



Homonymous hemianopsia

Homonymous hemianopsia is a loss of half the visual field on the same side in both eyes. After hemispherectomy surgery, the child loses half of their field of vision directly opposite the side of the removed hemisphere.

Classrooms

In a classroom setting, the child may be unable to see the teacher in the front or the classroom or the lesson plan on the wall. Seating location is important to ensure that the instructor is not in the child's field cut. Homonymous hemianopsia can dramatically affect the child's ability to navigate the environment. They may bump into walls often, trip on objects on the floor, or be startled when something appears in their field of vision. Fear of falling or inability to navigate obstacles with ease often causes the child significant distress which may result in their inability to fully participate in classroom and recreational activities.

Reading

Children with hemianopsia may search their blind field with their intact vision, but this search may be slow. Slow search patterns do not allow comprehension of the environment fast enough to avoid an obstacle. Homonymous hemianopsia and reading challenges Reading can present a particular challenge to a child with homonymous hemianopsia. Mean reading speed can be diminished, resulting in subjectively diminished reading performance: in other words, because the child cannot read as fast as their typically-developing peers, they and their educators believe they do not read well.

Right hemianopsia, which results after left hemispherectomy, can have a severe impact on reading in individuals who read languages that are written and read from left to right (e.g. English, Spanish, French) as one is always reading into the blind spot.

Left hemianopsia, which results after right hemispherectomy, can also have a significant impact on reading. Children may have problems finding the subsequent line of text. Also, because the first part of a word often contains information to quickly identify it, they may have frequent reading errors.

Hemispatial neglect and vision

Many children after hemispherectomy have hemispatial neglect - the inability to recognize stimulus coming from their affected side. People with hemispatial neglect are often unaware of their condition. Friends or therapists might suggest they look to their neglected side but that instruction misunderstands the problem they have with navigating the space around them: because the child is completely unaware that something is missing from their affected side in the first place, it is extremely difficult for them to be aware of it even after prompting.

Visual processing

Visual processing, or the brain's ability to understand and process what the eyes see, can sometimes be a challenge after hemispherectomy. Due to the nature of the surgery, the connections of the occipital lobe (the part of the brain that receives input from the eyes) is disconnected from other parts of the brain which may result in visual processing difficulties. Visual processing is comprised of several different parts and includes:

1. Visual closure - knowing what an object is when seeing only part of it. A child with visual closure issues may struggle to identify a word when they can only see a few letters (as may occur due to homonymous hemianopsia)
2. Visual discrimination - using eyesight to compare features, like color and shape, from one to another object. A child with visual discrimination issues may confuse one letter for another
3. Visual figure-ground discrimination - differentiating a shape or word from its background. A child with visual figureground discrimination may struggle to pick out numbers or words from a page;
4. Visual memory - recalling something the child saw recently. A child with visual memory problems may struggle to recall a written phone number or how a word is spelled
5. Visual sequencing - distinguishing the order of numbers, letters, words, or images. Problems with visual sequencing may cause a child to struggle with filling in the bubbles on a test, aligning numbers for addition or subtraction, or keeping their place when reading a page;
6. Visual-spatial processing - understanding how an object's location relates to you. A child with visual-spatial processing issues may struggle with judging time, reading a map, etc.;
7. Visual-motor processing - using the eyes to coordinate body movements. Children with visual-motor processing may be unable to copy word or judge the distance of an object. Other visual challenges Other visual challenges such as strabismus ("lazy eye"), cortical vision impairment, nystagmus, and depth perception may occur either because of the procedure or due to the underlying brain condition that caused the seizures in the first place.

Source: Brain Recovery Project: *Education after Hemispherectomy*