Multiple Sclerosis Trust

MS

Multiple sclerosis information

for health and social care professionals

MS: an overview

Diagnosis

Types of MS

Prognosis

Clinical measures

A multidisciplinary approach to MS care

Self-management

Relapse and drug therapies

Relapse

Steroids

Disease modifying drug therapies

Symptoms, effects and management

Vision

Fatigue

Cognition

Depression

Women's health

Bladder

Bowel

Sexuality

Mobility

Spasticity

Tremor

Pain

Communication and swallowing

Pressure ulcers

Advanced MS

Complementary and alternative medicine

Index

Fourth Edition

Section 3

Vision

Multiple sclerosis can affect vision by various mechanisms, although frank blindness is very rare in MS. The NICE clinical guideline states that each professional in contact with a person with MS should consider whether the individual's vision is disturbed, by considering, for example, the individual's ability to read the text of a newspaper, book or other written material and to see the television.

If there are some problems with vision it is worthwhile initiating an optometrist assessment to ascertain whether the visual problem can be helped by glasses. Any individual who experiences reduced visual acuity, despite using suitable glasses, should be referred for a specialist opinion. The optometrist can assess whether the visual problem may be caused by an eye problem that is not due to MS, such as cataracts or macular degeneration. A decision can therefore be made as to whether the visual problem is best dealt with in an ophthalmology or neurology clinic.

Some visual problems that are specific to MS are:

Optic neuritis

Optic neuritis is the most common eye problem in MS. It is the first manifestation of MS in up to 30% of cases and most people with MS will have optic neuritis at some point during their disease course. It is characterised by an inflammation and demyelination of the optic nerve. The optic nerve is the second cranial nerve that joins the eye to the brain, transmitting the retinal image to the brain.

Optic neuritis usually presents with unilateral impairment of vision, although bilateral cases can occur. There is usually some degree of pain behind the eye and pain on eye movement, although 10% of cases are painless. The visual impairment comes on acutely and vision can get progressively worse for up to two weeks. The degree of visual loss can vary from mild blurring through to loss of light perception in the affected eye. There is loss of colour vision, decreased ability to see contrast and a visual field defect in the affected eye. The visual field defect is usually over the central part of vision and is termed a central scotoma.

On examination there will usually be a defect in the pupil's reaction to light in the affected eye called a relative afferent pupillary defect. The optic nerve head may appear swollen when viewed through an ophthalmoscope, although in over half the cases the nerve head is not swollen because the part of the optic nerve that is affected is away from the eye. In these cases the condition is often termed retrobulbar optic neuritis.

Optic neuritis can usually be diagnosed on clinical grounds, although sometimes further tests are needed. These can include blood tests, magnetic resonance imaging (MRI) of the orbits and brain (Figure 1), an electrical test called visual evoked potentials and a lumbar puncture.

Spontaneous recovery of vision usually starts to occur by the third week. Most recovery takes place over the next three months, although there are signs of recovery for up to two years following an episode of optic neuritis. Most people with optic neuritis make a good recovery, although 10% are left with significant visual impairment. Despite a good recovery of visual acuity there are often subtle defects in colour vision or contrast sensitivity. Vision can often get transiently worse in the affected eye due to heat or exercise. This is called Uhthoff's phenomenon.

Treatment in the acute phase with a short course of high dose oral or intravenous corticosteroids will speed up recovery, although their use has not been shown to affect the final level of visual recovery.

Optic neuritis may occur as a one-off. In a third of cases it can recur, in either eye. Only about 2% of people, though, will develop permanent blindness due to repeated attacks of optic neuritis. About 60% of people who present with optic neuritis will go on to develop MS. The risk of conversion to MS can be ascertained by looking for asymptomatic brain MS lesions on MRI. If there are no brain lesions then the long-term risk of MS is 20%; the risk rises to 80% if any brain lesions are seen.

Double vision (diplopia)

Double vision (diplopia) may be another early symptom of MS. This occurs when the nerve pathways that control eye movements are damaged. It is due to a misalignment of the two eyes so that they look in slightly different directions and they may not move together in a coordinated fashion. The nerve pathways commence in the brainstem, which is a common site of relapses in MS (Figure 2). Diplopia may be accompanied by vertigo, nausea and unsteadiness (ataxia). If

diplopia occurs as part of a relapse then it will usually recover. This recovery may be speeded up by treatment with corticosteroids, as described above. If the diplopia is persisting, particularly in someone with progressive MS, then putting a prism in one lens of glasses or patching one eye can abolish the double vision.

Nystagmus

Nystagmus is the repetitive to-and-fro motion of the eyes. The movement can be horizontal, vertical or have a rotational component. It may just occur with eye movements, when it is termed gaze-evoked nystagmus. This is often asymptomatic, but is clearly seen by an observer. In progressive MS nystagmus can occur in the primary position of gaze. This can then cause the symptom of oscillopsia, where there is a failure to maintain fixation and therefore objects appear to move and vision is blurred. This can be very disabling and it can cause a significant reduction in visual acuity. This is a very difficult symptom to treat. Initial studies have indicated that gabapentin and memantine may be effective.

On-going visual problems

If there are persisting difficulties with vision, despite all available treatment, then the person with MS may benefit from being registered as having a sight impairment. In addition, a referral to a low vision service should be made, to see if there are specific areas where help can be given, such as the provision of appropriate magnifying devices to permit reading.

Further resources

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Figure 1
Coronal MRI of the orbits in an individual with acute optic neuritis showing an inflamed optic nerve (arrowed).

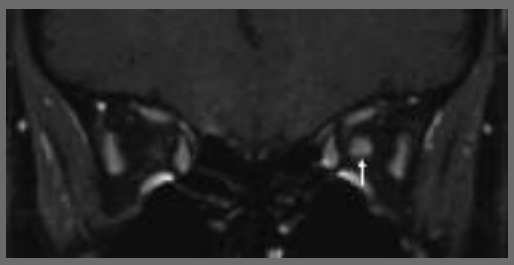
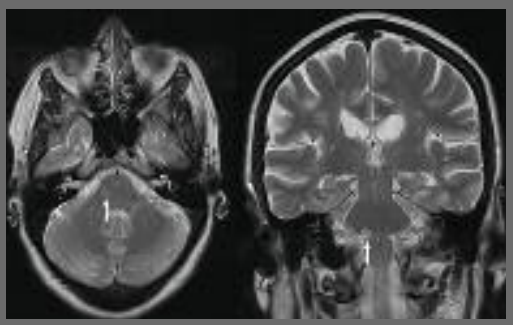


Figure 2
Axial (left) and coronal (right) MRI of the brain in an individual with MS showing a lesion in the brainstem (arrowed) that was responsible for acute double vision.



We hope you find the information in this book helpful. If you would like to speak with someone about any aspect of MS, contact the MS Trust information team and they will help find answers to your questions.

This book has been provided free by the Multiple Sclerosis Trust, a small UK charity which works to improve the lives of people affected by MS. We rely on donations, fundraising and gifts in wills to be able to fund our services and are extremely grateful for every donation received, no matter what size.

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