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## Eyes - optic neuritis

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### Summary

- Optic neuritis is inflammation of the optic nerve that causes blurred, grey and dim vision.
  - If you have these symptoms, contact your doctor immediately.
  - Common causes of optic neuritis include multiple sclerosis, cytomegalovirus, Lyme disease and herpes.
  - In many cases, optic neuritis is short-lived and resolves by itself without treatment in around four to 12 weeks.
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The optic nerve connects the eye to the brain. Our sight relies on the optic nerve transmitting information on shape, colour and pattern from the back of the eye (retina) to the brain's visual centres. Optic neuritis is inflammation of the optic nerve that causes blurred, grey and dim vision. The symptoms can range from mild to severe, depending on the extent of the inflammation.

Optic neuritis can occur at any age, but people in their 30s are most commonly affected. Vision improves by itself in up to 80 per cent of cases, while some degree of reduced vision is permanent for the remaining 20 per cent. A number of diseases and conditions can trigger this inflammation, including multiple sclerosis. Optic neuritis is also known as retrobulbar neuritis.

### The optic nerve and optic neuritis

The optic nerve is actually more than one million individual nerves bundled together. Each nerve plays a significant role in sending information from the retina to the brain. Inflammation causes affected nerves to swell, which means they cannot work properly.

The degree of visual impairment experienced with optic neuritis depends on how many nerve fibres are inflamed – the more nerve fibres affected, the worse the symptoms. Generally, eyesight deteriorates over a few days rather than suddenly. The peak of vision loss usually happens about a week after the symptoms first appear.

### Symptoms of optic neuritis

Symptoms of optic neuritis can include:

- blurred vision
- grey vision (colours seem faded)
- dim vision
- pain in the back of the eye, especially during eye movement.

Symptoms may worsen if you are hot, for example, after playing sport or showering.

If you have these symptoms, contact your doctor immediately. Your doctor should send you to a hospital emergency department if they suspect you have optic neuritis.

In about 70 per cent of cases, only one eye is affected.

### Causes of optic neuritis

Some of the many conditions and diseases that can cause optic neuritis include:

- cytomegalovirus
- hepatitis B
- herpes

- HIV
- Lyme disease
- measles
- multiple sclerosis
- mumps
- paranasal sinus infection
- radiation therapy
- syphilis
- tuberculosis.

### **Optic neuritis and multiple sclerosis**

Optic neuritis can be the first symptom of multiple sclerosis (MS), but this is only true for some people. Not everyone with optic neuritis will develop MS. There are many people who only have one attack of optic neuritis and do not develop any neurological problems.

An MRI scan can assess your risk of developing MS. If there are small spots on the brain scan, your risk of developing MS is higher. It is estimated that the risk of people who have optic neuritis developing MS within 10 years is 30 to 60 per cent, depending on whether these spots are seen on the MRI scan.

Optic nerve fibres are wrapped in myelin sheaths that help to conduct nervous system messages. With MS, the myelin sheaths become inflamed, causing plaques or lesions to appear.

Vision problems are a common first symptom of MS. However, optic neuritis doesn't mean that developing MS is inevitable.

### **Other vision problems linked to MS**

Apart from optic neuritis, other common vision problems associated with MS include:

- **nystagmus** – the eyes make involuntary 'jumping' movements, both horizontally and vertically
- **diplopia** – the person experiences double vision.

### **Diagnosis of optic neuritis**

Optic neuritis can be mistaken for a number of other eye conditions such as ischaemic optic neuropathy, so careful diagnosis is important. Tests may include:

- eye examination
- colour vision tests
- peripheral (side) vision tests – to test visual field
- MRI scan – this scan is helpful to diagnose the condition and also to give information that will be able to assess the risk of the person developing MS.

### **Subclinical optic neuritis**

A person may have demyelination of the optic nerve but not experience any visual symptoms. This is known as subclinical optic neuritis. The damage to the optic nerve can still be identified by certain tests, including electrical diagnostic tests and visual field examination.

### **Treatment for optic neuritis**

Permanent damage to the optic nerve occurs in about 85 per cent of cases, but the damage does not always cause serious vision problems. In many cases, optic neuritis is short-lived and resolves by itself without treatment in around four to 12 weeks. The person's vision improves once the inflammation subsides.

In severe or chronic cases, intravenous corticosteroids may be used to speed along recovery. However, the use of oral corticosteroid therapy is controversial. For example, some research suggests that it may increase the risk of recurrence. Regular eye examinations are important. The person should also undergo further tests to check for the

presence of MS.

### **Where to get help**

- Your **GP (doctor)**
- **Ophthalmologist**
- **Neurologist**
- **MS Australia** Tel. **1800 042 138**
- **The Royal Victorian Eye and Ear Hospital** Tel. **(03) 9929 8666**

**This page has been produced in consultation with and approved by:**

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