ISAAC Webinar

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What can be communicated in 50 minutes?

- There is a method that can describe the degree of functional vision in children with CVI
- There is a method that can facilitate improvements in functional vision in children with CVI
- Educators, therapists & parents may have more information about interventions for CVI than physicians
- “Wait and see” is not good advice to families

- Early intervention is critical
- Even older individuals can show great progress in functional vision
- Don’t underestimate a child’s abilities or potential before they have ACCESS to their visual world

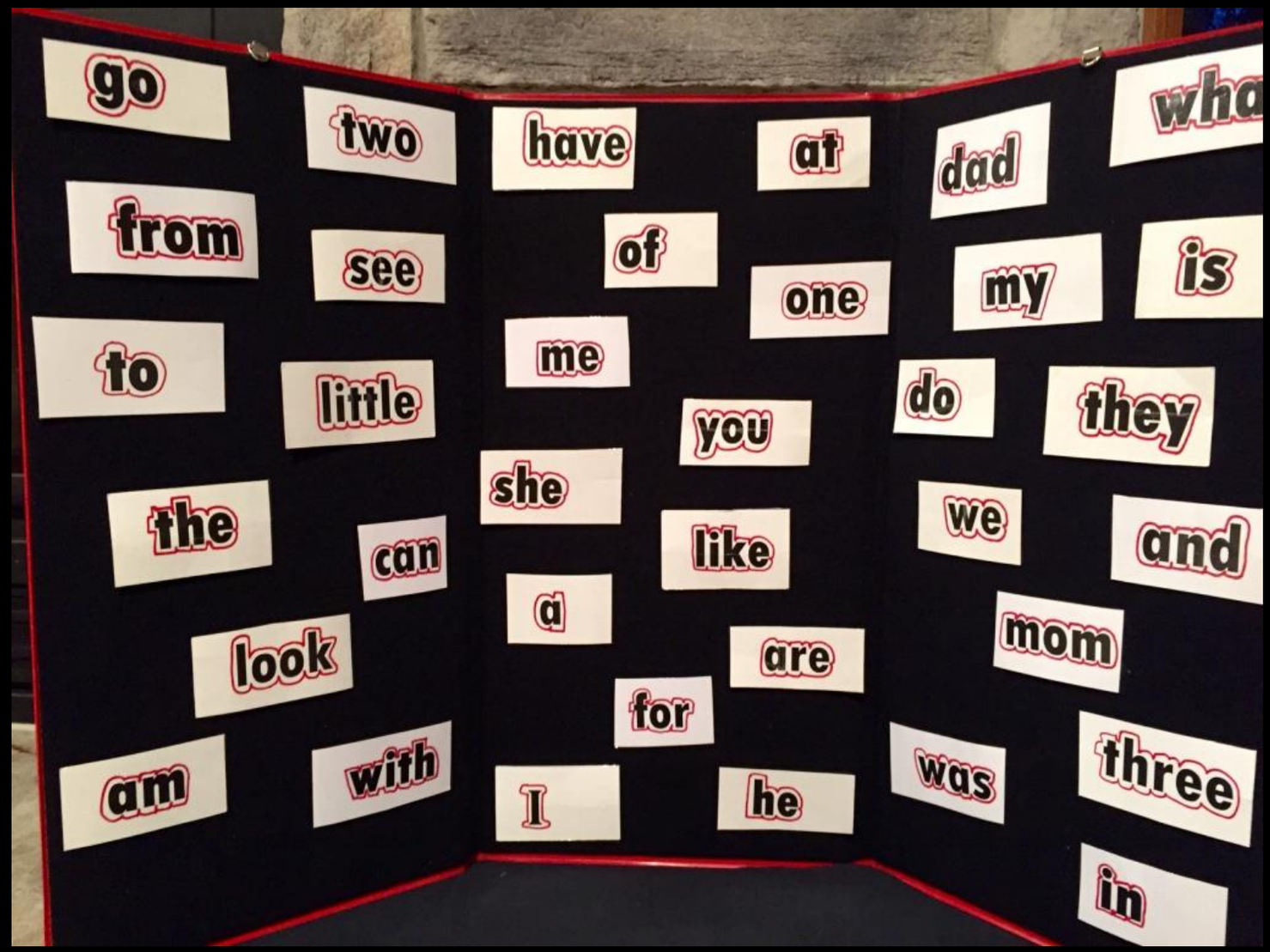
what does The CVI Range approach mean?

- it means that there is an approach to visual impairment that is grounded in the visual and behavioral CVI characteristics….not a generic program
- it means that there is an approach that is systematic and closely monitored
- it means that there is a form of visual impairment in which improvements in functional vision are expected and measured
- it means that there is a method that is used in the United States and in many countries that is effective and useful
- it means that cortical visual impairment is different than cerebral visual impairment

Principles & Procedures

- Properly identifying all children who have CVI
- Conducting appropriate assessments
- Providing appropriate supports to facilitate improvements in functional vision

Children with CVI require novel solutions in order to excel



Diagnosis

- I. Eye exam that does not explain the child's profound lack of visual attention
  - the eye exam is essential
- II. History of neurological condition associated with CVI
- III. The presence of unique CVI visual and behavioral characteristics

The key to understanding how children with CVI see is found in the characteristic CVI behaviors

- attraction to color
- light gazing
- movement (dorsal stream)
- visual complexity (ventral stream)
- visual latency
- visual field differences
- difficulties with distance viewing
- visual reflex differences
- difficulties with visual novelty
- lack of visual motor match

The CVI Range (Roman Lantzy, 2007) is used to investigate the extent of the affect of the 10 characteristic behaviors associated with CVI

Purposes of The CVI Range

- to describe a continuum of visual function
- to find a common method and language to standardize severity of CVI
- to monitor progress and improvements in functional vision
- to determine appropriate interventions
- to explain the individual's functional vision
- to complete an educational functional vision assessment

The CVI Range

- Used as a measure of degree of affect of CVI
- Developed by Roman
- Based on the constructs developed by Jan, Hoyt, Groenveld
- Considers CVI in terms of visual impairment, not used as a definition that includes all forms of visual processing disorders (not sensitive to autism, dyslexia, etc)

CVI Range Procedures

- Interview
- Observation
- Direct assessment

The CVI Range
Christine Roman, Ph. D.
2003(revised 2005)

Student/child's name:_____ Age:_____

Evaluator(s):_____ Evaluation Date: _____

This assessment protocol is intended for multiple evaluations over a period of time. Suggested scoring (no less than 3x per school year):
(a) Initial assessment (red)
(b) Second assessment (blue)
(c) Third assessment (green)
*Further assessments will require a new form.

Totals:	Evaluation#1 (red)	Evaluation#2 (blue)	Evaluation#3 (green)
1. Range for Rating 1			
2. Total for Rating 2			
3. Combine both ratings to get overall CVI Range			

0 1 2 3 4 5 6 7 8 9 10

CVI Range 1-2: Student functions with minimal visual response

O	*I*	*D*	R	+	+/-	-	
							May localize but no appropriate fixations of objects or faces
							Consistently attentive to lights or perhaps ceiling fans
							Prolonged periods of latency in visual tasks
							Responds only in strictly controlled environments
							Objects viewed are a single color
							Objects viewed have movement and/or reflective properties
							Visually attends in near space only
							No blink in response to touch and/or visual threat
							No regard of the human face

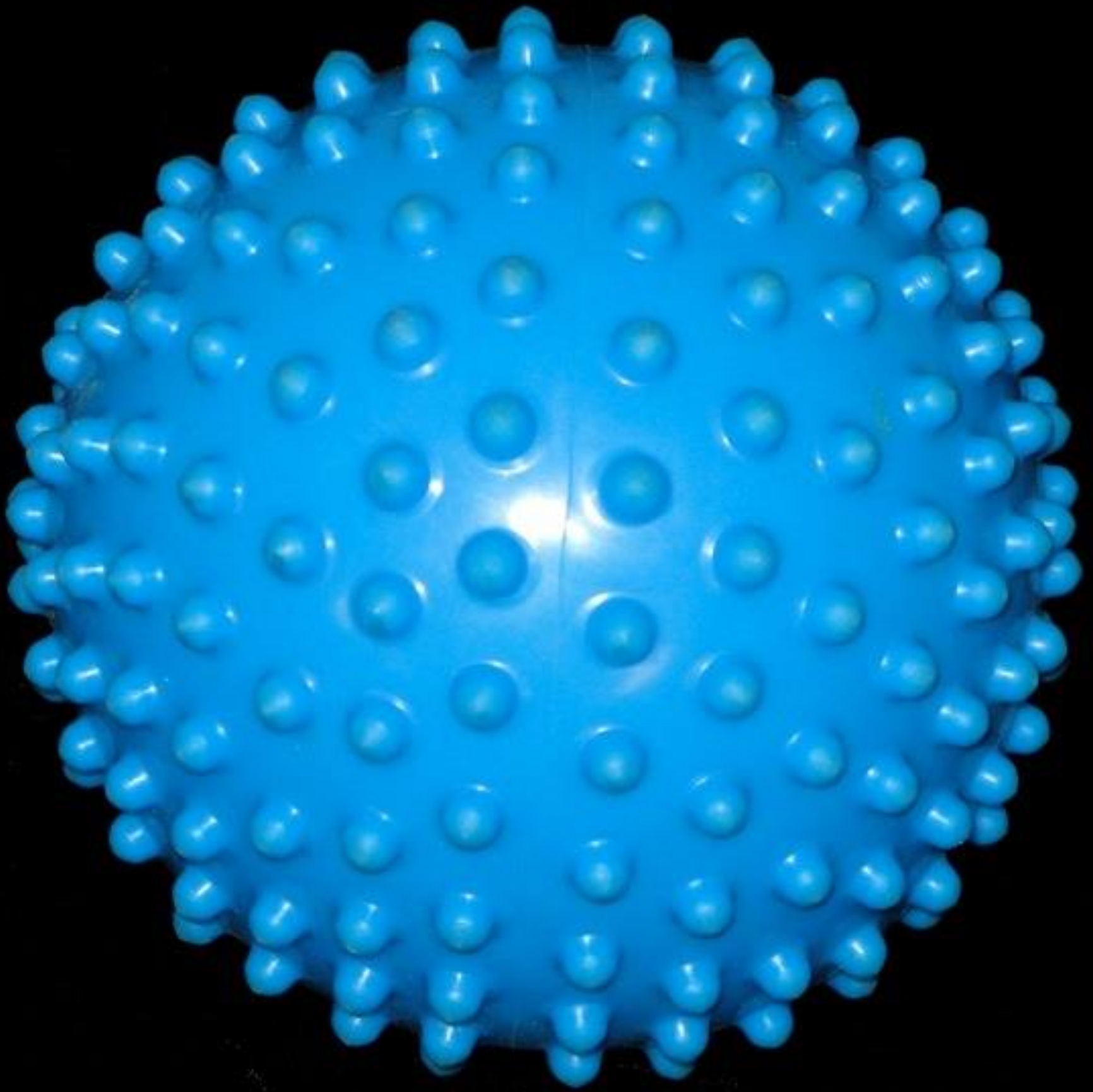
CVI Range 9-10: Student spontaneously uses vision for most functional activities

O	*I*	*D*	R	+	+/-	-	Selection of toys/objects not restricted
							Only the most complex environments affect visual response
							Latency resolved
							No color or pattern preferences
							Visual attention extends beyond 20 feet
							Views books or other 2 dimensional materials, simple images
							Uses vision to imitate actions
							Demonstrates memory of visual events
							Typical visual-social responses
							Visual fields unrestricted
							Look & reach completed as a single action
							Attends to 2-dimensional images against complex background

	Not Resolved		Resolving		Resolved
1. Color	0	.25	.5	.75	1
Comments:					
2. Movement	0	.25	.5	.75	1
Comments:					
3. Latency	0	.25	.5	.75	1
Comments:					
4. Visual Fields	0	.25	.5	.75	1
Comments:					
5. Complexity	0	.25	.5	.75	1
Comments:					
6. Light Gazing	0	.25	.5	.75	1
Comments:					
7. Distance Viewing	0	.25	.5	.75	1
Comments:					
8. Visual Reflexive Responses	0	.25	.5	.75	1
Comments:					
9. Visual Novelty	0	.25	.5	.75	1
Comments:					
10. Visual Motor	0	.25	.5	.75	1
Comments:					

III. CVI Characteristics

Color



color is a visual

“anchor”

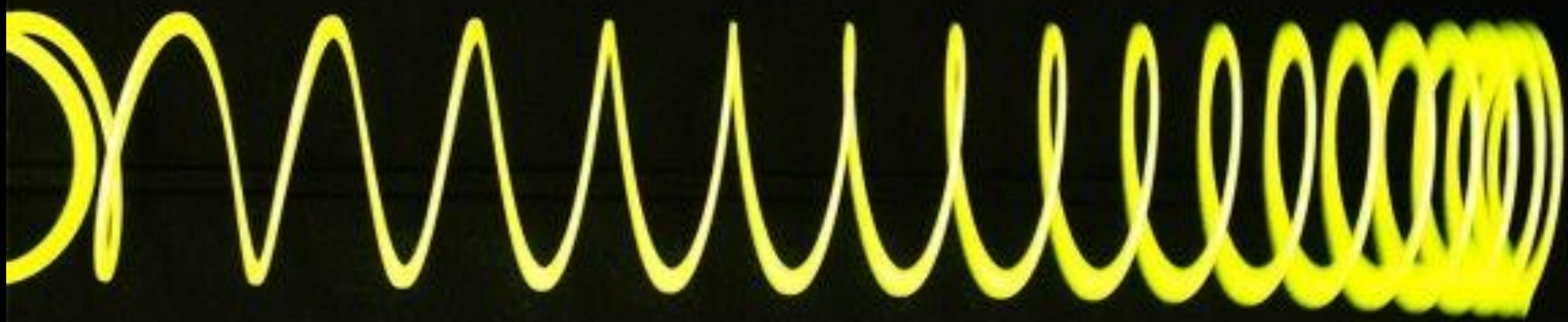

SLOW
CHILDREN
AT PLAY


SLOW
CHILDREN
PLAYING

Movement

movement

- movement of the object
- shiny or reflective objects
- child is moving (independently or being moved)
- child moves head




EXIT

Visual latency

Complexity

Visual Complexity

- surface of the object
- viewing array
- sensory environment
- complexity of the human face

single color objects

Why??

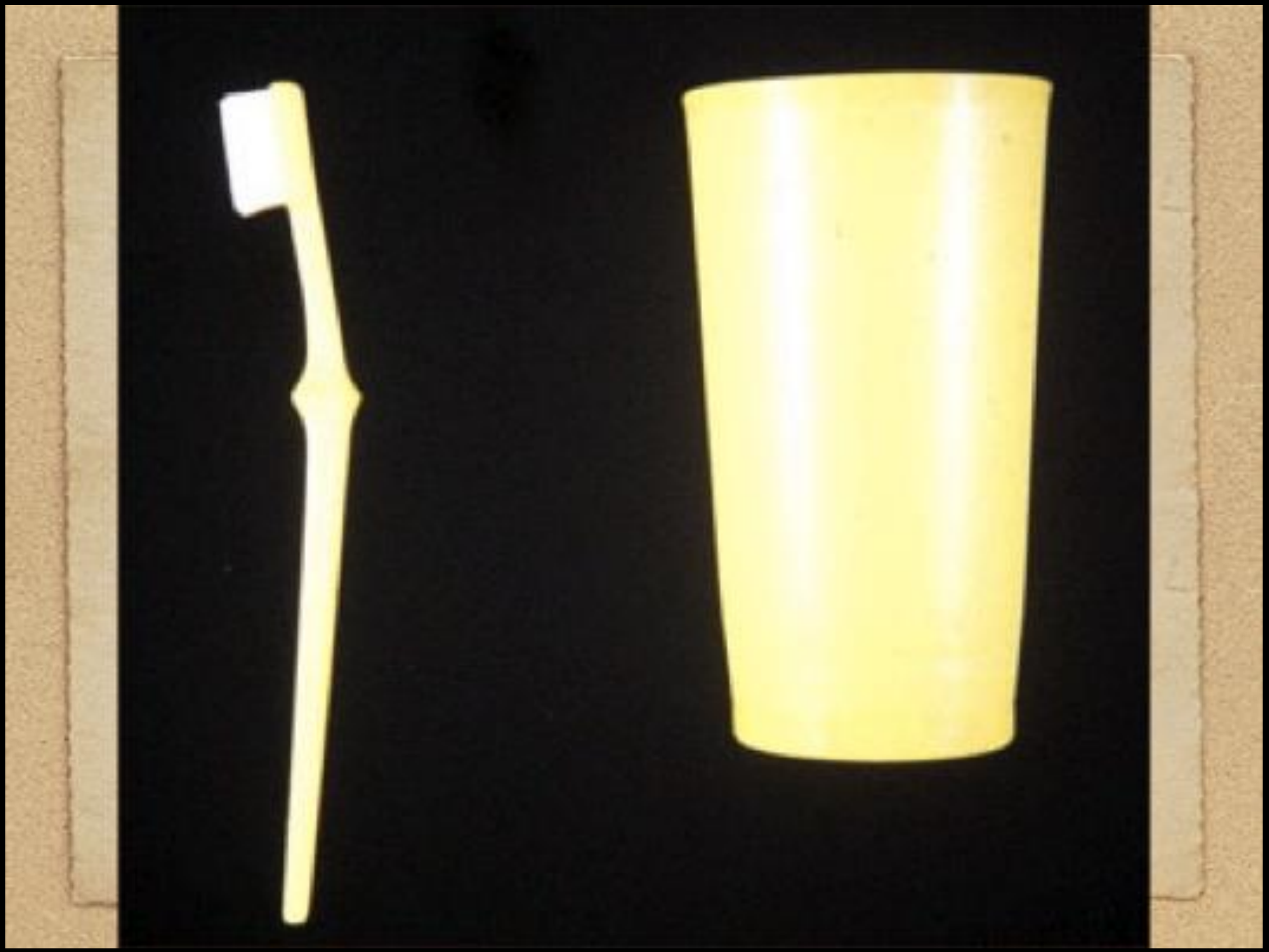
will these spoons look the same at each presentation?

- single color objects help the individual with CVI see the essence of an object in it’s entirety

- multi-color objects may result in learning an object based on fragile pieces of information

- and…what about 2-D materials?

complexity of array



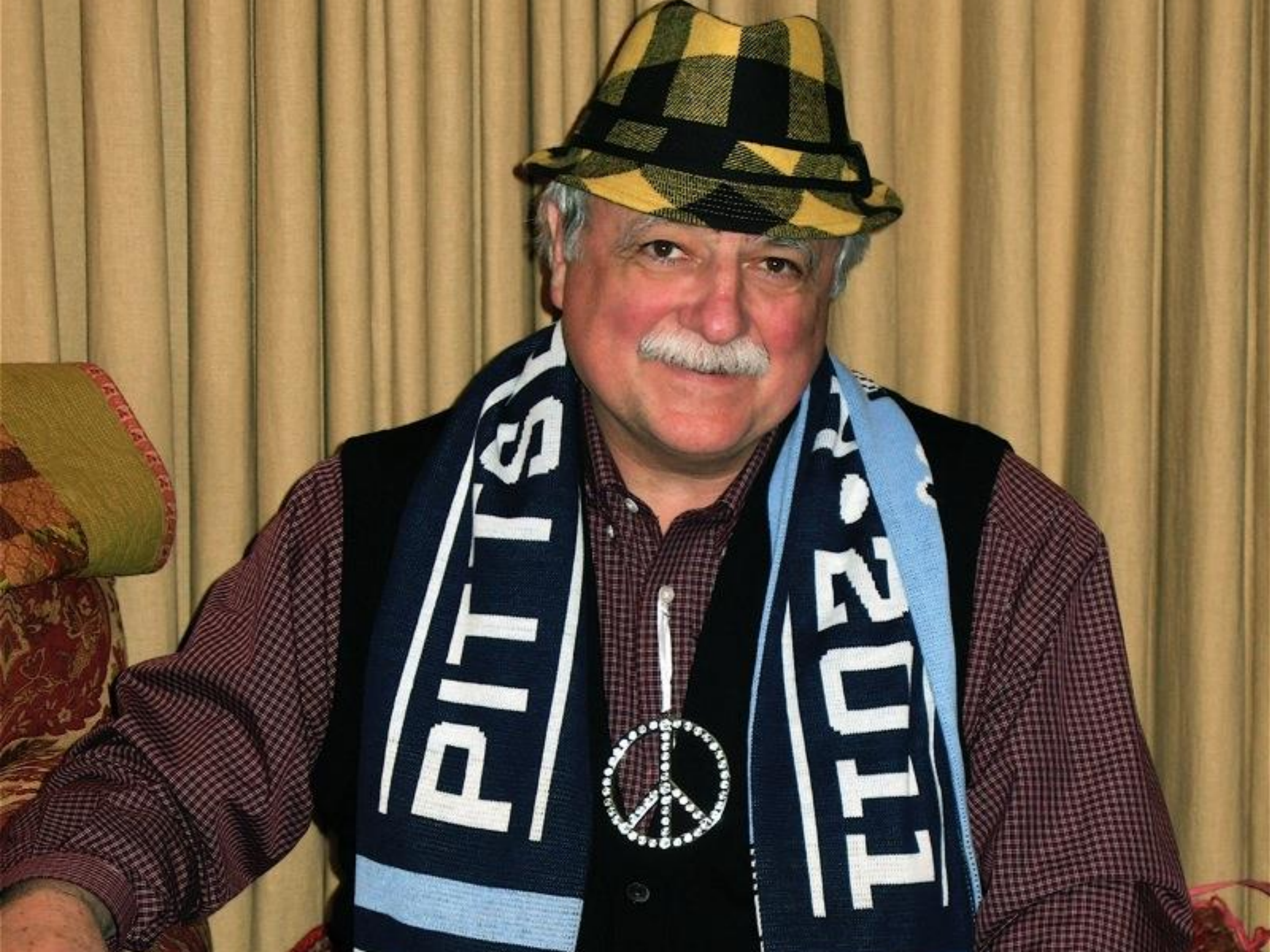

20 - 23
13 - 16
5 + 6

your clothing matters

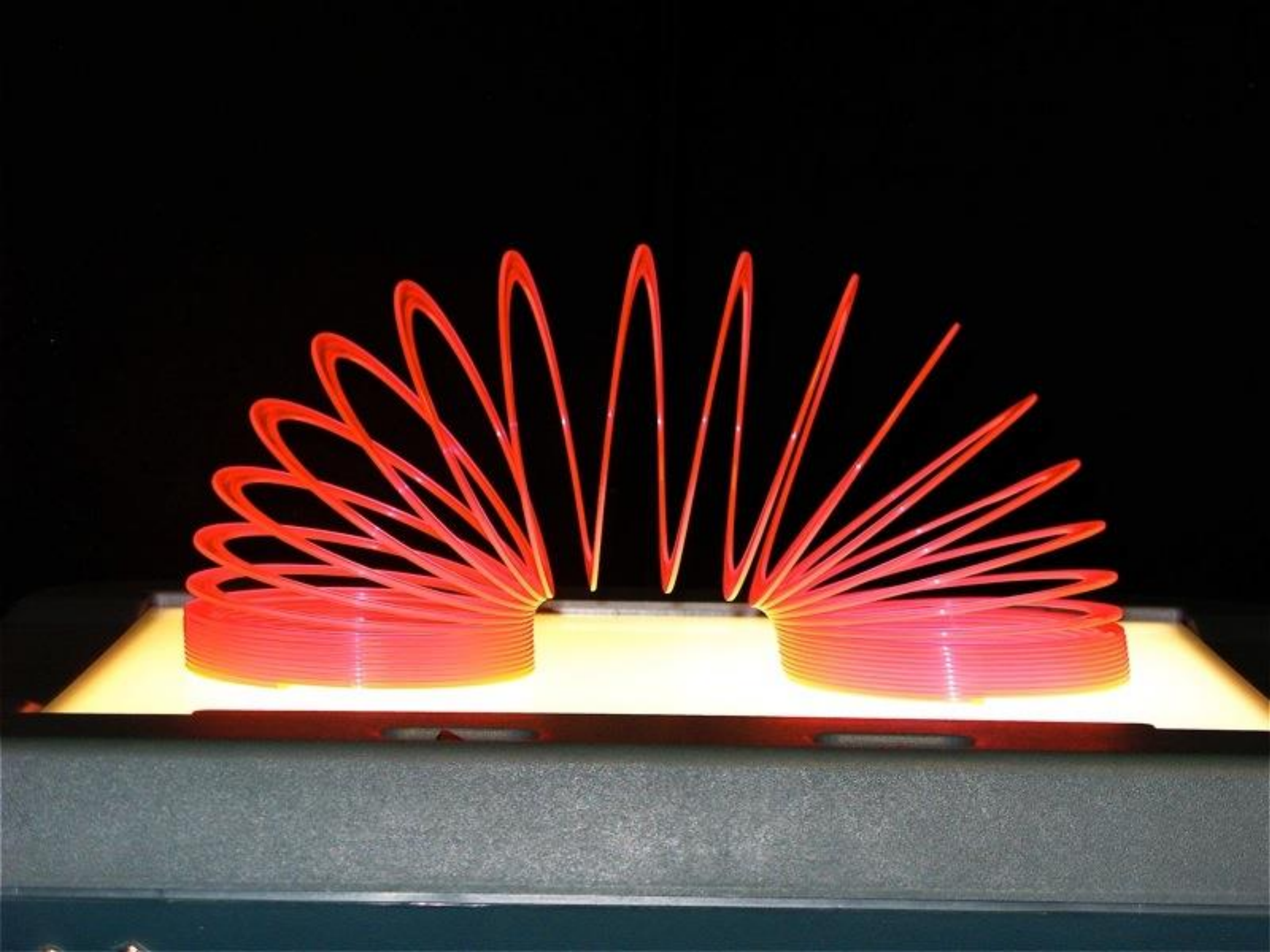
Catic School, Mexico City
Gabriella Berlanga


DynaVox

the human face is a visually complex target

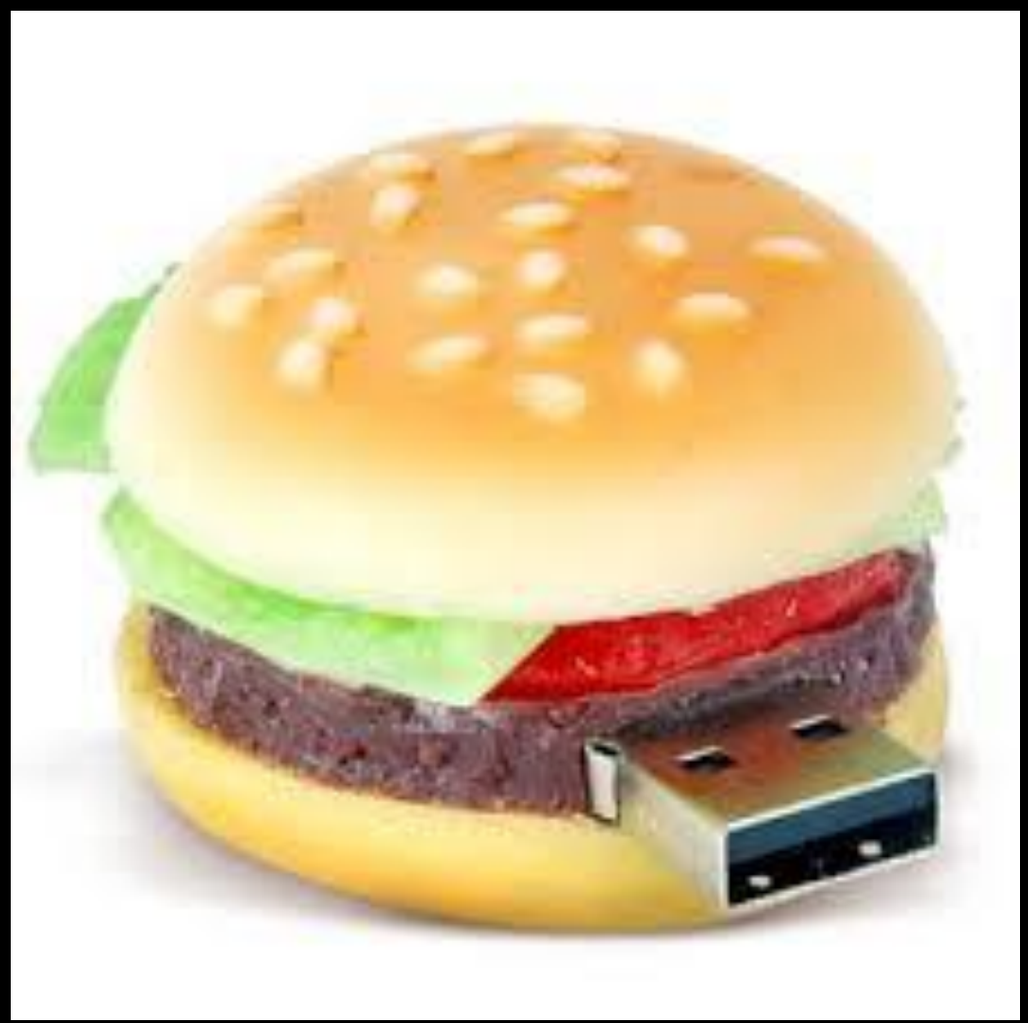

PITT

Light gazing/
nonpurposeful gaze



Visual field preferences

Difficulties with visual novelty



How did you assign meaning to the image?

- Previous visual experiences
- visual schemes that include information regarding faces, animals, trees...
- the child with CVI has to develop and expand visual schemes intentionally, NOT incidentally

learning salient visual features

- helps add critical information to the “search engine”
- expands understanding
- generalizes learning
- supports understanding of the critical or defining features
- supports divergent thinking and reduces rigidity in thinking

novelty

- alerts us to new information
- creates an “aha”
- associated with incidental learning
- helps expand visual schemes

Visual reflexes

- Reflexes often absent, or inconsistent

  - Blink to touch between eye brows

  - Blink to threat

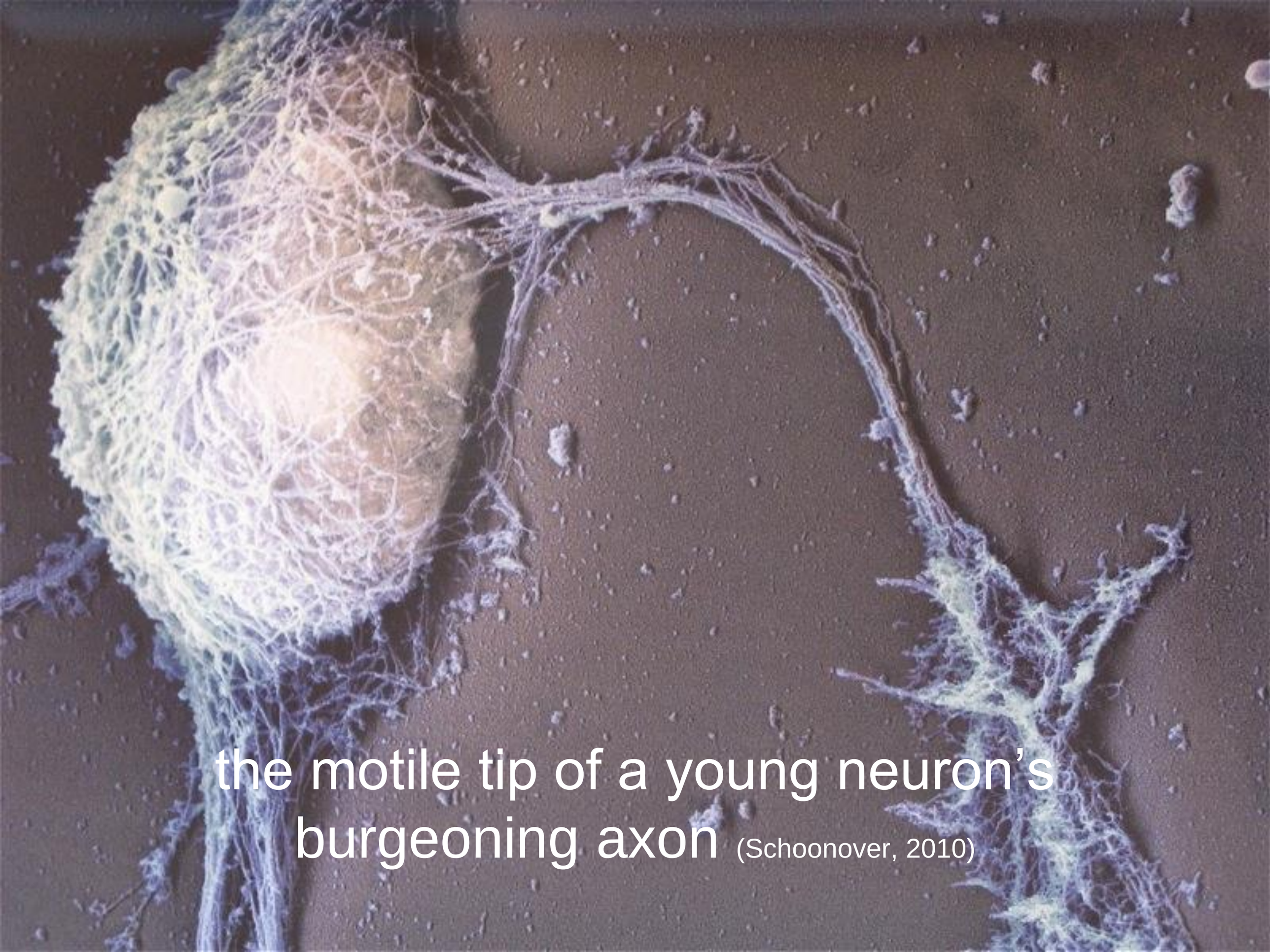
Difficulty with distance viewing, complexity of array

Absence of visually directed reach

Interventions

Interventions

- are based on the principles of visual plasticity and critical visual periods (Hubel, Weisel & others)
- new neural pathways can be developed and visual function can be increased

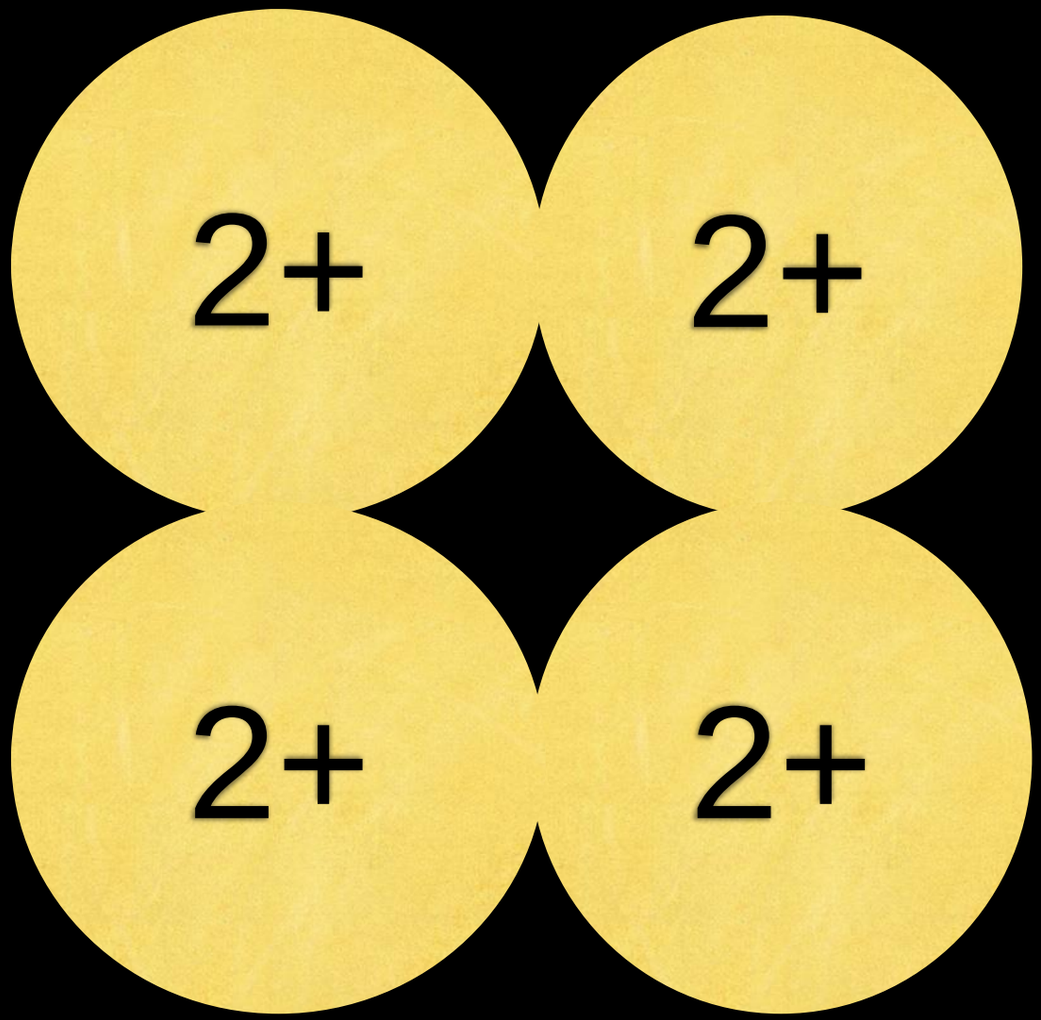


the motile tip of a young neuron’s burgeoning axon (Schoonover, 2010)

Notions to question

- vision varies from minute to minute, hour to hour, day to day
- vision cannot exceed cognitive level
- too mentally impaired to see
- vision is the least of the child’s problems

Identify at least 2 opportunities in each quarter of the day...and add
frequency is important



Interventions for CVI

- ***approach*,** not therapy
- vision improvements occur via the eyes
- interventions must be paired with functional, meaningful routines
- create adaptations and activities that incorporate the CVI characteristics at, not above or below the assessed level

Take away messages

- CVI is the leading cause of pediatric visual impairment in The U.S.
- CVI is not consistently diagnosed in a timely way or sometimes not at all
- Traditional diagnostic methods may be inappropriate methods to identify CVI
- The degree of CVI can be measured; interventions are designed to match the CVI Range score
- Improvements in functional vision are associated with targeted interventions