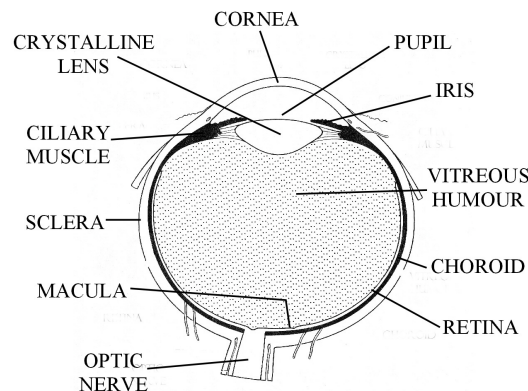


spectacle distortion



What is Spectacle Distortion?

Spectacle distortion is where everything appears to be sloping, slanting or bent. It is usually noticed when spectacles are worn for the first time, or the lenses have been changed. It is also referred to as *meridional aniseikonia*.

What Causes it?

All spectacle lenses cause changes in the image size inside the eye - the higher the prescription, the greater the change.

On average, approximately one Dioptre (1.00D) of lens power will change the retinal image size by one percent. This may not sound like much, but the brain is very sensitive to these changes, and may notice an image size change of less than one eighth of one percent.

In 'minus' prescriptions (for short sightedness, or *myopia*), the image is made smaller; in 'plus' prescriptions (for long sightedness, or *hyperopia*), the image is made bigger. In astigmatism (caused by the eye being shaped like a rugby ball), the change in image size will be different in one direction compared to the other at right-angles to it, causing very noticeable sloping effects.

Is There Any Way of Reducing the Effect?

One way to reduce these effects is to reduce the power of the spectacle lenses. It has been said that 'testing sight is a science, but prescribing is an art', so it is quite common for optometrists to compromise the prescription slightly to make the distortion effects more bearable, without significantly affecting the clarity of the vision.

Sometimes the effect can be reduced by changing the curvature of the lenses, but this can cause other problems so is really a last resort.

Contact lenses are an excellent way of eliminating the distortions – as the contact lens sits on the surface of the eye, the distortions are reduced to zero. However, contact lenses do not suit everyone, and can be associated with other problems.

It is essential that the spectacle frame is adjusted properly, so that the lenses sit in the correct position and are at the correct angle – this is especially so for thinner lenses (high index or aspherics).

The only real way to deal with these distortions is to wear the spectacles. The brain is very adaptable, and will alter according to the images being received. It can take anything from a few hours up to a couple of weeks for the distortion to disappear completely, but things will eventually settle down, and buildings will once again be vertical and the ground horizontal.

Does it Help to Wear the Spectacles Less?

No. The distortion will always be noticeable unless the brain has a chance to adapt. If you need spectacles but don't wear them, your brain will compensate for the blur. When you start to wear the spectacles, your brain no longer needs to compensate for the blur, but instead needs to compensate for the changes in image size. This adjustment takes time.

Doesn't Wearing the Glasses More Make the Eyes Worse?

After you have got used to the glasses, it will feel like the vision is worse without them - giving rise to the myth that 'wearing spectacles makes the eyesight worse'. The blur without the glasses is exactly the same, but the brain is no longer compensating for it, making it feel worse. In adults, wearing glasses or not makes no difference to the way the prescription changes.

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