

Permanent prisms

If the situation remains stable for a period of time and a prism is still required to maintain single vision, a prism can often be incorporated into a glasses prescription without the disadvantages of the lines and distortion.

Double vision (Diplopia) and care of prisms

Orthoptic department

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What is Diplopia?

Diplopia is the medical term for double vision.

Why do I get double vision?

The eyes are moved using six muscles surrounding each eye. From birth the eyes are designed to work as a co-ordinated pair, so that only one image is seen. If one of the muscles becomes weak or has something restricting the movement, the eyes are unable to work as a pair and double vision occurs.

Why don't children with squints get double vision?

The ability to see one image is developed in the early years of life and should be well established by the time a child is eight years old. If the eyes do not work together in childhood, it is unusual to develop double vision as the brain adapts and only uses one eye at a time.

Once visual maturity has been reached it is difficult to ignore the second image.

Why is my double vision so variable?

The type of double vision varies according to which muscle or muscles are defective.

Diplopia can be horizontal, vertical, tilted or a combination of all three. It can be present at near and/or distance, or just in one particular direction of gaze.

What happens now?

The Ophthalmologist (Eye Doctor) will try to establish the reason the muscle has become weak and this may require further investigations.

You may also be referred for an Orthoptic assessment. This is an examination that will try and determine where the problem lies. The Orthoptist will try to relieve the symptoms where possible and monitor the progress or recovery over time.

How can I get rid of the double vision?

This can be done in two ways.

Eliminating one image

Sometimes it is not possible to join the diplopia so it may be necessary to cover one eye to eliminate the second image. This will provide comfort and safety for as long as necessary. This will not alter the cause of the problem and will not damage the eyesight in anyway, but it will affect your depth perception.

Joining the double vision using a prism

A prism is used to alter the position of the image received by the eye until only one image is perceived. Attaching an optical prism to your own glasses or frames with plain lenses does this. These prisms are called Fresnel prisms

This is a temporary treatment that can be adjusted as the double vision changes.

Fresnel prisms

The design of the Fresnel prism makes it suitable to be placed on one or both lenses on a pair of spectacles. The prism is made up of lots of tiny prisms which produce a thin flexible plastic sheet that can be attached to the inside of the lens.

It has a smooth side and a rough side. The smooth side is stuck to the inside of the lens using water, and once dry it rarely falls off.

Cleaning your Fresnel prism

The rough side of the Fresnel is exposed so it tends to collect dust and may need to be cleaned.

Use a gentle stream of water and a very soft brush in the direction of the lines. Pat or blot dry with a soft lint free cloth.

If the prism becomes dirty with make-up or grease, it may need to be removed and cleaned in the same way with a small amount of washing-up liquid.

Replacing the Fresnel prism

If you need to remove the prism or it falls off, it can be replaced quite easily.

1. Detect the rough and smooth surfaces of the prism.
2. It is essential that the lines are in the same direction as fitted by the Orthoptist.
3. Lay the glasses in shallow warm water and press the smooth side onto the inside of the lens. Check the lines are correctly positioned and straighten if necessary while the lens is still wet.
4. Press out all the air bubbles and ensure the Fresnel prism is entirely within the frame or air bubbles will appear when it dries.
5. Dry gently with a lint free cloth or leave to air dry.

The advantage of the Fresnel prism is that it is a temporary measure until the situation becomes stable or changes.

The disadvantage is that it may reduce your vision or cause distortion.