

# The CAROTID ARTERY and the EYE

There are two carotid arteries: one on the right side of the neck (which supplies blood to the right side of the brain) and one on the left side of the neck (which supplies blood to the left side of the brain). When blood flowing through the carotid artery is reduced or blocked, the eyes and brain do not receive enough oxygen. As a result, brain function and vision can be greatly affected.

## **WHAT HAPPENS WHEN THE CAROTID ARTERY IS BLOCKED?**

A narrowing, hardening or irregularity of the carotid artery can cause a blood clot or accumulation of debris to form in the artery. This is known as **carotid artery disease**. The debris may break off into the blood stream and interfere with blood flow to the eyes and brain. A reduction of blood flow through one of the carotid arteries may cause temporary vision loss in the eye on the same side. The loss of vision is like a curtain being drawn over the eye and usually lasts just one or two minutes. Weakness or numbness can also occur on one side of the body.

Temporary blockages of the arteries are called **transient ischemic attacks (TIA)**. You should see your ophthalmologist or physician immediately if you experience such episodes. TIAs are warning signs that a complete blockage of the artery may occur. A complete blockage of the carotid artery can cause a stroke. The effects of stroke can be either mild (loss of side vision or slight muscle weakness) or severe (complete loss of vision, paralysis of one side of the body, loss of speech).

## **CAN A BLOCKED CAROTID ARTERY BE PREVENTED?**

Several factors increase the risk of developing carotid artery disease, including:

- smoking;
- high cholesterol;
- high alcohol consumption;
- obesity;
- high blood pressure;
- lack of exercise;
- family history.

A healthy lifestyle that includes a good diet, normal body weight, exercise, and a low cholesterol level will greatly reduce your chances of blocked arteries and stroke. If you have a family history of carotid artery disease or are at risk for stroke, examinations by your physician, a radiologist and/or ophthalmologist can help detect dysfunction in the carotid arteries. Examinations may include:

- ultrasound, to hear and measure blood flow through the arteries;
- magnetic resonance angiogram (MRA), which produces electronic images of the arteries;
- computerized tomography angiogram (CTA), which involves injecting a special dye into the bloodstream to illuminate the arteries;
- dilation (widening) of the pupil with eyedrops to examine the eye for blocked blood vessels.

## **HOW IS CAROTID ARTERY DISEASE TREATED?**

Treatment of carotid artery disease may involve one or more of the following:

- blood-thinning medications, such as aspirin, to help prevent blood clots;
- medication to lower blood pressure;
- surgery to remove the blocked section of the artery