

Retinoscopy

WHAT IS RETINOSCOPY?

Retinoscopy (also called skiascopy) is a technique to figure out the refractive error of the eye (farsighted, nearsighted, astigmatism) and the need for glasses without having to ask “which is better, one or two.” The test can be quick, easy, reliably accurate and needs little cooperation from the patient.

HOW IS IT PERFORMED?

A handheld instrument called a retinoscope shines a beam of light into the eye [See figure 1]. When the light is moved up and down and left and right across the eye, the examiner looks at the movement of the light reflected from the back of the eye. The examiner then holds lenses in front of the eye and as the power of the lenses changes, there is also a change in the direction and pattern of the light reflection. The examiner keeps changing the lenses until reaching a lens power that shows the refractive error of the patient.



Fig. 1: A handheld instrument called a retinoscope projects a beam of light into the eye during retinoscopy.

WHEN IS RETINOSCOPY USED?

Retinoscopy is used to find the refractive error in children, developmentally delayed adults, or in those who are unable to cooperate with other ways to check for glasses. It is especially useful in very young children and infants.

ARE DILATING EYE DROPS NECESSARY FOR RETINOSCOPY?

Children's eyes are usually dilated for retinoscopy. This is because the reflected light is easier to see when the pupil is large and because the drops temporarily limit the eye's



ability to accommodate or focus. This allows for a more accurate measurements of the refractive error.

WILL GENERAL ANESTHESIA BE NECESSARY FOR RETINOSCOPY?

For the most reliable retinoscopy the child should look at the examiner's light for a few seconds to few minutes. Most children, including infants, can look at the light long enough to allow successful retinoscopy in the office without anesthesia. Some children may need to be held still in the office for the retinoscopy. However, in some cases general anesthesia may be needed if the child does not look at the light long enough for retinoscopy.

WHAT OTHER TECHNIQUES CAN BE USED TO DETERMINE THE REFRACTIVE ERROR OF A CHILD?

Auto-refraction and subjective refraction are other techniques used to determine refractive error. Auto-refraction is a method that uses a computer type device. This method can be helpful but still requires the patient to be still and look at a picture in the computer for several seconds.

Subjective refraction is can be used to fine tune retinoscopy or auto-refraction measurements. Subjective refraction needs the patient to give feedback by telling the examiner which lens gives the clearest vision. You may know this as the part of the exam where the ophthalmologist asks "which is better, one or two." This type of refraction can be helpful in older children.

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