

MTI PhotoScreener

What Are You Testing?

The MTI PhotoScreener is an eccentric photorefractor that identifies amblyogenic factors: eye misalignment, cataract, nearsightedness, farsightedness, anisometropia (a difference in focusing power between the two eyes), and astigmatism.

What You Need to Do the Test:

1. MTI PhotoScreener.
2. MTI PhotoScreener power cord.
3. Film that has been out of the refrigerator for at least 2 hours.
4. Pupil measurement tool.
5. Labels with the child's name and ID number to attach to the back of the photograph and labels to put on the data sheet.
6. A 3 prong extension cord (if the PhotoScreener power cord is not long enough to reach the electrical outlet).
7. A stapler for attaching photograph to data form.
8. A dimly lit room.
9. Tripp Trapp chair for the child; stool for the photographer positioned 3 feet from each other.
10. Black cloth to hang on wall behind child's head during testing.
11. Small desk or table for photo processing (readability evaluation and photo attachment).
12. Small table to support Photoscreener.
13. Pen light for photo processing.
14. 30-second timer.

Setup for PhotoScreening:

1. Check the PhotoScreener battery charge prior to each screening session by turning the camera on and making sure the low battery light does **not** come on. **Do not** charge the battery unless the low battery light is on. If the low battery light does appear, follow these steps to recharge the battery:

- a. Plug the AC/DC adapter cable into the camera's left side jack and into an electrical outlet.
 - b. The camera can now be left to charge for 14-16 hours or can be operated in the normal manner off the AC power. If the camera is operated during the charge, this time period is part of the 14-16 hour total charge.
 - c. Do not plug the PhotoScreener in unless the low battery light is on. Leaving the battery to continuously charge, or re-charging the battery when the low battery light is not on, will decrease the life of the battery.
2. Place two chairs approximately three feet across from each other. The child will sit in the Tripp Trapp chair and the photographer will sit in the other chair. The child should be photographed against a black background. [Do not place the child's chair directly up against a light colored wall because the bright flash bouncing off of the wall may affect the quality of the image. Similarly, do not take a picture over a table, which could also affect the quality of the image.]
 3. Load the film into the PhotoScreener by turning the camera over with the left side down. Open the film-back by pulling out on the bottom of the door latch. The film door will swing down out of the top part of the film-back. Remove the empty film case by pulling out and down on the white, foam backed tab. Place new film into the top part of the film-back with the white, foam backed tab facing out. The black tab of the film safety cover should extend through the door latch. Check to be sure that the smaller white tabs are not tucked under the pack. Close the film door and press the door latch into the locked position. Pull the black tab of the safety cover all the way out of the film-back and discard it.
 4. Place the PhotoScreener on the countertop or table next to the photographer's chair. Put the stapler next to the recording station.

How You Do the Test:

1. Position the black cloth behind the child's head.
2. Have the child sit in the Tripp Trapp chair away from distractions.
3. Sit approximately 1 m (39 in) from the child, place the camera on your lap/table, and aim the camera toward the child, with the camera lens at the child's eye level. There is no through-the-lens focusing.
4. Turn the camera on by pressing the on/aim (left side) button for one second.
5. Turn on the aiming lights by pressing the on/aim button again.

6. Line up the focus lights >< in the middle of the child's forehead, just above but not touching the child's eyebrows.
7. Tell the child to look for the blinking red and green lights on the front of the camera.
8. Press the fixation button (upper left side). Do not talk to the child once the button is pressed. The fixation lights are the stimulus that the child must look at. If the child hears the photographer's voice, the child will look at the photographer. The screening will not be valid if the child looks anywhere but at the fixation lights.
9. If the photographer has a difficult time getting the child's attention, the music button can be pressed.
10. Immediately as the child looks at the fixation light, press the flash button (lightening bolt – upper right side) to take the picture.
11. Once the camera lens rotates 90°, the camera will be ready to take the second picture of the child.
12. Repeat steps 5-9 above for the second picture.
13. Remove the photo from the camera by pulling the two tabs from the right side of the camera. Begin by pulling the numbered tab and follow-up by pulling the larger unnumbered tab. The second unnumbered tab will need to be pulled parallel to the camera at a moderately slow and even pace.
14. Once the photo has been pulled from the camera, start the 30 second timer. [At 75°, picture will develop within 30 seconds from the time the photo is pulled from the camera.]
15. For children with dark irides, take the film out of the camera after 20 seconds to maximize the readability of the photo.
16. Place a label with the child's VIP ID number, Name Code, and photograph sequence number (1, 2, or 3) onto the gray side of the photograph while you are waiting for it to develop.
17. When the buzzer sounds after 30 seconds, remove the protective casing from the photograph. Separate the photo by peeling the gray side away from the black side of the photo.

18. Using a light and the pupil calibrator, evaluate the photo for readability by checking for “the 4 F’s”: Four pupils, Four – Eight mm pupils, Focus, and Fixation. If the photo is not readable, retake the two pictures for another photograph. There must be a readable top picture (first picture taken) and a readable bottom picture (second picture taken). You can achieve this by obtaining a readable top and a readable bottom in different photos.
 - a. Four pupils: Each set of eyes must have two pupils showing. The photo is still readable if 1/3 of a pupil is not showing. If it is impossible to differentiate between the pupil and the iris, the picture needs to be retaken.
 - b. Four-Eight mm pupils: Use the pupil measurement tool to judge whether or not the pupil is too small (less than 4 mm) or too large (more than 8 mm).
 - c. Focus: Similar to any photo taken, if the picture is out of focus, it is not readable. Looking at the eyelashes helps determine if the picture is in focus.
 - d. Fixation: Fixation is evident by a small white dot appearing centered and slightly nasal in the pupils. Fixation must be achieved in at least one eye in the top picture and in at least one eye in the bottom picture. If fixation is not achieved, the child was not looking at the fixation light on the front of the camera.
18. If no photographs can be taken or after *three* photographs of the same child a readable top and a readable bottom is not achieved, record the child as unable.
19. Staple the bottom of each photograph to the bottom of the child’s data form. Staple each photograph separately.

What You Tell the Child:

1. Tell the child to sit in the Tripp Trapp chair.
2. Tell the child that you are going to take two pictures of him/her with your special camera.
3. Tell the child to look at the red and green light on the camera and to open his/her eyes and “look to see if a mouse/Barney is going to pop out of the camera.”

What You Write Down:

1. Put the form label in the designated area on the data collection form. If there are no labels for the child, write the VIP ID number, Name Code, and age in the area for the label.
2. Write down whether you were able or unable to complete MTI Photoscreening.

3. Check the box indicating how many photos were taken.

Remember!

1. Put the child's identifying label on the photograph.
2. Line up the aiming lights in the center of the child's forehead, slightly above the eyebrows. Make sure the tips of the lights touch but don't cross over.
3. Be sure the child is looking at the fixation light when you take the picture.
4. Retake unreadable pictures.
5. AVOID SAYING THE WORDS "GOOD PHOTO" AND "BAD PHOTO!" Well-meaning Head Start teachers and/or parents may overhear the "diagnosis" from the photographer and think the child has a vision problem. This information is sometimes communicated very quickly to the parents.
6. The 4 Fs are:
 - Four pupils
 - Four to eight mm pupils
 - Focus
 - Fixation.