Homonymous Hemianopia

What is a Homonymous Hemianopia?

Homonymous hemianopia refers to an absence of vision towards one side of the visual world in each eye. The damage that caused this problem is in the brain and not in the eyes.

What is the anatomy of the visual pathway?

Many people are familiar with the concept that the left half of the brain receives sensations from and is responsible for movement on the right side of the body and vice versa. In a similar way, the left half of the brain receives visual information for vision from the right side of the world and the right half of the brain receives visual information from the left side of the world.

What may be the symptoms of a homonymous hemianopia?

- It is difficult to explain the sensation of a homonymous hemianopia. People with a right homonymous hemianopia often “feel like” the problem is in the right eye, but checking each eye by itself shows that the right side of each eye is affected. The same holds true for patients with a left homonymous hemianopsia.

- Affected people may bump into things on the side of the visual field defect. Driving may be particularly problematic: people may get into accidents as they change lanes because they cannot see oncoming cars or sideswipe objects on that side. Objects on a desk or table may not be seen on the side of the visual field loss, and sometimes even the food on that side of the plate is left uneaten.

- Visual hallucinations may occur with homonymous hemianopia, especially if it develops suddenly as it would from a stroke. Affected people are often reluctant to mention this symptom but these are not related to a psychiatric disorder.
Examples of what a person may see with a homonymous hemianopsia often involve showing a picture of a scene and then blanking half the scene as shown in Figure 1.

Figure 1. Top picture: Scene as observed by individuals without a homonymous hemianopia. Bottom picture: Scene as observed by individuals with a homonymous hemianopsia.

In another example, consider the following paragraph from Silence of the Lambs: the top shows the real paragraph, and the bottom shows the paragraph as it might be seen by someone with a right homonymous hemianopsia:

Clearly something was wrong with him. There was a peculiar cleverness in Crawford, aside from his intelligence, and Starling had first noticed it in his color sense and the textures of his clothing, even within the FBI-clone standards of agent dress. Now he was neat but drab, as though he were molting.

Clearly something was a peculiar cleverness in intelligence, and Starling sense and the textures FBI-clone standards of but drab, as though he
How is a homonymous hemianopia diagnosed?

- A complete evaluation of the visual system is recommended. Often included in this evaluation is a visual field test that assesses for any visual field defects.
- Homonymous hemianopia may be caused by any disorder that affects the brain, including tumors, inflammation, trauma, but most commonly is due to a stroke.
- Imaging of the brain by magnetic resonance imaging (MRI) is the most common diagnostic test used to diagnose the location and cause of the brain injury.

How is a homonymous hemianopia treated?

- Attempts to address the symptoms caused by a homonymous hemianopia may be directed at two areas: reading and dealing with the environment. Low vision specialists and vision rehabilitation may be consulted to work on these techniques.
- Prisms or mirrors have been used on glasses to compensate for the blind field. These attempt to shift or relocate the visual field toward the defect to attract attention to objects there but eyes must still actively move in that direction to focus on the object.
- More formal attempts to help recover visual field loss using computer assisted programs are controversial. These programs may not actually restore what is lost but instead retrain the brain to move the eyes more to “fill in the blanks.”

What is my prognosis?

- Recovery depends on the underlying cause.
- In general, the vision loss is permanent if the cause is a stroke.

Will my vision improve?

- Any recovery that occurs is likely to begin soon after a stroke and reach its maximum improvement in the first 6 months, although some improvement may occur after that. If the underlying cause is not a stroke, the potential for improvement may differ. This should be discussed with your doctor.
Will I be able to drive?

- **Driving** poses a hazard for many people with homonymous hemianopia. Much depends on associated neurologic deficits, especially the presence of neglect.
- Many rehabilitation facilities have **driving simulators** both for training and for evaluation driving safety. Taking the drivers test to allow an experienced examiner to assess driving safety may be helpful.
- Vision requirements for a **license to drive** may be found for **individual states** on the Web at: [http://www.mdsupport.org/library/drivingrequirements.html](http://www.mdsupport.org/library/drivingrequirements.html). If you have any doubt about whether your visual field loss disqualifies you from driving in your state, **ask your doctor**.