

Sudden loss of vision

Loss of vision is considered sudden if it develops within a few minutes to a couple of days and may affect a small part of the vision or may seem like blurred vision. It may affect one or both eyes and all or part of a field of vision. Most forms of visual loss are local to the eye but on occasions visual loss maybe a symptom of a potential problem with another part of the body.

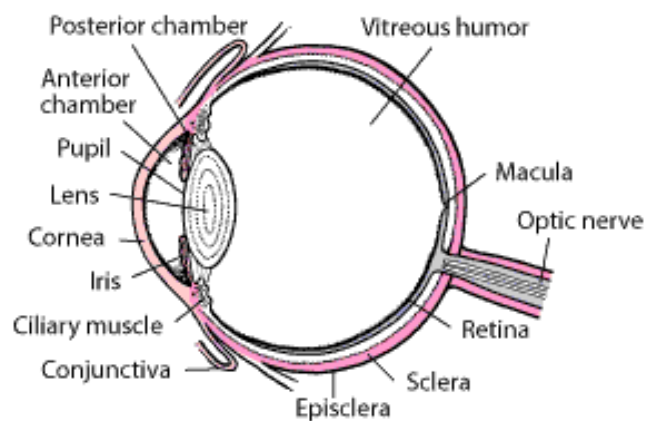


Diagram showing the inner structure of the eye

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What are the causes of sudden visual loss?

To enable sight, light travels from the outside world through several transparent structures before the light sensitive film of the eye (the retina) can sense the image. The cornea is the first transparent structure. It covers the front of the coloured part of the eye (iris), allowing light to pass through and enter the lens inside your eye. Through the lens the light passes through vitreous humour (the jelly in the eye). If anything causes problems with light transmission through these images vision will be blurred or lost. For example, if the cornea is scarred, it will seem like you are looking through a steamy

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window. If the lens becomes cloudy (cataract), then light is impeded and vision blurred

There are 3 general causes for sudden loss of vision:

- Clouding of normally transparent eye structures
- Abnormalities of the retina (the light-sensing structure at the back of the eye)
- Abnormalities of the nerves that carry visual signals from the eye to the brain (the optic nerve and the visual pathways)

Most of the disorders that cause total loss of vision when they affect the entire eye may cause only partial vision loss when they affect only part of the eye.

Causes of visual loss

Once the image hits the retina, the next leg of the journey is the brain to interpret the image. Nerve signals travel along the optic nerve from each eye. Damage to an eye or the visual pathway causes different types of vision loss depending on where the damage occurs.

The most common causes of sudden loss of vision are usually due to commonly what is referred to a 'block or burst', for example:

- Blockage of a major artery of the retina (central retinal artery occlusion)
- Blockage of an artery to the optic nerve (ischemic optic neuropathy)

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- Blockage of a major vein in the retina (central retinal vein occlusion)
- Blood in the vitreous humor near the back of the eye (vitreous hemorrhage)

Sudden blockage of an artery (artery occlusion) or vein (vein occlusion) may only affect a part of the retina or optic nerve or the whole of the retina. This may be due to inflammation or build up of 'debris' elsewhere in the body and lodging in the small vessels of the eye. A blood clot can form in the retinal vein and block it, particularly in older people with high blood pressure or diabetes. People with diabetes are also at risk of bleeding into the vitreous humor.

Sometimes what seems like a sudden start of symptoms may instead be sudden recognition. For example, a person with long-standing reduced vision in one eye (possibly caused by a dense cataract) may suddenly become aware of the reduced vision in the affected eye after covering the unaffected eye.

Other less common causes of sudden visual loss include:

1. Acute glaucoma (associated with pain, vomiting, and feeling quite unwell)
2. Inflammation of the eye structures, called uveitis
3. Retinal infections
4. Macular degeneration, whether wet or dry.

Anything that blocks the passage of light from the environment to the back of the eye or disrupts the transmission of nerve impulses from the back of the eye to the brain will interfere with vision.

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Blindness can occur under the following circumstances:

Light cannot reach the retina.

- Damage to the cornea caused by infections such as herpes keratoconjunctivitis or an infection that follows contact lens overwearing, which results in an opaque corneal scar
- Damage to the cornea caused by vitamin A deficiency (keratomalacia), which causes dry eyes and results in an opaque corneal scar (rare in developed nations)
- Damage to the cornea caused by a severe injury that results in an opaque corneal scar
- A cataract, which causes loss of clarity of the lens

Light rays do not focus on the retina clearly.

- Imperfect focusing of light rays on the retina (refraction errors) that cannot be fully corrected with eyeglasses or contact lenses (such as from certain types of cataracts)

The retina cannot sense light rays normally.

- Detached retina
- Diabetes mellitus
- Macular degeneration
- Retinitis pigmentosa
- Inadequate blood supply to the retina, usually due to a blockage of the retinal artery or vein, which may be caused by inflammation of the blood vessel wall (such as that caused by giant cell arteritis), or

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due to a blood clot that travels to the eye from somewhere else
(such as from the carotid artery in the neck)

- Infection of the retina (such as from *Toxoplasma* or fungi)

Nerve impulses from the retina are not transmitted to the brain normally.

- Disorders affecting the optic nerve or its pathways inside the brain, such as brain tumors, strokes, infections, and multiple sclerosis
- Glaucoma
- Inflammation of the optic nerve (optic neuritis)

The brain cannot interpret information sent by the eye.

Disorders that affect the areas of the brain that interpret visual impulses (visual cortex), such as strokes and tumors

When to see a doctor

Sudden loss of vision is an ophthalmic emergency. You should call the local eye department urgently in these situations to gain specialised care immediately.

Treatments

Treatments will depend on the cause of the visual loss. There sometimes maybe nothing that can be done to recover the vision, but the doctor may very well wish to monitor the eye and undertake tests to find the cause.

Unfortunately, in some eye conditions resulting in visual loss, the complications may require longer term monitoring and treatments.

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