Low Vision Evaluation and Educational Considerations of the Visually Impaired Child

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Set Yourself Apart

- Referrals
- Fees
- Professional Satisfaction
Case History

• Age of onset of symptoms/signs
  – congenital
  – acquired

• History of symptoms/signs
  – stable
  – progressive
Case History

• Family Pedigree
  – autosomal dominant
  – autosomal recessive
  – x-linked recessive

• Other associated conditions
  – hearing impairment
  – Cerebral Palsy
Case History

- Educational Information
  - Grade Level
  - Literacy Medium
  - Use of Low Vision Aids
  - Educational Modifications

- Goals for the Exam
  - Parents
  - Institution
  - Child
The Low Vision Exam

• Visual Acuity
  – Use the most sophisticated test the child can complete
    • Response to light
    • Preferential Looking
    • Symbol Matching
    • Number or Letter Identification
The Low Vision Exam

• Visual Field Assessment
  – Blink Reflex
  – Confrontation Fields
    • Flicker Light
    • Toys
    • Fingers
  – Threshold Fields
The Low Vision Exam

• Binocularity
  – Hirschberg
  – Cover Test
  – Stereopsis

• Color Vision
  – Ishihara
  – Farnsworth D-15
The Low Vision Exam

• Other Preliminary Tests
  – Accommodative Amplitudes
  – Near Point of Convergence
  – Null Point of Nystagmus
The Low Vision Exam

• Refractive Data
  – Retinoscopy
  – Refraction
  – Cycloplegic Retinoscopy
The Low Vision Exam

• Eye Health
  – Anterior Segment
  – Posterior Segment
Low Vision Considerations

- Magnification
- Visual Fields
- Lighting/Glare
- Educational Assets
Magnification

- Relative Distance Magnification
  - Hold the material closer to the eye
- Relative Size Magnification
  - Enlarge the print
- Angular Magnification
  - Low Vision Devices
- Electronic Magnification
Determining Magnification

• Magnification = reference VA/Goal VA

• Determination of near add: \( F = \frac{M}{r} \)
  – Example: Reference acuity = .4/2M
    • Magnification needed to read 1M = 2X
    • Add: \( F = \frac{2}{.4} = 5 \text{ Diopters} \)
    • Young patients can and should use adds or accommodation
Device Selection

• Task
• Target Acuity
• Cost
• Cosmesis
Spectacles

- Patients with Visual Impairment may not appreciate subjective improvement
  - Should trial frame to determine usefulness
  - Always Polycarbonate
  - Consider for Protection
Glare Control Filters

- Glare can be disabling
- Tints are often disease-specific but are always person-specific
  - Must be demonstrated
  - Contrast Sensitivity Charts are biased with wavelength changes
Literacy Medium
Recommendations

• Must be based on objective testing
• Large print does not fix all problems
  – Limited availability
  – Very costly
  – Often does not increase reading rate or comfort
• When to consider Braille
Individuals with Disabilities Act (IDEA)

- Six Guiding Principals
  - Free appropriate public education
  - Least restrictive environment
  - Procedural safeguards
  - Appropriate evaluation
  - Parent & Student participation in decision making
Goals of IDEA

• Strengthen the role of parents and students
• Ensure access to the general curriculum
• Focus on teaching & learning while reducing paperwork
• Give attention to racial, ethnic and linguistic diversity to prevent inappropriate identification and mislabeling
Expanded Core Curriculum

• Compensatory academic skills
• Orientation and mobility training
• Social interaction skills
• Independent living skills & career and vocational skills
• Recreation and leisure skills
• Career education
Expanded Core Curriculum

- Vision Considerations
  - Visual efficiency skills
  - Use of assistive technology
  - Alternate communicative modes
    - Large Print
    - Audio
    - Braille
The IEP

Legally Binding Contract by Team

- Parents
- Student if appropriate
- Teachers
  - classroom
  - vision
- School administration
- Others
  - Optometrist
  - Advocacy organization
The IEP

• **Documents**
  – Present level of performance and how disability affects progress in curriculum
  – Measurable annual goals
  – Special education services provided to or on behalf of the child
  – Program modifications for the child to participate in general curriculum and extracurricular activities
The IEP

• Documents
  – Modifications to assessments
  – Frequency, location and duration of services
  – Transition needs (beginning at age 14)
  – How goals are measured and reported to parents
Recommendations to the Classroom Teacher

• Allow closer working distances
• Be conscious of glare sources/lighting
• Don’t expect child to read at their VA threshold for long periods of time
• Allow frequent breaks
• Decrease workload or increase time allotted to task
• Formal communication to other health care providers and the educational team is critical to the success of the child

• Consistent with the objectives of the Healthy People 2010 and the AOA’s Healthy Eyes Healthy People initiatives
The Optometrist’s Role

• The Eye Disease
  – Diagnosis, etiology, treatment, prognosis and genetic counseling if indicated

• The Visual Status
  – Visual acuity at distance and at near
  – Devices used to obtain threshold acuity AND threshold for fluency
The Optometrist’s Role

- Other Pertinent Findings
  - Visual fields, binocularity, color vision, glare response, and refractive error
- Low Vision Device Recommendations
- Orientation & Mobility Training
- Occupational or Physical Therapy
- Lighting
The Optometrist’s Role

• The IEP is a parent driven process - provide the information so that the parent can best advocate for their child
Thanks for helping the kids