Getting to Know You: An Individual Difference Approach Beginning with Sensory Assessment

Ontario Ministry of Children and Youth Services

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Today’s Learning Objectives

- To understand the individual differences approach.
- To understand sensory development.
- To be able to implement basic tools of functional sensory assessment.
- To identify and be able to implement strategies to support functional sensory development.
T. Berry Brazelton, 1993

It is in the first weeks and months of life that children first try to understand and master their environment; and find their efforts encouraged – or not;

First attempt to concentrate and find it possible – or not.
First conclude the world is orderly and predictable – or not.

First learn that others are basically caring – or not; It is in these years that the foundations for later learning are laid down – or not
Common Language

- **Visual Impairment** (umbrella term)
- **Legally Blind** (20/200 or 6/30, 20°, medical / eligibility determination)
- **Blind** (without any sight)
- **Functionally Blind** (vision as a secondary channel)
- **Low Vision** (vision is primary modality, but affected)

- **Visual Problem** (potentially treatable vision concern, but that will require medical referral and perhaps some educational support)
Developmental Difference / Adaptive Task Approach

Questions to Ponder

- How does the child, given his/her capabilities, engage the environment?

- How does the environment afford meaningful and purposeful interactions?

- What, given these features, is the resulting learning behaviours observed?
Setting the Stage

“To observe, infer or interpret the behaviours of a sightless person demands not an understanding derived from sighted experiences, but a radically different conceptual framework.”

“To proceed with a child who is blind in the same manner as a child who is sighted is both unjust and unfair.”

(Nesker Simmons & Davidson, 1991)
“The opportunity to be equal, and the right to be different.”

(Hatlen)
Understanding the Child: Personal Variables

- Family Constellation / Birth Order
- Family Support Systems
- Temperament
- Age of Onset and Severity of VI
- Presence of Other Conditions / Disabilities
- Unique Developmental Path
Understanding the Child: Environmental Variables

- Opportunities to experience daily events to access the:
  - physical world
  - social/emotional world
  - learning setting
Temperament is Part of the Equation

Temperament refers to the infant’s behavioral style or disposition (Thomas and Chess, 1977)

“Goodness of fit” is key to the caregiver infant relationship.

Temperament and caregiver responsiveness contribute to the mental / emotional development of infants
Dimensions of Temperament

1. **Activity Level**: inactive versus active motor behavior.

2. **Rhythmicity**: regularity of schedule, predictability versus unpredictability of behavior.

3. **Approach or Withdrawal**: typical initial response to new stimulus
Dimensions of Temperament

4. **Adaptability**: response to change in routine.

5. **Sensory Threshold**: level of stimulation needed to evoke a response.

4. **Intensity of Response**: energy level of response.
Dimensions of Temperament

7. **Quality of Mood**: degree of pleasant, happy, and friendly behavior versus unpleasant, unhappy, and unfriendly.

8. **Distractibility**: the extent to which extraneous stimuli interfere with or change ongoing behavior.

9. **Persistence and Attention Span**: length of time an activity is pursued and the continuation of an activity in the face of interruptions or obstacles.
Flexible, Fearful, or Feisty

The Different Temperaments of Infants and Toddlers

CA Dept. of Education
P. O. Box 944272
Sacramento, CA 04244
Flexible – about 40% of children

- Regular Rhythms
- Positive Mood
- Quick to Adapts
- Low Intensity
- Low Sensitivity

Need special attention so they do not get lost in the group. May not be as obvious with needs. Want to “check in” with this child, as he or she may not be overly overt with needs.
Feisty or Fussing – 10% of children

- Active
- Intense
- Distractible
- Sensitive
- Irregular
- Moody

Children are intense – fun and frustrating. Can use redirection of attention. Helpful to be flexible and adapt to the child who defies a schedule. Be sensitive to child’s response to sensory information (touch, light, noise). Peaceful settings and preparation with transitions are important.
Fearful – roughly 15% of children

- Slow to adapt.
- Withdraws

May be called shy. If pushed to join in, may cause withdrawal. Helpful to provide preparation for new activities. Watch for emotion to shift from caution to enjoyment before stepping back. Provide a space of the child’s own.
Brain Development in Infancy

- A “hot topic” around the world.
- We now realize “wiring opportunities.”
- This information readily applies to children who have sensory disabilities.
Importance of Brain Development

- The environment affects not only the number of brain cells and the number of connections made, but also the way the connections are "wired."

- There is evidence of the negative impact of early stress upon brain function.
Sensory Development

- Our senses are our external avenues of learning.
  - senses (input in)
  - motor (input out)

- Sensory-based learning begins in utero and continues through the rest of our lives.
Practices of Yesteryear ...

- Sensory bombardment in the intensive care unit in the 1964 - 1970s.

- Sensory stimulation kits & black and white commercial materials in classrooms.
Now our job is to . .

Analyze and build an environment that is supportive of sensory learning.
“Perceptual information obtained through the senses and the processing of this information facilitates the child’s understanding of his physical and social environment.”

(Stewart & Cornell, 2004, p. 87)
Sequence of Sensory Development

- Touch
- Vestibular / Proprioception
- Taste
- Smell
- Auditory
- Vision
Touch

- Received from the skin. Fingertips have highest tactile sensitivity / discrimination sensors.

- Provides information about temperature, touch, pressure, and pain.

- How we are touched makes a difference - whether we are threatened or comforted. As such, touch is linked closely with one’s emotions.

- Develops head to toe. At birth – focus is on protective touch. With time – discriminative touch.
Touch

- The temperature regulation boundaries of the womb begin the process.

- There are 2 systems: discrimination (child touches something or feels being touched) and protection (touch is registered as dangerous or uncomfortable)
# Touch in Utero

<table>
<thead>
<tr>
<th>3 weeks gestation</th>
<th>Touch sense begins to develop</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 weeks gestation</td>
<td>Only top of head not sensitive to touch – perhaps in preparation of its role in the birth process!</td>
</tr>
<tr>
<td>Birth</td>
<td>One of the most advanced sensory abilities. Touch is used as a means of parent:child emotional connection.</td>
</tr>
</tbody>
</table>

No light touch in the womb, only deep pressure touch. There is continually “resistance feedback.”
Role of Touch

- Touch is rudimentary to infant/caregiver attachment and for providing the platform of emotional security for future learning behavior. “Tactile sensations are the primary source of comfort and security (Ayres, 1981, p. 62).

- Rosen (1977) described touch as an interface between children and their environment, both what touches them and what they touch. She noted six types of sensory information that the sense of touch can detect: deep touch, light touch, vibrations, pain, temperature, and two-point touch (ability to identify how many points of contact an object has with the skin, such as a braille cell with fingers).
Four Unique Touch Abilities

Touch encompasses four unique sensory abilities, each with their own specific neural pathways.

Feeling something with one’s skin and specialized nerve receptors is cutaneous sensation.
Four Unique Touch Abilities

Pain and temperature sensations are also accomplished through the skin and specialized nerve receptors.

The fourth sensory ability is proprioception or the sense of position and movement of one’s body. Proprioception will be addressed in the following section on *Vestibular and Proprioception*. 
Touch and the Child Who is Deafblind

- With compromised / absent vision and hearing, touch will be a primary modality for many children who are deafblind.

- As such, care should be taken to ensure the world is a “safe and predictable” place to reach out, touch, explore, and find.
The Power of the Tip of a Finger

- 9 feet of blood vessels
- 600 pain sensors
- 36 heat sensors
- 75 pressure sensors
- 4 oil glands
- 9,000 nerve endings
How Hands are Used

to see

to hear

to release tension

to communicate

as tools
Haptic Perception (Bushnell & Boudreau, 1993)

- **Birth** - cannot tactiley discriminate the characteristics of an object placed in their hands.

- **10 weeks of age** - begin to distinguish between differently sized and shaped objects held in their hands.

- **6 months** - can tactiley perceive temperatures, hardness, and textures through touch and handling of objects.

- **9 months** - weight perception is evident

- **12 to 15 months** - can perceive differences of the spatial arrangement of shapes with similar features
Assessment Considerations

- How well does the child use his or her hands?
- Is the child alert to vibration and touch?
- Does the child handle objects with some caution?
- Is the child interested in differences of texture and detail?
- Does the child explore with curiosity?
- Does the child recognize objects through touch?
Assessment Considerations

- Does the child have a tactile means of identifying people?
- Does the child interact with you physically?
- Does the child touch you only as an object or as a source of affection, help, and/or enjoyment?
- Does the child allow you to guide him or her physically in order to show him/her things?

*(Remarkable Conversations, 1999)*
An Important Distinction

**Tactile Selectivity**
- Resistance to touch
  - No preparation
  - Poor information
  - Dislike texture
  - Not interested
  - Unsure of time frame

**Tactile Defensiveness**
- Avoidance of touching
  - “Lack of integration of the early protective touch (protopathic) system which results in delays in the development of later, higher level discrimination touch (epicritic) system.” Strickling, 1998, p. 9)
  - Hypersensitivity
  - Feels aversive
Scenario: Touch and Auditory Cueing

- Diaper Changes that were tense for baby

- As his mom approaches Andrew she takes care to softly call out to him. Once she is next to him, she places her hand on his side and waits for his response. Andrew adores his mom and usually wiggles with excitement when she is next to him. As he smiles and goos, she nestles next to him.
Scenario: Touch and Auditory Cueing

- If his diaper is in need of changing, she pats his side and tells him that she is going to change him. While Andrew is being changed, he can play with the diaper in his hands.

When diapering is finished, she announces “all done!”

As time has passed, his mother has noticed that all she needs to do is announce the diaper change and Andrew knows what will be happening to him. Although he does not always like to stay still during the diaper change, he is no longer visibly upset with the activity.
Vestibular (subcomponent of touch)

- Receptors in inner ears sense changes of one’s position in space (specifically one’s head in space).

- Provides information what direction our bodies are moving, how fast we are moving, and if we are speeding up or slowing down.

- Affects arousal state and helps organize movement, enhance spatial awareness, and develop muscle tone. Motor development is tied to vestibular system.

- Inadequate vestibular input = problems with muscle tone, bilateral integration, and midline orientation (Strickling, 1998)
# Vestibular

<table>
<thead>
<tr>
<th>Age</th>
<th>Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 months gestation</td>
<td>Sense of movement and gravity from balance begin in inner ears</td>
</tr>
<tr>
<td>Birth</td>
<td>Before birth – begins to respond to gravity. By birth, very well developed</td>
</tr>
<tr>
<td>6-12 months</td>
<td>Peak Sensitivity</td>
</tr>
<tr>
<td>2.5 years</td>
<td>Rapid Decline Until Puberty</td>
</tr>
<tr>
<td>Adolescence</td>
<td>Reaches full maturity</td>
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</tbody>
</table>
Proprioception
(Subcomponent of Touch/Body Position)

- Muscles and joints give one a sense of the position of one’s body in space, activated through sensory receptors located in the tendons, muscles, and joints of the body.

- Influenced greatly by visual feedback. Sighted children watch their bodies move in space.

- Proprioception is a process by the CNS together with vestibular and visual information. When there is a vision loss, it is more than a loss of a sensory system – the use of vestibular and proprioceptive input is affected (Strickling, 1998).
Taste

- Closely linked to smell. Both are functional at 28 weeks gestation. By last trimester, baby can taste the food that the mother eats.

- Chemically perceived by receptors on the tongue. Special receptors on different parts of the tongue are sensitive to salty, sour, bitter, and sweet tastes.
Smell

- Received chemically from receptors in the nose. By last trimester, the baby can smell odors from outside the womb.

- Smell sensations go directly into the emotional center of the brain.
# Olfactory Development

<table>
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<tr>
<th>Age</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>28 weeks gestation</td>
<td>Begin to function</td>
</tr>
<tr>
<td>3rd trimester</td>
<td>Can taste the food that mom eats.</td>
</tr>
<tr>
<td>Birth</td>
<td>Can identify smell of mom</td>
</tr>
<tr>
<td>3 Years</td>
<td>Children show a different response to pleasant versus unpleasant smells. By six or seven years of age,</td>
</tr>
<tr>
<td>6 Years</td>
<td>Children’s olfactory preferences and aversions are comparable to adults</td>
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</tbody>
</table>
### Hearing Development

- Sound is carried by airways and captured and registered by receptors in the ears.

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<th>Description</th>
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</thead>
<tbody>
<tr>
<td>28 weeks gestation</td>
<td>Fully developed with 12 weeks of listening experience to muted /lower frequency sounds</td>
</tr>
<tr>
<td>Birth</td>
<td>Hears low frequency sounds better than high frequency</td>
</tr>
<tr>
<td>4-10 years</td>
<td>Achieve adult-like hearing; ability to listen in noisy environments</td>
</tr>
</tbody>
</table>
Sequence of Auditory Localization

1. sounds presented directly at ear level;

2. sounds presented at ear level and downward;

3. sounds presented at ear level and upward;

4. sounds presented directly upward, and

5. sounds presented in front of child’s body and at almost any other angle
Hearing and the Child Who is Deafblind

- There may be no difference in sounds in the background and sound in the foreground – increased challenge for the child to sort out auditory information.
Assessment Considerations

- Cause / prognosis / treatment / implications.
- Loudness needed to hear a sound.
- What sounds can the child hear and not hear?
- Can the child hear speech at normal levels?
- Is there a history of ear infections?
Assessment Considerations

- Are there benefits from listening devices?

- Has the child and family been trained in the care and use of assistive listening devices?

- Does the child use hearing to alert, attend, localize, discrimination, recognize, comprehend sounds / language?

- Does the child enjoy sounds, do new sounds frighten the child, is the child easily distracted by background noise?

(Remarkable Conversations, 1999)
Vision Development

- Three components to the visual system: eyes, optic nerve, and brain.

- Underdeveloped at birth – the visual system “wires” the first year of life with ongoing acuity refinement throughout first years of life.
Vision

The visual sense is unique in its ability to organize other sensory information, and to provide simultaneous and continuous information from near and distant locations.

Burton White (1975, p. 121) noted further that 20% of all waking hours of a child aged eight months to three years is “spent simply staring at one thing or another.”

Rosen (1997, p. 172) noted that “vision, together with the vestibular and proprioceptive systems, provide the feedback mechanism by which children develop, self monitor, refine, and integrate sensorimotor skills into daily functioning.”
Vision as an Integrating Sense

- Enables infants to learn about people, objects, and events; encourages play behaviors, visual imitation of skills, and activities; facilitates social development and self-help activities

- Plays a critical role in attention and cognitive development

- Motivates infants and toddlers to stay awake, alert, and attentive to people, objects, and events.

Vision and Nonverbal Communication

Vision drives early nonverbal communication.

The ability of infants to see their caregivers’ faces facilitates bonding and attachment and reciprocal interactions. Later, vision is used to establish joint attention.

Glass, 2002; Warren & Hatton, 2003
Understanding the Progression of Visual Development

- Enables us to understand the visual capabilities of typical infants at various ages and provides insight into the visual world of the infant.

- Helps to identify infants who have atypical development that might result from visual or neurological impairments.
Understanding the Progression of Visual Development

Provides us with the ability to assess functional vision in young children with visual impairment and make appropriate recommendations for strategies to enhance visual function.
Prenatal Development: Vision

- Structural development typically proceeds in an orderly manner.

- Evidence of the developing eye is apparent by the 21st day of gestation.

Chandna & Noonan, 2000
Cook, Sulik, & Wright, 2002
Postnatal Development: Vision

- The visual system is immature, but functional at birth.

- The eye continues to develop from infancy through childhood.

- Changes to key structures of the eye occur during the first year.
Newborn Infants: Vision

- Attend to form, objects, and faces
- Are sensitive to bright light
- Are visually responsive under low illumination
- Are usually farsighted

Erin, 1996
Glass, 2002
Hyvärinen, 2000
Infants: Vision

• Are unable to focus accurately on distant or close objects until approximately 3 months

• Make eye contact with caregivers at approximately 6 weeks

• Develop binocular vision by 3 to 4 months of age

Erin, 1996
Glass, 2002
Hyvärinen, 2000
Development of Visual Acuity

Forced-choice preferential looking
- 20/600 at birth
- 20/120 at 3 months of age
- 20/60 at 12 months of age
- 20/20 at 3 to 5 years of age

Visual evoked potential
- 20/400 at birth
- 20/20 at 6 to 7 months of age

Eustis & Guthrie, 2003
Development of Visual Abilities

Within the first 6 to 12 months, infants demonstrate

- visual awareness,
- improvement of visual acuity, and
- visual fixation.
Contrast Sensitivity

- Ability to see subtle shades of gray is underdeveloped at birth. *Important for early recognition of faces.*

- Useful indicator of an infant’s ability to use vision in daily routines

- Infants 2.5 to 3 months can see shades of gray as well as most adults if the pattern size is large enough

- Improves as efficiency and density of the cones at the fovea of the eye mature.

*Atchley, 1997; Chanda & Noonan, 2000*
Assessment Considerations

- Cause / prognosis / treatment / implications.

- Acuity / field / color vision / binocularity.

- Near and distance vision implications for learning / communicating / moving.

- What helps / what hinders?
Vision and Hearing
Differences in Development

- Vision not as developed at birth, but developed rapidly thereafter.

- Hearing emerges early (by six months gestation), but matures gradually.
Senses and the Brain

- Our brains work to inhibit or filter out unnecessary sensory information.

- The process of *habituation* occurs when a familiar stimulus can be ignored and not attended to on a conscious level.
More on Habituation

“"A mature brain responds to important information, but habituates irrelevant information.”

Babies depend on others to help filter out unnecessary information for them.
Self Regulation

“Ability to maintain physiological and behavioral functioning in face of external and internal stimulation.”

(Zuckerman, 1993)
Factors of Sensory Regulation

- The child’s physiological ability to take in certain types of sensory information. The child with VI has less and perhaps distorted input.

- The child’s focus of sensory input (directed inward or outward). What is more interesting – the lure of the outside world or the safety of the internal world.

- The ability of the child’s central nervous system to cope with sensory input.
When the child is out of synch

A disorganized child cannot distinguish one stimuli from another. Visual stimulation or pain stimulation may equal STRESS!

May need to assist the child to “organize” before he or she can attend to sensory information.
Learning to Read Signals

- The body communicates
  - understimulation
  - overstimulation
  - homeostases: The ability or tendency of an organism or cell to maintain internal equilibrium by adjusting its physiological processes
Reading Signals: Calm-Alert State

- **Approach Signals**
  (indicative of being well organized, content and ready for interaction)

  - Smiling
  - “Ooh” expression
  - Soft, relaxed and alert facial expression (eye contact)
  - Cooing
  - Relaxed limbs with smooth body movements
  - Turning toward sounds
Reading Signals: Active-Alert State

- **Warning Signals – “Help Me!”**
  (indicative of still having ability to self-organize, but....) 

- Hand or hands on face or clasped together.
- Finger or hand sucking (not meaning hunger)
- Making fists with hands.
- Straightening legs or bracing body.
- Assuming the fetal position.
Reading Signals
Fussy State

- **Fussing Signals:**
  (Stressed / overstimulated, beyond self calming)
  - Irritability
  - Gaze aversion or gaze locking
  - Finger splaying or saluting
  - Frantic, disorganized, jerky movements.
  - Squirming.
  - Back and neck arching, appearing to push away.
Reading Signals: Fussy State

  Sneezing. Hiccups.
- Autonomic Changes: Color changes (paleness, mottling, flushing).
- Autonomic Changes: Changes in respiration.
- Gagging or spitting up.
- Visceral Changes: Changes in heart rate
Reading Signals: Crying State

Fussing Signals
(Baby is stressed/over-stimulated, beyond self calming)

- Irritability
- Gaze aversion or gaze locking
- Finger splaying or saluting
- Frantic, disorganized, jerky movements.
- Squirming. Back and neck arching, appearing to push away.
- Color changes (paleness, mottling, flushing).
- Changes in heart rate or respiration.
- Gagging or spitting up.
Crying to Inconsolable Crying

- The infant who is inconsolable may likely be over-stimulated, disorganized, and unable to self calm.

- Look for signals of the child moving through the progression of warning signals to inconsolable crying. Legs may be drawn up, mouth maybe blue, and hands may be near mouth.
What Happens with Sensory Loss?

- Absent or compromised information.

- Contraindications of other sensory systems.

- Accentuation of other sensory systems.
Vision and Vestibular Systems

- Children who are visually impaired may not learn to fully use vestibular input (Rosen, 1997) and

- May demonstrate motor problems such as hypotonia, delayed postural reactions, and delayed movement milestones (Brown & Bour, 1987; Jan, Robinson, Scott, & Kinnis, 1975).
Vision and Proprioception Systems Working Together

“Since all movement operates on a feedback system, either visual or proprioceptive, the latter sense provides the only means by which people who are blind can identify and precisely coordinate movement.”

Limited or absent “body part watching” – influences movement and, later, maintaining specific body positions used for protective techniques and cane techniques.

Rosen (1997, p. 174)
Hearing and Vision Impairment

- Fraiberg (1968) noted that sound is not a substitute for sight in the first year of life. Between six and seven months, hearing and holding are two separate events for the infant who is blind. At this age, the infant does not realize that the object that was just moments ago sounding outside of his or her hands is the same one now placed in his or her hands. Hearing cannot provide the same “confirmation of existence” information of vision in the early months of life.
Assessment Considerations

- Provide comfortable and optimal positioning for response and interaction.
- Allow ample time for responses.
- Minimize / eliminate sensory distraction.
- Consider need for sensory input to increase state of alertness.

*(Remarkable Conversations, 1999)*
Assessment Questions

- When using one sensory system, does use of another assist or distract child? (can child use more than one at a time?)

- What is the easiest modality for the child to use?

*(Remarkable Conversations, 1999)*
Functional Vision Assessment

**FVA**—the systematic observation and assessment of visual functioning in different routines and activity settings. Results of the FVA are used in combination with other information to identify priorities for facilitating development, learning, and optimal use of vision.  

*This will be a strong focus of our next face-to-face session.*
Factors Affecting the FVA

A FVA describes children’s visual responses

- in familiar or unfamiliar settings,
- under varying levels of motivation and alertness,
- in different environmental conditions.
Developmentally Appropriate Functional Sensory Assessment

This is a systematic way of collecting information about

- sensory preferences,
- learning environments, and
- intervention materials and methods
Functional Sensory Assessment

- The *Adapted Sensory Channel Form* (Anthony, 2003b), assists in direct observations of the child’s sensory behaviors within natural environments.

- *The Sensory Learning Profile* (Anthony, 2003a), asks caregivers questions about how a child with VI uses sensory information during activities and routines.
Learning About A Child’s Sensory Mode(s)

- What is a child’s primary sensory modality for learning?

- What is the child’s secondary sensory modality for learning?
Adapted Sensory Channel Form

- Gathers information about sensory behaviors
- Notes sensory preferences based on the child’s responses, level of alertness, and calming activities
- Compares sensory use in structured and unstructured situations
- Notes toy, activity, and motivational preferences

Anthony, 2003b
Sensory Channel Form

- The more everyone on the team understands the child’s sensory capabilities AND the child’s sensory preferences ....

- the better the child’s access to information will be and the more information the team will have on how to encourage movement and exploration.
Instructions for SC Form

- Schedule at least 3 observations.
- Include team members.
- Record concrete observations.
- Record continuous behaviors only once.
- Record all sensory channels used.
- Record at least 15 behaviors.
- Collect data until a pattern emerges.
Completing a Sensory Profile

- Building a medical history.
- Learning about sensory support equipment.
- Identifying key sensory modalities.
- Identifying “sensory feature” preferences.
- Using sensory features as motivators.
- Determining environmental supports.
Using a Sensory Profile Form

- Is part of the sensory assessment. Should take in a team perspective.

- Provides an overview of the child’s individual learning style.

- Identifies motivators for learning/play and movement. Knowing a child’s sensory abilities and preferences will guide practice.
Sensory Learning Profile

The Sensory Profile develops a description of how the child appears to access sensory information under specific circumstances and conditions. It documents

• response to visual stimuli;
• latency of visual response;
• preferences for types of auditory, vestibular, and kinesthetic stimuli; and
• positioning preferences that support overall sensory responsiveness.

Anthony, 2003a
Environmental Cues: Definition

Environmental cues may help young children with visual impairment use their functional vision more effectively.

- Color
- Contrast
- Time
- Space/distance
- Illumination

*Corn, 1983, 1989*
Strategies to Support Hearing

- Changing Volume
- Changing Proximity
- Positioning of Auditory Stimuli
- Use of Assistive Listening Devices
- Attention to Room Acoustics
- Eliminating / Minimizing Ambient Noise
Strategies to Support Tactile

- Building a trusting relationship.
- Preparation of student for tactile information.
- Protection of predictability.
- Attention to tactile sensitivity / defensiveness.
- Use of meaningful tactile information in everyday learning situations.
## Calming vs. Alerting Touch

<table>
<thead>
<tr>
<th>Calming</th>
<th>How?</th>
<th>Alerting</th>
<th>How?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Blowing. Touch without warning. Lumpaging or course food. Scratchy carpet, blanket, or clothing.</td>
</tr>
</tbody>
</table>
## Calming vs. Alerting
### Sense of Body

<table>
<thead>
<tr>
<th>Calming</th>
<th>How?</th>
<th>Alerting</th>
<th>How?</th>
</tr>
</thead>
</table>
## Calming vs. Alerting Movement

<table>
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<th>How?</th>
<th>Alerting</th>
<th>How?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Swaying.</td>
<td>Angular or spinning.</td>
<td></td>
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<tr>
<td></td>
<td>Carrying in pouch.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Rocking chair.</td>
<td></td>
<td></td>
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<tr>
<td>Calming</td>
<td>How?</td>
<td>Alerting</td>
<td>How?</td>
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<tr>
<td>Smells associated with</td>
<td>Mother’s smell.</td>
<td>Strong tastes.</td>
<td>Tobacco / smoke.</td>
</tr>
<tr>
<td>positive experiences.</td>
<td>Baby’s smell.</td>
<td></td>
<td>Chemicals.</td>
</tr>
<tr>
<td>Sweet tastes.</td>
<td></td>
<td></td>
<td>Citrus, cinnamon.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sour, bitter, salty.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Citrus.</td>
</tr>
</tbody>
</table>
## Calming vs. Alerting Vision

<table>
<thead>
<tr>
<th>Calming</th>
<th>How?</th>
<th>Alerting</th>
<th>How?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Block out curtains.</td>
<td></td>
<td>Red, cerise.</td>
</tr>
<tr>
<td></td>
<td>Pale colors and teal blue.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calming</td>
<td>How?</td>
<td>Alerting</td>
<td>How?</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------</td>
<td>---------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>White noise.</td>
<td>Static.</td>
<td>Unpredictable</td>
<td>Excited or anxious voices.</td>
</tr>
<tr>
<td>Familiar sounds.</td>
<td>Background noise.</td>
<td>noises.</td>
<td></td>
</tr>
<tr>
<td>Rhythmic sounds.</td>
<td>Heartbeat.</td>
<td>High or fluctuating</td>
<td>Screaming or shouting.</td>
</tr>
<tr>
<td>Low pitch.</td>
<td>Lullabies.</td>
<td>pitch.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Baroque/classical music.</td>
<td>Loud noises.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crooning or humming.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Too much sensory information can be as problematic as too little information. Children with fragile central nervous systems and/or cortical visual impairment may not engage in an activity without the proper amount of presented sensory information.

(Anthony, 2004)
Strategies

- Ensure a team approach with sensory specialists, parents, and therapists.
- Building in sensory consideration into learning activities.
- Environmental Considerations for Sensory Programming
- Establishing a “Sensory Working Space”
  - Lighting/ Contrast / Array
  - Acoustic Considerations
  - Pairing of Sensory Information
Resources
