

# Optic Nerve Atrophy

## WHAT IS THE OPTIC NERVE?

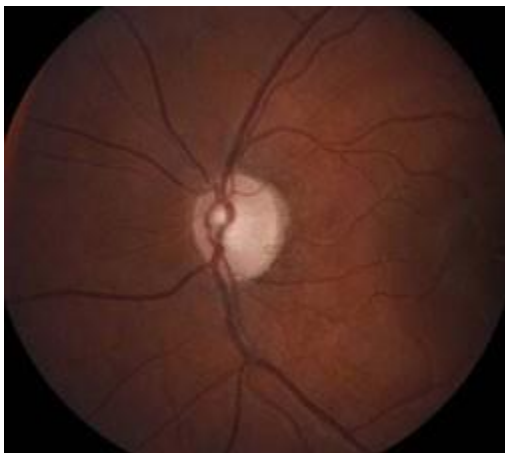
The optic nerve is a nerve in the center of the back of the eye. The optic nerve itself carries over one million nerves that connect the retina (the part of your eye that has cells that collect light and sends a signal to your brain) to the occipital lobe (the part of the brain that interprets vision) like a cable wire. When your ophthalmologist examines your retina, what they see is a pink/orange circle with a yellow/white center, that is the optic nerve. (see Figure 1)



**Fig. 1:** Normal optic nerve.

## WHAT IS OPTIC NERVE ATROPHY?

Optic nerve atrophy (OA) is damage to the optic nerve that can cause damage to the vision in the center, peripheral vision (side vision) and color vision. OA that occurs in a child may cause nystagmus (a shaking movement of the eyes ).



**Fig. 2:** Optic nerve with atrophy. See how it is lighter in color this can be a sign of atrophy.

### WHAT CAUSES OPTIC NERVE ATROPHY?

OA can have different causes. These causes include tumors, trauma, decreased blood supply (ischemia) or decreased oxygen supply (hypoxia). It can also be caused by damage to the nerve from swelling (increased pressure around the nerve), hydrocephalus (increased fluid in the head), toxins, infection, inflammation, premature birth, and rare disorders. Sometimes, OA can be passed on from parents to children genetically. People can be born with it or develop it later in life as adults.

### HOW IS OPTIC NERVE ATROPHY DIAGNOSED?

A complete eye exam with an ophthalmologist can help diagnose OA. Testing usually includes vision, pupil reaction to light, checking eye movements for eye crossing or shaking (nystagmus) and looking at head positioning for tilting. Your ophthalmologist will look for any changes in color of the optic nerve (see Figure 2). Older children can have peripheral vision (side vision) and color vision tested. Specialized testing may be needed to help confirm the diagnosis.

### WHAT TREATMENT IS AVAILABLE FOR OPTIC NERVE ATROPHY?

Unfortunately, there is no treatment to reverse atrophy of the optic nerve. Diagnosing it early and limiting further optic nerve damage (if possible) is the goal. For example, removing increased fluid pressure around the brain and spinal cord (hydrocephalus) may prevent further optic nerve damage if that is the underlying cause of the OA. Glasses may be prescribed for kids who need them to get the best possible vision. Magnifier glasses or tinted lenses may also help vision. When optic atrophy is only in one eye, protection of the good eye by wearing of safety glasses is very important.



## WHAT ELSE CAN BE DONE FOR A CHILD WITH OPTIC NERVE ATROPHY?

A child with OA may have poor vision and may need special assistance for school. A personalized learning created by education specialists, school teachers, and low vision specialists (sometimes with special tools to help see better) can help a child to learn better at school.

If you have questions about optic nerve atrophy, speak with your ophthalmologist.

For more scientific information on optic atrophy visit: [https://eyewiki.org/Optic\\_Atrophy](https://eyewiki.org/Optic_Atrophy)

**Updated 03/2023**