

# Seeing Your Retina

Catch light in a retinal net

## Introduction

You can use a dim point of light to cast a shadow of the blood supply of your retina, onto the retina. This will allow you to see the blood supply of your retina.

## Material

- A Mini maglite
- 3/8 inch dowel cut to the length of the body of a AA battery
- aluminum foil.
- A room which you can darken.
- A sheet of black construction paper.



## Assembly

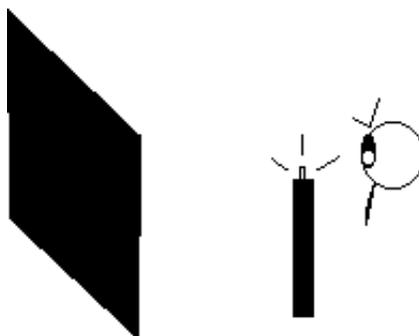
Wrap the dowel with aluminum foil. Make sure the aluminum foil covers the flat ends of the dowel!

Unscrew the back of the mini maglite and remove one AA battery, replace it with the aluminum foil wrapped dowel. Replace the back.

Unscrew and remove the front of the mini maglite.

The light will come on as a dim point source.

Darken the room, turn off the lights and close the shades.



Move the dim light back and forth in front of your eye. Look at a dark background.

## To Do and Notice

Don't poke yourself in the eye!

It is best to wear eye protection and hold the maglite just outside the protective shield.

Hold the maglite about 1 cm in front of, and slightly below, the center of the pupil of one of your eyes.

Look at a distant wall or at the sheet of black construction paper. The black paper should fill your field of view.

Move the light slowly side to side a short distance (0.5 cm)

Do not follow the motion of the light with your eye.

Keep doing this for 20 seconds.

Notice the network that appears. It looks like the branches of a tree or the branches of a river pattern viewed from space.

### **What's Going On?**

The net is the pattern of arteries and veins which supplies blood to your retina. It spreads out from the dark blob of your blindspot.

In human eyes the blood supply of the retina is in front of the retina. That is, light passes through the blood supply on its way to the retinal detectors. You do not see the retinal blood supply because it never changes and your eye ignores unchanging images.

The point source of light casts a shadow of the retinal blood supply on the retina. When you move the point of light side to side the shadow moves. You can then see the changing shadow.

### **So What?**

Glaucoma, is a disease of the eye in which pressure builds up inside the eyeball. The pressure squeezes on the retinal blood supply network, reducing bloodflow to the periphery of the eye and resulting in the death of the retina starting at the periphery and working in toward the center. One of the symptoms of glaucoma is tunnel vision.

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