

Vision Loss

Definitions of Vision Loss

- **Visual acuity**
 - (distance at which an individual can clearly identify objects)
- **Legally blind**
 - (20/200 or arc under 20 degrees)
- **Field of vision**
 - (arc that a person can see)
- **Tunnel vision**
 - (small arc in center)
- **Peripheral vision**
 - (can see to the sides)
- **Visual efficiency/functional vision**
 - (use of residual vision)

Levels of Vision Loss

- Low vision
 - » Can read print, typically use optical aids, can use vision for reading, also know as partial sight
- Functionally blind
 - » Typically use Braille for academics, functional vision for mobility and daily living
- Congenital/acquired
 - » age of onset
 - » Congenital, aquired or adventitiously

Types of Vision Loss

- Astigmatism (cylindrical curvature of the cornea, objects may be blurry)
- Hyperopia (farsightedness)
- Myopia (nearsightedness)
- Albinism (decreased pigment, abnormal optic nerve development, light sensitive)
- Amblyopia (lazy eye, poor acuity and depth perception)
- Cataracts (opacity or cloudiness of lens, reduced acuity, blurring, poor color, light sensitive)
- Glaucoma (increased pressure in eye due to fluid, peripheral field loss, poor night vision, light sensitive)
- Nystagmus (involuntary movement of the eye, difficulty fixating)
- Optic nerve atrophy (damage/degeneration of optic nerve)
- Optic nerve hypoplasia (underdevelopment of the optic nerve)
- Retinitis pigmentosa (hereditary, degenerative condition, tunnel vision)
- Retinoblastoma (cancerous tumor of the retina)
- Retinopathy of prematurity (disruption in normal development of retina blood vessels)
- Strabismus (muscle imbalance such that eyes can't focus on same object, esotropia-in, exotropia-out, hypertropia-up, hypotropia-down)
- Cortical visual impairments (may also have cerebral palsy, seizure disorder, developmental delays, not caused by any conditions of the eye but due to damage of visual cortex or visual pathways, brain does not adequately receive or interpret visual information)

Effects of Vision Loss.

- Children need environment that is aurally and tactually inviting to learn
- Impairment impacts the following:
 - ‡ Orientation and mobility
 - ‡ Daily living skills
 - ‡ Reading and writing
 - ‡ Conceptualization & cognitive development
 - ‡ Psychosocial development
 - ‡ Vocational choices
- Degree that these areas are affected depend upon the following:
 - ‡ age of onset
 - ‡ severity of vision loss
 - ‡ family support
 - ‡ type and degree of educational intervention

- Language development
 - ‡ Little understanding of words in everyday conversation
 - ‡ Vocabulary acquisition occurs through integration of visual experiences
- Intellectual development
 - ‡ Affects information student is able to rely upon, but not intellectual abilities
- Social development
 - ‡ Nonverbal communication skills are impaired
- Academic development
 - ‡ Slowed by impairment, not by child's intellectual capabilities

Educational Tools

- Hands on experiences & direct instruction to facilitate learning
- Braille
 - 6 raised dots
 - Braille music
 - Provide extra time for reading tasks
- Large print
 - Provide extra time for reading tasks
- Assistive technology
 - Optacon (scanner/decoder that translates print into vibrations on the fingertip)
 - Kurzweil Reading Machine (translates printed material into audible synthesized speech)
 - VersaBraille (converts Braille into print or speech)
 - Descriptive video service (captioning for the deaf)

Adaptations to music room/ clinic

- Provide student opportunities to explore new environments
- Move closer to the student when talking
- Talk while writing on board or conducting
- Have classmates provide verbal descriptions
- Use white boards rather than chalk boards
- Large print copies
- Physically assist
- Give definitions of words that may be unfamiliar due to visual nature of the word
- Provide materials a priori
- Model acceptance and inclusion

Music Education

- Began with Lowell Mason in 1832, taught at the Perkins School for the Blind, music was an academic as well as an extracurricular
- Music is an important part of the curriculum for students with visual impairments
- Adapting music instruction
 - Provide extra time, Braille music, auditory cues, etc.
 - Students are often comfortable in jazz settings due to improvisation, playing by ear
- Music educators need to facilitate socialization opportunities

Music Therapy

- Objectives include:
 - Development of listening skills
 - Mobility and orientation skills
 - Daily living skills
 - Social skills
 - Interpersonal communication skills
- Music used:
 - To structure activity to facilitate learning academic material, motor, social, and verbal behavior
 - As a stimulus cue or prompt for sound localization and other listening tasks
 - As a contingency
 - As a part of music appreciation and enjoyment

- Listening skills
- Mobility and orientation skills
 - Spatial awareness
 - Teach travel routes
- Daily living skills
- Social and interpersonal communication skills
 - Nonverbal behaviors
 - Social relationships
 - Self-esteem
- Sensory stimulation behaviors that may accompany blindness
 - Sensory compensation