CONSCIOUS CARE & SUPPORT

CCS

Week Five

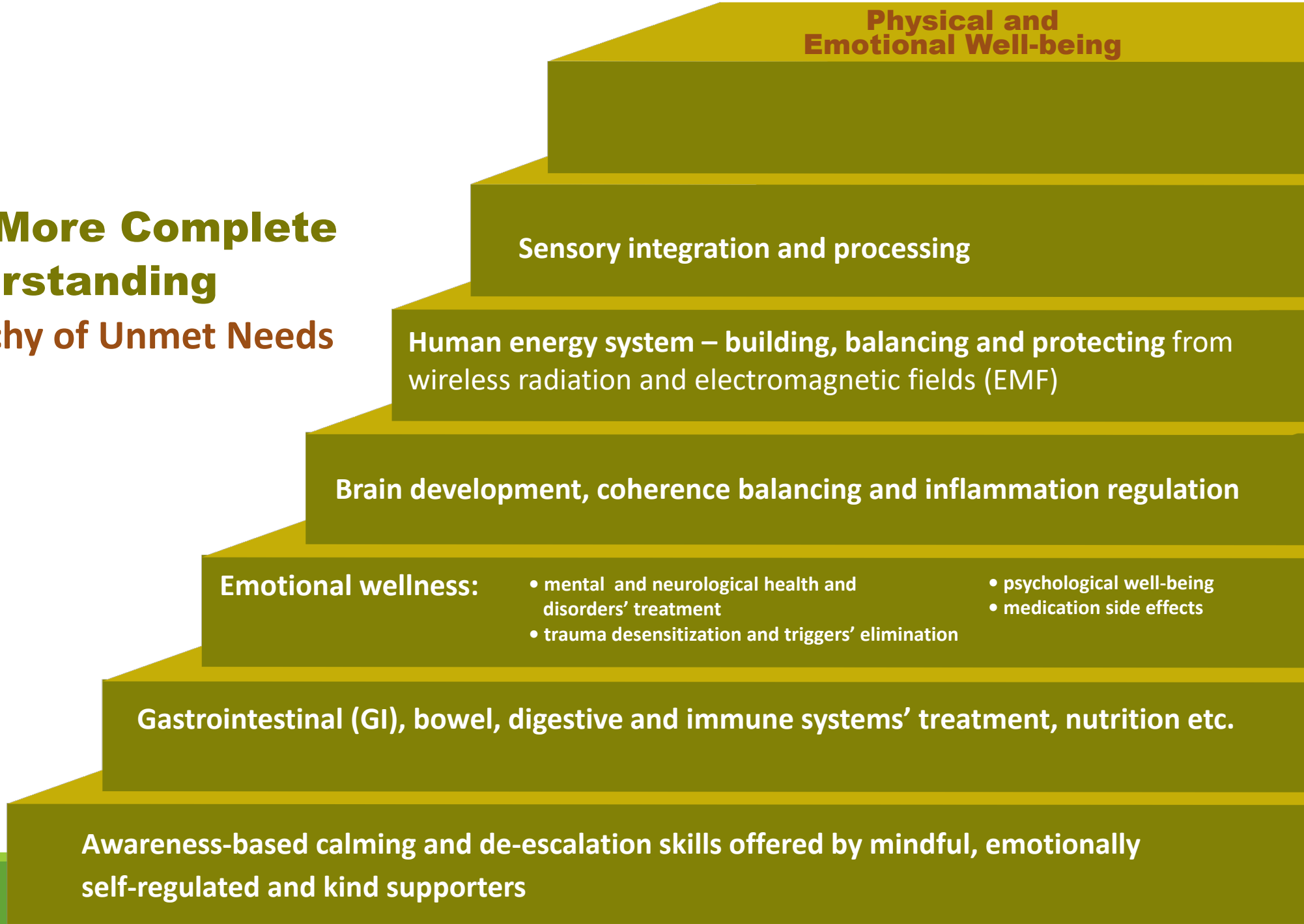
Sensory Integration and Processing

A CENTRE FOR CONSCIOUS CARE

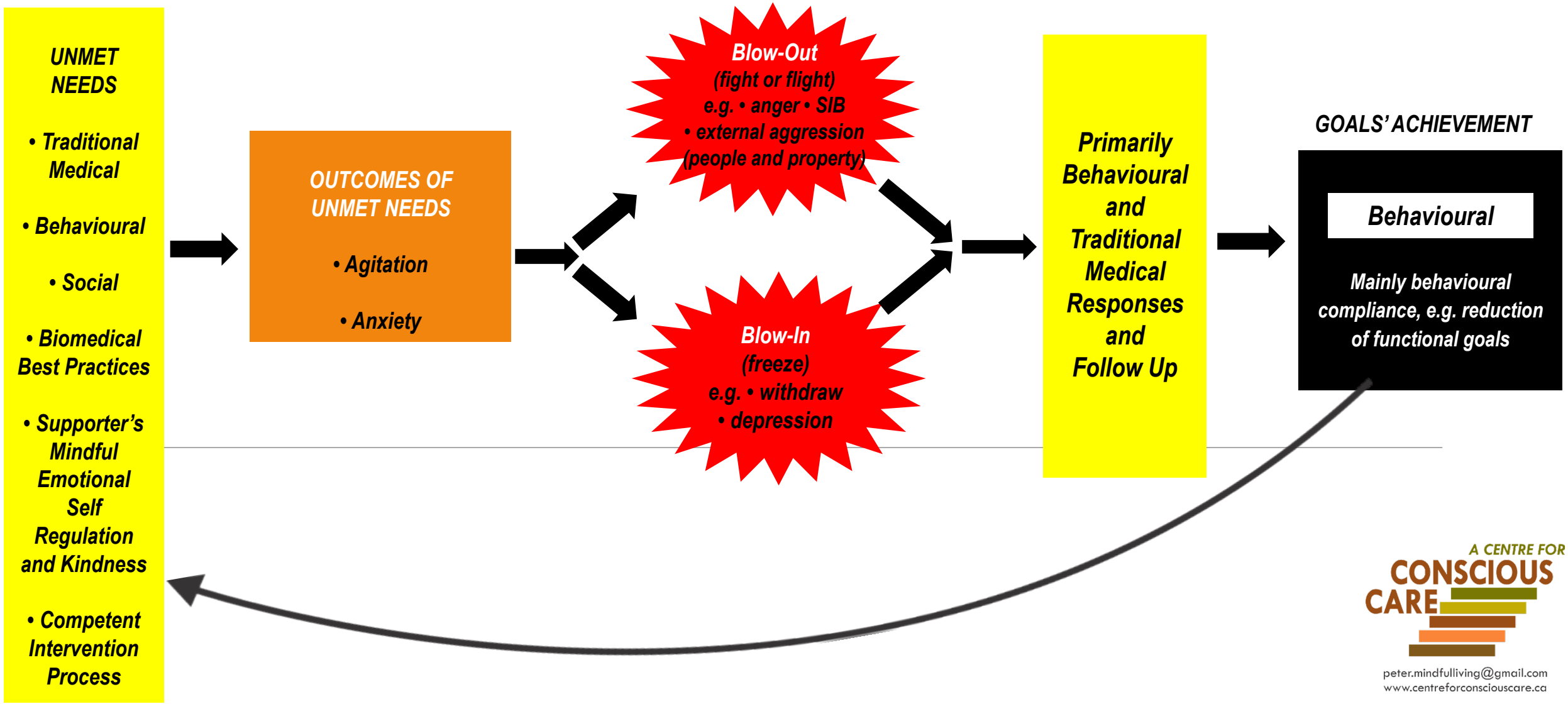
COMMUNITY LIVING Prince Edward

Toward A More Complete Understanding

of the Hierarchy of Unmet Needs



The Recurring Cycles of Behaviour to Calm to Behaviour



A CENTRE FOR CONSCIOUS CARE
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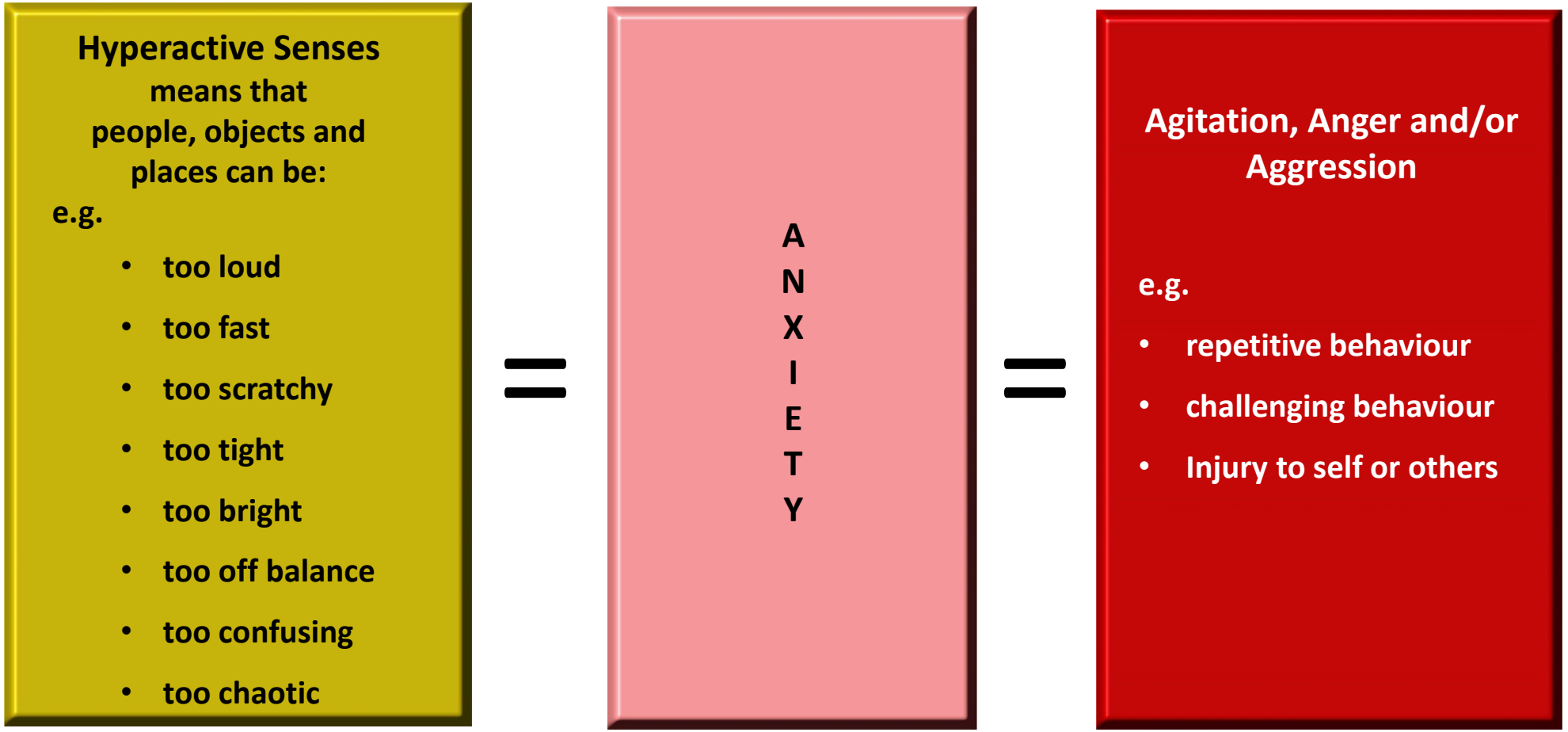
MAKING SENSE OF THE SENSES

- Everyone's 'reality'/life experience comes through 8 senses
- Our sense doors are:
  - Taste
  - Smell
  - Hearing (Auditory)
  - Seeing (Visual)
  - Touching (Tactile)
  - Balancing (Vestibular)
  - Body Awareness (Proprioception)
  - Interoception (sensing pain or too hot/cold)

Hyper vs. Hypo Sensitivities

Hyperactive Senses Lead to Challenging Behaviours



Hypoactive Senses Lead to Challenging Behaviours

Hypoactive Senses
means that people, objects and places can be:

e.g.

- **too quiet**
- **too slow**
- **too dark**
- **too loose**
- **too tickly**
- **too confusing**
- **too chaotic**

=

ANXIETY

=

Agitation, Anger and/or Aggression

e.g.

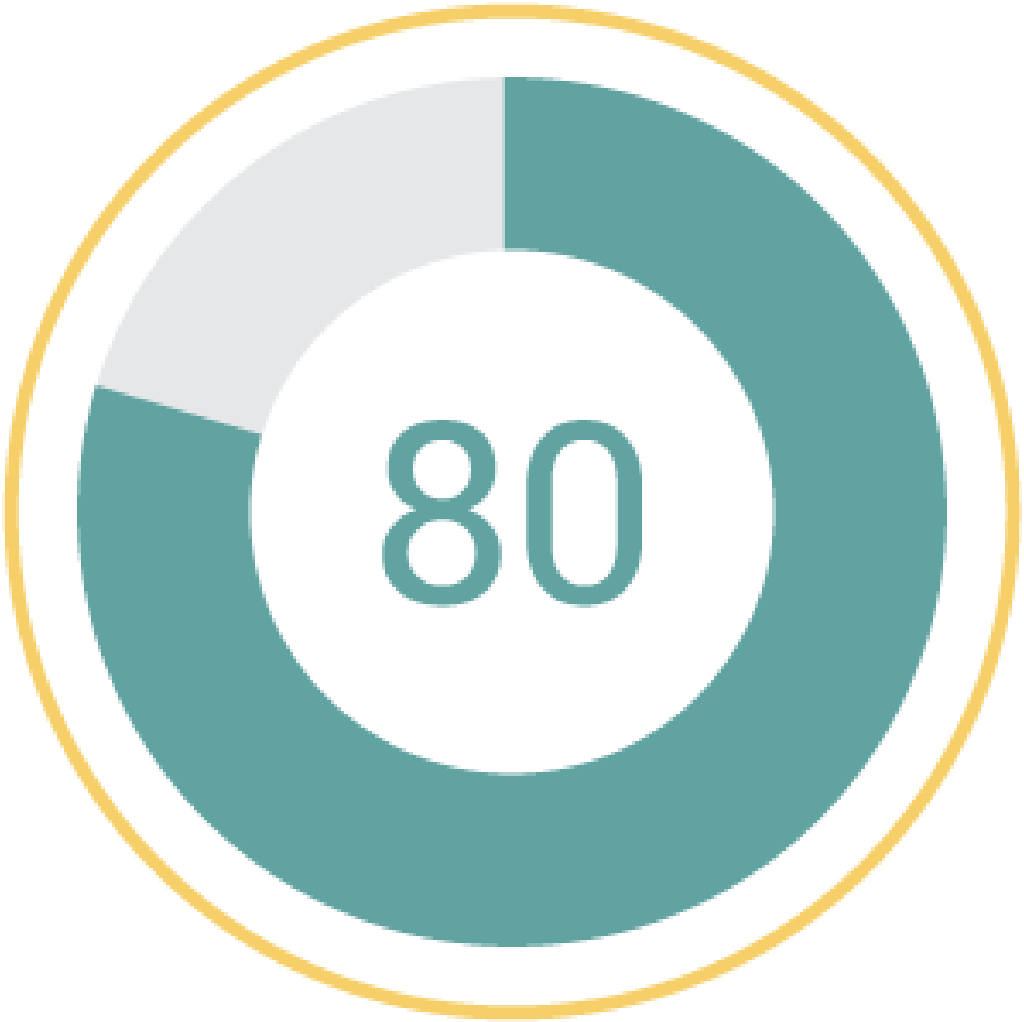
- **low energy**
- **low motivation**
- **quiet/withdrawn**

Eventually **-**

- **repetitive behaviour**
- **challenging behaviour**
- **Injury to self or others**

Prevalence of Sensory Problems

- People with autism and other developmental disabilities are at a much higher risk of having sensory integration problems



Prevalence of Sensory Problems (cont'd)

- A high percentage of challenging behaviours such as aggression or self-harm are caused by sensory problems (reference Aggression to Calming).

  A high percentage of these challenging behaviours can be prevented and deescalated with sensory interventions to improve sensory processing (in the moment) and sensory integration.

Prevalence of Sensory Problems (cont'd)

- **Startle Response**
  A majority of people with developmental disabilities **startle much more readily** due in part to hyperactive hearing (the inner ear does not form properly). They also startle for up to 1 hour versus 5-10 seconds for neurotypical individuals.

- **Senses must all be working together** i.e. be integrated. If they are not, several of the person's senses can react to over stimulation e.g. a startle often makes light seem 5 times brighter and noises 5 times louder.

Prevalence of Sensory Problems (cont'd)

- **A person's preferred stimulating activities are often clues** leading to what need they are trying to meet and how best to meet that need. Encourage safe self-stimulation and add a well-balanced, prescribed (by Occupational Therapist if possible) daily sensory diet.

- **Occupational Therapists** who are trained and certified in Sensory Integration methods are the best qualified to assess and plan interventions and daily sensory diets.

- The following are examples of typical sensory processes that are more often problematic for people with developmental disabilities.

Proprioception

Vestibular

Tactile

Balanced Gastrointestinal (GI) **is required for….**

Balanced Neurotransmitters **which are required for….**

Balanced Sensory Integration & Processing

Audio Sensory Processing Problems

Inner Ear Problems

People with developmental disabilities or autism often cannot tune into human speech because they cannot use their Middle Ear Muscles to dampen the lower sound frequencies as others can.

- Because lower frequencies are at full volume, they mask higher frequencies
- Lower frequencies trigger Fight/Flight brain responses
- Autopsies often find cerebellum inflammation which has close links to the vestibular inner ear system (ref. John Hopkins, 2005)
- Sound Therapy is often an effective treatment (RE: The Listening Centre in Toronto, ON)

Sensory Processing and Integration Summary

1. Any sense can be over or under stimulated.

2. Observe to see what repetitive activities people prefer and their possible symptoms of sensory dysfunction.

3. The need for patterns/order, organization and consistency/predictability is to keep senses working properly.

4. Nutrition is critical.

5. Consult a qualified Occupational Therapist for assessments and treatments.

Proprioception Regulating Exercises

- Vibration is highly stimulating to our proprioception sense e.g. massage chair
- Weighted/compression clothing and blankets are self calming to this sense
- Practice measured strengthening exercises to learn to use right level of force
- Squeeze machine
- Regular doses of touch from massage, brushing, handholding is excellent
- Pushing and pulling
- Carrying heavy objects
- Weight resistance and pressure work-outs
- Jumping on the trampoline
- Throwing or catching a heavy ball or beanbag
- Rolling up tightly in a blanket
- Two people laying on backs playing bicycle together
- Digging in heavy sand
- Sucking on a water bottle

Vestibular Regulating Exercises

- Through planned and controlled sensory stimuli with adaptive responses, levels of organization in the brain are enhanced. New neuron cells are grown.
- Jumping, hopping, bouncing (on a mini trampoline or stabilization ball), catching, throwing, skipping and pogo stick.
- Swinging, rotating and hammocking in all directions also improves inner ear functioning.
- Balance beam (1”x 6” x 8’ boards in pattern). Walk toe to heel.
- Balance on boat bumpers.
- Boat in the ocean exercise.
- Vaulting – sudden jolts are very helpful.
- Standing and balancing on elliptical cushion while catching balls.
- Wii and Xbox balancing exercises.
- Sit on air cushion.
  Weight shifting stimulates balance and improves inner ear and motor behaviour functioning. This reduces movement fear and anxiety that often leads to agitation, anger or aggression.
- To be most effective, activities must be done frequently and consistently.

Tactile Regulating Exercises

To Stimulate:

- Chewing appliances
- Walking on a variety of textures in bare feet
- Gripping appliances to stimulate 'feel'
- Colourful clothing, pictures etc.
- Hand stimulation with many different textures -
  e.g. - from sand to water,
  - to rough to smooth,
  - to hot to cold

To Calm:

- Avoid people who get too close
- User friendly clothing – not too tight or too scratchy
- 'Snoezelen type' environments, slow moving soft light, soft textures and colours, soft music/'bubble tubes'
- Ear plugs/head phones
- Soft food textures e.g. minced or puréed or smoothies