

## Bell's Palsy

Bell's palsy is a disorder of the facial nerve, the seventh cranial nerve. This condition causes partial paralysis on one side of the face, affecting the muscles of facial expression. Bell's palsy usually occurs in adults and develops suddenly.

Symptoms of Bell's palsy include the inability to smile on one side or close one eyelid completely, decreased tear production and sense of taste, blurry vision, and distorted hearing.

The causes of Bell's palsy are varied. In most cases, the cause is never identified, but it is believed that Bell's palsy often develops secondary to a viral inflammation. Other causes include activation of the body's immune system and changes in blood flow. Bell's palsy is more common in patients with diabetes and in pregnant women.

Most of the time, Bell's palsy disappears on its own after a few months. Eye lubricants may be used to prevent complications. In some cases, corticosteroid or antiviral drugs may be used to help in the treatment of this condition.

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## Microvascular Cranial Nerve Palsy

Microvascular cranial nerve palsy (MCNP) is one of the most common causes of double vision in older people. It occurs more often in patients with diabetes and high blood pressure and is often referred to as a “diabetic” palsy.

MCNP occurs when the blood flow is blocked to one or more of the three nerves that control the eye muscles. If the abducens nerve is blocked by improper blood flow, your eye will not be able to move toward the outside, and you will have double vision (see side-by-side images). If the trochlear nerve is affected, you will have vertical double vision (see one image on top of another). And if the oculomotor nerve is affected, you will have limited up and down eye movement. The eyelid may droop, too.

Although it is not clear what blocks the blood flow, diabetes, high blood pressure, or migraines may be to blame. Occasionally, there may be a blocked vessel in the covering of the brain, which can be associated with pain around the eye.

Symptoms of MCNP include weakness in one or more eye muscles, blurred or double vision, drooping eyelid, or enlarged pupil.

Although there is no known treatment for MCNP, double vision may be treated by patching either eye. If the double vision persists, prism eyeglasses or eye muscle surgery may be prescribed. Sometimes, anti-inflammatory drugs such as ibuprofen may help with any pain associated with MCNP.

Over a period of six to 12 weeks, normal function and vision should return. Your nerves will not be permanently injured. However, if the double vision does not go away, it is important to tell your ophthalmologist (Eye M.D.).

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## Ischemic Optic Neuropathy

Ischemic optic neuropathy, a condition caused by restricted blood flow to the optic nerve, is the sudden loss of vision in one or sometimes both eyes. It primarily affects the elderly. There are two forms of ischemic optic neuropathy, caused by differing underlying conditions.

**Nonarteritic ischemic optic neuropathy (NAION)** is usually painless; it is caused by cardiovascular disease. If you have high cholesterol, high blood pressure, diabetes, or if you smoke, you are at higher risk of developing the condition. Unfortunately, there is no cure, and the central or peripheral (side) vision that you have lost cannot be restored. However, treating the underlying causes of your cardiovascular disease can help control nonarteritic ischemic optic neuropathy and prevent further vision loss.

**Arteritic ischemic optic neuropathy (AION)** is a condition caused by inflammation of the arteries supplying blood to the optic nerve. This inflammation is known as **giant cell arteritis (GCA)**, and its cause is unknown. Women are more likely to develop GCA than men, and Caucasians are affected at a much higher rate than people of other races. People of Scandinavian ancestry are at particular risk. If you have polymyalgia rheumatica, you have an increased risk of having GCA as well.

Signs to look for include:

- flu-like symptoms including headache, fatigue, and fever;
- blurred vision;
- double vision;
- scalp tenderness;
- jaw pain;
- stiffness or pain in the neck, hip, or arms; and
- unexplained weight loss.

When treated quickly with high doses of corticosteroids (anti-inflammatory medications) before you experience loss of vision, your symptoms will be relieved and chances are excellent that your eyes will not be affected. For this reason, your ophthalmologist (Eye M.D.) may begin treatment before a biopsy can confirm your diagnosis. You may need to take corticosteroids for as long as a few years, though at lower dosage levels.

Major side effects of corticosteroids include:

- osteoporosis;
- high blood pressure;
- muscle weakness; and
- cataracts.

You should discuss the complications of corticosteroid medications and alternative treatment options with your ophthalmologist.

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## Hemifacial Spasm

Hemifacial spasm (HFS) is a condition that causes involuntary contractions of the muscles on one side of the face. The disorder occurs in both men and women, usually beginning in middle age. Symptoms often begin as a twitching of the eyelid and may gradually spread to involve the muscles of the lower face. The condition may be caused by a blood vessel pressing on a facial nerve, a facial nerve injury, or a tumor, or it may have no apparent cause.

After your ophthalmologist (Eye M.D.) has ruled out other more serious underlying conditions, the most common treatment for HFS is the injection of botulinum toxin, a neurotoxin, into the affected muscles. In some cases, surgery may be necessary.

If botulinum toxin is the best treatment for your condition, your ophthalmologist will inject the drug into the involved facial muscles in a simple, outpatient procedure. Botulinum toxin has proven to be a safe treatment for HFS with few side effects. The injections will probably work for about six months, so repeated treatments are necessary. You should see the full effect of the injection about a week after the procedure.

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## Blepharospasm

Blepharospasm is an involuntary contraction and spasm of the eyelid muscles that causes your eyes to squeeze shut. Blepharospasm is more common in women and usually appears after the age of 50. Generally, one will notice that one's eyes are blinking and twitching more often. On occasion, it can progress to repeated, forceful, involuntary closing of the eyes.

Bright lights, fatigue, watching television, driving, and stress can all exacerbate your condition. Sleeping, walking, concentrating on a task, and relaxation exercises may provide temporary relief.

The most common treatment for severe blepharospasm is the injection of small amounts of botulinum toxin into the eye muscles to partially paralyze them and return them to normal function. Results are temporary, so treatment must be repeated every few months.

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## Giant Cell Arteritis

Giant cell arteritis (GCA), also known as **temporal arteritis**, is a chronic inflammation of the lining of medium- and large-sized arteries. The cause of giant cell arteritis is unknown. Left untreated it can lead to blindness. Treatment should be initiated as soon as the diagnosis is suspected.

Giant cell arteritis rarely occurs in people below 50 years of age, and it typically begins at around age 70. Women are more likely to develop GCA than men, and Caucasians are affected at a much higher rate than people of other races. People of Scandinavian ancestry are at particular risk. If you have **polymyalgia rheumatica**, you have an increased risk of having GCA as well.

Signs to look for include:

- flu-like symptoms including headache, fatigue, and fever;
- blurred vision;
- double vision;
- scalp tenderness;
- jaw pain;
- stiffness or pain in the neck, hip, or arms; and
- unexplained weight loss.

If blood flow to the eyes is restricted by GCA, it can lead to a condition called **arteritic ischemic optic neuropathy**, which can cause sudden blindness in one or sometimes both eyes. When treated quickly with high doses of corticosteroids (anti-inflammatory medications) before you experience loss of vision, your symptoms will be relieved and chances are excellent that your eyes will not be affected. For this reason, your ophthalmologist (Eye M.D.) may begin treatment before a biopsy can confirm your diagnosis. You may need to take corticosteroids for as long as a few years, though at lower dosage levels.

Major side effects of corticosteroids include:

- osteoporosis;
- high blood pressure;
- muscle weakness; and
- cataracts.

You should discuss the possible complications of taking corticosteroids and alternative treatment options with your ophthalmologist.

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## Migraine

Migraine headache is a common neurological condition that occurs in about 20% of the population and in 50% of women. It is not clear how a migraine works, but it is believed that the basic cause is an abnormality of serotonin, which is a chemical used by the brain cells. During a migraine, changes in serotonin levels cause the blood vessels in the brain to constrict. This decreases oxygen supply in the brain. In rare cases, a stroke is possible.

Certain foods like aged cheese, chocolate, red wine, and caffeine may trigger migraines. Hormonal changes during pregnancy, menopause, and menstrual periods also are associated with migraines. People with migraines often have a family history of headaches or prior histories of motion sickness.

Symptoms of migraines include nausea, sensitivity to light or sound, pounding pain, and some visual symptoms, including a blurring spot, an expanding border often described as zigzag lines or shimmering, and vision loss in only one eye. Rare symptoms include double vision or a change in pupil size.

Treatments first seek to avoid any known factors that precipitate a migraine attack, including environmental factors, medications, and food. Medications for migraines may be prescribed. If migraines are severe, medication on a regular basis may be necessary.

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## Headache

Headaches are one of the most common health complaints. They are caused by a variety of factors and can be divided into the following groups:

### **Tension-type headaches**

This is the most common type of headache. The pain may be felt in the forehead, temples, neck, or around the eyes. Doctors are uncertain about the cause of this type of headache but believe they are due to stress, sleeping or working in unusual positions, clenching jaws, grinding teeth, or chewing gum. These kinds of headaches are usually temporary and can be relieved by an over-the-counter pain reliever.

### **Migraine headaches**

This kind of headache is also common. Migraine pain is related to activity in the brain that swells blood vessels of the scalp, causing throbbing pain, nausea, sensitivity to light, sounds, or odors, and pain that increases with movement. The exact cause of migraines is still unknown. About one in 10 people suffer from migraines, and they affect more women than men. Migraines can run in families and can affect young children as well.

### **Cluster headaches**

Cluster headaches are less common than migraines and affect more men than women. They are called cluster headaches because they come in daily bouts of 30 minutes to two hours and continue for one to two months. These bouts can occur several times a year. The pain is felt on one side of the head, is very severe, and can be accompanied by tearing or red eye on the affected side, sweating, and stuffy nose.

Eye disease is the least common cause of headaches. Headaches caused by eye disease are usually felt in the eye or brow on the side where the disease occurs. These headaches are often associated with symptoms like blurred vision, halos, and sensitivity to light. Headaches can also be caused by high blood pressure or brain tumors, although headaches caused by brain disease are rare and become dramatically worse over time.

In general, headaches can include symptoms that may affect vision or your eyes, but they are not directly caused by eyestrain.

A thorough examination by your primary physician is recommended for any chronic or recurring headache. An eye exam by an ophthalmologist (Eye M.D.) may be helpful in some cases.

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## Diplopia

Diplopia is double vision caused by a problem with the muscles that control the eye or the nerves that stimulate those muscles.

Many conditions can cause diplopia. Double vision is usually a symptom of **strabismus** (misalignment of the eyes), due to the improper movement of one or more eye muscles. Strabismus is most often found in children, but it can develop later in life. A growth in the eyelid pressing on the front of the eyeball can also cause temporary double vision. Rarely, double vision arises because of an abnormality within the eye, such as a dislocation of the eye's natural lens.

The onset of double vision in adulthood should be brought to the attention of your ophthalmologist (Eye M.D) immediately to exclude the possibility of a tumor, aneurysm, or neurological problem. Two of the primary neurological conditions that could cause diplopia are **microvascular cranial nerve palsy (MCNP)** and **myasthenia gravis (MG)**.

Microvascular cranial nerve palsy, or "diabetic palsy," is one of the most common causes of double vision in older people. It occurs more often in patients with diabetes and high blood pressure, when blood flow is blocked to one or more of the six eye muscles that control eye movement. Although there is no known treatment for MCNP, the double vision may be treated by patching either eye. If the double vision persists, prism eyeglasses or eye muscle surgery may be prescribed.

Myastheniagravis is a disorder characterized by muscle weakness, caused by a communication breakdown between the nerves and the muscles due to an autoimmune condition. It is most common in the muscles of the face, eyes, arms, and legs, and in the muscles used for chewing, swallowing, and talking. Double vision is one of the common indicators of myasthenia gravis. Though there is no known cure for myasthenia gravis, there are a number of treatment options to manage the condition, including medication, surgery, and other procedures. If you have MG, physical therapy can help, and you can learn specific coping skills for improving your daily life. Early detection and treatment of MG is crucial to managing the condition and preventing serious problems with breathing or swallowing, which require emergency care.

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## Functional Visual Loss

Functional visual loss is an apparent loss of vision with no sign of a structural abnormality in the eye.

If your ophthalmologist (Eye M.D.) suspects that you have functional visual loss, you will need to have a complete eye examination to rule out possible underlying causes of your vision loss. In addition to the examination in your doctor's office, you may require, among other things, blood work and imaging with computed tomography (CT) or magnetic resonance imaging (MRI).

Should these tests rule out other causes of the vision loss and show indications of functional visual loss, you can begin treatments that will help you regain your sight. Because your ophthalmologist has eliminated the possibility of other underlying causes of your vision loss, you can feel assured that your condition is not serious and that your vision will very likely recover with time.

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