

[Understanding Vision](#) Oct 16, 2017

## The eyes of our children

When a child is born, it can see instantly. However, its visual acuity does have to develop over time.

**The newborn's eyes are beaming, a smile brightens up its face – those are among the most amazing moments for a mother as she holds her baby in her arms. At this stage the baby's eyes are still developing and cannot fully identify its surroundings. Our little ones all have to learn how to walk and talk and their eyes have to learn how to see.**

That is why it is important to know that close to 20 percent of all toddlers under the age of four do in fact suffer from vision problems. This, however, is not a cause for concern: modern children's glasses can help your child's vision skills improve.

Every human being has vision and motor skills in his or her DNA – information that eventually enables us to learn to see, walk and run. A newborn's eyes are able to see as soon as it enters this world. However, the new baby's vision is not nearly as evolved as that of an adult. It first has to develop its own visual acuity, i.e. the skill that will allow it to recognise certain details and identify an object. It actually takes quite a long time before humans can enjoy eagle eye vision:

### The development of vision skills – newborn to toddler

- During the **first month** of its life, the baby's vision is blurred, but it can distinguish between dark and light. The vision horizon reaches about 30 centimetres in scale.
- During the **second month**, it begins to recognise facial contours and patterns. The tiny human being is now also able to differentiate between colours.
- During the **third and fourth month**, the child will start to smile at its parents, and it can distinguish between colours and see clearly within a range of about 25 centimetres.
- As of the **fifth month**, the baby is able to recognise its parents. This is evident in the fact that whenever you try to secretly leave the room, the baby will protest loudly.
- Starting in the **sixth month**, the child begins to grasp for objects and can see things off in the

distance clearly.

- By the **seventh month**, the baby cannot just grab objects; it can also turn and rotate them.
- As of the **eighth month**, little tykes have the ability to differentiate between familiar and strange faces.
- As of the **ninth month**, thumbs and index fingers become active tools and even the smallest objects can be grasped with amazing precision.
- As of the **eleventh month**, the toddler, when asked “Where is your dad?” may respond by turning his or her head to look for him.
- Starting in the **twelfth month**, the child will hand specific objects to its parents, expecting them to do something specific. The baby’s eyes can now track down rapidly moving objects.
- By the child’s **fourth birthday**, its vision acuity reaches the adult level.
- When the child is **6 or 7 years** of age, the development of its visual capabilities is almost complete.
- By the time a child is **8 or 9 years** old, the development of the field of vision is such that the child can recognise complete scenarios and events. As a result, it can now be considered what Germans call “roadworthy” – i.e. it can move about safely as far as its vision is concerned.

## The brain needs time as well

A child’s eyes have not reached full maturity yet. The eye uvulas, which are critical for our sharp vision > [the nerve cells that absorb light are located on the uvulas](#) are actually developed in the uterus. However, they do not acquire their final shape until after the baby is born. Not only do the eyes need time to develop - the brain does, too. While a child’s eye absorbs ambient light, the processing of the stimulus received happens in the brain centre, where the actual image is developed.

## Recognise and treat vision problems

If a vision problem is detected and treated early, a child may develop normal vision.

To ensure that a child’s eye can develop normally, its brain needs certain impulses. However, if something is wrong with its eyes, these impulses may not occur. If visual problems are detected and treated early, the child may very well develop normal vision. Make an appointment with an optometrist if you have observed any of the following conditions in your baby or toddler, as they may be indications of a vision problem:

- ✓ Clearly visible and permanent strabismus
- ✓ Anankastic holding of the head at an incline
- ✓ Strikingly large eyes
- ✓ Avoidance of light or failure to respond to light
- ✓ Obsessive rubbing of the eyes with fingers and grimacing
- ✓ Turning of the eyes without zooming in on anything
- ✓ Missing of objects the child is grasping for

**In older children, vision problems may also be evident in the following peculiarities:**

- ✓ The child frequently stumbles or runs into furniture
- ✓ Increased vision problems at dusk and in the dark
- ✓ Sudden decline of grades at school
- ✓ The child does not like to read
- ✓ The child isolates himself or herself from other children
- ✓ Recurring headaches may also be indicative of vision problems

## When children have vision problems



The earlier the problem is detected, the more rapid and effective its treatment will be.

Children absorb close to 90 percent of everything they learn through their eyes. Consequently, the early detection of potential vision problems is critical. As with any health issue, the same rule applies here: the earlier the problem is detected, the more rapid and effective its treatment will be. Below, we have provided an overview of the most common vision problems:

### **Far-sightedness (hyperopia)**

The child easily recognises objects off in the distance, however, it takes great effort for it to see things that are up close. This will quickly lead to too much stress for the brain, which causes headaches, reddening of the eyes, inability to concentrate, restlessness and rapid exhaustion when the child reads or writes. Important note: most babies and toddlers are far-sighted and this condition does improve over the course of the first few years of a child's life.

### **Nearsightedness (myopia)**

The retina bundles light rays that penetrate the eye from the distance because the eye is too long or the refraction power of the eye's lens is too high. Children who are affected by this condition are consequently very actively engaged with everything that is up close. However, they have problems seeing images on TV, a ball when playing a game or writing on the school blackboard. These children tend to squint or blink a lot as they try to compensate for the vision problem or to see objects off in the distance more clearly.

### **Astigmatism**

This vision problem is also described as an irregular curvature of the cornea. Irregularly shaped cornea radiuses cause the vision to be blurry and distorted. Depending on the severity of the irregular curvature, the child will see objects with linear transmissions that are more or less distorted.

### **Cross-eyed vision (strabismus)**

In plain English, we call people who cannot focus both eyes on one target simultaneously cross-eyed. Experts refer to this condition as strabismus. About five percent of all humans suffer from this unique form of a visual problem that does not cause any pain whatsoever. As a rule, just one of the eyes is affected. Its focus is misdirected to the inside, the outside, the top or the bottom. In other words, it zooms in on a fixed point that is not congruent with that of the eye's sharpest vision, but focused on a different location on the retina. The consequence: two different images are generated in the brain – a sharp one and a blurry one. To facilitate its own job, the brain learns to suppress the image it finds unacceptable. Henceforth, the child favours its properly working eye to be able to see. The neglected eye is unable to fully develop its vision acuity – which is why it is referred to as the "lazy eye." Over time, its vision declines further. If a severe strabismus is not treated, an actually healthy eye may develop a vision problem. The resulting condition is called amblyopia – a lifelong dysfunction that has other consequences as well. A child who depends on using just one eye is unable to develop a spatial sense of vision and will also fall behind in terms of the development of its motor skills. As an adult, a person who suffers from this condition may encounter significant problems, for instance when driving a car. The good news: if the condition is detected prior to the 10th to 12th month, amblyopia can be treated quickly and effectively. After the child is a year old,

the restorative process takes longer.

## Children's glasses provide protection



A cool design makes the difference.

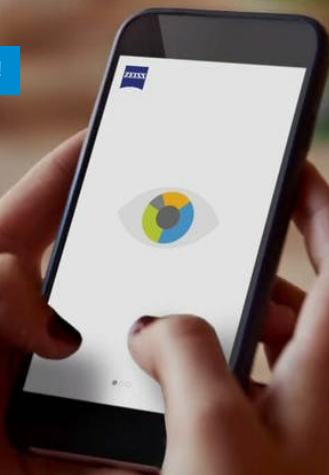
Today, children's glasses are considered cool and kids who wear them are no longer likely to become the targets of ridicule.

Heroes in children's novels have done a lot for kids who wear glasses. The days when children would stubbornly refuse to wear glasses are long gone. Children's glasses are considered cool today and kids who wear them are no longer likely to become the targets of ridicule. One important thing to remember: frames for children's glasses are customised for their individual needs. On the top, the frame should not extend beyond the bottom edge of your child's eyebrows. On the bottom, it should not touch your child's cheek bones. On the side, make sure the glasses do not extend beyond the edges of the eyes. To make sure that the children's glasses do not interfere with your child during play and other activities, the earpieces should be guided along the temples and should not leave too much of a clearance. Spectacles for children should be lightweight, sturdy and elastic. Make absolutely certain that the frame does not cause discomfort, such as pressure. We do not have to tell you that a cool design makes all the difference!

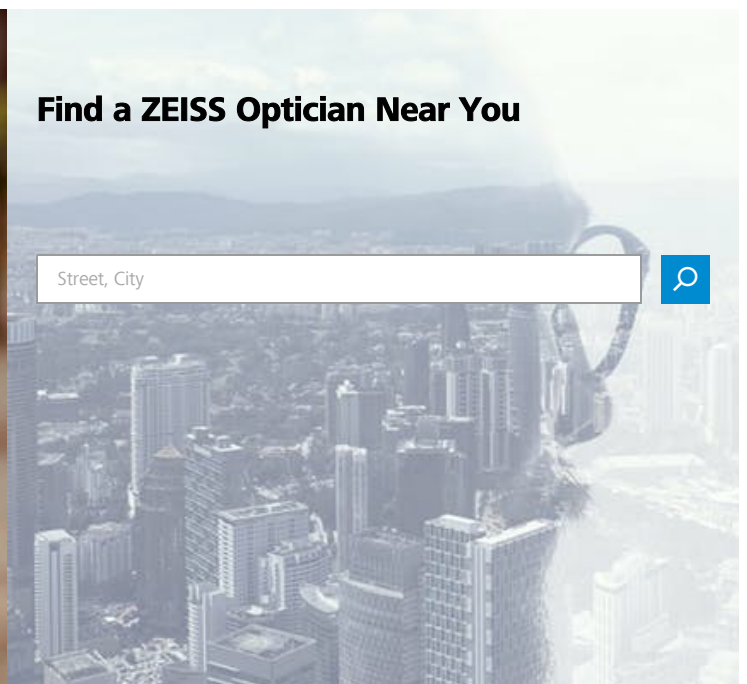
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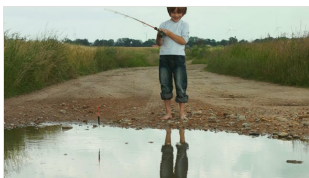
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