Essentials of an Occupational Therapy Low Vision Evaluation

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Learning Objectives:

- Learn what components need to be included in an Occupational Therapy Low Vision Evaluation
- Learn how to test vision
- Learn how to rate ADLs based on visual deficits
- Learn how to create a problem list and goals based on findings of evaluation

Components of a Low Vision Evaluation: Getting Started

- Primary and Secondary Diagnoses
- Medical History of Diagnoses
- Past Medical History
- What is the client's goal in coming to therapy?

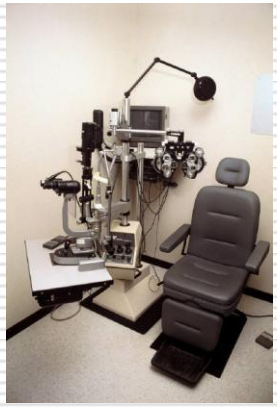
Primary Diagnosis:

- When working with low vision clients the primary diagnosis refers to the client's best corrected visual acuity.
  - This is important because Medicare only reimburses when the best corrected visual acuity in the better eye is 20/60 or worse.

Primary Diagnosis:

- Based on the ICD-9 codes
  - 369 Blindness and Low Vision
  - 369.0 Profound Impairment in both eyes
  - 369.1 Moderate or Severe Impairment, better eye, Profound Impairment, lesser eye
  - 369.2 Moderate or Severe Impairment, both eyes
- Refer to the ICD-9 manual for specifics that go after each code, example 369.24 moderate impairment one eye and severe impairment in other eye

Visual Impairment Ranges:



- Normal: 20/12 – 20/25
- Near-Normal: 20/30 – 20/60
- Moderate Low Vision: 20/80 – 20/160
- Severe Low Vision: 20/200 – 20/400
- Profound Low Vision: 20/500 – 20/1000
- Near-Blindness: 20/1250 – 20/2500
- Total Blindness: NLP (No light perception)

Secondary Diagnosis:

- The secondary diagnosis is the visual disorder or diagnosis that is causing the visual impairment.
  - 362.01 Background diabetic retinopathy
  - 362.02 Proliferative diabetic retinopathy
  - 362.51 Nonexudative macular degeneration
  - 362.52 Exudative macular degeneration
  - 365 Glaucoma
  - 366 Cataract

Medical History for Visual Deficit

- When did you first start experiencing problems?
- What eye doctors have been caring for you (specialties)?
- What treatments have you received?
  - Laser sx, eye drops, etc?
- Has your vision remained the same or changed recently?
- Do you experience double vision?
- What type of glasses do you currently wear?
- Are you currently using any magnifiers or devices to read?
- What type of materials are you able to read?

Past Medical History (vision):

- Did you have problems with your eyes as a child?
- When did you first start wearing glasses?
- Have you had any eye surgeries or eye injuries in the past?
- Have you had any TIAs or CVAs in the past?

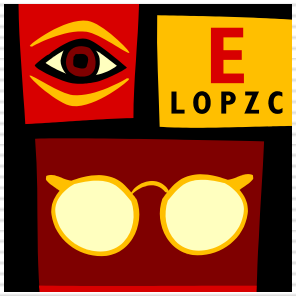
Find out the Client's Goal:

- What would you like to achieve by coming here today?
  - Most clients will tell you that they want a pair of glasses that will allow them to see better.
    - This is the point when I explained to client his or her condition and what I will be doing and how the information gathered will be used to increase his or her independence.

Let the Evaluation Begin!

- Every low vision evaluation needs to include the following:
  - Assessing eye dominance
  - Assessing visual acuity
  - Assessing visual fields
  - Assessing contrast sensitivity
- The information gained is necessary to provide proper intervention and treatment.

Assessing Eye Dominance:



- You can assess eye dominance informally or formally.
- Informally:
  - When you take a picture with a camera, what eye do you hold the camera up to?
  - Or, have your client hold their arms out in front of them and place their two hands together to form a triangle. Stand at a distance and ask them to look through the triangle to see you. (The eye he or she uses is the dominant eye)

Continuing Eye Dominance:

- Formal testing:
  - From BIVABA
    - Test Materials: Basic Visual Function Assessment test form card with 8mm hole, and flower design card
    - Environment: You want the room to be well lit with the light source coming from behind the client.
    - Procedure: The client should wear his or her glasses, the card with hole is placed in front of the client, ask the client to pick up the card and look through the hole with one eye to view the flower.
    - Examiner: The examiner should hold the flower card 16 inches away from the client. The examiner records which eye the clients views the flower with.
    - Only explain the test after it is given!

Eye Dominance Continued:

- Eye dominance is very important. It does not matter which eye has better vision, the client is going to direct viewing with his or her dominant eye.
  - If the dominant eye has poorer vision, you are going to need to accommodate tasks and activities to the visual acuity of the dominant eye.

Assessing Visual Acuity:

- There are two forms of visual acuity that will be assessed:
  - Intermediate Acuity
  - Reading Acuity
- When testing visual acuity the chart must always be at the correct distance from the client.
- Acuity is a fraction of the distance over the letter size. It is not accurate unless the test is at the correct distance.

Intermediate Visual Acuity

- A number of charts are commercially available.
  - Testing should be completed in a well lit room.
  - The chart should have even illumination with no glare.
  - The client should be wearing his or her distance glasses.
  - The dominant eye should be tested first followed by the non-dominant eye, then both eyes together. (Use the occluder or clip on occluder or eye patch to cover the eye not being tested).
  - The chart should be held at mid-line.
  - Instruct the client to read as far down as he or she is able to read.
  - Record the Snellen fraction for the last line where the client accurately identified the majority of the numbers.

Intermediate Acuity Testing: Test Accommodations

- The client may turn or tilt their head, but the distance must be maintained. Document if a head turn or tilt occurs and in what direction.
- Letters may be blocked one letter at a time.
- The client may be given paper with each of the numbers on it and point to the correct number if he or she is unable to speak.
- If the client is able to use yes and no accurately a choice of numbers may be given and the client can respond yes or no.
- The client may read the first two numbers on a line and then go to the next line. The client receives credit for the last line where he or she was able to easily read the line.
- The test may be given over a number of days or rest periods may be given.

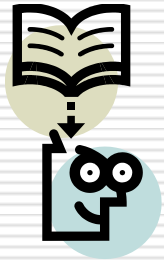
Observation is key:

- Watch your client and see if there are any trends when assessing acuity.
  - Does the client always missed things on the right or left?
  - Is the client turning his or her head?
  - Where is the client looking?

Reading Acuity: (Near vision)

- Again you want to make sure the client is in a well lit room with the chart illuminated without glare.
- The client should wear his or her reading glasses.
- Both eyes are tested together with the card held at the test's appropriate distance.
- Again the card should be held at mid-line.
- Instruct your client to read from the largest sentence down on the card.
- Record the last line that the client read accurately without effort.

Reading Acuity Accommodations:



- The client may turn or tilt their head, but the distance must be maintained. Document if a head turn or tilt occurs and in what direction.
- Lines may be blocked one line at a time.
- The test may be given over a number of days or rest periods may be given.

Results of Visual Acuity:

- The information gained will allow you to decide what type of magnification devices or assistive devices may be helpful for your client.
- Remember the best corrected vision in the better eye needs to be 20/60 or worse for Medicare re-imbursement.

Visual Field Testing

- When testing visual fields you want to assess the central visual field as well as the peripheral visual field.
  - It is important to consider the client's visual attention, relative visual field losses, and clinical observations of the client.

Field Testing

- Confrontation Testing:
  - American Academy of Ophthalmology Red Dot Confrontation Test
  - The Kinetic Two Person Confrontation Test
- These are the only tests that are completed with the client's eye glasses off.

American Academy of Ophthalmology Red Dot Confrontation Test

- Materials needed: 2 tongue depressors with red dots at one end of each depressor with dots on both sides and an occluder.
- The examiner sits 1 meter from the client.
- The examiner holds the depressors (targets) 20 inches (50cm) from the client.
- The targets are held in different positions during the testing.
- This only tests the central visual field.

The 5 Positions:

- Position A: Superior Field
  - The target is held at shoulder width at forehead level height.
- Position B: Inferior Field
  - The target is held at shoulder width at adam's apple height.
- Position C: Superior Field
  - The target is held adjacent to the face at forehead level height.

Continued:

- Position D: Inferior Field
  - The target is held adjacent to the jawline of the face at adam's apple height.
- Position E: Superior and Inferior Field
  - One target is held horizontally at the brow line and the other is held horizontally at the chin.

Scoring for the Red Dot Test:

- + = the target was seen
- - = the target was not seen
- D = the target was seen, but the color was diminished.

Procedures:

- The client should be in a well lit room with his or her glasses off.
- One eye is tested at a time.
- The client is instructed to tell the examiner if he or she sees one dot or two and whether the dots are equally bright in color.
- The client is also instructed that his or her right eye should be focused on the examiner's left eye when testing the right eye and the left eye should be focused on the examiner's right eye when the left eye is tested.
- The client uses the occluder to occlude the eye not being tested.

Documentation:

- The biVABA has a form where you can document whether or not the target was seen in the different positions for each eye.
- Remember the results of this test are only for central vision.

The Kinetic Two Person Confrontation Test

- Materials needed: occluder, penlight, and target large enough to be seen at 1 meter with glasses off.
- Test Environment: Dimly lit so the client is able to see penlight when entering visual field.
- This test assesses peripheral vision.

About the test:

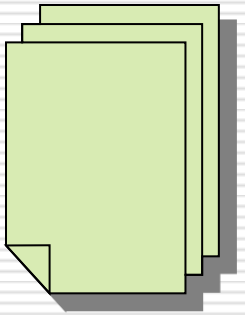
- Two people are needed for the test.
  - One person stands and holds an object a meter away from the client. (This person's job is to make sure the client maintains eye contact with the object in front of them).
  - The second person stands behind the client and moves the penlight into the client's peripheral field and records the test results.

Continued:

- Each eye is tested separately.
- The light is brought in from the 3 o'clock, 12 o'clock, 9 o'clock, and 6 o'clock positions.
- The client is instructed look at the object in front of them and to say now or raise a hand when he or she first detects the light.
- The penlight is brought from behind the client in an arc moving slowly.
- When testing the 6 o'clock position, bring the penlight in from the occluded side.

Documentation:

- The biVABA also has a form for documenting the results of this test.
- Remember that each eye is tested separately during the test.
- The results provide information about the client's peripheral vision.



Contrast Sensitivity

- As we age we require increased contrast to see objects. Decreases in contrast sensitivity affect the client's ADLs and safety. It is important to see what level of Contrast Sensitivity the client has.
- (Also called Contrast Sensitivity Function CSF).

LeaNumbers Low Contrast Screener (from the biVABA)

- Important things to know about the test materials:
  - The test surface is sensitive to environmental pollutants.
    - Do not expose the test to light or dust.
    - Never touch the test with your fingers.
    - Make sure to clean the test following the instructions included in the kit.

Testing CSF:

- The room should be well lit and chart fully illuminated.
- The test is given at 3 different distances: 40 cm, 1 meter, and 3 meters. Contrast sensitivity may be affected for near or far or both.
- The chart should be centered at mid-line and is not accurate if it is not held at the proper distance.

Procedure:

- The client should wear his or her glasses.
- Both eyes are tested together.
- Have the client read the first number of the line. If he or she does not have any problems move to the next line.
- If the client hesitates or makes an error go back to the previous line and have the client read the whole line.
- First test at 1 meter, then 40 cm or 16 inches, and then at 3 meters.
- The client receives credit for the last line he or she was able to read correctly.

Results:

- The biVABA has copies of the form where the information from each of the distances is plotted to show the level of contrast sensitivity function.
- A person with normal CSF is able to identify 25 symbols at 40 cm, 20-25 at 1 meter, and 15 symbols at 3 meters.

90% of the information brought in by the CNS is from vision.

No matter how poor the vision, the client will always try to use his or her vision.

Assessing Scotomas

- For clients with macular degeneration you always want to assess for scotomas.
  - The client may have relative or dense scotomas.
    - Relative scotomas allow for some increased vision with increased lighting.
    - Dense scotomas do not respond to increased lighting.

Types of Scotomas:

- Central Scotomas occur on the fovea of the macula.
  - A preferred retinal locus will occur if damage occurs to the fovea.
- Paracentral Scotomas are scotomas that occur on macula.
- Ring Scotomas form a circle around the fovea.
  - Magnification may not be helpful in this situation.

Clock Assessment

- A clock face may be used to assist in locating scotomas.
  - Have your client look at the center of a clock.
  - Have your client tell you which numbers they see most clearly.
  - Numbers that are not seen are where scotomas are located.

Scotomas Continued:

- Another way to locate scotomas is to have clients read for you.
  - Look for parts of words that are missing.
  - Look to see if there are problems locating the next line to read.
  - Take note of any problems that occur.

PRL Training:

- With a clock face, have your client look at your hand when it is placed above, below, to the left, and to the right of the clock face.
- Ask your client when they are able to see the clock face the best.
- Use the results of this test to start training. (Look above, below, to the left or to the right of the object).

Questions???

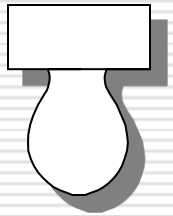
Assessing ADLS:

- ADLs should be measured in a measurable way.
- Rating scales work well to quantify the client's abilities.
- Have the client and/or family member rate how the client does with different ADLs.

Ratings:

- 0 = unable to complete because of vision
- 1 = very difficult to complete because of vision
- 2 = slightly difficult to complete because of vision
- 3 = no problems because of vision
- N/A = doesn't apply to client

You want to address ADLs and I-ADLs:



- Bathing
- Toileting
- Dressing (color identification)
- Feeding (reading menu, food identification)
- Grooming
- Medication Management
- Glucose Management
- Insulin Injections
- Transfers
- Meal Preparation (stove, oven, microwave, labels, pouring liquids, measuring items)
- Laundry

ADLs and I-ADLs Continued:

- Operating thermostat
- Housekeeping
- Telling time
- Home repairs
- Sewing
- Financial Management (coins, bills, checks)
- Writing
- Reading mail
- Using telephone
- Computer
- Reading newspaper
- Reading for fun
- Television
- Seeing people's faces

ADLs and I-ADLs Continued:

- Leisure activities
- Shopping
- Finding food
- Reading prices
- Reading signs
- Mobility inside the house
- Stairs
- Doorways
- Furniture
- Using assistive devices
- Traveling in yard
- Even and uneven surfaces
- Shade from trees
- Driving
- Public Transportation
- Unfamiliar areas
- Signage

Don’t forget to find out about the home environment!

- Do you have stairs to enter the house?
- Are there stairs in the house?
- Do you have throw rugs?
- What type of lighting do you have in your home?
- Do you have an area where you do the mail or read?
- Do you have any adaptive equipment?

Home Continued:

- Do you live alone?
- Do you care for someone else?
- Do you have any pets?
- How long have you lived in your current setting?

Once you have gathered all of the information it is time to make a problems list:

- Impairments:
  - Decreased Visual Acuity
  - Decreased CSF
  - Decreased Central Vision
  - Double Vision
- Functional Limitations:
  - Decreased reading
  - Decreased writing
  - Decreased money identification

Setting Goals:

- Client will read large print magazine using a typoscope.
- Client will write notes on bold-line paper.
- Client will identify coins by touch.
- Client will use large print checks.
- Client will use hand magnifier for spot checking prices in store.
- Client will use stand magnifier for reading books.

Things to remember with goals:

- Goals should always be purposeful and meaningful.
- Goals should always be functional.
- Goals should always be obtainable.
- Never lead your client to think that you will change his or her vision. Educate them on his or her condition and what type of interventions you can offer them.

Any Questions????

- Feel free to contact me at: julie.nastasi@gmail.com

References:

- The biVABA Test Manual by Mary Warren. visAbilities Rehab Services. Copyright: 2005.
- Low Vision Rehabilitation A Practical Guide for Occupational Therapists by Mitchell Scheiman, Maxine Scheiman, and Stephen Whittaker. Slack Inc. Copyright: 2007.
- Danbury Hospital Main Street Rehabilitation Center's Low Vision Evaluation.
- AOTA's Low Vision Practice Guide.