
See Like Me
Low Vision Simulator Kit

Introduction

The See Like Me low vision simulators present the following visual conditions:

1 - Cataracts
2 - Glaucoma
3 - Diabetic Retinopathy
4 - Macular Degeneration
5 - Retinitis Pigmentosa
6 - Detached Retina
7 - Hemianopsia
8 - High Degree Myopia

The See Like Me low vision simulators are designed to present a version of each specific eye condition listed above. These simulators are different from others on the market because they show the color changes that are often present in certain eye conditions as well as differences in vision that often occur between the two eyes.

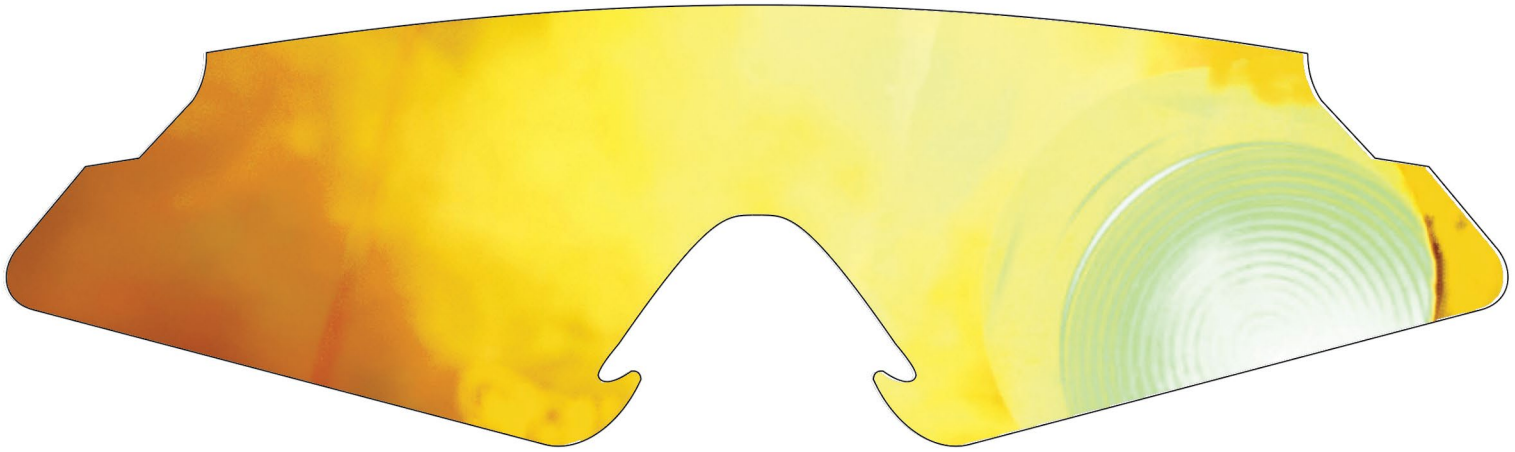
No two eye conditions are the same and no two eyes are exactly the same, especially those that have disease, injury, or congenital anomaly. The See Like Me low vision simulators cannot mimic any person’s exact vision; instead, they give a general sense of what it is like to function with low vision that stems from a particular condition.

Cataracts

A cataract occurs when proteins build up in the lens of the eye. When enough proteins accumulate, the lens gradually becomes opaque and does not let much light through. Distortions, yellowing of the visual field and dark spots in vision occur as a result.

Most cataracts are the result of the aging process. Injury to the eye at any age may result in cataract as well. Sometimes babies are born with cataracts or develop them in childhood. These are termed “congenital cataracts.”

Cataracts are the number one cause of blindness worldwide. Alcohol, tobacco and diabetes are all primary contributors to their development.

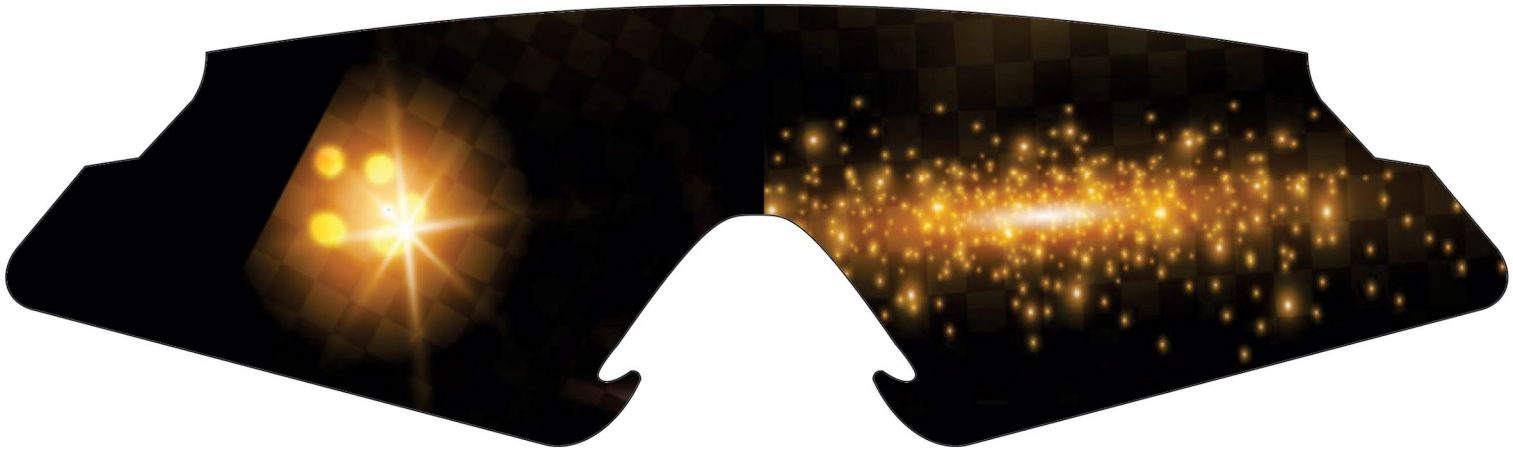


Glaucoma

Glaucoma is a condition that occurs when pressure builds up within the chamber of fluid that is located in front of the eye's iris. There are a number of ways in which this can happen, but the end result is continuous pressure on the optic nerve. Over time the increased pressure on the optic nerve causes it to lose its ability to conduct messages to the brain. Glaucoma is the second leading cause of blindness worldwide.

The damage of glaucoma starts at the edges of vision called the periphery. Eventually, if the pressure continues, the visual fields grow ever smaller until there is vision only in the very center of what once were full visual fields. Often the remaining visual fields become discolored. Glaucoma can result in complete blindness.

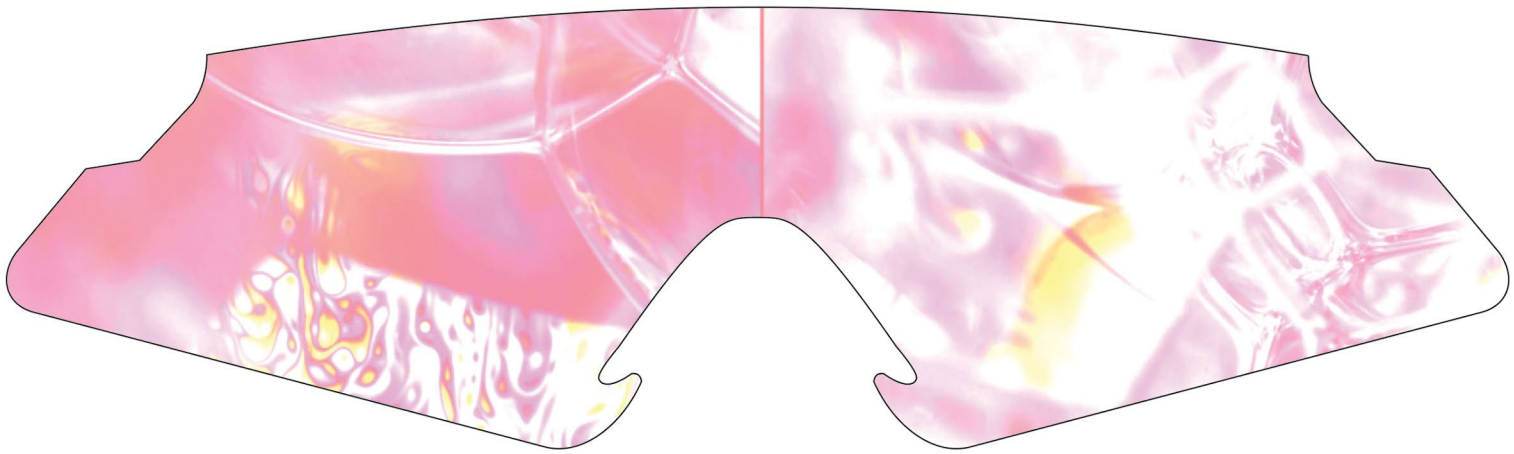
Fortunately there are treatments that can slow or stop the progression of glaucoma. Adults should have a yearly test for glaucoma.



Diabetic Retinopathy

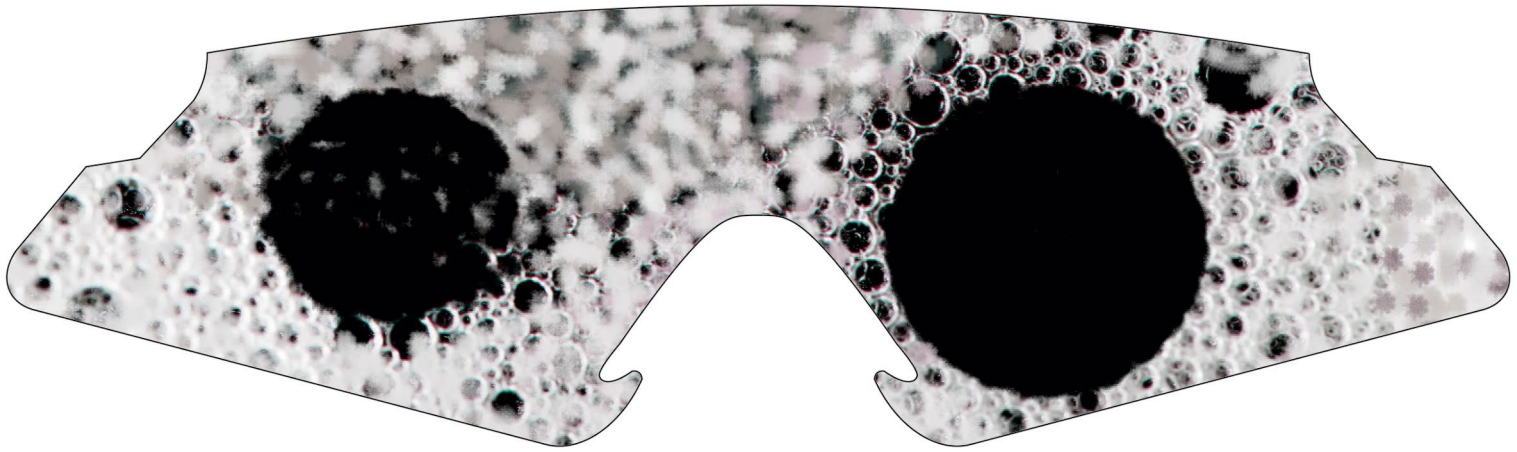
Diabetic retinopathy occurs when blood vessels in the retina and supporting tissues become damaged and new blood vessel growth occurs. The new blood vessels leak blood or fluid into the vitreous, the gel inside the eyeball. The long term effects of high blood sugar contribute to the development of diabetic retinopathy.

People who have the condition often see floaters, strings, blood, dark areas or have blurry vision. The longer and more uncontrolled a person's blood sugar is, the more likely he or she is to experience diabetic retinopathy. The condition occurs in individuals with both Type I and Type II diabetes.



Macular Degeneration

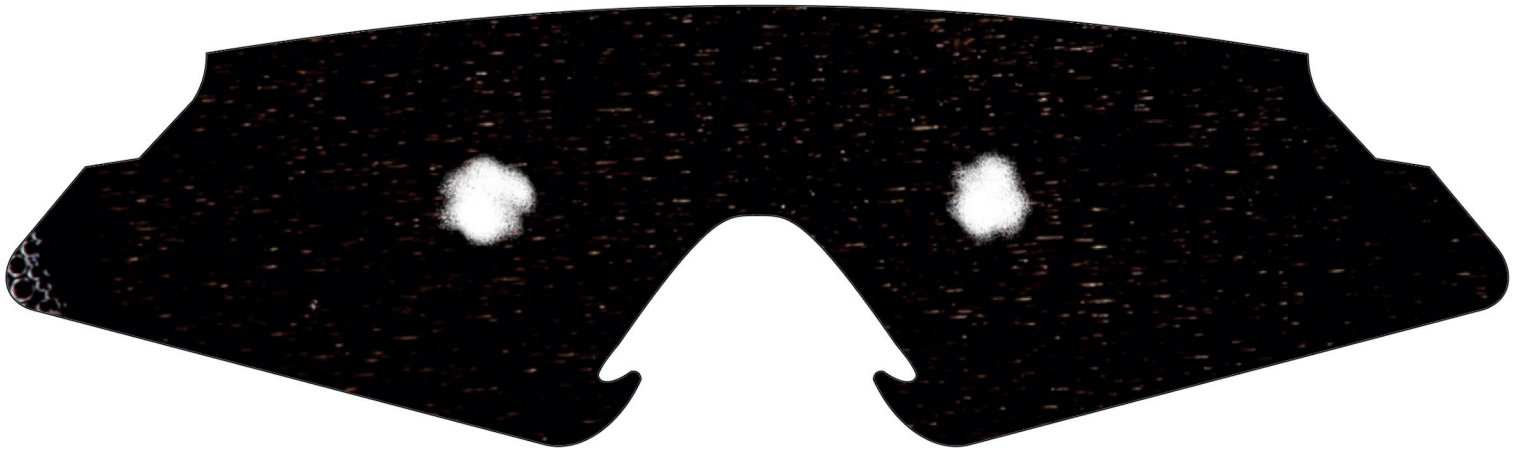
Macular degeneration is a complex disease. It is the central vision which is lost. This is the portion of our eye we use most during the day to see detail and accomplish tasks such as reading. In congenital macular degeneration, babies are born with a condition which causes the macula to begin degeneration in childhood. There are three primary diseases of this type. One is called Stargardt's disease, one is Best Disease, and the last is x-linked retinoschisis.



Retinitis Pigmentosa

Retinitis pigmentosa is a silent thief of vision. Often people do not know they have it until it becomes severe. In most cases vision loss is gradual. It begins at the periphery and gradually works its way toward the center over a period of years as the photoreceptor cells (the cells which react to light and send its message to the brain) die.

No one knows what causes retinitis pigmentosa, but heredity plays a strong part in most forms of the disease. Usher syndrome, Leber's congenital amaurosis, and rod-cone dystrophy are the primary forms of the disease, though there are others.



Detached Retina

When the retina pulls away from the tissue behind it, we call it a retinal detachment. This is always an emergency situation. Swift action must be taken by an ophthalmologist to prevent a permanent detachment. Some of the warnings that may occur in the early stages of retinal detachment are:

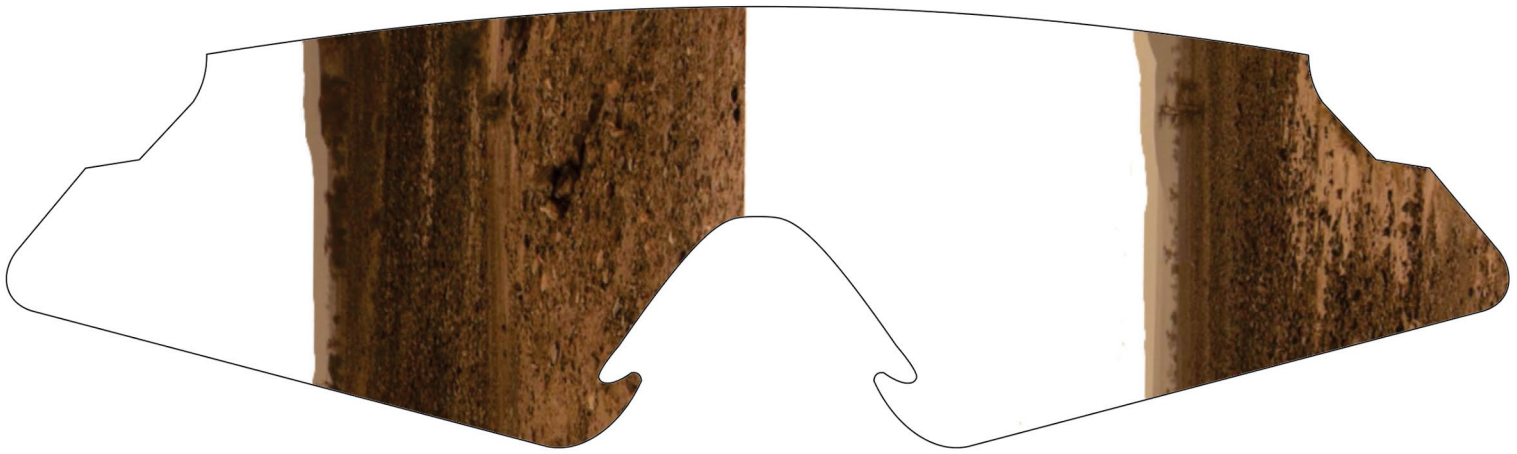
- flashes of light
- sudden appearance of many floaters
- shadowy curtain over vision
- sudden blurred vision

When a detachment is not treated, and sometimes even when it is, fluid from the vitreous gel inside the eye may leak behind the detached piece of retina and cause permanent blindness in that area.

We are fortunate today to have technologies and operations that can often resolve retinal detachment and restore at least some vision if caught early.

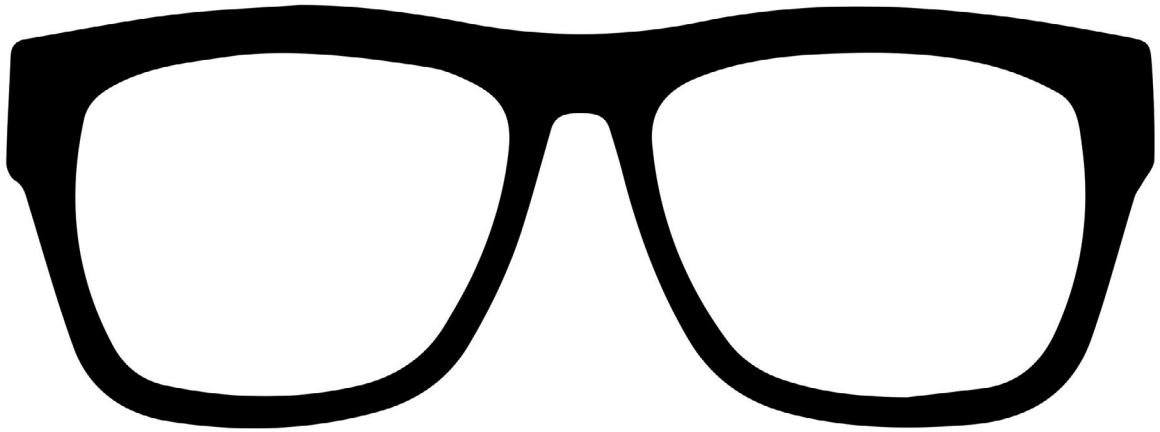
Hemianopsia

There are many kinds of hemianopsia, virtually all of them are caused by damage to the brain. We are primarily concerned with homonymous. With homonymous hemianopsia a person loses half of the visual field on the same side in each eye. The visual images that we see on our right side travel from both eyes to the left side of the brain. Conversely, the visual images we observe on our left side in each eye travel to the right side of the brain. Therefore, damage to the right side of the posterior portion of the brain or right optic tract can cause a loss of the left field of vision in each eye. Likewise, damage to the left posterior brain or left optic tract can cause a loss in the right field of vision.



High Degree Myopia

Myopia is a common condition. Most people know it as near-sightedness. This can be described as being able to see clearly up close, but not at a distance. Myopia is caused by an eyeball that is too long. It causes the image to be focused before it reaches the retina, and so the image is blurry. Many times myopia can be treated by the use of glasses or contacts.



Resources

American Association for Pediatric Ophthalmology and Strabismus, https://www.aapos.org/terms/conditions/66

Genetics Home Reference, https://ghr.nlm.nih.gov/condition/cone-rod-dystrophy

Mayo Clinic, http://www.mayoclinic.org/diseases-conditions/wet-macular-degeneration/home/ovc-20164274

Royal National Institute for Blind People, http://www.rnib.org.uk/

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