



**Name of School System**  
Name, Teacher of the Visually Impaired  
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## Functional Vision Evaluation & Learning Media Assessment

**Name:** \_\_\_\_\_ **DOB:** \_\_\_\_\_  
**Estimated Acuity:** Fix and Follow  
**Visual Diagnosis:** Exotropia  
**Evaluator:** \_\_\_\_\_  
**Dates of Evaluation:** \_\_\_\_\_

### BACKGROUND INFORMATION:

\*\*\*\*\* is a 15 year old girl who attends the Moderate Intellectual Disability class at \_\_\_\_\_ in \_\_\_\_\_. \*\*\*\*\* has had a visual impairment since birth but the extent of her visual impairment was just recently identified by the school. She receives her ophthalmologic care from Dr. \_\_\_\_\_. She was most recently seen on \_\_\_\_\_. The report indicates that \*\*\*\*\* is able to fix and follow. Her responses to a confrontation test were within normal limits, her motility was within normal limits and pupils were normal in shape and size. She has a large angle exotropia in both her right and left eyes with alternating exotropia in her left eye with limited control but her vision in both eyes indicated she can fix and follow. Finally, Dr. \_\_\_\_\_ also noted she had dry eyes.

*Exotropia is an eye misalignment in which one eye deviates outward while the other fixates normally.*

\*\*\*\*\*'s visual impairment is secondary to her suspected medical diagnosis of mitochondrial disease. According to the United Mitochondrial Disease Foundation (umdf.org), Mitochondrial disease causes a number of physical symptoms associated with muscle weakness and loss of muscle coordination and is associated with loss of vision. Extraocular muscles are very susceptible to mitochondrial dysfunction. Patients may have difficulty moving their eyes in all directions of gaze. Some have double vision and have to adopt various head positions to align their deviated eyes and achieve single binocular vision. According to the US National Library of Medicine National Institutes of Health, it may impact central acuity and color discrimination and may also impact the muscles that control eye movements.

This functional vision evaluation is being conducted as part of an initial referral for vision services to determine eligibility as well as to identify what \*\*\*\*\* sees and what helps or hinders her visual performance particularly to assist in the use of her eye gaze communication device. The intent is to acquire an understanding of \*\*\*\*\*'s functional vision in a variety of environments and to determine what environmental conditions serve as "visual assists" that help \*\*\*\*\* to see or "visual obstacles" that interfere with seeing. The team is particularly interested in support to determine whether her eye gaze communication system is appropriate for her, if it should or can be adapted or if another system would be more beneficial.

### FUNCTIONAL VISION OBSERVATIONS:



Sample FVE Degenerative Disease with Multiple Disabilities  
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\*\*\*\*\* is non-ambulatory and was observed within her familiar environments that included her classroom, therapy rooms, cafeteria and in the hallways. Lighting in the hallways came from overhead fluorescent lights. Classroom lighting came from the overhead fluorescent lighting as well as the light from the Active Board. \*\*\*\*\* was directly assessed in a therapy room to avoid auditory and visual distractions. Lighting came from overhead fluorescent lights as well as natural lighting from windows. \*\*\*\*\* visually attended to movies presented on the Active Board and demonstrates awareness of familiar persons through smiles.

### **Appearance Of Eyes:**

\*\*\*\*\*'s eyes appeared healthy at the time of the evaluation, but a wide angle exotropia was observed. Although \*\*\*\*\* demonstrates she is able to see out of both eyes, her left eye presents with more exotropia, therefore, she visually attends to materials presented in her central visual field with her right eye as she appears to have more control of its movement, and suppresses her left eye.

### ***OCULOMOTOR BEHAVIORS:***

#### **Fixation:**

Fixation is the ability to hold an object steadily in view for a period of time. \*\*\*\*\* is able to establish a visual fix on materials at a near, midrange, and distances beyond 10'. \*\*\*\*\* was not occluded for this evaluation. \*\*\*\*\* is only able to establish a visual fix with one eye at a time. She was observed to lose a visual fix when she tried to coordinate muscle movement. Additionally, she is unable to sustain fixation on a moving target and unable to maintain a fix if she smiles or laughs – something she frequently does as she has a wonderful disposition and good sense of humor. Providing stable and aligned body and head is important for sustained visual fixation, as well as a reduced area to visually attend to. \*\*\*\*\* had a difficult time sustaining visual concentration due to difficulty focusing her gaze paired with postural stability. The combination of visual and motor impairments is having a significant impact on \*\*\*\*\*'s use of vision.

#### **Tracking:**

Tracking is an essential skill needed to read a line of print and return to the next line. Tracking skills are also required in many sports and in everyday activities such as watching a passing car and driving. \*\*\*\*\* had difficulty maintaining a visual fix in order to track the movements of slowly moving materials horizontally and vertically in all directions. She moves her head in order to maintain a fix, but it appears challenging for her to coordinate her movements and maintain a visual fix at the same time. Her eyes “jump” as she attempts to track and she does not have a smooth visual pursuit but instead has a jerky and uneven eye movement.

#### **Shift of Gaze:**

Shift of gaze is the ability to visually fix on an object, shift to another object, and then return. When provided with extra time, \*\*\*\*\* was able to slowly shift her gaze between materials presented parallel and non parallel, but there was a delay in doing so with a lack of fluid movement. She had difficulty initiating and stopping visual movement between specific points. Activities requiring frequent shifting of gaze should be minimized.

#### **Scanning:**

When provided with extra time, \*\*\*\*\* is able to scan her near and midrange environments to locate requested and desired materials including her communication board with 1 1/4" x 1 1/2" pictures paired with print labels. She doesn't, however, use a systematic search and if the viewing area is large, requiring her to move her head in order to view all the choices, she loses her visual fix and she does not consistently scan all areas of the area presented. Her difficulty with head control results in exaggerated, disorganized head and eye movements.



## ACUITIES & FIELDS

### Visual Field:

The visual field is the entire area of vision that can be seen without shifting the eyes or moving the head. \*\*\*\*\*'s current eye report did not indicate field loss. \*\*\*\*\* responded well to materials presented in her right, left, lower and upper visual fields when they were approximately 60 to 80 degrees from center.

### Near Visual Acuity:

Near vision is the ability to perceive objects at a reading distance. Near distance is usually measured at 14 to 16 inches. \*\*\*\*\*'s doctor was unable to determine acuity. The following results are an estimation of her near vision using size comparisons. Various size letter cards were presented in isolation on a black felt board.

At approximately 12"

Distance Comparison	Results	Comments	Print Comparison
20/200	5/5	This was the font size ***** was able to consistently identify from a 12" distance.	33 pt font
20/150	2/5	***** was visibly fatigued and had a more difficult time discriminating this font size.	24 pt font
20/125	0/5	***** was unable to identify any letters.	20 pt font

This demonstrates that \*\*\*\*\* is able to comfortably read a simple Arial font type print that is

**33 pt** in size at 12" distance. Currently pictures are being presented to \*\*\*\*\* paired with print in a much smaller font size, more comparable to 10pt to 14 pt size. Although \*\*\*\*\* is able to discriminate many of the picture icons, she is missing out on the opportunity to pair skill with print awareness and develop literacy. Teachers and therapists should choose the largest size font possible in a simple font that will fit on the communication card. Consider pairing pictures with a single word for the purpose of using a larger font and for simplicity sake. Currently \*\*\*\*\*'s communication board uses Mayer Johnson pictures which are line drawings with color. The meaning is often conveyed by small details in the drawing. Although the team feels that \*\*\*\*\* has a good symbolic cognitive ability, they agree that \*\*\*\*\* may need support with more abstract pictures. Be aware that the tiny details contained in some of the pictures may be a problem. Color coding the background may assist in indicating meaning but be certain to ensure good contrast.

When working with \*\*\*\*\* in building literacy, consider auditory presentation paired with print that is at least 33 pt font size at near distance no greater than 12 inches. For midrange activities (activities 18" to 36" away), choose an even larger font of 66 pt size or larger.

**66 pt size**



### **Distance Visual Acuity: *Abnormal Results***

Distance vision is the ability to perceive objects at a distance usually measured at 20 feet. Although a formal acuity was not possible to establish during her clinical evaluation, \*\*\*\*\* was evaluated during the course of this assessment to determine an approximation for educational purposes. \*\*\*\*\* visually attends to instruction presented at the Active Board. \*\*\*\*\* should be provided with preferential seating and when possible, position her 5'-7' from the board to allow her to best view presented information but not too close that she needs to reposition herself to view the entire board. At this distance, \*\*\*\*\* was able to accurately identify all letters on the 20/150 line. With this approximate visual distance acuity, \*\*\*\*\* should be able to detect and discriminate print that is approximately 2 ½" in size. It is always best practice to pair visual presentation with auditory description for students with visual impairments.

### ***VISION OTHER SKILLS***

#### **Color Vision:**

Color perception is a determination of a person's ability to perceive colors and shades of colors. \*\*\*\*\*'s color vision was not formally assessed, but she was able to demonstrate that she knows her primary and secondary colors. Mitochondrial Disease is associated with central vision loss. Central vision provides acuity as well as color discrimination. Continue to use and incorporate colors as \*\*\*\*\* is able to discriminate them at this time but changes in \*\*\*\*\*'s ability to discriminate colors should be monitored.

#### **Contrast, Lighting, & Glare:**

The observation took place within \*\*\*\*\*'s classroom and cafeteria under normal lighting conditions. She was not observed to squint, but teachers should position screens of devices and any laminated materials at an angle to reduce the negative impact of glare. Whenever possible, present \*\*\*\*\* with information in high contrast.

#### **Visual Clutter & Complexity**

Although \*\*\*\*\* was able to match and discriminate pictures within a cluttered background when provided with extra time, it does slow her down and negatively impact her overall performance. \*\*\*\*\* should be presented with materials in simple fonts with minimal serifs to improve the readability of the print. Pictures and words should have adequate spacing to assist her in making accurate selection using eye gaze. Legibility is a function of typeface design. Although it may be tempting to use a variety of fonts to make them stand out or give a paper personality, it almost always decreases the legibility and readability. Avoid using italics when possible and also avoid using all capital letters. Both these forms of print make it more difficult to differentiate among letters. Keep the backgrounds simple to create visual clarity and avoid clutter. Too many small details in a picture may be perceived as a patch of the predominant color in the design. Clutter may also detract from the student's ability to distinguish one object from another in a picture containing several objects.

#### **Visual Motor Skills**

Visual motor skills are the skills needed to coordinate eyes and hands. \*\*\*\*\* demonstrated significant difficulty coordinating her movements with gaze. Allow \*\*\*\*\* to focus on one motor movement at a time. In other words, do not expect her to reach or turn to look while maintaining a visual fix on presented materials. \*\*\*\*\* attempted to reach out toward materials using her right hand when she wanted to interact with them. \*\*\*\*\* demonstrated an interest in a 3" Clifford finger puppet and a sparkly purple pom-pom. Avoid presenting pictures and selections too far apart that would cause \*\*\*\*\* to need to move her head as it is difficult for her to sustain a visual fix when she needs to coordinate muscle movement.



## **Visual Discrimination & Recognition**

Visual discrimination is the ability to recognize details in visual images. It allows students to identify and recognize the likeness and differences of shapes/forms, colors and position of objects, people, and printed materials. \*\*\*\*\* was able readily match words that were identical but written in a different font.

### ***LEARNING/READING MEDIA ASSESSMENT***

\*\*\*\*\*'s primary learning and reading media is auditory followed by vision. \*\*\*\*\* is able to vocalize and uses a blink to indicate "yes". \*\*\*\*\*'s classroom teacher, Shelly Malone, has assessed her current reading level and found her to be functioning on an approximate 3<sup>rd</sup> to 4<sup>th</sup> grade reading level for sight words. In addition to reading sight words, \*\*\*\*\* successfully uses partner assisted scanning to access her communication book. The current icons on her communication book and communication board range in size from 1" to 2" in size. When presenting the boards and card options to \*\*\*\*\* , teachers verbally label the cards for her, allowing her to use her auditory skills to listen to her options.

Additionally, \*\*\*\*\* has been trialing an eye gaze communication device with the goal to provide her an independent means to communicate. To date, \*\*\*\*\* has not been successful in using the device. Some of the reason was due to the device requiring adjustment, but it does appear to cause significant visual fatigue. To use the board, \*\*\*\*\* must establish and maintain a steady visual fix, scan all the choices and make a selection. The goal is for \*\*\*\*\* to become familiar with the layout and location of icons to create ease of access. Currently, \*\*\*\*\* frequently loses her visual fix which requires the machine to locate and calibrate to her eye (it is calibrated to her right eye). Additionally, she does not consistently look at all her choices prior to making a selection and as stated earlier, she does not use a systematic search pattern.

### ***SUMMARY***

\*\*\*\*\* is a delightful 15 year old girl who has a visual diagnosis of exotropia which is secondary to a suspected diagnosis of mitochondrial disease. \*\*\*\*\* has a wide angle exotropia and uses her right eye to view materials and appears to suppress her left eye. She is able to establish a visual fix when she is not attempting to coordinate muscle movement. \*\*\*\*\* is moves her head in order track the movements of materials and her eyes "jump" as she attempts to track the movements. \*\*\*\*\* requires extra time to shift her gaze between materials that are presented. Presenting materials within a small field will assist \*\*\*\*\* in viewing all her choices without coordinating muscle movement. \*\*\*\*\* is having difficulty scanning an entire area and does not use a systematic search pattern which results in missing information and options presented. \*\*\*\*\*'s near acuity was assessed at a 12" distance. At this distance, \*\*\*\*\* was able to successfully and consistently identify items that were at a 20/200 distance comparison which corresponds to a 33 pt font size. At midrange (small group activities) \*\*\*\*\* should be presented with 66pt font when presented with word cards to build her reading skills. Materials at a distance should be at least 2 ½" in size. Although \*\*\*\*\* knows her primary and secondary colors, be aware that color vision can be affected by additional progression of mitochondrial disease. Providing \*\*\*\*\* with high contrast and using colors as keys can assist her when scanning through communication pages. Although \*\*\*\*\* did not appear to be light sensitive, be cautious when presenting laminated materials and position them in a way to minimize glare. Provide extra spacing between pictures and/or words along with a solid background will assist \*\*\*\*\* in viewing the available choices without having to search a cluttered background.

### **Statement of Eligibility**

According to the (State) Department of Education State Rules, a student must have a visual acuity of 20/70 or less in the better eye after correction that negatively affects her visual performance. \*\*\*\*\*'s doctor was able to determine that she can fix and follow, but was unable to determine a visual acuity as \*\*\*\*\* is non verbal and has limited motor control. Using a combination of information gained from \*\*\*\*\*'s eye report and this Functional Vision Evaluation, it is my professional opinion that \*\*\*\*\* is eligible and in need of service from a Teacher of Students with Visual Impairments at this time.



## RECOMMENDATIONS:

### Visual Functioning

- Be aware that \*\*\*\*\*'s visual functioning may differ from one time to another or from one environment to another. Differences in visual functioning are due to a variety of factors, such as \*\*\*\*\*'s physical state, the particular materials used, and how those materials are presented.

### Visual Field

- \*\*\*\*\* uses her right eye to visually attend to materials. Position materials between the center and 45° of center and limit the area of view so \*\*\*\*\* can see all choices without repositioning her head.

### Visual Attention

- When presenting choice boards, provide \*\*\*\*\* with **extended time** to view choices.
- \*\*\*\*\* may need longer than average to gain visual information from a picture or from print.

### Visual Clutter

- Pictures and materials presented should be simple and **free of visual clutter**
- Present items against a **plain background**; do not hold them up in space, as this tends to make them appear to "blend in" to the background.

### Contrast

- Using a **good contrast** background for items will improve \*\*\*\*\*'s ability to visually detect and fixate on the item. A contrasting color of presentation board may help visually define the space where \*\*\*\*\* needs to direct her visual attention.

### Visual Presentation of Choices

- When presenting items for choice making, make sure \*\*\*\*\* is **aware of all the choices**.
- You may need to **present each item individually** and have her track that item to the presentation board, making her choice when all items have been placed on the board.
- If using laminated pictures, position the pictures so that they do not reflect the light from overhead lighting and create a glare.

### Positioning

- **Position** \*\*\*\*\* to facilitate the best visual response.
- \*\*\*\*\* should be given **preferential seating** (front and center) in the classroom for all films and assemblies, and demonstration lessons.

Name

Teacher of Students with Visual Impairments  
Date

