

Visual Function



Can my loved one see?

- When talking about whether or not an individual can see, it is important to know the difference between the roles of the eyes and the brain, as both lead to “seeing.”
 - The eyes are the access point of the visual information
 - The brain is where that information is processed or interpreted
 - It is possible that the eyes are working, but the brain is unable to interpret the information sent from the eyes. This is like a movie playing without anyone there to watch it. This is referred to as **cortical blindness**.
- We assess an individual’s ability to receive and/or process visual information by looking at his/her reaction to various stimuli.



Visual Startle: a reaction to a visual threat (something rapidly approaching the eyes)

- Reflexive (unconscious) behavior
- Possible Responses:
 - Blink
 - Eyelid flutter
 - Flinch

*If a loved one responds with a startle, it is likely that his/her eyes are functioning. If they do not respond, it does not automatically mean they are blind.



Visual Fixation: shifts eyes to refixate on an object that has moved away from the initial point of fixation

- Demonstrates some awareness of environment (minimally conscious)
- Possible Responses:
 - Eye gaze shifts briefly (>2 seconds) towards an object, picture, or person that has moved



Visual Pursuit: eyes fluidly move to maintain visual gaze on people or objects moving in their environment

- Demonstrates some awareness of environment (minimally conscious)
- Possible Responses:
 - Your loved one watches you as you walk across the room
 - Your loved one keeps their eyes on their reflection in a mirror as it moves

*If a loved one demonstrates visual fixation, or visual pursuit, it is likely that his/her eyes are functioning and that his/her brain is aware of the information received.

(over)



Does my loved one know what he/she is looking at?

- If your loved one has demonstrated signs that his/her eyes are functioning and that his/her brain is aware of the information, the next step in our assessment is to determine how accurately the brain is processing that information. This is done by observing whether your loved one reaches for and/or touches objects in the environment and by determining whether or not he/she can discriminate between objects (e.g. when provided two options, looks at or reaches for the item asked)
- There are different factors that can impact performance:
 - **Visual acuity:** clarity of vision
 - Best assessed when your loved one is conscious and has a reliable yes/no system
 - **Visual agnosia:** impaired visual recognition of familiar objects not related to acuity, language, memory, etc.
 - **Visual field cuts:** decreased vision or blindness in parts of the visual field of one or both eyes
 - **Visual attention:** ability to focus on visual stimuli



Activities for increasing visual attention to the environment

- Schedule specific times during the day to watch TV. Do not play it as background noise, as this may distract your loved one and decrease responsiveness to other commands. Choose specific, meaningful music or shows for your loved one which may elicit a positive or negative response.
- Sit near your loved one in different places (e.g. on the left side or the right side) and talk to him/her or play music for him/her.
- Present your loved one with a bright/flashing object or picture, and quickly move it to a different position.
- Hold a mirror or picture within their view and move it slowly to different positions.
- Ask your loved one to look at or touch a specific object while holding it in their field of view.
- Hold up two or more objects and have your loved one identify the target object via touch or eye gaze.

If you have additional questions, please consult your primary care physician or neuroophthalmologist.