

# Optic neuropathy

## Etiology

Optic [neuropathy](#) is a near-ubiquitous feature of [Friedreich's ataxia](#) (FRDA).

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Compressive optic neuropathy

[Ischemic optic neuropathy](#)

[Traumatic optic neuropathy](#).....

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Optic [neuropathy](#) refers to damage to the optic nerve due to any cause. Damage and death of these nerve cells, or neurons, leads to characteristic features of optic neuropathy. The main symptom is loss of vision, with colors appearing subtly washed out in the affected eye. On medical examination, the optic nerve head can be visualised by an ophthalmoscope. A pale disc is characteristic of long-standing optic neuropathy. In many cases, only one eye is affected and patients may not be aware of the loss of color vision until the doctor asks them to cover the healthy eye.

Optic neuropathy is often called optic atrophy, to describe the loss of some or most of the fibers of the optic nerve. In medicine, "atrophy" usually means "shrunken but capable of regrowth", so some argue that "optic atrophy" as a pathological term is somewhat misleading, and the term "optic neuropathy" should be used instead.

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Optic atrophy is the end result of any disease that damages nerve cells anywhere between the retinal ganglion cells and the lateral geniculate body (anterior visual system).

The diagnosis of optic neuropathy is made when there is a visual defect or if 2 out of 3 exams (contrast sensitivity, color vision and funduscopy exam) are abnormal. [Optic neuropathy](#) in [Fibrous dysplasia](#) (FD) is more common in patients with [growth hormone](#) excess <sup>1) 2)</sup>.

Evidence suggest aggressive management of GH excess reduces the risk of optic neuropathy.

Visual acuity loss in [idiopathic intracranial hypertension](#) (IIH) can be caused by both outer retinal changes and [optic neuropathy](#). Vision loss from outer retinal changes is mostly reversible. The outcome of patients with coexisting outer retinal changes and optic neuropathy or optic neuropathy alone depends on the degree of optic neuropathy, which can be predicted by the retinal ganglion cell-inner plexiform layer complex (GCL-IPL) thickness <sup>3)</sup>.

<sup>1)</sup>

Cutler CM, Lee JS, Butman JA, et al. Long-term outcome of optic nerve encasement and optic nerve decompression in patients with fibrous dysplasia: risk factors for blindness and safety of observation. *Neurosurgery*. 2006; 59:1011-7; discussion 1017-8

2)

Boyce AM, Glover M, Kelly MH, et al. Optic neuropathy in McCune-Albright syndrome: effects of early diagnosis and treatment of growth hormone excess. J Clin Endocrinol Metab. 2013; 98:E126-E134

3)

Chen JJ, Thurtell MJ, Longmuir RA, Garvin MK, Wang JK, Wall M, Kardon RH. Causes and Prognosis of Visual Acuity Loss at the Time of Initial Presentation in Idiopathic Intracranial Hypertension. Invest Ophthalmol Vis Sci. 2015 Jun;56(6):3850-9. doi: 10.1167/iovs.15-16450. PubMed PMID: 26070058.

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