

[Understanding Vision](#) Nov 29, 2017

Recognising vision problems

Short-sightedness, long-sightedness, astigmatism, etc.: What vision problems are there and how can we correct them?

Short-sightedness, long-sightedness, presbyopia: visual impairments can take on many forms. Those affected will notice it immediately: their eyesight isn't what it used to be, and this decline is becoming an ever greater strain. Short-sighted people find it difficult to see things that are far away, while for long-sighted people close-up objects become harder to see. Digital vision and looking at a smartphone, laptop, etc. all have an impact on our vision, and have transformed our visual habits. That's why an increasing number of people are complaining of digital eyestrain or difficulty seeing when driving. BETTER VISION explains: What visual impairments are there, what causes them – and what helps us regain optimum vision?

There is a whole host of vision problems we could fall victim to. Most of them are largely harmless and can be corrected just by wearing glasses: short-sightedness, long-sightedness, presbyopia and astigmatism to name but a few. This article focuses on these "normal" vision problems. However, there are specific cases in which only an operation can help.

[> Click here for everything you need to know about the most common eye diseases...](#)

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How a healthy eye works

To better understand short- and long-sightedness we first need to explain how we see: in order to perceive things clearly, they have to be projected on the retina – and not in front of it or behind it.

A number of factors are involved in this process, including the length of the eyeball and the curvature of the eye's lens and cornea. A deviation from the norm leads to short- or long-sightedness.

Short-sightedness (myopia)

How does short-sightedness manifest?

Short-sighted people perceive faraway objects as blurred, while close-up objects appear crystal clear.

What are the causes of myopia?

There are actually a fair few. The most common is an excessively long eyeball (axis myopia). Incoming light is bundled not on, but in front of the retina. The upshot? Vision becomes blurred. In rare cases, this leads to refractive myopia. With this type of myopia, the eyeball length is normal but the cornea or lens are much too curved, which is why the image appears not on but in front of the retina – and is thus perceived as blurred. Did you know that the word myopia comes from the Greek word myops, which means "squinting face." Without glasses, many short-sighted people squint when looking into the distance so they can see more clearly – hence the expression.

The normal eye











What helps if you're short-sighted?

Generally, an optimally fitted pair of > [distance glasses](#) or contact lenses can help you see clearly when looking at faraway objects. Your optician can perform an eye test to quickly find out if you're short-sighted and offer you the correct vision devices.

Long-sightedness (hyperopia or hypermetropia)

How does long-sightedness manifest?

Seeing things close up is tiring. Long-sighted people usually perceive close-up objects as blurred. A long time spent reading, doing DIY or staring at a screen without the help of glasses often results in a headache. While long-sighted people can clearly see objects in the distance, it often takes them a while to adjust from close-up to faraway objects.

What are the causes of long-sightedness?

The most common – and almost always genetic – cause of long-sightedness is because the eyeball is too short (axis hyperopia). A relaxed, long-sighted eye therefore cannot image close-up objects on the retina but rather behind it, which is why they appear blurred. Refractive hyperopia is much more rare: this is where the eyeball is normal in length, but the cornea or lens are not curved enough to be able to see close-up objects clearly. The same thing happens if the eye's lens is missing. This can be genetic, but can also come as the result of an accident or a disease.

The normal eye









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What helps if you're long-sighted?

In general, long-sightedness can be corrected with single vision lenses, [> reading glasses](#) or properly fitted contact lenses, to enable you to see close-up objects clearly once again. Your optician can perform an eye test to quickly find out if you're long-sighted and offer you vision

Presbyopia

How does presbyopia manifest?

Suddenly, small print is a big challenge and texts have to be held further away to be read. Reading in poor light becomes very taxing, symbols and text on a smartphone screen seem blurred, and it gets harder and harder to switch between looking at objects close up and far away. While the symptoms of presbyopia are similar to those of long-sightedness, the former only affects people from the age of 40 and up as that's when the eye muscles start to age. Some people notice this early on, and others do so when they're older. Long- and short-sightedness are almost always hereditary.



What are the causes of presbyopia?

Presbyopia occurs as the eye naturally ages, usually from the age of 40 upwards: the lens loses its elasticity and can thus no longer properly focus clearly on objects at different distances. This makes reading, especially at close range, that much more difficult.

Vision over 40







What helps if you have presbyopia?

People suffering from presbyopia – who don't have other vision problems like short- or long-sightedness – can use single vision lenses for seeing objects either close up or far away, and thus enjoy optimum vision. For presbyopia sufferers who are short- or long-sighted and wear glasses, however, > [progressive lenses](#) are the way to go: there are corrective areas of different strengths, thus enabling razor-sharp images at all distances, no matter how near or far. Multifocal contacts and/or progressive lenses can be used to correct presbyopia. Your optician can perform an eye test to find out if you have presbyopia and offer you glasses or contact lenses to correct your vision.

Astigmatism**How does astigmatism manifest?**

Objects close up and far away are perceived as distorted and blurry, details can't be made out, and point light sources look like a small line or bar. Many people also find it difficult to judge distances correctly.

What causes astigmatism?

Astigmatism is usually genetic. It is where the cornea curves in different directions at varying degrees of intensity, which compromises "consistent," undistorted vision. In most cases, astigmatism occurs alongside short- or long-sightedness.

Astigmatic vision









What helps if you have astigmatism?

Astigmatism can be corrected with glasses, contact lenses or an operation. Glasses for those suffering from astigmatism feature a "cylinder." You can see whether your glasses have one of these cylinders by looking at your prescription: cylinders are noted with the abbreviation "cyl." A cylinder balances out the blurred image, meaning you can enjoy normal vision once again. Depending on the kind of astigmatism, it may be possible to wear soft or hard contact lenses, or toric contact lenses.



Contact

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Digital eyestrain



How does digital eyestrain manifest?

Digital eyestrain manifests in particular from the age of 30 upwards in the form of headaches and neckaches, as well as burning or overtired eyes, either while using digital devices or afterwards.

What causes digital eyestrain?

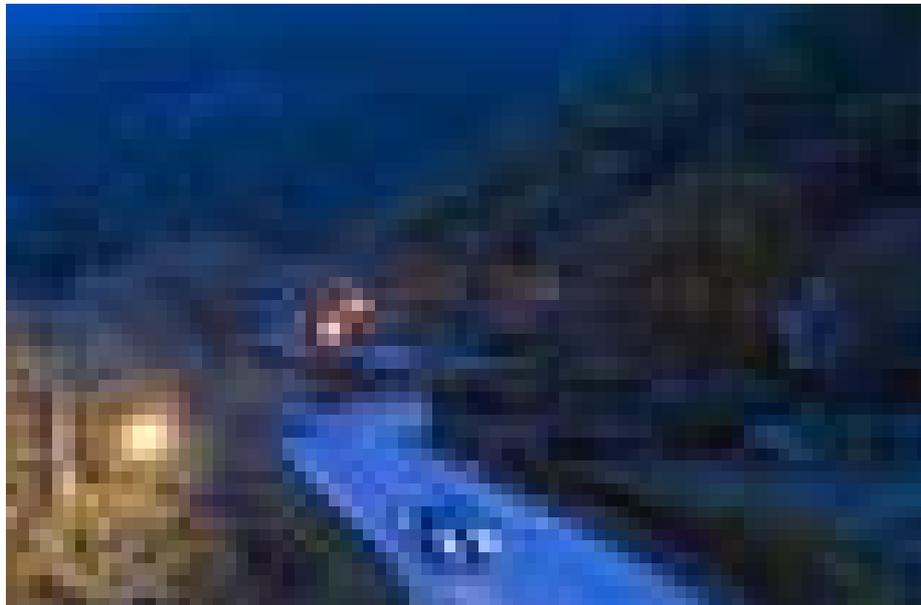
Using digital technology (such as smartphones, e-readers and tablets) demands a lot from our eyes.

We look at them more closely than we would, say, a book. At the same time, in just a fraction of a second our eyes move from close up to far away: from the small screens – with their tiny text, tightly packed information – and back again. This places extreme strain on the ciliary muscle and the eye's lens, which must constantly re-adapt to different distances to ensure that what we see is in focus.

What helps if you suffer from digital eyestrain?

For those suffering from digital eyestrain, one solution could be distance lenses with special support for your eyes at close range, such as the [> ZEISS Digital Lenses](#). Our ZEISS Precision progressive lenses also feature this technology as standard. Both lens types have been specially developed for digital devices such as e-readers and smartphones: special optimisation of the near zone takes into account the typical movements of the eyes and the shorter reading distance required by these devices. The design optimally supports the ciliary muscle, making it easier for the wearer to focus in the near and distance ranges.

Vision problems when driving



How does eyestrain manifest while driving?

Seeing clearly while driving is deemed incredibly tiring. Driving at night, poor light conditions and bad weather all do much to tire out the eyes, as do reflections, e.g. from wet roads and other cars. This could result in feeling unsafe while driving, and leave you with overtired eyes after a long journey.

What causes vision problems while driving?

Driving demands a lot from our eyes. Our gaze has to shift often, such as between the street, the sat nav, the mirrors and the dashboard. Unpleasant weather and adverse light conditions often make it difficult to see. Added to that are irritating glare, e.g. from the headlights of oncoming cars, street lamps and reflections off the wet street. If your glasses haven't been adjusted to fit you

properly, you'll only suffer from greater eyestrain. This effect is exacerbated by dehydration, incorrectly adjusted car seats and irritants like air conditioning and heating fans.

How can you minimize eyestrain while driving?

Special driving lenses can minimize the visual stress caused by driving, e.g. [> ZEISS DriveSafe lenses](#), available as single vision and progressive lenses. They help you judge distances and driving situations more quickly, improve your vision at night, reduce irritations caused by reflected lights and ensure you can quickly adjust your viewing focus to your driving surroundings.

Have you got a clear view?

Your very own quick eye test:

- ✓ **Symptom:** Do you only see objects and text clearly when you hold them up in front of you?
Cause: You're probably short-sighted.
- ✓ **Symptom:** Can you see your colleagues clearly, but find it hard to read the words on a screen?
Cause: You could be long-sighted.
- ✓ **Symptom:** Point light sources look long instead of round. Objects seem distorted. Street lamps don't have a clear halo, but look fringed and elongated.
Cause: You could have astigmatism.
- ✓ **Symptom:** Do you suddenly find it hard to switch between close-up and faraway objects – and vice versa?
Cause: You could have presbyopia.
- ✓ **Symptom:** When reading a text close up, does it appear blurred? To see things clearly, do you have to hold them further away, e.g. books or your smartphone?
Cause: Presbyopia.
- ✓ **Symptom:** You use your smartphone regularly. Do your eyes burn come evening, and do you often get headaches and neck pain?
Cause: You're probably suffering from digital eyestrain as you're putting too much strain on the ciliary muscle.
- ✓ **Symptom:** Can you no longer see road signs clearly and do you get disoriented by glare when driving?
Cause: These could be the symptoms of short-sightedness, or presbyopia in combination with eyestrain caused by driving.
- ✓ **Symptom:** Does driving make you more tired than usual, particularly at night? Do you get the feeling you can't see as clearly as you used to?
Cause: It's highly likely that your eyes are under strain while driving. A number of different visual impairments could be causing this, such as short- and long-sightedness, or presbyopia. Astigmatism also diminishes your vision.

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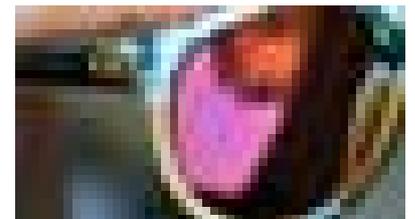
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