## Intervention Strategies for Infants & Toddlers with CVI and their Families

**Western Regional Early Intervention Conference 2019**  
Broomfield, CO  
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### 8:30 am

**Purpose and organization of the CVI Companion Guide to the Developmental Guidelines for Infants with Visual Impairments**

- Contents and resources
- CVI Manifestations
- CVI Profile
- Questions to Gather Information
- Narrative Chapters on Selected Developmental Domains
- Tips for Practice

Video observations and small group activity

- CVI Profile
- Questions to Gather Information

### 9:15 am

**Possible effects of CVI and interventions to support:**

- Social-emotional Development
- Communication Development

### 10:00-10:15 am

**Break**

### 10:15 am

**Possible effects of CVI and interventions to support:**

- Cognitive development
- Fine Motor Development
- Gross Motor Development

### 11:15-11:45 am

- **Application to practice**
  - Embedding Functional Vision Interventions within Daily Routines
  - Objectives-Within-Routines Matrix  
  - Small Group Activity and share back
  - Close
Intervention Strategies for Infants & Toddlers with CVI and their Families
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Purpose of the Companion Guide
• Document, monitor, and address potential effects of CVI
• Within the domain framework established in the Developmental Guidelines
• Show dynamic relationship across developmental domains

Key Concept: Development
• Developmental differences for children with ocular and cerebral visual impairments
• Consequences of VI & CVI may affect developmental and functional outcomes
• Interventions address inter-relationships among domains and visual impairments

Outgrowth of the Developmental Guidelines
• Areas:
  • Social-Emotional,
  • Communication,
  • Cognitive,
  • Fine Motor,
  • Gross Motor,
  • Functional Vision
• Narrative review of critical issues
• Developmental charts
• Intervention strategies

Evidence-Base
• Relevant research
• Professional craft knowledge
• Family wisdom and experiences
  (Buysee & Snyder, 2006)
• Drawn from the fields of:
  • Autism
  • DeafBlindness
  • Developmental psychology
  • Early childhood special education
  • Hearing loss
  • Speech & language
  • Visual impairment

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Key Concept: Routines

- Effective and meaningful learning experiences occur within daily routines
  - Example: Mealtime coordinates
    - vision
    - social interaction
    - cognition
    - communication
    - fine motor

Key Concept: Optimize

- Learning opportunities:
  - Repetitive
  - Fit abilities
  - Enjoyable
- Attention:
  - Eliminate distractions
  - Build on interests and preferences
- Sensory stimuli:
  - Perceptible
  - Meaningful
  - Just right

Content & Resources

Use of the CVI Companion Guide

- Developmental timelines for vision and visual integration
- Forms for tracking data collection and analysis
- CVI Companions Guide
- Sensory Stimulation

CVI Profile Summary and Intervention Guide

- CVI Manifestations
  - Vision
  - Visual Cognitive
  - Visual Motor
  - Visual Perception

CVI Profile Areas to Monitor and/or Target for Intervention

- How does CVI affect the child’s function?
  - Visual Cognitive Function
  - Visual Motor Function
  - Visual Perception Function

- Consider intervention for possible or accommodations

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<thead>
<tr>
<th>Target</th>
<th>Instruction</th>
<th>Accommodation</th>
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Functional Vision Development Logs

Observation Activity
1. Quickly review the handouts on CVI Manifestations, Questions to Gather information for the CVI Profile and Questions about a Child’s Use of Sensory Information
2. View three short video clips of 17-month-old Freya
3. Reflect and discuss:
   • What do you notice about how Freya responds?
   • What do you notice about Freya’s use of vision?
   • What are possible manifestations of CVI?
   • What questions would you ask her mother?

Possible Effects of OVI & CVI on Early Development
- Eye contact
- Smiling
- Atypical responses
- Hospitalization & medical treatments
- Visual joint attention
- Visual imitation
- Awareness in portions of field of vision
- Visual attention
- Visual search
- Visual recognition of:
  - people/objects
  - familiar faces
  - facial expressions
  - Extracting details from complex visual scenes
- Visual motor coordination
- Head and body rotation
- Forward movement
- Concepts of objects

Possible Effects of CVI on Early Development
- Looming
- Visual and auditory input
- Looking & listening at the same time
- Fast rate speech
- Fast pace gestures and actions
- Seeing fast moving or stationary targets
- Inefficient grasp
- Difficulty orienting hand/arm movements to position object
- Copying or imitation of gestures
- Route finding
- Spatial organization
- Sound localization

Selected Tips to Support Early Learning
- Environment that supports early learning
- Positions of caregiver, child and materials
- Preferred and engaging items
- Slow paced speech and actions

Developmental Domains
Developmental Domains

- Social-Emotional
- Communication
- Cognition
- Fine Motor
- Gross Motor

Social-Emotional Development

- Ability to create and maintain social relationships
- Regulate range of emotions

Strategies to Support Social-Emotional Development

Self Regulation
- Recognize and interpret
- Structured, nurturing environments
- Predictable routines
- Self regulation skills

Relationship-based Interventions
- Interpret and respond
- Identify likes and dislikes
- Encourage visual attention
- Provide anticipatory cues
- Play turn-taking games

Emotional Literacy
- Amplify emotional expressions
- Talk about feelings
- Books and songs

Positive Behavior Support
- Attention
- Escape
- Access
- Sensory stimulation

More Strategies to Support Social-Emotional Development

Auditory Input Strategies

4 Ss
- Say less, Stress, Go Slow, Show (Weitzman, 2017)

Auditory Sandwich
- Auditory-visual-auditory

Voice-Action Synchrony
- Voice and action
  (Martin-Prud'homme, Lartz, Borden, & Meehan, 2016)

Acoustic Highlighting
- Emphasize and lengthen initial sound
- Whisper word
- Vary pitch, duration or intensity
- Use “auditory space”
  (Martin-Prud'homme, Lartz, Borden, & Meehan, 2016)
**Visual & Tactile Input Strategies**

*Motionese* (modifying gestures, actions and signs with infants and toddlers):
- Attention getting
- Physical contact
- Positive affect
- Pace of signs and gestures
- Range of motion
- Object actions
- Repetition
- Simplification

(Dunst, Gorman, & Hamby, 2012)

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**Communication Output Strategies**

**Choice-Making**
- One item
- Two items

**Interrupted routine/ Pause & wait**
- Preferred activity
- Interrupt
- Interpret behaviors
- Resume activity

**Augmentative & Alternative Communication (AAC)**
- Manual signs for key words
- Visual communication
- Voice output communication devices

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**Cognitive Development**

- Attention, Memory, and Executive Functioning
- Development of concepts and categories

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**Break**

10:00-10:15 am
### Strategies: What **WE** can do

- Slow and simple pacing
- Focus on what child can and wants to do
- Provide activities that respond to child’s actions

### Strategies: Creating a Supportive **Environment**

- Responsive and nurturing
- Uncluttered
- Perceptible objects
- Joint attention
- Predictable daily activities

### Strategies: **BUILDING** Cognitive Capabilities

- Routines and repetition
- Activities to build understanding, memory and generalization
- Challenge to use cognitive skills:
  - Attention
  - Memory
  - Inhibition/planning

### 2nd Look: 24 month-old Ryan & Mother

- What does his mother do?
- How does she create a supportive environment?
- What cognitive skills is Ryan developing?

### Concepts & Categories

- Concrete concepts (e.g., bottle, mama)
- Semi-concrete concepts (e.g., action, color, position)
- Abstract concepts (e.g., feelings)

### 17 Month-Old Reyna Making a Choice

- What concept(s) does Reyna demonstrate?
- How did she develop these concepts?
- Suggestions for next steps?
Concrete Concepts

- Existence
- Permanence
- Differences
- Names or labels
- Characteristics
- Functions and use

What is this?

- What concepts does this child demonstrate?
- How did this child learn these concepts?

Fine Motor Development

- Ability to explore and learn by touching, reaching and grasping
- Affects development of perceptual, social, language, and cognitive skills

Strategies to Support Fine Motor Development

Provide Tactile Kinesthetic Feedback

- While the child completes an activity associated with a supporting object
- Provides a physical reference base

12-month-old Gabriel

- What do you observe about Gabriel’s responses?
- What do you observe about his fine motor development?
- Suggestions for next steps?

More Strategies to Support Fine Motor Development

- Encourage focused attention
  - Present objects in a quiet space (tent or variation of Little Room)
  - Reduce visual and auditory clutter
- Facilitate stable mental maps
  - Keep objects consistently in key places until child learns where they are (move to encourage problem solving skills)
  - Use a vivid visual object as a central focus and guide with surrounding objects in regular pattern
  - If visual crowding is a problem, space objects apart so child can see them
Gross Motor Development

- Use of large muscle groups that promote exploration
  - arms, legs, feet, torso for activities such as crawling, sitting up, & walking
- Associated with development in other domains
  - receptive and expressive language
  - social and cognitive accomplishments
- As gross motor skills improve and become automatic, a child can attend to other learning activities

Gross Motor Development and Orientation & Mobility

- Skills include:
  - Locating and recognizing objects
  - Forming a mental map of environment
  - Moving about safely and efficiently in it
- Integrated instruction of O&M skills in early intervention supports:
  - Fine motor
  - Gross motor
  - Communication
  - Cognition

Strategies to Support Highly Perceptible Mobility Goals

- Bold color to make goal “pop out”
- Simplify background
- Add other vivid sensory features to goal or along route
- Identify landmarks at child’s eye level
- Use a song that includes landmarks along travel route

Fast Moving Objects Can Be Difficult to See

- Reduce number of fast-moving objects in play spaces
- Keep play spaces and routes free of extraneous objects (balance with opportunities to learn how to maneuver more objects)
- Adjust speed of gross motor tasks to fit child’s abilities
- Obtain O&M assessment to determine need for pre-cane skills, pre-canes, and non-canes

Embedding Functional Vision Interventions Within Daily Activities

Advantages
- Real life contexts
- Fits family lifestyle
- Multiple opportunities
- Predictable, meaningful, and functional
- Natural reinforcers
- Build’s caregiver competence and confidence
Gather information about daily activities:
- What are the family routines?
- What works well and what is challenging?

Determine learning opportunities:
- How can we use preferred activities?
- How can we make a challenging routine easier to complete?

Monitor and evaluate progress:
- How will we know if progress is being made?
- How do we know an outcome is achieved?
- How can we track progress?
- How is this working for caregiver and child?

Determine learning opportunities:
- How can we use preferred activities?
- How can we make a challenging routine easier to complete?

Objectives Within Activities Matrix

<table>
<thead>
<tr>
<th>Outcomes/Objectives</th>
<th>Lunch</th>
<th>Bath</th>
<th>Play</th>
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</thead>
<tbody>
<tr>
<td>Will look at caregiver’s face</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will reach and grasp offered object</td>
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Questions to Facilitate Brainstorming

- How can preferences be used?
- What will make a difficult activity easier?
- What support and motivation will help?