CONDITION

Optic neuritis

Optic neuritis is inflammation of the optic nerve that can cause pain and reduced vision.

WHAT IT IS
Inflammation of the optic nerve causing vision changes

BODY SYSTEM
Eyes and nervous system

MAIN SYMPTOMS
Vision loss, eye-movement pain, faded colours, blind spot

WHAT CAUSES IT
Immune inflammation, sometimes infection or another disease

HOW IT IS DIAGNOSED
Eye and vision tests, usually supported by MRI

MAIN TREATMENT
Corticosteroids and treatment of any underlying disorder

CAN IT BE CURED?
Sometimes - inflammation resolves, but nerve damage may remain

IS IT AN EMERGENCY?
Sometimes - sudden vision loss needs emergency assessment

LONG-TERM OUTLOOK
Vision often improves, though recurrence or lasting loss can occur

Overview

Optic neuritis is inflammation of the optic nerve. This nerve carries visual information from the eye to the brain. Inflammation can disrupt those signals, causing blurred, dim, or missing areas of vision.

The condition often affects one eye, although both eyes can be involved. Symptoms usually develop over hours or days rather than months. Eye pain, especially when moving the eye, is common.

Optic neuritis is sometimes a single event with no identified cause. It can also be connected with conditions that affect myelin, the protective covering around nerves. These include multiple sclerosis, neuromyelitis optica spectrum disorder and myelin oligodendrocyte glycoprotein antibody-associated disease, usually shortened to MOGAD.

Many people regain useful vision over the following weeks and months. However, some continue to notice faded colours, reduced contrast or an area of missing vision. The likely course partly depends on the cause and whether there have been previous attacks.

New vision loss should be assessed promptly. Other eye and brain conditions can cause similar symptoms, and some require time-sensitive treatment.

Symptoms

Optic neuritis usually causes a change in vision in one eye. The change may be mild, or it may leave little useful vision in that eye. Symptoms commonly worsen for several days before stabilising.

Possible symptoms include:

Pain may start before the change in vision. It often settles within days, even if the vision takes longer to improve. Some people have no pain.

Vision may temporarily become blurrier during exercise, hot weather, a fever or a hot shower. This is called Uhthoff's phenomenon. Heat temporarily slows signals through a previously damaged optic nerve; it does not necessarily mean that new nerve damage is occurring.

Symptoms involving both eyes, severe swelling at the back of the eye, repeated attacks or vision that continues worsening beyond the expected period may suggest an underlying condition other than typical optic neuritis.

- Blurred, dim or reduced vision
- Pain behind the eye, often worse with eye movement
- Colours looking faded or less vivid
- A dark, blurred or missing area near the centre of vision
- Reduced contrast, making objects look washed out
- Brief flashing lights or flickering with eye movement

Causes and risk factors

In many cases, optic neuritis results from immune-system inflammation that damages myelin around the optic nerve. Myelin works like insulation around an electrical wire, helping nerve signals travel efficiently.

Optic neuritis can occur without an identified underlying illness. It may also be the first sign of

multiple sclerosis, but having optic neuritis does not mean that you will necessarily develop multiple sclerosis. MRI findings and other test results help estimate that risk.

Other important causes and associations include:

Previous optic neuritis and an associated inflammatory nervous-system condition increase the chance of another episode. The pattern differs among multiple sclerosis, neuromyelitis optica spectrum disorder and MOGAD.

Eye strain, reading and screen use do not cause optic neuritis.

- Neuromyelitis optica spectrum disorder: an immune condition often linked to antibodies against a protein called aquaporin-4
- MOGAD: an inflammatory condition linked to antibodies against myelin oligodendrocyte glycoprotein
- Infections: certain viral, bacterial and other infections can inflame the optic nerve
- Systemic inflammatory conditions: illnesses such as sarcoidosis or lupus can sometimes affect the optic nerve
- Inflammation after an infection: the immune response may continue after the infection itself has improved

Diagnosis

There is no single symptom that confirms optic neuritis. Diagnosis is based on the pattern of symptoms, an eye and neurological examination, and selected tests. The assessment also checks for other causes of vision loss, such as retinal disease, reduced blood flow to the optic nerve or pressure inside the eye.

An eye specialist may test:

The optic nerve may look swollen. In many cases, however, the visible part of the nerve looks normal because the inflammation is farther behind the eye.

An MRI scan of the eye sockets and brain can show inflammation in the optic nerve. It can also look for brain changes associated with multiple sclerosis or another neurological condition. A contrast agent may be used to make active inflammation easier to see when it is medically appropriate.

Optical coherence tomography, or OCT, is a painless scan that measures nerve layers at the back of the eye. It can document swelling or later thinning, but it does not always establish the cause by itself.

Blood tests may be needed when symptoms are severe, affect both eyes, recur or are otherwise unusual. These can look for aquaporin-4 or MOG antibodies, infections and systemic inflammatory conditions. A lumbar puncture, which collects fluid from around the spinal cord, is useful in selected cases but is not required for everyone.

- How clearly you can see
- Colour vision and contrast
- Peripheral and central vision
- How the pupils respond to light
- Eye movements
- The retina and optic nerve at the back of each eye

Treatment and management

Treatment depends on the severity, likely cause and whether the presentation is typical or unusual. Assessment by an eye specialist, neurologist or both may be needed.

Corticosteroids like prednisone or hydrocortisone reduce inflammation. In typical optic neuritis associated with demyelination, high-dose corticosteroids can speed early visual recovery. They do not appear to improve the final level of vision for every person, so some mild, typical cases may be observed without steroid treatment. The route and length of treatment are specialist decisions.

Steroid treatment can cause temporary effects such as sleep disturbance, mood changes, indigestion or increased blood sugar. A clinician should consider your other medical conditions and medicines before recommending it.

Severe optic neuritis that does not respond adequately to corticosteroids may sometimes be treated with plasma exchange. This treatment removes part of the blood plasma and replaces it, reducing harmful immune substances. It is used more often for serious attacks linked to neuromyelitis optica spectrum disorder and in selected other cases.

If tests identify an infection, immune condition, multiple sclerosis, neuromyelitis optica spectrum disorder or MOGAD, treatment is directed at that cause. Longer-term immune treatment may be offered when the risk of further attacks is high.

Until vision improves, practical measures can help. Brighter lighting, increased text size, high-contrast settings and low-vision support may make daily tasks easier. Avoid driving unless your vision meets local legal standards and you feel safe to drive.

Complications

Some people have lasting changes even when standard eye-chart vision returns. Colours may remain less vivid, contrast may be reduced, or vision may feel different between the eyes. OCT testing may show thinning of nerve fibres after the inflammation settles.

More significant permanent sight loss is possible, particularly after severe or repeated attacks. This risk is greater with some underlying conditions, including aquaporin-4 antibody-positive neuromyelitis optica spectrum disorder.

Optic neuritis can recur in the same or opposite eye. Repeated inflammation can cause accumulating optic nerve damage.

For some people, an episode leads to the diagnosis of multiple sclerosis, MOGAD or another inflammatory condition. This is not inevitable. Brain MRI findings, antibody results and the pattern of symptoms help clarify the likelihood.

Corticosteroids and longer-term immune treatments can also have side effects. Monitoring is tailored to the treatment being used.

Prevention

There is no proven way to prevent a first episode of optic neuritis. It is usually caused by an immune process that cannot be predicted or controlled through diet, exercise, screen habits or supplements.

After an episode, preventing another attack depends on the cause. If multiple sclerosis, neuromyelitis optica spectrum disorder, MOGAD or another inflammatory illness is identified, long-term treatment may reduce the chance of future inflammation. It cannot remove the risk completely.

Take prescribed preventive treatment consistently and attend planned eye or neurological follow-up. Report new symptoms early rather than restarting leftover corticosteroids or changing treatment yourself.

Living with it and what to expect

In typical optic neuritis, vision often starts improving within several weeks. Recovery may continue for months, and sometimes longer. The speed and extent of recovery cannot be predicted for an individual at the start of an attack.

Many people return to their usual activities. Some continue to notice subtle problems with colour, contrast, depth perception or vision in dim light. These changes may matter even when an eye chart shows good vision.

Temporary blurring with heat or exercise can continue after recovery. Cooling down and resting usually allow vision to return to its previous level. A persistent or clearly new change needs assessment because it should not automatically be assumed to be heat-related.

Follow-up may include repeat vision tests, OCT scans or MRI. Routine appointments are used to track recovery, review test results and discuss the chance of recurrence or an associated condition. Follow-up may continue for months or years when MRI findings or antibody tests indicate an ongoing risk.

Living with uncertainty about another attack can be difficult. Clear advice about whom to contact, which symptoms to report and when the next review is due can make this more manageable. Low-vision rehabilitation and workplace or school adjustments are available when visual changes persist.

When to get medical help

Arrange urgent, same-day medical assessment for any new or unexplained loss of vision, pain with eye movement accompanied by visual change, or colours suddenly appearing faded in one eye. Do not wait for a routine eye test if vision is actively worsening.

Seek emergency care for:

These symptoms do not always mean optic neuritis. They can occur with stroke, retinal problems, dangerously raised eye pressure and other conditions needing immediate assessment.

Contact your usual eye or neurological team promptly if previously stable vision worsens, symptoms return in either eye, or new neurological symptoms develop. Routine follow-up is appropriate for stable recovery, test review and discussion of long-term risk.

- Sudden severe vision loss, especially if it occurs within minutes
- Vision loss in both eyes
- Vision changes with weakness, numbness, difficulty speaking or severe imbalance
- Severe eye pain with a red eye, headache, nausea or vomiting
- New vision loss after a significant eye or head injury

Common questions

Will my sight come back after optic neuritis?

Vision often improves substantially over weeks or months, especially after a typical first episode. Some people are left with reduced colour vision, contrast or sharpness. Severe, recurrent or atypical inflammation has a greater risk of lasting loss.

Does optic neuritis mean I have multiple sclerosis?

No. Optic neuritis can be an early feature of multiple sclerosis, but it also occurs alone or with other conditions. A brain MRI, examination and sometimes additional tests help estimate the likelihood.

Can optic neuritis affect both eyes?

Yes. Typical adult optic neuritis often affects one eye, but both eyes can be involved. Bilateral symptoms are more common in children and in some infections or immune conditions. New changes in both eyes need urgent assessment.

Can screens or reading make optic neuritis worse?

No evidence shows that screens, reading or other close work damage the inflamed optic nerve. These activities may feel tiring or uncomfortable while vision is reduced. Breaks, larger text and adjusted brightness may help.

Can I drive with optic neuritis?

Driving may be unsafe during an active episode because sharpness, visual fields, contrast and depth perception can be affected. Driving rules differ by location. Do not drive until your vision meets the legal standard and you can manage traffic safely.

Can optic neuritis come back?

Yes. Recurrence is possible, particularly when optic neuritis is linked to MOGAD, neuromyelitis optica spectrum disorder, multiple sclerosis or another inflammatory illness. A new episode may affect the same eye or the other eye.

Sources

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