

Hemianopia / Hemianopsia



Description

Hemianopia (Hemianopsia – half vision) is a functional defect where a blind area affects half of each eye's visual field.

The condition is caused by brain damage rather than problems with the eyes. It can be caused by damage to the brain either by lesions on the optic nerve, vascular lesions or aneurysms, infections, pressure from carotid arteries, brain tumors, traumatic brain injury or stroke which affects the optic nerve, optic chiasm or occipital visual cortex. The type of field loss is influenced by the location of the damage within the brain's visual system.

There are several types of hemianopia:

- ⇒ Altitudinal - affects the lower or upper half of the visual field of either or both eyes.
- ⇒ Binasal - affects the inner half of each eye's visual field (left half of right eye's field and right half of left eye's field).
- ⇒ Bitemporal - affects the outer half of each eye's visual field (right half of the right eye and left half of the left eye).
- ⇒ Homonymous - affects the same half of each eye's field.

Implications

In hemianopia, images from only one half of each eye reach the brain as image reception from only half of each visual field occurs due to blindness in the other half.

The degree of vision loss may be partial or absolute. In some cases, the visual field loss can also affect the macula (responsible for central vision and fine detailed crisp vision).

In addition to visual field deficit, disorientation and dizziness, vertigo, or nausea may be experienced.

Depth perception difficulties and coordination challenges may occur. Peripheral vision may be severely impacted. Therefore, orientation and mobility instruction and scanning techniques can enhance safety. Individuals may need to have saccadic training (moving the eyes into the field loss) and learn to read by following the text with a finger. They may need to actively try to increase the size of small eye movements as they endeavour to see each word in their visual field, recognise it as the complete word, and read it.

Some improvements in vision may be possible depending on the cause of the loss of visual field, however, recovery is dependent on the extent of the damage.

Accessing the curriculum

Seat the student to ensure their best possible view of the teaching focus.

Reduce classroom glare. Avoid reflective surfaces, instruction next to windows and control overhead lighting to reduce visual fatigue, discomfort and enhance access.

Ensure all print and digital materials are clear and uncluttered. Ensure strong contrast and bolding.

Consider the provision of dark lined paper.

Reduce visual clutter by ensuring learning materials are well spaced and well organised on a page.

Remove unnecessary visual information.

Use bullet points rather than long narrative text when presenting information.

Consider the use of non-optical devices such as a dark ruler or a straight piece of card/paper to assist the student in keeping their place when reading.

Encourage the student to turn their text on a sideways angle in order to read within their visual field.

For example, hold the text at a 45 to 90 degree angle to enable reading vertically instead of horizontally and keep the text within the available field of vision.

Provide additional verbal descriptions to support instruction and understanding.

Electronic access to print materials can greatly assist, especially with utilisation of the built-in accessibility features of Windows and Apple operating systems.

Allow the student extra time to process visual information (if required) and to reduce visual fatigue. When fatigue is present, offer eye rest time.

Encourage active scanning of the learning environment by using head and eye movements to look towards the side with the visual field loss. When walking in public areas, buddy the student with another and ask that person to walk on the side with the visual field loss.

Modify physical activities and provide detailed verbal instructions of all actions, skills and game rules (where necessary).

As this document contains generic information, please consult with the Vision Education Program in regard to individual educational needs.

References

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For further information

Phone: 08 9402 6409

Email: sensory@education.wa.edu.au

Web: www.ssens.wa.edu.au