

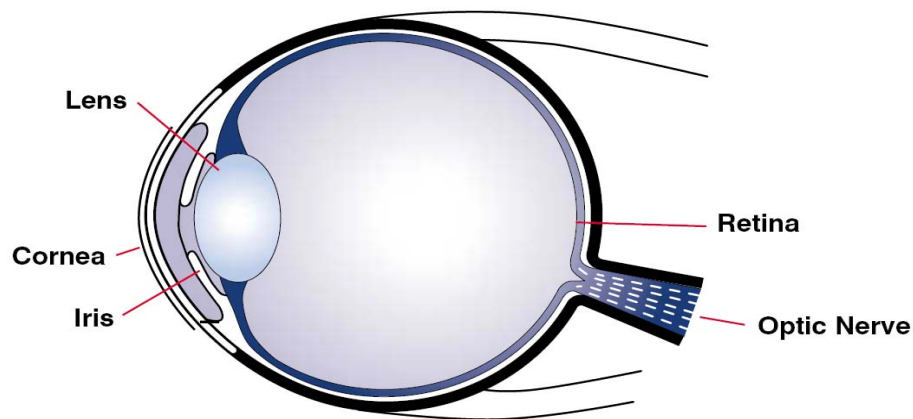
ACHROMATOPSIA (ROD MONOCHROMATISM).

What we see is in fact made in the brain. The brain makes sight from signals given to it by the eyes.

What is the normal structure of the eye?

The eye is made of three parts.

- A light focusing part at the front (cornea and lens).
- A light sensitive film at the back of the eye (retina).
- A large collection of communication wires to the brain (optic nerve).



Retina.

The retina has two types of light sensitive cells called Rods and Cones.

Rods are good at 'seeing'

- Things that move
- In the dark
- In black and white
- Less detail
- Mostly 'outer' / peripheral vision

Cones are good at 'seeing'

- Things that are still
- In daylight
- In colour
- In fine detail
- Mostly 'central' vision

What is Achromatopsia?

Achromatopsia is an eye condition where the cones do not work from the day a child is born.

Most cases of Achromatopsia occur by chance (idiopathic). However occasionally the condition can be genetic (that is, there is a problem with the chemical make-up of the body).

How does this affect the way my child sees?

Vision

1. **Blurred vision**, especially in the central area (where there are more cones). This may cause problems with reading, recognising faces and seeing small objects.
2. Although central vision is blurred the **outer vision is normal** and children usually have no problems getting around.
3. Poor **colour vision**.

Nystagmus

This is an involuntary 'wobbling' of the eyes, which affects the ability to focus properly.

Photophobia / Glare

Children may be uncomfortable in bright light. This may cause their eyes to water.

What can be done to help?

There is no operation / treatment to cure Achromatopsia. There are however, things that can be done to help children see better.

1. **Glasses or contact lenses**

In Achromatopsia glasses may be needed and tinted lenses may help reduce glare.

2. **Hats**

To reduce glare, a peaked hat or visor may be useful.

3. **Low Vision Aids**

Equipment such as magnifiers may be useful.

How can parents, family, friends and teachers make a difference?

1. Be aware of the problems with **glare**. Children may need reduced or shaded light. Blinds and curtains are useful.
2. Wherever possible use **matt surfaces** for desktops, whiteboards, paper, wall, floors etc. Shiny surfaces, snow and water can reflect light, causing glare.
3. **Outdoor protection**. Encourage the child to wear specially tinted glasses (if prescribed).
4. **Near work**. A close reading position may be preferred and should not be discouraged.
5. **Seating in school**. Where possible the child should be seated close to the teacher, away from windows if there are no blinds, and close to the board and TV.
6. **School Equipment**. Many children with Achromatopsia, at Key Stage 2 and above, benefit from using some type of magnifier. This enlarges print making reading less tiring. It may sometimes be helpful to provide a desk stand or a copyholder, which will bring work to eye level and prevent discomfort and poor posture.
7. Be aware of children's **difficulties with colours**.

Useful contacts.



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This information is intended to describe most aspects of the condition but each child is different and there will always be exceptions.

Acknowledgements

This leaflet was compiled by a multidisciplinary team from the eye departments at Birmingham Children's Hospital and Birmingham Heartlands Hospital, Birmingham Focus on Blindness and Birmingham Specialist Support Services.