



**University  
Hospitals Sussex**  
NHS Foundation Trust

# Refraction in children

Orthoptic Department

Patient information

## What is this information about?

This leaflet gives important information about refraction, an eye test used to check if your child needs glasses.

It explains what the test is, why your child has been referred, how it is done, and what happens next.

## Why have I been given this leaflet?

Your child has been referred for refraction by the Orthoptic Team at University Hospitals Sussex NHS Foundation Trust.

This leaflet is to help you understand what the test involves and why it is important.

## What is refraction?

Refraction is the process where light bends as it passes through different parts of the eye.

This bending helps focus the light onto the back of the eye so we can see clearly.

The word 'refraction' is also used when measuring the size and shape of the eye to check if glasses are needed.

## Why is refraction needed?

Refraction helps find out why your child's vision might be reduced.

**The orthoptist may request refraction if:**

- Your child has blurred vision
- Your child has a squint (strabismus)

- There is a strong family history of glasses
- Your child had difficulty with other vision tests (e.g. 3D vision test).

Normally, light focuses clearly at the back of the eye.

**If the eye is:**

- Too short – your child may be long-sighted
- Too long – your child may be short-sighted
- Irregularly shaped – your child may have astigmatism

Refraction helps check for all of these.

## How is the test done?

**Refraction is usually carried out by:**

- An optician or optometrist
- Sometimes by an orthoptist or ophthalmologist

You will normally be asked to attend either the hospital optician or a local community optician.

**In the test:**

- A small light is shone into your child's eye to see how light reflects from the back of the eye
- Lenses are held up in front of the eye to see which one gives the best focus
- The test is usually done in a darkened room.

## What are the eye drops for?

For children under 5, eye drops are often used to make the test more accurate.

### **The drops:**

- Widen the pupil (the black part of the eye)
- Relax the focusing muscles, so the test gives clearer results.

The most common drops are called cyclopentolate and come in two strengths (0.5% and 1%).

The strength depends on your child's age, health, and development.

You may be asked to put the drops in about 45 minutes before the test.

## What do the results mean?

### **The test results will show if your child:**

- Is long-sighted (needs help seeing close up)
- Is short-sighted (needs help seeing far away)
- Has astigmatism (blurred vision due to the shape of the eye).

The strength and type of lenses needed will be written down by the optician, who will prescribe glasses to help your child see clearly.

Each eye may need a different prescription.

## What happens after the refraction?

In most cases, your child will be asked to wear their glasses all the time.

**Glasses will be checked after a while to make sure:**

- They fit well
- Your child is happy wearing them
- They are improving vision in both eyes equally.

It's important to attend all follow-up appointments with the optician and orthoptist.

## Will the glasses strength change?

**Yes. Sometimes:**

- Glasses may be started at a lower strength to help your child get used to them
- Further treatment, like patching or Atropine drops, may be used to strengthen the weaker eye if needed
- The glasses alone may help to correct a squint, which your orthoptist will assess.

As your child's eyes grow, repeat refractions will be needed to adjust the prescription.

The frequency of these checks will be decided by your child's optician or orthoptist.

## Contact details

If you have questions or need to speak to the Orthoptic team:

**St Richard's Hospital**

**01243 831499**

**Southlands Hospital**

**01273 446077**

**Sussex Eye Hospital Orthoptists**

**01273 664872**

**Princess Royal Hospital Orthoptists**

**01444 441881 Ext. 68305**

## Useful information

For more about children's eye conditions, glasses, patching, and vision development visit:

**Squintclinic** [www.squintclinic.com](http://www.squintclinic.com)



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care in St Richard's Hospital, Southlands Hospital,  
and Sussex Eye Hospital.

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