

## What is retinal angiography?

To more closely examine the retina (the back of your eye) and choroid (blood vessels under the retina), your ophthalmologist (Eye M.D.) may use a diagnostic technique called angiography (pronounced an-jee-AHG-ruh-fee).

A colored dye is injected into a vein in your arm, where it travels throughout the blood vessels in your body. As the dye passes through the blood vessels in the eye, a special camera takes photographs of the retina or choroid blood vessels.

Two types of dyes can be injected into the vein: fluorescein (pronounced FLOR-uh-seen) or indocyanine green (ICG).



A patient undergoes fluorescein angiography.

## Why is angiography performed?

Angiography helps your ophthalmologist see what is happening in your retina or choroid, highlighting any abnormalities that may be present. It is used most often to:

- Help diagnose and monitor eye conditions, including macular degeneration, diabetic retinopathy, retinal vein occlusions and macular edema;
- Guide laser surgery with pinpoint accuracy;
- Monitor the effect of laser surgery.

## How do fluorescein and ICG angiography differ?

Fluorescein angiography is the best way to examine the blood vessels in the retina, but choroidal blood vessels are hidden beneath a layer of colored cells in the retina. The best way to view the choroidal vessels is with ICG angiography. The infrared light released by the ICG dye can be seen through the colored cells.

The American Academy of Ophthalmology is an organization of nearly 30,000 ophthalmologists (Eye M.D.s) dedicated to preserving eye health and sight.

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051150-1 Academy reviewed 03/11 ISBN 978-1-61525-213-8

 **AMERICAN ACADEMY  
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*The Eye M.D. Association*

## How is angiography performed?

1. Special eyedrops are put into your eye to make your pupil dilate (widen).
2. Your ophthalmologist or an assistant will insert a small needle into a vein in your arm and inject the dye.
3. As the dye passes through the blood vessels in the retina and choroid, a special camera will take a series of photographs that will later be reviewed by your ophthalmologist. The entire procedure takes less than 30 minutes.

## Are there any side effects with angiography?

You may experience some of the following symptoms after retinal angiography:

- If the dye leaks from your vein, a burning sensation may occur at that site.
- Your eyes may be sensitive to light due to the dilation of your pupils. Bring sunglasses with you to your appointment.
- Your vision may be blurry due to the eye-drops you received. It is a good idea to have someone drive you home afterward.
- Your vision may appear darker or have a colored tint afterward. This will last only a few minutes.
- After the fluorescein dye is injected, your skin may turn yellowish for several hours.
- Because your kidneys remove the dye from the body, your urine will turn dark orange or yellow for up to 24 hours following the test.

Allergic reactions to **fluorescein dye** are uncommon and severe reactions are rare. The most common reaction is a skin rash (hives) or itchy skin. Rarely, breathing difficulty or severe reactions can occur. This is usually treated with oral or injectable antihistamines, depending on the severity of the symptoms.

**ICG dye** contains iodine. Severe allergic reactions are possible in people who are allergic to iodine. You must inform your ophthalmologist if you think you may be allergic to substances that contain iodine, such as X-ray contrast and shellfish.

## Notes

## Retinal Angiography A Closer Look

