

# Unit 4: Visual Impairments

PGDT 424

# Definitions of Visual Impairments

- **Visual Impairments /blend/**
  - vision cannot be primary learning channel
- **Partially Sighted**
  - some useful vision – person may see colors and figures with blurring
  - vision between 20/70 and 20/200
- **Legal definition: any of the following**
  - only reads first E with both eyes
  - 20/200 vision with glasses
  - tunnel vision (less than 20 degrees)



# Definitions Continued

- **IDEA**- an impairment in vision that even with correction, **adversely affects educational performance**
  - Functionally blind – uses Braille but has vision for environmental tasks
  - Low vision – can read with magnification or environmental modification
  - Totally blind- must use tactual and auditory learning; no meaningful input through vision



# Characteristics of Visual Impairments

- Limitations in range and variety of experiences
- Limitations in mobility
- Limitations in environmental interactions
- Can affect
  - incidental learning – concepts like “table”
  - social interactions
  - career development



# Challenges of Visual Impairment in the Classroom

- Fewer opportunities to acquire information visually ( i.e. maps ,art)
- Learning Difficulties
  - may read very slowly –fall behind
  - difficult to meet the demands of general education classroom
- Social difficulties
  - can't catch non-verbal cues from others
  - inability to judge distance ( i.e. stand too close when socializing)



# Signs

**What might I see in a child that suggests he or she may have a visual impairment?**

\*Children often times have difficulty verbalizing or explaining a vision concern. Look for symptoms in three areas: physical changes, changes in vision and changes in behavior.



# Physical Changes

- Eyes that are wandering, bloodshot, encrusted or have reoccurring redness or watering
- Pain or itching in the eyes
- Rubbing eyes frequently
- Frequent blinking, squinting, facial distortion or frowning
- Viewing things at a distance or very closely



# Physical Changes, Continued

- Eyes turn inward, outward, upward or downward
- Eyes are very sensitive to light
- Frequent headaches, tiredness or dizziness after doing hard work
- Has sties frequently
- Trips and bumps easily





# Changes in Vision

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- Complains about things being blurry
- Holds hand close to eyes or moves it in front of them
- Tilts head or covers one eye to see



# Changes in Behavior

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- Irritable when looking at things far away or when doing written work on their own
- Short attention span when watching something happening from across the room



# Assessment Procedures

**Who is responsible for determining whether a child has a visual impairment, and what assessments are done?**

- Teacher: Observes child everyday so should look for symptoms & begin assessment process
- Ophthalmologist or Optometrist: Does medical eye exam and report



# Assessment Procedures Continued

- School District or Local Agency: Responsible for providing educational assessments \*(prerequisite for this is *either* a diagnosis or other reason to suspect impairment)
- Psychologist: Does assessment of functional vision skills to see how impairment will affect educational development



# Assessment Procedures Continued

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- Visual acuity – eye chart
- Functional vision assessment (FVA) – how students use vision in variety of natural environments
- Learning media assessment (LMA) – to determine most appropriate reading media

# Prevalence and Causes Of Legal Blindness

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Albinism: Albinism is caused by altered genes, which are inherited. These genes do not allow the body to make the correct amounts of melanin. 1 in every 17,000 people has one type of albinism.



# Prevalence and Causes Of Legal Blindness Continued

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- Blindness: Blindness is caused by many impairments. The most general are cataracts and glaucoma.

# Prevalence and Causes Of Legal Blindness Continued

Cataract: Cataracts are caused by aging. The lens in one's eye changes with age. No one really understands why this happens. Between the ages of 52-64 you have a 50% chance of getting a cataract. By age 75 just about everybody has a cataract.





# Prevalence and Causes Of Legal Blindness Continued

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- Diabetic Retinopathy: This is caused by diabetes. Diabetes affects the retinal blood vessels and causes bleeding which blocks transmission of light through the eye. A 1/3 of diabetics will develop diabetic retinopathy.

# Prevalence and Causes Of Legal Blindness Continued

Glaucoma: This is caused by the built-up pressure in the eye, which does not allow normal flowage, preventing proper drainage. About three million Americans have glaucoma.



# Prevalence and Causes Of Legal Blindness Continued

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Hemianopsia: This impairment is caused by a malfunction or damage to one side of the optic tract. This causes “half-vision”.

# Prevalence and Causes Of Legal Blindness Continued

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Macular Degeneration: This is caused by hereditary and untreatable diseases. It affects the macular area of the retina. About 15 million Americans have this impairment.



# Prevalence and Causes Of Legal Blindness Continued

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Retinal Detachment: Retinal detachment is caused by the weakening of the retina. This is caused by fluid leaking behind the retina and then it pulls away from its normal position.

# Prevalence and Causes Of Legal Blindness Continued

Retinitis Pigmentosa: (night blindness) The cause of this disease is unknown but is suspected to be an enzyme is the retina. Most types are heredity. The most common type (52%) occurs mostly in teenagers and gets severe around age 60.



# Prevalence and Causes Of Legal Blindness Continued

Strabismus: (crossed-eyed) This is caused by the lack of muscle coordination. It causes the eye to point in different directions. The eyes are unable to focus on the same point. This is more prevalent in females than males. About 40 per 1,000 people have this impairment.



# Strategies or Methods for Modifying Curriculum

- Arrange the classroom carefully and leave adequate space for all students to move about.
- Keep furniture and supplies in the same places so students can learn where everything is.
- If you do rearrange the room notify the student to give them time to readjust.





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- Keep aisles clear.
- Assign a buddy at the beginning of the year.
- Identify novels you plan to use so they can be ordered in Braille, large-print, or audiotope format.
- Use a whiteboard with black felt-tipped markers.
- Recite what has been written on the board.

# Strategies or Methods cont.

- Call students by name so they can learn sounds of everyone's voices and where they are seated.
- Allow students to move close to demonstrations and displays.
- Give specific directions instead of using general words such as "here" or "there".
- Seat students to optimize visual learning.
- Meet with the itinerant vision specialist or other resource persons to discuss the student's needs and the extent of assistance required.



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- Allow students additional time to complete assignments and monitor those students closely to make sure they are not spending too much time on a single task.
- Have large print materials.
- Low vision devices allows students to read print and to see distant objects such as writing on a chalkboard.
- Verbally describe visual aids.
- Keep doors fully open or closed to prevent accidents.

# Accessing Information

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- Braille – tactile code
- Optical devices such as glasses, telescopes, magnifying lenses
- Large print books

# Communication: The student

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**The student:** Communication with the student is key in finding out specific learning preferences, likes/dislikes, strengths/weaknesses, and in starting an open line of communication that will continue through the school year.



# Communication: Past teachers

**Past teachers:** Find out who the child has had for teachers in the past 2-3 years, general education and special education if applicable. Take some time to talk with these teachers to find out what they learned from their experience with the child.



# Communication: A specialist

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**A Specialist:** Finally, when you have questions about general abilities of a child with the visual impairment, ask someone who will be able to completely outline it for you.



# Orientation

A child with a visual impairment needs time to become aware of surroundings and to be comfortable in a new place.

- ☐ Have the child come to your classroom before classes start and take the time to explain where everything is, and let the child explore and figure it out for him or herself.
- ☐ Make sure that supplies are kept in the same place.
- ☐ Fire drills and other procedural activities need to be explained and the routes walked with the child. Assign everyone in the room a partner for these activities so the child is not singled out.
- ☐ Make sure that doors, drawers, etc. remain open or shut, not slightly or half open.





# Tools

- \*A child with a visual impairment may use a number of different tools to aid in the learning process.
- \*Find out which of these tools the child you will be teaching uses and become familiar with them.
- \*Know how they work and how they can be used most effectively.
- \*Consider introducing these tools to the rest of the children in the classroom so curiosity is appeased.



# Texts

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Let the child know, or make prior arrangements to have the texts that you will be using in your classroom available in an alternate form such as Braille or on tape.

Make sure to read what you write on the board out loud.



# Activities

Examine planned activities to look for possible conflicts of ability to expectations.

Make sure to give the directions orally using specific language, while avoiding words like “here” or “there.”

Consider doing activities in partners to add another set of ears and another communicator to the situation, but be careful of balance in the work done.



# Normal Vision



# Macular Degeneration





# Glaucoma



# Cataracts



# Diabetic Retinotherapy





# Total Blindness

