, crunchy

Calming Foods

warm, smooth, sweet

All Purpose Foods (deep pressure through jaw from chewing)

chewy and crunchy foods may belong in this category

Non Foods: water, gum, straws to suck, blow or chew, bubble toys

aquarium tubing is great for sucking, blowing, and chewing. You can also get plastic hose for water cooler or hospital use that is high quality.

See oral motor section at www.fdmt.ca online store

"Our Chewable Jewels (right) are made from FDA approved food grade silicone and are Phthalate, BPA, PVC, Latex and Lead free products!"

MOVEMENT!!!

Action Schools! BC

PARTICIPACTION Let's get moving.

- Small movement, big movement, now and then movement, constant movement

- Up & down, back and forth, side to side, round and round (orbital and centrifugal)

- Movement of mouth/hands/feet can happen/help when whole body movement is not an option. (mouth items, fidgets, exercise band)

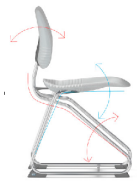
- Dynamic sitting provides movement input (chair ball, move'n'sit cushion, t-stool, kneeling).

- Increased gravity can decrease need for movement (weighted products, proprioception).

MOVEMENT!!!!

PantoMove
the best chair in the world!

The B1



PantoSwing

Andrew Lowes
VS America, Inc.

Canadian Sales Manager
P: 250-882-3686
F: 250-929-2230
E: a.lowes@vs-charlotte.com

www.contactVSamerica.com

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Dynamic Seating... Meet the new exercise ball!

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Standing Desk

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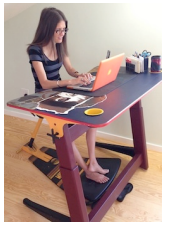
Conquer Portable Mini Exercise Bike

treadmill desk

Ask Eric McHaffie eric@jmclimited.ca

Move & Work



https://www.theinsidetrainer.com/office-exercise-equipment/

AUDITORY INPUTS

Sonic-Aid music can be purchased through iTunes or Avalon Music , and is ideal for playing in school or library. Sonic Aid sleep music also helps people to sleep better if they are sound sensitive.
www.bartelcameronassoc.com/sonic-aid-music.htm

Califone Hush Buddy Bear Earmuff Hearing Protector
from School Specialty
Different types of noise reducers can be found in the tool section at Home Depot and similar stores.

HoMedics fountain

HoMedics sound generator

chime used to prompt attention shift

iLs
www.integratedlistening.com/

Many large companies make pleasant background music for playing, working, and sleeping.
from iTunes Store

EASe
Electronic Auditory Stimulation effect
www.vision-audio.com/EASe1.html

VISUAL INPUTS

To help with visual attention:

http://tinyhousetalk.com/small-space-furniture-21-study-carrels/

calm down or sensory reduction zone

http://www.colorglasses.com

workspace for visually sensitive

Advanced LED lighting

Time Timer

http://www.youtube.com/watch?v=hjDWwq0Snlw

IEP Break

Providing appropriate sensory motor opportunities which promote learning is the responsibility of adults on the educational team. In a learning environment, this should be a team goal.

Requesting and using strategies well to enhance learning is a student-active goal, and an important Life Skill.

From Diana Henry's Tool Book www.henryot.com

SCHOOL RECESS

Survival Tools
#25
School Recess

BENEFITS

Recess is fun! On the playground you can experiment with different ways to move your body. And recess gives your muscles the nutrition your brain needs to help you concentrate for school work.

TO BEGIN

- Share with all staff members that:
  1. Recess is one of the most important sensory tools available in school.
  2. Playground equipment provides a *sensory diet* for students to help them perform at their best throughout the day.
  3. If students are deprived of recess they can become sensory starved.
- Provide children with free time on the playground.
- Giving children time to play actually helps their performance during quiet times in the classroom.

Heavy WORK

Involves Pressure/Force and provides a lot of calming sensory feedback from the body.

Also promotes core strength and stability, for increased strength and endurance.

We call these Heavy Jobs for kids who infer work as being negative.

Promote Heavy Work throughout the day, but direct a person to it:

When reaching overload

when s/he can't focus or be still,

when something challenging is coming,

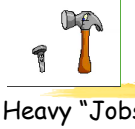
when s/he needs a break from something challenging,

when s/he needs to wind down a bit.

Before, during, and after using Collaborative & Proactive Solutions™ Ross Greene

Note what games and jobs work well for the person and when (in general).

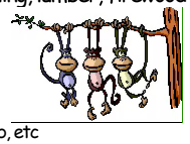
DO the DETECTIVE WORK! Take cues from what the person's body is telling you.



Heavy Work

Heavy "Jobs"

Haul groceries into the house and put things away. (include climbing and hands and knees)
Sweeping, mopping, wiping boards, desks, raking, mowing, beating a rug
Dragging hose, leaf bags, wheelbarrow, cart of balls or playground supplies
Pull linens off of the bed and drag down stairs. Move the sofa or classroom furniture
Carry laundry basket, carry pots or buckets of water, sand, dirt
Move books, office supplies, boxes of paper, trash cans, recycling, lumber, firewood
Chopping, sawing, hammering



Heavy Play

Dragging out the box of books, toys
Magic Carpet – Kids pull each other on a piece of rug or blanket
Walk like different animals (include plenty of 4 leg creatures, i.e. bear, crab, etc
Jump on a mini trampoline or rebounder
2 people sit face to face and rock to "row your boat" with rope or inner tube around them
Fall into a bean bag chair
Encourage hands and knees play with cars, animals (one hand plays, one hand holds you up)
Sidewalk chalk, playing in a wet sandbox
Tug of war, Pushing games, medicine ball
Swinging from rings, bars, jungle gym, hockey
Broad jump, jumping off of platforms and playscapes

Doing the Detective Work

When Reaching Overload:

1. Sensory Reduction
2. Heavy Work
3. Independent is better

For Homework and Focused Learning:

1. Observe, Observe, Observe…
2. Explore alternatives…different positions, places
3. Provide more movement opportunities
4. Provide more dynamic sitting or desk opportunities.

IF a person has difficulty sitting still:

1. Provide more movement and stimulation before the focused time.
2. Incorporate and end with Heavy Work, Proprioception, Pressure/Force.
3. During sitting, put something heavy in lap, dress warm or heavy (puts some to sleep). Do some pulling/pushing while seated and quiet.
4. Try dynamic or unstable sitting.

PEARSON

SENSORY PROFILE 2

PsychCorp a PEARSON brand

By Winnie Dunn www.sensoryprofile.com

- Caregiver version vs. School Companion
  Infant/Toddler/Child/Adolescent/Adult
- Sensory Processing **General Processing, Auditory, Visual, Touch, Movement, Body Position, Oral Sensory**
- Behaviours Associated with Sensory Processing
  Conduct, Social-Emotional Responses, Attentional Responses
- Sensory Temperament **Seeking, Avoiding, Sensitivity, Registration**
- School Factors **need for external supports, awareness and attention, sensory tolerance, availability for learning**

See www.marclandry.ca/Marcs_Sensory_Oasis/About_Me_Contact.html

First Hand Accounts of Autism

Grandin, T. (1995) *Thinking in Pictures and Other Reports from My Life With Autism.* New York: Doubleday Inc.

Hall, Kenneth (2001) *Asperger Syndrome, the Universe, and Everything* Jessica Kingsley Publishers London & New York

Jackson, Luke (2002) Freaks, Geeks, & Asperger Syndrome: A User Guide to Adolescence Jessica Kingsley Publishers London/New York

Kedar, Ido (2012) Ido in Autismland-Climbing out of Autism's Silent Prison

Robison, John Elder *Look Me in the Eye: My Life with Aspergers*

Williams D. (1992). *Nobody Nowhere.* New York: Times Books.

Williams, D. (1994). *Somebody Somewhere.* New York:-Times Books

Brain Links

zEaton-Arrowsmith School
z www.eatonarrowsmithschool.com
zQuantum Physics www.whatthebleep.com

zhttp://www.brainhighways.com

http://www.johnratey.com

http://www.youtube.com/watch?v=hBSVZdTQmDs

www.bokskids.org

www.nognz.com nognz brain fitness

Sensory Web sites

Henry's Occupational Therapy Services. **www.henryot.com**
Diana Henry lists her strategies for occupational therapists, teachers and parents.
Southpaw Inc. Sensory Integration Products www.southpawenterprises.com
www.incrediball.ca therapy balls, chair balls, etc
www.flaghouse.ca physical education and therapy supplies
Sensory Integration Resource Center, **http://www.sinetwork.org/**
Canada made quality Weighted vests and blankets www.innovaid.ca dianne@innovaid.ca
Weighted vests/pressure vests/sensory supplies www.fdmt.ca www.calmcomforts.com
www.avalonmusic.com www.brookstone.com Sonic-Aid music to affect brainwaves
www.reiinstitute.com/ rhythmic entrainment institute

See Lots more links and resources on my website

Sensory Bibliography/Resources

Building Bridges through Sensory Integration -

Occupational Therapy for Children with Autism and other Pervasive Developmental Disorders
© 2002 Ellen Yak, Shirley Sutton, Paula Aquilla Future Horizons Inc. Arlington Texas

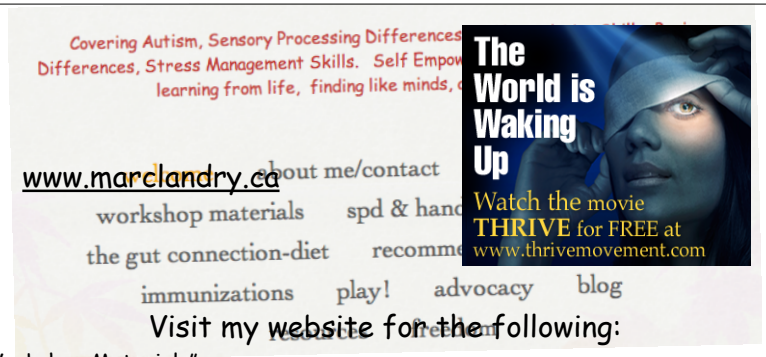
How does your Engine Run? The Alert Program for Self-Regulation.
(M.Williams, & S. Shellenberger, Therapy Works, 1994)
Take Five! Staying Alert at Home and School
(M.Williams, & S. Shellenberger, Therapy Works, 2001)

Making it Easy: Sensorimotor Activities at Home and School
(M. Haldy & L Haack, Therapy Skills Builders, 1995)

Sensational Kids : Hope and Help for Children with Sensory Processing Disorder (SPD)
(©2006 Lucy Jane Miller)

The Out of Sync Child: Recognizing and Coping with Sensory Integration Dysfunction
(Carol Kranowitz, Skylight Press Book, 2005)

The Out of Synch Child Has Fun
(Activities for Kids with Sensory Integration Dysfunction © 2003 Carol Stock Kranowitz)



Visit my website for the following:

"Workshop Materials"
- Recommended Reading and Links
- Relaxation Book & Social Stories
- "What Works" "Red Zone" and "Safe Place" forms
- Teaching Self Regulation Handout

The Scarfe Papers ("Play")
Advocacy Support
Resources
Information about my private practice ("About Me")

Self Regulation gauges
Fine Motor Planner

My Newsletters