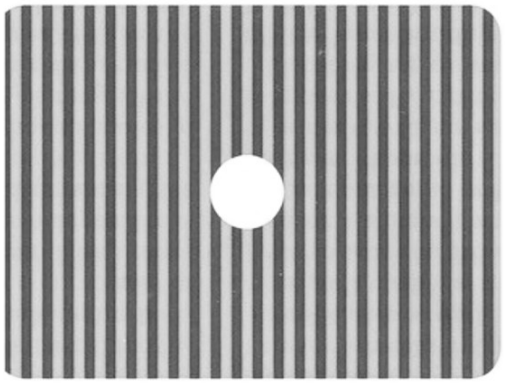
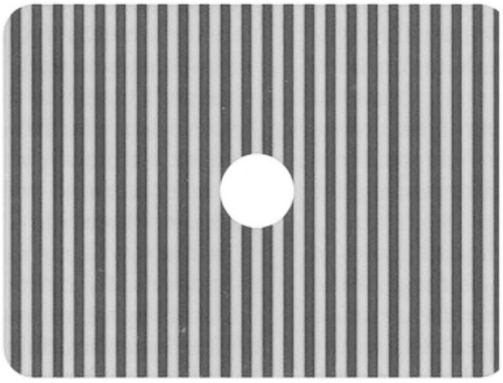
Why do we have a blind spot?

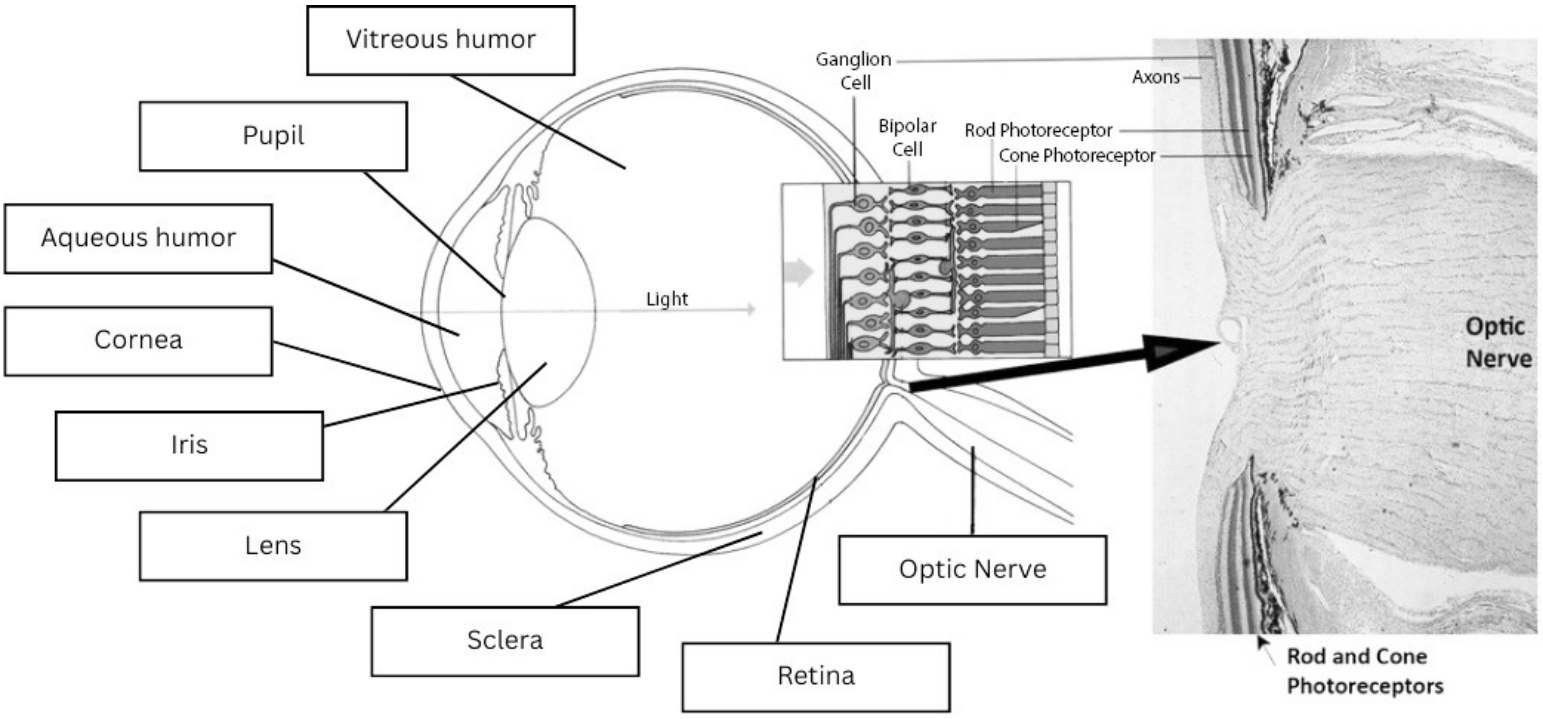
Instructions: close one eye and look at the X. Hold the paper at arm's length and then move it slowly toward your eye until you find a distance where one of the white spots in the pattern disappears. Then try it with the other eye closed. What can you say about where the blind spot is on your retina? Notice that when the white spot disappears, there does not seem to be a hole in the stripes. Your brain tries to convince you that there are stripes even when your retina does not see them.



X



Light passes through multiple retinal layers before reaching the photoreceptors (rods and cones) located in the back of the retina. The photoreceptors then activate the ganglion cells to send nerve impulses through their axons to the optic nerve and then the brain. Thus, there are no photoreceptors where the axons of the ganglion cells leave the retina. This is the blind spot.



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McPherson
Eye Research Institute
UNIVERSITY OF WISCONSIN–MADISON

Dear Parent or Caregiver,

Today, volunteers from the McPherson Eye Research Institute came to my class and we dissected a real bovine (cow) eye! It was a hands-on way to learn about the anatomy of the eye and how vision works.

I'd like to teach you about some of the interesting things I learned, so please ask me about today's lesson. Here are some questions you could use to get me started:

- What is the blind spot and why is it interesting?
- Can you show me where my blind spot is? (*I can demonstrate it with a simple activity!*)
- What is the retina, where is it located in the eye, and what does it do?
- What is the optic nerve and what does it do?
- Why do we have a blind spot?
- What are some other parts of the eye and what do they do?
- Are cow eyes different from human eyes? If so, how?
- What else did you learn that you did not know before?
- What did you enjoy the most about today's lesson?

Thanks for letting me share what I learned today with you!

About our institute:

At the University of Wisconsin–Madison's McPherson Eye Research Institute, more than 250 researchers, clinicians, graduate students, and postdoctoral fellows across 50+ departments work together with one shared purpose: to understand, protect, and restore vision.

Discovery is at the heart of what we do—but so is community. Through our volunteer-powered Outreach Program, we bring vision science beyond the lab and directly into Wisconsin classrooms, sharing hands-on lessons and interactive demonstrations that make learning about vision science exciting and memorable. We also equip teachers with training and classroom-ready resources—such as dissection kits—so they can offer these impactful activities year after year!

By connecting students with science, we aim to spark curiosity, build confidence, and inspire the next generation of innovators in science and medicine. We are proud to share our knowledge and resources in service to our community—because advancing vision research ultimately means improving lives, including yours!

Scan here to learn more about MERI!