

### terms for dx

hyperopia	farsightedness
myopia	nearsightedness
cataracts	clouding of the lens - often due to age
glaucoma	peripheral vision is gone - only central vision
macular degeneration	central vision is gone
diabetic retinopathy	cow print - occurs secondary to diabetes
homonymous hemianopsia	Loss of vision in half of the visual field. Vision is lost in the same half of each eye, while vision is retained in the opposite half of each eye. Loss of visual field is on the same side as physical impairments, such as hemiparesis.
diplopia	double vision
contrast sensitivity - decreased	decrease in contrast sensitivity function can lead to a loss of spatial awareness and mobility and increase the risk of injuries.

### interventions

hyperopia	correctable with glasses/lenses
myopia	Correctable with glasses, contact lenses or various forms of Lasik surgery.
cataracts	managed with adaptations including glasses, magnifiers, and bright lighting. Advancing cataracts that limit functional vision must be removed surgically.

### interventions (cont)

glaucoma	compensate for tunnel vision by moving his or her head and body around to view peripheral visual areas. -Pathways in the home should be cleared of clutter. -Electronic magnification devices and adjusted lighting patterns to reduce glare may be helpful. -Night vision is often severely impaired. Patient education to help with adjustment to the condition is important.
macular degeneration	compensate for central vision loss by turning the head and body to use peripheral vision using another, unaffected point on the retina. Called Eccentric Viewing Techniques or Pseudo Fovea training. Other treatments include Amsler Grid training, device training to compensate for visual acuity, environmental modifications, and patient education. Support groups help with adjustment.

### interventions (cont)

diabetic retinopathy	Careful management of diabetes can slow progression. Advanced stage leads to permanent blindness. Treatments can include Amsler Grid training, Eccentric Viewing, special tinted glasses to reduce glare and sharpen acuity, environmental modifications, electronic magnification devices, community resource training.
homonymous hemianopsia	compensation techniques.
diplopia	dependent on the underlying cause of the double vision. Medications may be used if the underlying cause of the double vision is another medical condition. If eye muscles are weak or misaligned, corrective surgery may be used. If surgery will not correct double vision, other methods such as eye patching or using prism glasses may help to correct or reduce the problem.



### interventions (cont)

contrast sensitivity - decreased

Reduced contrast sensitivity may affect the ability to walk down steps, recognize faces, drive at night or in the rain, find a telephone number in a directory, read instructions on a medicine container or navigate safely through unfamiliar environments. Reading is also compromised, for example letters may be almost invisible if the print is too light. Environmental modifications, such as high contrast colors or strips on the first and last steps of staircases, contrasting colors on door frames and the use of contrast on electrical outlets, can all improve patient safety. Decreased contrast sensitivity function is associated with ocular pathological conditions such as a cataract, age-related macular degeneration, diabetic retinopathy, glaucoma and optic nerve degenerations.

low vision providing adaptations to compensate for vision loss.

### interventions (cont)

low vision

-Increase the level of lighting in areas where activities will occur. - Use adjustable window treatments (curtains, blinds, shades, drapes) to allow for the adjustment of natural light. -Place chairs near windows to allow for reading or craft work using natural light. - Reduce glare, including adjusting the location of mirrors. Use non-skid, non-glare cleaning products on floors. -Increase contrast, such as placing a dark bath mat on a white bathroom floor or bright orange tape on the edge of a dark step. Use light colored door handles on dark colored doors and vice versa. -Clear walkways and reduce clutter in common areas. - Tape down or remove rugs and electrical cords. -Increase font size during reading, including use of large print books and adjusting computer monitor settings. - Recommend textured upholstery on furniture to provide tactile cues for seat location. -If making recommendations for a public hallway, recommend that drinking fountains, fire extinguishers, and other obstacles be located along the same wall, leaving the other wall clear. -Light stairwells clearly to reduce shadows and glare. Mark landings with a highly contrasting color. -Mark emergency exits clearly

### interventions (cont)

unilateral neglect

The lighthouse strategy combines three strategies (anchor, guide, scan) to help the person scan, plan, and implement functional tasks.

### visual perceptual skills terms

form constancy

The ability to recognize and label objects even when they are viewed from a different angle or in a different environment.

figure ground

The ability to focus on one specific piece of information in a busy background. To see an object in a busy background.

visual closure

The ability to correctly perceive an object or word, even when it is partly hidden. This ability helps you to quickly make sense of what you see, even if it is not all visible to you, which means you do not have to see every little detail in order to recognize something.

visual memory

The ability to store visual details in short-term memory and to recall the visual details of what you have seen.



### visual perceptual skills terms (cont)

**spatial orientation** The ability to identify the position or direction of objects or points in space. Position in space (relates to understanding directional language concepts, such as in/out, up/down, in front of/behind/between, left/right, when relating to objects or shapes such as letters).

**visual discrimination** This is the ability to see subtle differences between objects or pictures. This visual perceptual skill can be described as "paying attention to detail".

**spatial relationships** This is the ability to visually perceive two or more objects in relation to each other and to yourself.

### low vision assessments

**amsler grid** Used as a maintenance tool for clients with age related macular degeneration to monitor vision changes.

### low vision assessments (cont)

**visual acuity - snellen chart** 20/20 vision is a term used to express normal visual acuity (the clarity or sharpness of vision) measured at a distance of 20 feet. If you have 20/20 vision, you can see clearly at 20 feet what should normally be seen at that distance. If you have 20/100 vision, it means that you must be as close as 20 feet to see what a person with normal vision can see at 100 feet.

**confrontational testing for visual field cuts** visual fields of both eyes overlap; therefore each eye is tested independently. The patient should cover their right eye with their right hand (vice versa when testing the opposite eye). With the examiner seated directly across from the patient, the patient should direct their gaze to the corresponding eye of the examiner.

**contrast sensitivity** Contrast sensitivity is an important factor influencing the quality of vision. - chart with decreased color of letters

### low vision assessments (cont)

**clock drawing** The Clock Drawing Test (CDT) is a nonverbal screening tool in test for visuospatial deficits and cognition which the patient is asked to draw a clock. Although there are multiple versions of this test, in general, they all ask the patient to draw the face of a clock and then to draw the hands to indicate a particular time. Placement of the numbers around the circle requires visual-spatial, numerical sequencing, and planning abilities.

### screening tools for ocular motor skills

**pursuit tracking** The ability of the eyes to track moving objects within the visual field. The therapist watches for coordination of eye movements and any deviation of gaze from the object.

**convergence** alignment of the eyes during near distance tasks. client reports or signals when they see two of the object (see double).

**saccades** ability of the eyes to quickly jump from one area of focus to another. The therapist watches for difficulty moving the eyes and deviation from the objects.

### screening tools for ocular motor skills (cont)

peripheral vision ability to see motion from the sides of the eyes. The therapist will measure the angle between 0 and 90 degrees at which the object is seen.

visual field loss - also called confro-ntational testing Whether a visual field cut exists and the severity of that field cut. The therapist asks the client to report if the object is seen in different locations and watches for loss of visual pursuit.

### adaptations for visual impairment

magnifiers Used to enlarge print or objects within magnified field. - hand held – magnifies a small, defined area -sheet – magnifies an entire page - hands free – mounted on a table or desk, hung around the neck, or worn as glasses. Used for small piece work, needlework, etc

low vision lighting Used to provide extra lighting for reading or small piece work. May be hand held, mounted, or incorporated into a magnifier.

adaptive clocks Clocks that use audio output to announce the time and vibration to provide alarms.

### adaptations for visual impairment (cont)

audio books Books read aloud and recorded specifically for the visually impaired.

talking and low vision devices Devices that provide audio output or large print on the controls. Calculators, television remote controls, personal organizers, telephones, timers, daily living devices, and other devices are available with these adaptations.

labelers Braille, large print or audio tags to label clothing and other items.

assistive tech These items include adaptations for low vision for computers, tablets, and smartphones.

### visual perception clinical observations

form constancy Difficulty recognizing shapes, numbers, and letters when they differ in either color, size, font, or when they are presented in a different context • Difficulty recognizing people wearing different clothing

### visual perception clinical observations (cont)

figure ground Difficulty locating clothing in drawers during ADLs • Missing road signs or vehicles when driving • Unable to locate toys in a toy box • Struggles to find information on a busy blackboard • Loses place when copying work from the board • Loses place on the page while reading • Struggles with navigating around a map

visual closure Cannot identify traffic signs that are partially hidden behind a tree or other vehicle • Difficulty locating items in the refrigerator that are partially covered • Difficulty making sense of words on a smudged page • Difficulty recognizing an object even when you can only see part of it • Difficulty finding an item of clothing when it is partly hidden

visual memory Difficulty remembering faces or new people • Reading comprehension is affected when visual memory is deficient • Difficulty recalling a phone number that has just been read • Difficulty remembering sight words • Difficulty copying work from the board or a book

spatial orientation letter and number reversals



### visual perception clinical observations (cont)

visual discrimination  
 Struggles to match clothing, socks, or cutlery, especially when the differences are subtle • Struggles to see the difference between similar objects (e.g., coins) • Struggles to see differences between similar looking letters and words (eg b / d, b / p, 5 / s, won't / want, car /cat)

spatial relationships  
 Difficulty understanding what it means to "stand first in a line", "sit in front of Amy" or "put the pencil on top of the paper". • Difficulty with spacing and organization of written school work • Difficulty with writing on the line/in relation to the lines • Standing in line without bumping into others

### standardized test of visual perception

beery vmi  
 Integration of visual and motor abilities

test of visual perceptual skills  
 Non-motor visual perceptual skills, including: -visual discrimination -visual memory -visual-spatial relationships -form constancy -visual-sequential memory -visual closure -figure-ground

### standardized test of visual perception (cont)

motor free visual perception test  
 MVPT  
 Non-motor visual perceptual skills, including: -visual discrimination -spatial relationships -visual memory -figure-ground -visual closure

developmental test of visual perception  
 DTVP  
 Both motor and non-motor perceptual skills, including: -eye-hand coordination -copying -figure-ground -visual closure -form constancy The adult version also includes: -visual-motor search -visual-motor speed

### visual skills

visual motor  
 visual perception

motor coordination  
 sequential memory

visual perception skills  
 figure ground

visual processing skills:  
 convergence, tracking, divergence, visual efficiency, saccades, visual fixation  
 form constancy

visual discrimination

visual memory

visual closure

spatial relations

