

Understanding Sensory Processing: An Update/Updating Our Understanding of Sensory Processing

Some concepts and terms have been brought to Winnie's attention as needing updating and clarification.

These concepts help us understand sensory processing better.

Please continue to provide feedback. It is only through dialogue between professionals that understanding improves. We cover 5 topics in this communication:

1. Using the terms *underresponsive* and *overresponsive*
2. Understanding the notion of *more than others* and *less than others*
3. Using the *more* and *less* ratings with the sensory system scores
4. Thinking about the Quadrant scores
5. Problem-solving: a possible strategy

Using the Terms *Underresponsive* and *Overresponsive*

In the *Infant/Toddler Sensory Profile* Manual, we use the words *underresponsive* and *overresponsive* to describe the two ends of the neurological threshold continuum (i.e., less than and more than others).

However, this has resulted in some confusion, with therapists mistakenly equating *underresponsive* with *less than others* and *overresponsive* with *more than others*.

This was the best understanding we had at the time; now that we have been using the materials some things have become clearer. We should probably reserve our use of the words *underresponsive* and *overresponsive* for times when we are discussing general responses (e.g., Timmy is generally underresponsive to his environment):

Underresponsive is **not** equivalent to *less than others*

Overresponsive is **not** equivalent to *more than others*

This is particularly relevant when looking at the sensory section scores, because the sensory sections are a combination of items from all the quadrants.

Understanding the Notion of *More Than Others* and *Less Than Others*

The I/TSP concepts of *more than others* and *less than others* are new to all of us. We changed the scoring patterns to reflect *more* and *less* as a way to move from thinking of sensory processing as a problem to thinking of it as a reflection of a person's way of responding. This change opens the door for us to talk and think about sensory processing as a general concept that explains all human experience, rather than limiting our thinking of sensory processing as a problem (i.e., as a disability or disorder).

Clearly, the ideas haven't evolved to complete clarity as yet. That's OK...disciplines only evolve as all the members continue to think about the ideas. For the *Infant/Toddler Sensory Profile*, and if you use the expanded cut scores for the original *Sensory Profile* on the website:

More than others simply means that the person does the behaviors listed in that grouping (sections or quadrant groupings) more than typical peers.

Less than others simply means that the person does the behaviors listed in that grouping (sections or quadrant groupings) less than typical peers.

Remember: The middle section represents the "fat" part of the Bell Curve (-1SD to +1SD) or about 68% of the population, so the *more than others* and *less than others* directions represent the people outside that majority. Somewhat more/somewhat less represents the 1–2 standard deviation section or about 14% on either side of the middle section. A lot more/a lot less represents more than 2 SDs or about 1–2% on each end (see page 40 in the I/TSP for a graphic representation of the Bell Curve).

Using the *More* and *Less* Ratings With the Sensory System Scores

In the *Infant/Toddler Sensory Profile*, and on the *Sensory Profile* website, when a child has a *more than others* score in a sensory section, this means that according to the combined responses to that group of items, the child engages in these behaviors more than peers do. It is then up to you to link this information to the participation challenge the parents have raised.

In our studies with children with disabilities, test results usually end up on the *more than others* side of the continuum. Yet we need to be open to the possibilities of other patterns, and be willing to think through how the *less than others* pattern might be affecting a child's participation.

The most accurate way to describe the sensory system scores is by simply using the words *more than* and *less than* others. Remember, the sensory scores are a combination of seeking, avoiding, registration, and sensitivity items, and thus cannot be *underresponsive* or *overresponsive* in their summary scores.

You can look at individual items in a section (e.g., auditory processing), and see which specific behaviors the child exhibits. The icons next to each item cue you regarding the quadrant the item represents. Many times you will see that the responses reflect a particular pattern (e.g., sensitivity and avoiding items are more frequent than other items in the auditory section, suggesting a low threshold issue with sounds).

If the idea of looking at the items in a section is overwhelming, use the quadrant scores, your skilled observations, and interview information about the child's participation issues. It is OK to limit the scope of consideration—your job is to use the available data to inform your analysis of the person's participation.

Thinking About the Quadrant Scores

It is important to remember that every person engages in behaviors in each quadrant; they are separate but related concepts. For example, Seeking has its own continuum, and is not one end of a continuum with Avoiding or Low Registration at the other end. A person can seek more than others, seek the same as others, or seek less than others; a person can avoid more than others, avoid the same as others, or 'avoid less than others.

Perhaps it would be helpful to think about each continuum, as a continuum: at one end of the continuum the person may be impoverished in the characteristic, in the middle more adaptable, and at the other end of the continuum, dominated by the characteristic. See the table for a more thorough explanation.

Key Concepts for Intervention Planning

Using a sensory processing approach (fall 2003 version)

Quadrants	More than others scores in the quadrant (i.e., always—lower numerical scores)		Less than others scores in the quadrant (i.e., never—higher numerical scores)	
	Key characteristic	Intervention focus (provide within participation)	Key characteristic	Intervention focus (provide within participation)
Low Registration	Notices less	Provide more intensity	Notices more	Provide more familiarity
Sensation Seeking	Seeks and enjoys input	Provide more opportunities	Does not seek input	Provide variety
Sensory Sensitivity	More detection	Provide more structured input	Less detection	Increase awareness
Sensation Avoiding	Bothered by input	Make less input available	Less likely to withdraw	Provide organized input

Note. These ideas are the result of thinking, research, and practice **and** will help us generate better ideas from our thinking, research, and practice.

Problem-Solving: A Possible Strategy

1. Identify what the family needs and wants the child to do.
2. Conduct skilled observations and interviews to get an idea about what might be supporting and interfering with the participation issue raised in step 1.
3. If you think that sensory processing might be a contributing factor to the story, administer a standardized measure (such as the *Infant/Toddler Sensory Profile*) to provide this validation and give you additional information for interpreting the child’s situation.

Consider the Quadrant Scores first: what overall pattern of sensory processing does this child exhibit? How do you think this pattern might be contributing to or interfering with the participation issue raised in step 1?

Use these overall concepts to talk to the parents about how sensory processing might help all of you understand the child’s behaviors better.

Link the quadrant data to actual behaviors you observed, or stories the parent told you; this helps the parent understand the sensory processing concepts as they occur in the child’s life (e.g., “When you said that Rose is a light sleeper, that is consistent with this Sensitivity score, which indicates that Rose is more likely to notice things than other children”).

Also, consider what the child’s resources might be (e.g., when a child engages in an avoiding pattern, this also represents an adaptive behavior. The child understands at some level that a situation is likely to be overwhelming and is trying to protect her- or himself from or manage a potential negative outcome.). Even things that need to change can be explained through their function as well. This helps the parent get an overall perspective about the meaning of the behaviors.

Think about what sensory systems are most important to the child's story. It is not likely that a child with Sensory Sensitivity will be sensitive to all sensory inputs. Which ones are contributing to this child's challenges? Are there sensory systems that are helpful to the child's participation? The sensory scores merely give you a general idea about how that sensory system is functioning. Patterns of individual items within a sensory section can inform you about what kind of sensory processing seems to predominate (which is why we put the icons next to each item for you).

4. Remember: The families and teachers want to know your insights and wisdom...your interpretation of the information. Spend less time explaining individual items and scores (those discussions are for your internal and collegial dialogue to understand better as a therapist), and more time linking your hypotheses to the child's everyday life challenges.