



Deborah S. Bernay, O.D.
Meagan LeGrand, O.D.

High blood pressure and eye disease

Retinopathy

Sometimes in patients with hypertension, after the blood vessels are damaged, parts of the retina may not receive enough blood. Hypertensive retinopathy is damage to the retina from high blood pressure. The retina is the layer of tissue at the back part of the eye. It changes light and images that enter the eye into nerve signals that are sent to the brain.

These blood vessels may also begin to leak and cause bleeding into the retina. Depending on the area of the retina affected by the injured vessels---for instance, if the macula or center of the vision are affected---the patient can suffer a significant amount of vision loss.

Causes

High blood pressure can damage blood vessels in the retina. The higher the blood pressure and the longer it has been high, the more severe the damage is likely to be.

When you have diabetes, high cholesterol levels, or you smoke, you have a higher risk of damage and vision loss.

Rarely, blood pressure readings suddenly become very high. Sometimes, the sudden rise in blood pressure can cause more severe changes in the eye.

Other problems with the retina are also more likely to occur, such as:

- Damage to the nerves in the eye (ischemic optic neuropathy) due to poor blood flow
- Blockage of the blood supply in the arteries to the retina (retinal artery occlusion)
- Blockage of the veins that carry blood away from the retina (retinal vein occlusion)

Symptoms

Most people with hypertensive retinopathy do not have symptoms until late in the disease.

Symptoms may include:

- Double vision, dim vision, or vision loss
- Headaches

Sudden symptoms are a medical emergency.

Exams and Tests

Using an instrument called an ophthalmoscope, your health care provider can see narrowing of blood vessels, and signs that fluid has leaked from blood vessels.

The degree of damage to the retina (retinopathy) is graded on a scale of 1 to 4:

- At grade 1, you may not have symptoms.
- In between grades 1 and 4, there are a number of changes in the blood vessels, leaking from blood vessels, and swelling in other parts of the retina.
- Grade 4 retinopathy includes swelling of the optic nerve and of the visual center of the retina (macula). This swelling can cause decreased vision.

Fluorescein angiography may be used to examine the blood vessels.

How Is Hypertensive Retinopathy Treated?

The best way to treat hypertensive retinopathy is to adequately control your blood pressure.

Can Hypertensive Retinopathy Be Prevented?

To prevent hypertensive retinopathy, keep your blood pressure under control by reaching and maintaining your optimal weight, sticking with a diet recommended by your physician, exercising regularly, and faithfully taking your high blood pressure medications as prescribed. If you are smoking, stop smoking, as the nicotine narrows the size of the vessels. In addition, see your doctor on a regular basis for follow-up care.