



CONFRONTATION VISUAL FIELDS

ALLIED OPHTHALMIC TRAINING

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TEST YOUR KNOWLEDGE!

Which of the following conditions can lead to visual field defects?

- a. Retinitis pigmentosa
- b. Glaucoma
- c. Macular degeneration
- d. All of the above

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True or False?

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True or **False**

WHAT IS A PERSON'S VISUAL FIELD?

- A **visual field** defines the space that a person can see while keeping their head in the same position
- The visual field radiates out from the pupil and extends in a cone-like shape – this is important to understand when thinking about how you test the perimeter, or edges, of the visual field
 - Objects that are further away from the person are more likely to be within that person's visual field
 - You can test this by seeing how quickly you lose sight of your fingers if you hold them close to your face versus extending your arms while looking straight ahead

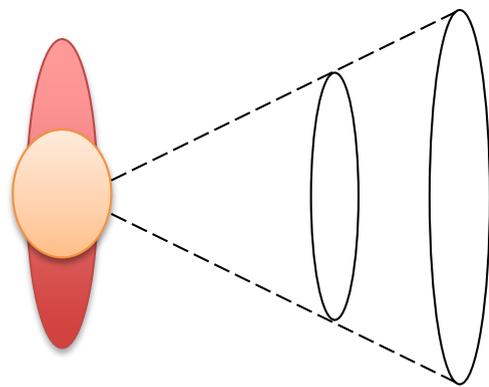


Diagram showing the cone-like shape of the visual field – notice how quickly it expands as the distance increases .

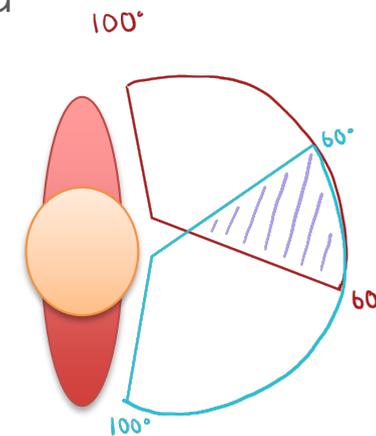
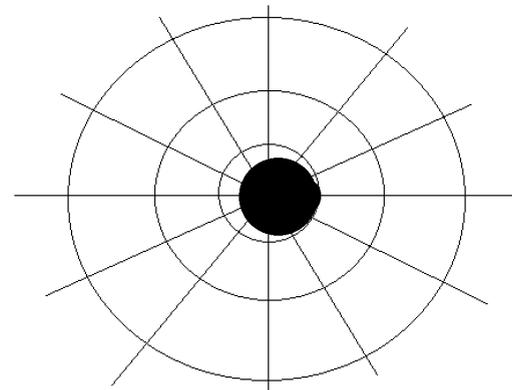


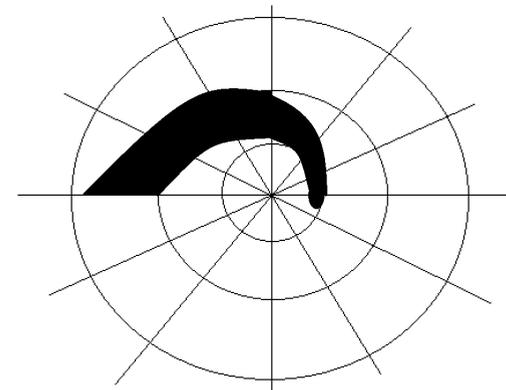
Diagram showing the limitations of each eye's visual field. The visual field extends furthest in the temporal side as it is not blocked by the nose. Binocular vision occurs where the two intersect (shown in purple).

WHAT IS A PERSON'S VISUAL FIELD?

- **Scotoma** refers to an area of a person's visual field that light perception is entirely absent or the light perception is diminished; sometimes referred to as a visual field defect
- The size, shape, and the quality of vision lost are all characteristics of a scotoma
- The type of scotoma provides information to the ophthalmologist about the cause of the defect
- Below are a few examples:



Central Scotoma



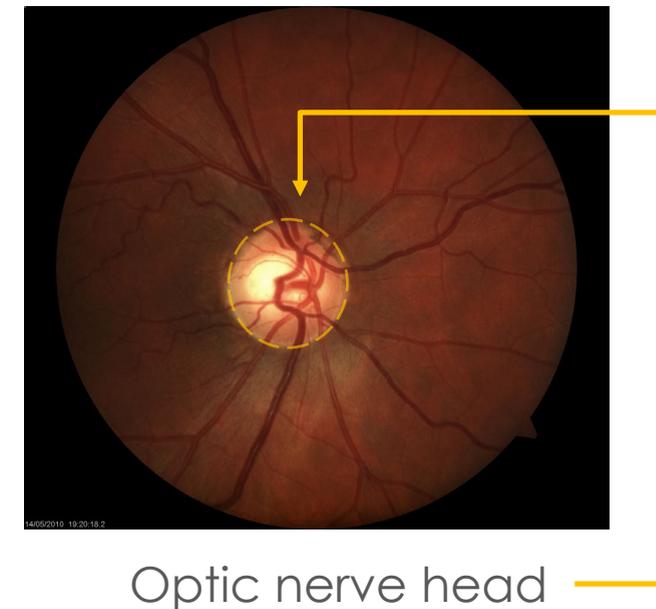
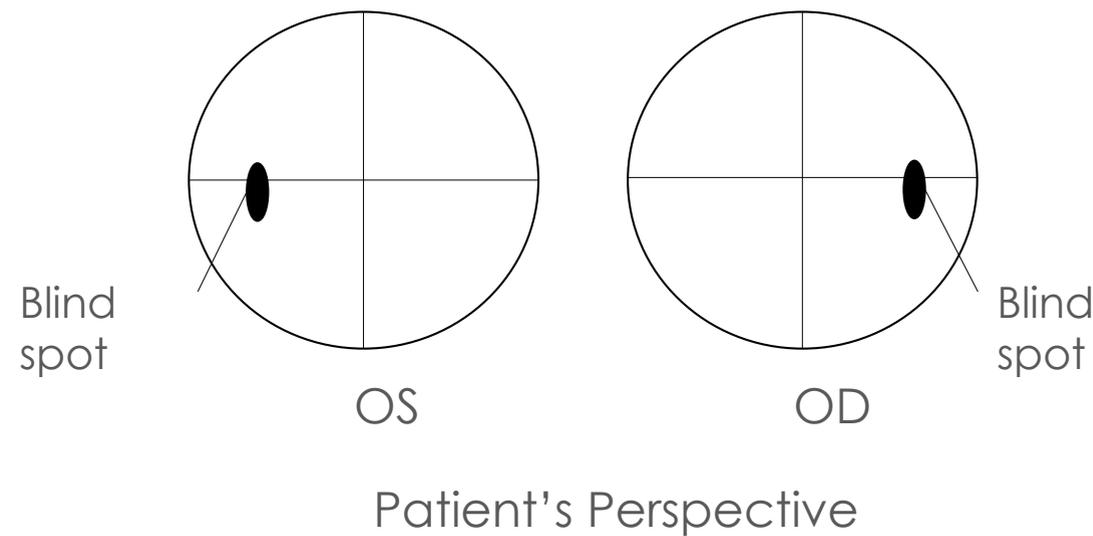
Arcuate scotoma

https://commons.wikimedia.org/wiki/File:Visual_field_centrocaecal_scotoma.png#filelinks

https://commons.wikimedia.org/wiki/File:Visual_field_arcuate_scotoma.png

WHAT IS A PERSON'S VISUAL FIELD?

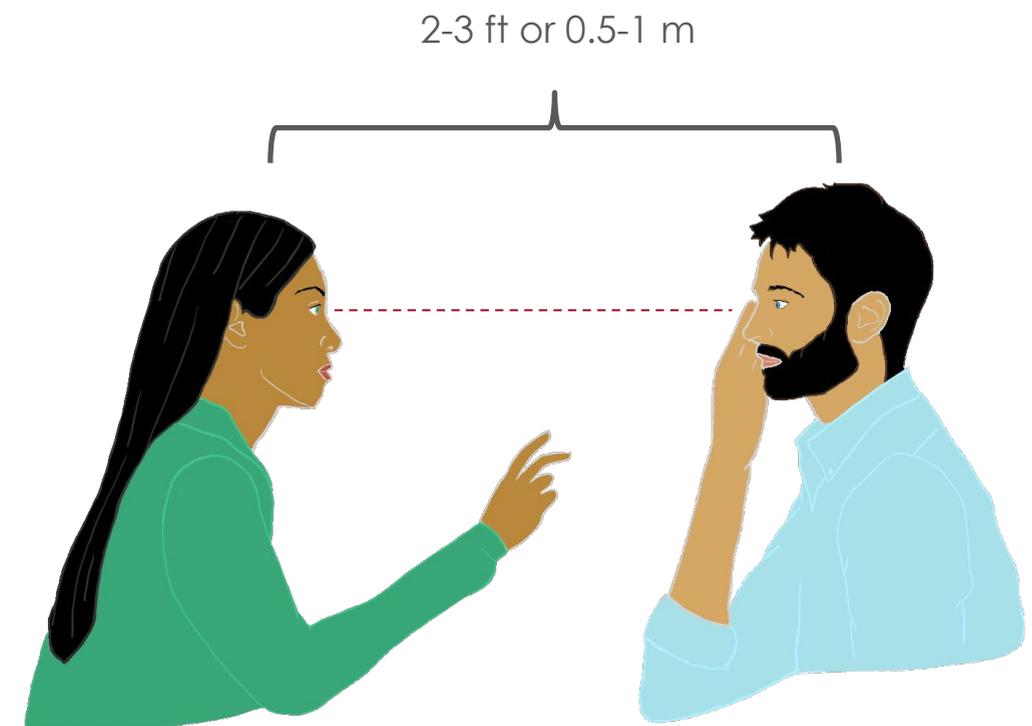
- For each eye there is a blind spot in the vision
 - This is where the ganglion cells of the retina merge to form the optic nerve of the eye and so there are no photoreceptors (rods and cones) in that one area of the retina
 - Fun fact: the optic nerve is the only nerve in the body that can be visualized clinically and non-invasively
 - There are websites where you can practice finding your own blind spot (<https://www.ao.org/museum-eye-openers/experiment-blind-spot>)



https://commons.wikimedia.org/wiki/File:NERVIOPTIC_OD.jpg

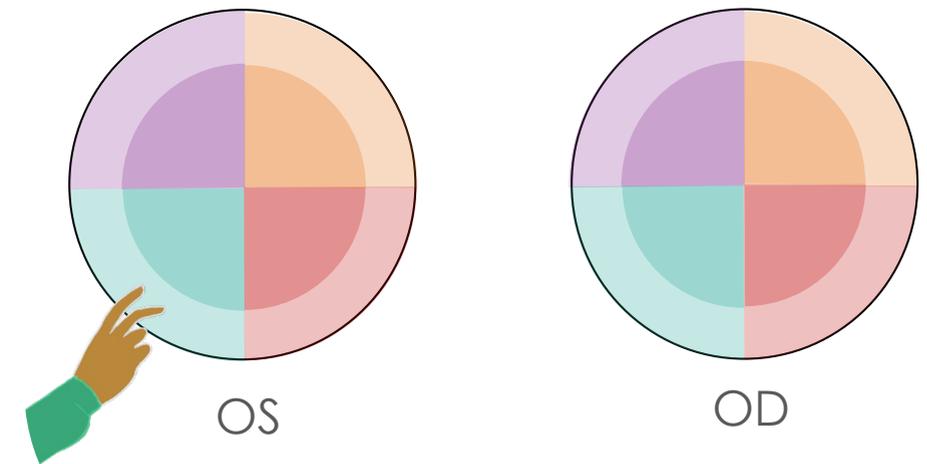
PERFORM A CONFRONTATION VISUAL FIELD (CVF) – STEP 1: ALIGN PATIENT

- Have the patient seated 2-3 ft away from you - if you both are seated your knees would be almost touching
- Align the height of your eyes with the patient - avoid standing over the patient
- Facing the patient, cover or close your left eye
- Ask the patient to cover their right eye completely (can use an occluder) – No peeking!
- Instruct the patient to stare at your right eye and to *not* follow your fingers



PERFORM A CONFRONTATION VISUAL FIELD (CVF) – STEP 2: TEST VISUAL FIELD

- Next hold **1, 2, or 5 fingers** in one of the four quadrants (avoid holding 3 or 4 fingers) and ask the patient to count them – show fingers exactly halfway between you and the patient
- If the patient can't see the fingers in the periphery, you can move the fingers in a few inches towards the center and see if they can see them – this counts as a defect!
- Once you have successfully tested the 4 quadrants of one eye, switch and test the other eye
- If the patient was able to count your fingers in all 4 quadrants, then you can document the VF as “CVF full”

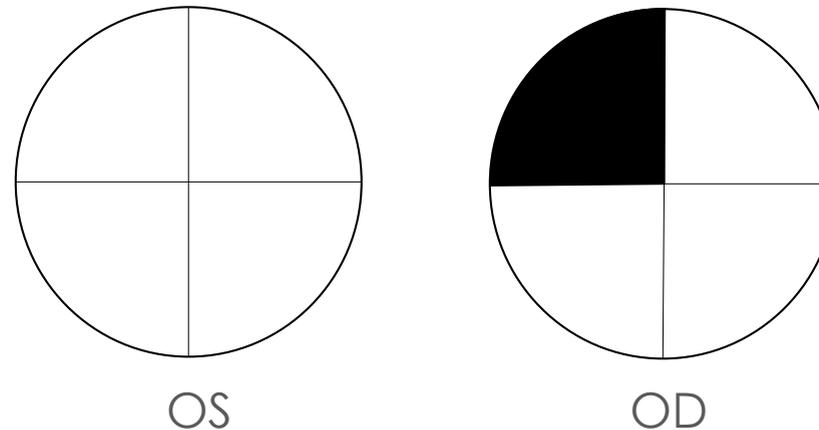


Patient's Perspective:
4 Quadrants that need to be tested one eye at a time – she is testing



HOW TO DOCUMENT THE CVF

- You document the patient's visual field as if you are looking from their perspective
- Example: If the patient couldn't count the fingers in *their* left upper quadrant of the right eye, you would document it like the picture below



- It may be helpful to imagine standing behind the patient as if you could look through and see what they are seeing

TROUBLESHOOTING AND TIPS

- If the patient looks away from your eye: first redirect their gaze back to your eye, and then *retest the quadrant* that you were testing when the patient looked away
- Avoid wiggling fingers, as this is testing a different sensory input for the brain
- Slowly move fingers from where you, as the examiner, can't read them until the point that you can read them – the patient should now be able to read them as well
- Remember you must match their eye level and the angle of their vision to adequately test the visual field
- Be patient. It is not uncommon to have to redirect a patient's fixation back to your eye a few times and it may take them a few seconds to count your fingers

ARE THERE OTHER WAYS TO TEST THE VISUAL FIELD?

- Yes! There are automated machines that ophthalmologists can use to obtain a more precise diagram of where the scotoma is located and the shape of the defect.
- While an automated visual field machine can provide additional information, a technician who is skilled in performing a confrontation visual field can provide incredibly useful information about the health of a patient's eye.
- With experience performing the CVF correctly, you'll learn to pick up more subtle defects like central defects and nasal steps.

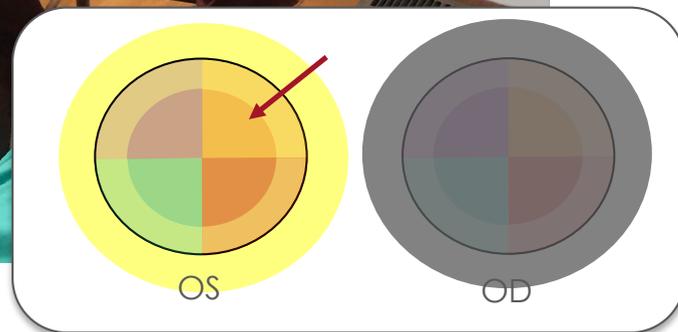
EXAMPLE OF VISUAL FIELD TESTING



The patient's **right upper quadrant** of the **left eye (OS)** is being tested.

Notice that the patient's gaze is focused straight ahead and is not looking towards the fingers.

The examiner is covering her left eye with her right hand so that she can use her left hand to assess the patient's right VF.



*For future reference, patients should have their hats removed or turned around so that the brim is not obstructing the visual field

EXAMPLE OF VISUAL FIELD TESTING



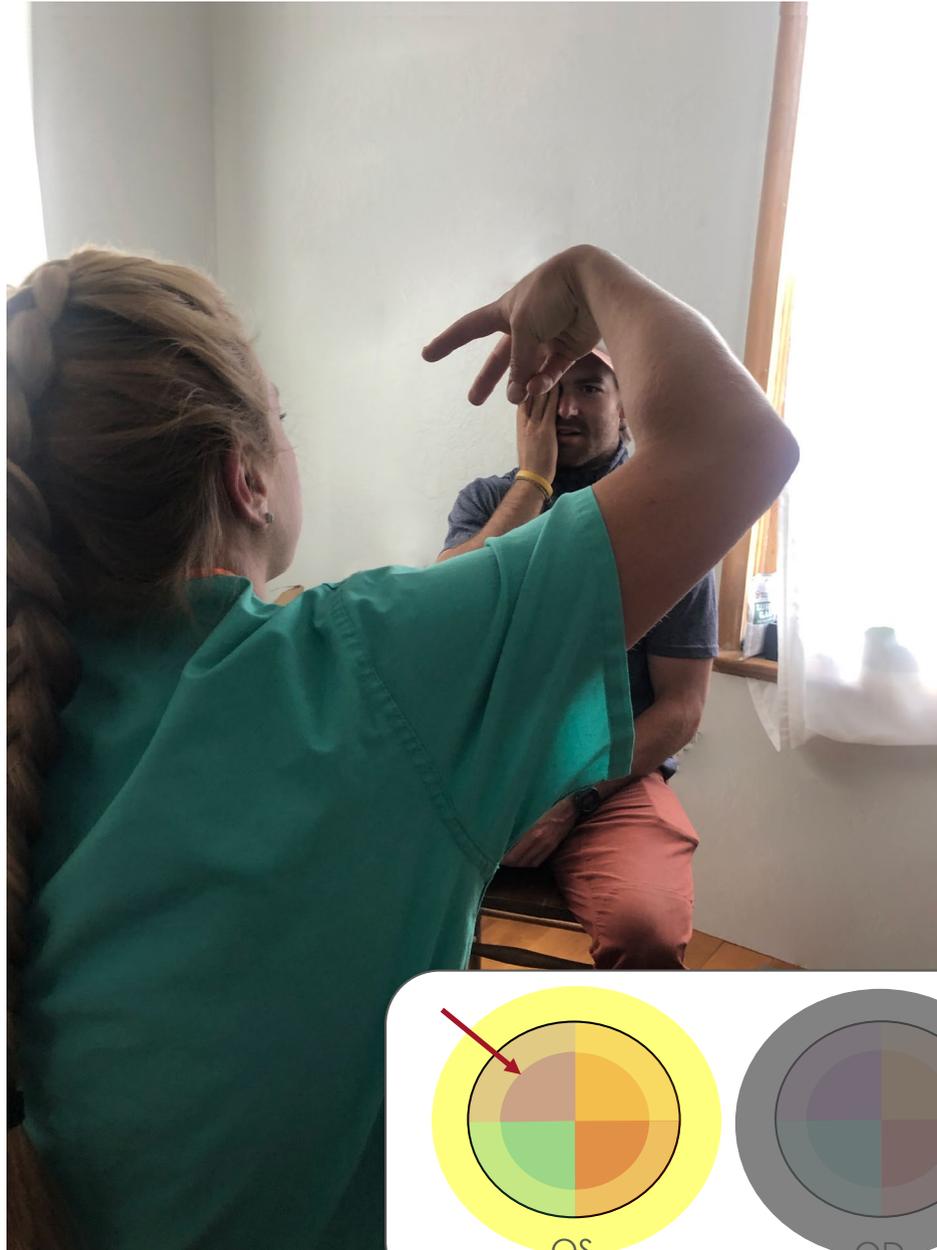
The patient's **right lower quadrant** of the **left eye (OS)** is being tested.

Remember to present your fingers halfway between you and the patient!



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EXAMPLE OF VISUAL FIELD TESTING



The patient's **left upper quadrant** of the **left eye (OS)** is being tested.

The angle of the camera makes it appear as though the examiner's head is tilted – but remember that you need to maintain the same level and angle of gaze as the patient.

Notice how a patient's visual fields can be assessed anywhere. There is no special equipment needed!



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EXAMPLE OF VISUAL FIELD TESTING



The patient's **left lower quadrant** of the **left eye (OS)** is being tested.

Remember to first test the outer limits of the visual field.

It is often helpful to recognize whether the defect was **nasal** or **temporal** when documenting. As you can see from the images, it can be tricky to translate what the patient is seeing from your perspective.

Once done, repeat the steps with the other eye!

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