

# Vision Problems

## THE BASIC FACTS

### MULTIPLE SCLEROSIS



A vision problem is the first symptom of MS for many people. The sudden onset of double vision, poor contrast, eye pain, or heavy blurring can be terrifying, and the knowledge that vision may be compromised makes people with MS anxious about the future. Fortunately, the prognosis for recovery from many vision problems associated with MS is good.

If vision problems do persist, resulting in permanent low vision, there are resources and tools to help people adapt. Complete blindness can occur, but it is very rare. More people are faced with the need to

accommodate to persistent changes. Some have even turned vision problems into advantages. Flo Fox, a photographer with MS in New York City, says that her adaptations helped her to become a better photographer, and she has taught other people with vision problems how to use various types of cameras adjusted to their abilities.

This fact sheet discusses the main MS-related eye problems, but people with MS may have poor vision from many other causes, just like anyone else. Regular eye care and periodic examinations are recommended for all.

# MS-Related Vision Problems

Optic neuritis, an inflammation of the optic nerve, is the most common visual disorder associated with MS. Double vision (diplopia) and involuntary movement of the eyes (nystagmus) are the two other problems. Nystagmus and diplopia are both linked to inflammation of brain stem areas that control movements of the eye.

The three disorders are not linked to each other and usually occur separately.

- Symptoms of **optic neuritis** include blurred vision, dimming of colors, pain when the eye is moved, blind spots, and loss of contrast sensitivity. These symptoms may worsen over the first few days to two weeks, and then gradually improve. Some people recover within a month; others need up to a year. Most people regain normal or close-to-normal sight. However, the quality of their vision, including color or depth perception and contrast sensitivity, may be reduced after an episode of optic neuritis.

Temporary flare-ups of optic neuritis symptoms may also occur. Hot showers or baths, exercise, a bout of flu, or a fever may all trigger dimmed color, blurred vision, and other problems. Nerve fibers that are demyelinated (have lost their myelin insulation) or are remyelinating (under repair) are very sensitive to higher temperatures. These heat-related symptoms resolve when the person cools off, be it from ice packs, over-the-counter fever reducers, cool drinks, air conditioning, or a soak in a cool tub of water.

“The symptoms mean the optic nerve is not conducting information as well as it should,” said Dr. Gregory P. Van Stavern, a neuro-ophthalmologist at Wayne State University in Michigan. “This doesn’t mean a person is having a new attack of MS. If symptoms persist for more than a day or so after the body temperature has returned to normal, then contact a physician.”

- **Nystagmus** reduces vision in a number of ways, including oscillopsia — an experience of the world “wiggling.” The wiggling may be horizontal or vertical, and may occur in one eye, or both. It typically causes general poor vision and, often, loss of balance.
- **Diplopia** disturbs vision by producing double images. Because seeing double can affect a person’s sense of orientation in space, diplopia may also interfere with balance.

## Treatment

The treatment is similar for an initial episode of diplopia, nystagmus, or optic neuritis. All three disorders — especially optic neuritis — may resolve on their own, but steroid medications are proven to speed recovery. (Poor vision caused by optic neuritis cannot be helped with eye glasses because the problems are caused by poor nerve conduction.) The biggest questions in an otherwise healthy individual who experiences a first episode of optic neuritis are whether to wait or to take steroids, and whether the episode will be followed by development of definite MS. Many answers about treatment revolve around the role of steroids in preventing **subsequent** attacks.

In a controlled trial, the Optic Neuritis Treatment Trial (or ONTT), high-dose intravenous steroids were shown to accelerate recovery from visual symptoms and to delay development of MS. Dr. Roy W. Beck, executive director of the Jaeb Center for Health Research in Tampa, Florida, who was principal investigator, summed up the trial this way: “Intravenous corticosteroids at the time of a first episode of acute optic neuritis appear to have a short-term beneficial effect... delaying the time to the development of a second demyelinating event [and therefore a diagnosis of definite MS]. However, there did not appear to be a long-term benefit from a single course of IV steroid treatment.”

The ONTT also found that people treated with oral steroids did not do as well as the people who were not treated at all. Oral steroids apparently **increased** the risk of recurrence.

If the initial symptoms of optic neuritis are mild and an MRI does not show any MS-like lesions, a doctor may decide to allow the disorder to resolve on its own. And the same is true for subsequent episodes of optic neuritis; mild symptoms can be left untreated while symptoms that are severe enough to interfere with everyday activities are generally treated with high-dose steroids.

Intravenous immunoglobulin (IVIG), an experimental (and more expensive) therapy, may be another option for people who are unable to take steroid medications. Although a study at the Mayo Clinic had inconclusive

results as to the efficacy of IVIG as a treatment, Dr. Elliot Frohman, associate professor of Neurology and director of the MS Program at University of Texas, Southwestern Medical Center in Dallas, recommends IVIG for people with MS who have diabetes, are manic-depressive, or cannot tolerate steroids for other reasons.

There is little information on the effectiveness of complementary therapies for vision problems, but some people report relief from vitamin B-12 shots during an optic neuritis episode. “We know optic nerve function depends on vitamin B-12 and folate,” said Dr. Thomas R. Hedges, III, professor of Ophthalmology and Neurology at Tufts University School of Medicine and the director of Neuroophthalmology at the New England Medical Center. “I encourage people to take multivitamins.” According to Dr. Frohman, anyone coming in for a vision problem should be screened for vitamin B-12 levels, as a deficiency can mimic symptoms of MS.

## Diplopia and Nystagmus

While initial treatment for diplopia and nystagmus is much the same as for optic neuritis, persisting diplopia may be helped by mechanical or surgical means. “We have prisms we can apply to lenses that redirect light to an eye that may be misdirected.

If there's misdirection, sometimes we can adjust the muscles surgically to realign the eyes. If all else fails, patching — or just applying frosted tape to the inside of one eyeglass lens can reduce double vision," Dr. Hedges said. He emphasizes that people with double vision don't need to alternate the patch from eye to eye.

"Patching an eye will not affect the vision in any way and will not delay recovery to any significant degree. The brain always tells both eyes to move at once," he said. In addition, it doesn't matter which eye is patched. "Patch whichever eye helps you to see better," he advises.

Nystagmus is more difficult to resolve. Dr. Van Stavern and Dr. Hedges agree that the existing medications for ongoing nystagmus, such as anticonvulsants and muscle relaxants, may not work well. Surgery is not usually recommended for nystagmus. According to Dr. Hedges, there is work being done on optical devices to stabilize the jiggling visual environment of people with nystagmus.

As difficult as these two disorders are initially, both diplopia and nystagmus may go away spontaneously. More-over, the brain eventually learns to ignore wiggling and black spots, restoring more normal vision.

## Low-Vision Specialists

While the prospect for recovery is generally good, there are times when the problems persist. If this is your situation, a low-vision specialist can analyze the extent of loss and recommend aids and strategies to help you make the most of the vision you have.

Low-vision specialists are licensed doctors of ophthalmology or optometry. The specialist will assess how your eyesight functions in day-to-day living — not just how well you do on an eye chart exam. He or she may ask questions about glare, contrast, sensitivity to light, and color perception. In addition, special charts may be used to measure other aspects of your vision. A typical session with a low-vision specialist lasts two to three times longer than a standard eye exam.

The low-vision specialist will want as much information as possible — not only about your medical and vision history, but your individual needs. If you have an occupational need, a hobby, or a favorite activity, explain it during your examination. Your low-vision specialist may be able to prescribe or recommend an optical device, such as microscopic or telescopic eyewear, a magnifier, a filter, or a closed circuit television system, that fits your specific needs.

# Living with Low-Vision

If your vision has become permanently poorer, changes in your home and work place can make you more comfortable and productive.

- Organize your possessions so that they are easier to find.
- Increase your lighting levels, and make sure that important areas, such as your desk, dressing area, and stove, are well lit. The type of lighting can also make a difference — experiment to find out what works best for you.
- Eliminate glare by moving mirrors and shiny objects.
- Heighten contrasts using paint or colored tape to mark light switches, doorways, and steps.
- Use large print. Newspapers, books, clocks, telephone dials, calendars, playing cards — virtually everything printed may be available in a large-print version.
- Be practical: carry a flashlight to movies; find out where the bathroom is ahead of time when eating out.
- Learn to ask for help when you need it. While hard at first, this is also very practical.

According to Dr. Frohman, both diplopia and nystagmus can affect your navigation and balance. “Added to a little bit of leg weakness or gait imbalance, and these vision problems can increase one’s safety risk,” Dr.

Frohman said. He notes that patching one eye affects a person’s depth perception, so a cane or other mobility aid may be essential to prevent accidents.

## Low-Vision Aids

Many optical devices have specific uses. One may be best for reading e-mail, another for watching movies, and yet another for cooking or reading a book. Magnifying devices are a case in point. A higher power magnifier provides a larger image but a smaller field of view. A lower power magnifier will have a larger field, with a smaller image. Your needs dictate which is more important, and using your magnifier often will make it more and more helpful to you. Be patient — everyone has individual adjustment periods.

One of the more popular visual aids is the closed circuit television (CCTV) which can magnify a number of things — including photographs, letters, book pages, even the labels on medicine bottles — onto a television screen. Some CCTVs are freestanding, with a monitor that sits on a platform. Others are plugged into your television and use its screen.

Your computer can also be modified in dozens of ways. There are programs that translate text into voice and vice versa, and there are excellent text magnifiers. The Low Vision Gateway, at [www.lowvision.org](http://www.lowvision.org), has an extensive list of computer programs for people with low vision. You can also go to

[www.MyMSMyWay.com](http://www.MyMSMyWay.com) — a Web site developed by the Technology Collaborative (an alliance between Bayer HealthCare Pharmaceuticals, the National MS Society, and Microsoft) to help you identify adaptive solutions tailored to your specific needs.

Photographer Flo Fox recommends that people with visual problems register at their local post office for free mailing. As she puts it, “You might as well take advantage of the government. Call your phone company, too, to find out about free directory assistance if you can’t read the type or turn pages in a phone book.”

Other resources and organizations to contact about living successfully with low vision include:

- **American Foundation for the Blind**  
800-AFB-LINE (800-232-5463),  
[www.afb.org](http://www.afb.org)
- **American Nystagmus Network**  
[www.nystagmus.org](http://www.nystagmus.org)
- **American Printing House for the Blind**  
800-223-1839, [www.aph.org](http://www.aph.org)
- **Lighthouse International**  
800-829-0500, TTY: 212-821-9713,  
[www.lighthouse.org](http://www.lighthouse.org)
- **The Low Vision Gateway**  
[www.lowvision.org](http://www.lowvision.org)
- **Low Vision Center**  
301-951-4444, [www.lowvisioninfo.org](http://www.lowvisioninfo.org)
- **The National Association for Visually Handicapped**  
800-677-9965, [www.navh.org](http://www.navh.org)
- **The National Federation of the Blind**  
410-659-9314, [www.nfb.org](http://www.nfb.org)
- **The National Eye Institute**  
301-496-5248, [www.nei.nih.gov](http://www.nei.nih.gov)
- **Public Broadcasting Service’s Descriptive Video Service**  
617-300-3600, [www.wgbh.org/dvs](http://www.wgbh.org/dvs)
- Every issue of the Society’s national magazine, *Momentum*, features low vision tips and resources in our “Low Vision Alert” column. For back issues, visit [nationalMSSociety.org](http://nationalMSSociety.org) and click on “Back Issues.” Or call us at 1-800-344-4867 and request a printed copy.

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# The Three Most Common Eye Disorders in Multiple Sclerosis

	<b>Optic Neuritis</b> Inflammation of the Optic Nerve	<b>Diplopia</b> Double Vision	<b>Nystagmus</b> Involuntary jerky movement of eyes
<b>Warning Signals</b>	Pain when the eye is moved; diminished color vision	None	Dizziness
<b>Symptoms</b>	Blurring or dimming of vision; blind spots in visual field; loss of contrast sensitivity	Double vision	Dizziness; jerky eye movements; loss of balance; experience of the world "wiggling"
<b>Consult</b>	Consult physician for treatment or referral to neurologist or ophthalmologist	Consult physician for treatment or referral to neurologist or ophthalmologist	Consult physician for treatment or referral to neurologist or ophthalmologist
<b>Self-Help</b>	Outline doorway, stairs and steps with high-contrast markings; increase lighting levels; eliminate glare by moving mirrors and other shiny objects	Patch one eye; vision usually improves within a few days or weeks	Mounted magnifiers; large-print books and other low-vision aids
<b>Remission Expectation</b>	Good	Good	Fair
<b>Recurrence</b>	Possible	Fairly common	Possible