



# Prisms

You or your child has been prescribed ophthalmic prisms to help manage a misalignment of the two eyes. These prisms were prescribed because the eyes are not looking in the same place at the same time (“strabismus.”) Prisms shift the images to get them to correspond with the misaligned eye position. This helps the eyes work together and can reduce or eliminate double vision (“diplopia.”)

## WHAT TYPES OF DOUBLE VISION DO PRISMS HELP WITH?

Prisms may be used to align vertically, horizontally, or diagonally separated images.

## WHAT IF THE IMAGES ARE TILTED?

Prisms can move an image up or down, and left or right. Unfortunately, prisms cannot rotate an image. Prisms may be able to bring the images close enough together to give the brain a chance to adjust to the tilt.

## HOW STRONG DO THE PRISMS NEED TO BE?

Usually, the least amount of prism necessary to control double vision is prescribed. This can help the patient work towards better alignment in some cases. If the prisms are too strong, they can be uncomfortable and might even worsen a patient’s strabismus.

## DO PRISMS CURE STRABISMUS?

No. Prisms do not strengthen the eye muscles or move the eyes. They are more like a crutch that makes it easier for the misaligned eye to line up with the target.

## WHAT TYPES OF PRISMS ARE AVAILABLE?

There are two main types of prisms: Fresnel (press-on) and ground-in. Fresnel prisms are a thin film that can be stuck onto the inside of the glass’s lens in the office, while ground-in prisms must be made by an optical shop.

## WHAT IS THE DIFFERENCE BETWEEN PRISM TYPES?

Fresnel prisms are easily changeable, but they have lines that can blur your vision and are likely to be noticed by others. They require frequent cleaning. For this reason, Fresnel prisms are usually used as a temporary measure. Ground-in prisms have a clearer image than Fresnel prisms – the glasses look like normal glasses – but they can be heavy, with one thick edge. Ground-in lenses tend to be more expensive.



## HOW DO I CLEAN GLASSES THAT HAVE A FRESNEL PRISM?

There are several online resources about the care of Fresnel prisms, such as <http://bit.ly/FresnelPrisms>.

## DO PRISMS HAVE SIDE-EFFECTS?

You may remember from science class that a prism can separate a beam of white light into a rainbow of colors. For this reason, prism glasses (of any type) may cause colored fringes around objects. The image through prism lenses also tends not to be as clear as with prism-free glasses.



## HOW STRONG CAN A PRISM BE?

The stronger the prism, the thicker and blurrier it will be. Few patients tolerate Fresnel prisms greater than 15 prism diopters (PD) because of blur. An optical shop can fit a ground-in prism up to or greater than 8 PD into each lens of the glasses, but with these stronger prisms, thickness, cost and weight of the glasses all increase.

## WHEN DO CHILDREN NEED PRISMS?

Prisms are sometimes used if a child is seeing double after surgery, or to help control a head tilt when there is vertical misalignment. They may be permanent or temporary. Other less common uses of prism for children include nystagmus, visual field abnormalities, and for irregular head positions.

## WILL I STILL NEED SURGERY IF I USE PRISMS?



It depends. For smaller deviations in patients who already wear glasses, prisms may be a good long-term option. For larger deviations, or for deviations that change in different gaze directions, prisms may help improve function temporarily until the decision for surgery is finalized. Whether or not prisms are used, strabismus might worsen over time, and surgery may eventually be necessary.

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