KAND-Related Vision Concerns
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KAND-Related Vision Concerns

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Summary

- KAND diffusely affects the brain
- Many regions of our brains are active during our visual experiences so vision is often affected
- Visual loss is only one symptom of KAND and is not the basis for its other manifestations
Manifestations of KAND

- Develop. delay
- Clumsiness
- Movement disorder
- General sensory loss
- Visual loss
- Limited adaptation
- Impaired cognition
- Ataxia
- Spastic paraparesis
- Peripheral neuropathy
- Seizures
- Optic atrophy
Visual associations

- Frontal lobe:
  - Dorsal visual stream; this portion determines "Where is it?"

- Parietal lobe:
  - Dorsal visual stream; this portion determines "Where is it?"

- Occipital lobe:
  - Ventral visual stream; this portion determines "What is it?"

- Temporal lobe:
Children in the US with standard vision issues = 35%
Sensory visual system
Effects of optic atrophy

- Decreased acuity
- Impaired peripheral vision
- Loss of color vision and contrast sensitivity
- Associations
Effects of optic atrophy

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Adaptation to optic atrophy

- Larger print, phones, tablets
- Reading strategies
- Assistance with ambulation
- High contrast stimuli, modification of steps
Cortical visual impairment

- Brain doesn’t seem to listen to eye
- Brain doesn’t respond
- Seizures can cause intermittently disorganized brain activity and CVI
Adaptation to CVI

- Severity can range from subtle to severe, from normal behaviors to apparent blindness
- Treat seizures
- Christine Roman-Lantzy’s work
  - CVI assessment
  - Guide for educators
Strabismus, nystagmus, abnormal eye movements

- Typically due to a diffuse cerebral or brainstem process like KAND
- Early strabismus does not cause double vision
- Depth perception is overrated
- Head posturing may result
Adaptation to eye movement anomalies

- Don’t try to therapy away a child’s compensation and control of a problem
- Spectacles, almost never with prisms, can be helpful
- Strabismus surgery
  - Improve binocularity
  - Reduce head posturing
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