

What causes the little white dot in the middle of the pupil?

When we take a photograph, we usually see a tiny white dot in the middle of the pupil. This occurs because the retina, at the point of the optic disk, contains no rods or cones, and therefore cannot process light. So the light is reflected back as a perfectly normal white dot. When a flash hits the optic disc head on, this dot will be more pronounced.



What is the Cat's Eye Reflex?

Cats, and many other nocturnal animals, have a special reflective layer on the retina called the **tapetum lucidum**. This acts as a mirror, reflecting the light back outside the eye, so that it can be reabsorbed by the cones of the retina, creating clearer night vision. This is why a cat's eye looks white when it is caught in bright light.



When a retinoblastoma tumour develops, it acts like the cat's tapetum lucidum. Light is reflected off the white surface of the tumour, giving the pupil a white, often pearlescent glow. Hence the term "cat's-eye reflex".

What should I do if I see the cat's eye reflex in a child's photograph?

The medical term for this reflex in humans is **leukocoria**. This phenomenon should always be investigated urgently by an ophthalmologist.



If you ever see a white glow in your child's eye, like the photo above, make sure both eyes are thoroughly examined by a **paediatric ophthalmologist** (a children's eye doctor) as soon as possible. This could save the child's life and vision.

DAISY'S EYE CANCER FUND

Daisy's Eye Cancer Fund provides supports the worldwide retinoblastoma community through clinical research, awareness raising and assistance to families accessing specialist medical care that is not locally available. Our ultimate goal is to establish sustainable, locally managed diagnosis and treatment programs in under-served regions of the world, so that one day, no child will face death from this entirely curable cancer.

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Photographing Retinoblastoma



Pictures that save lives and vision.



Daisy's Eye Cancer Fund

A Global Response To Childhood Retinoblastoma

Registered Charity #: 111-11-33

A fun family snapshot could save a child's life and sight.



Retinoblastoma is a potentially fatal childhood eye cancer. Many parents see it's most common sign of a white glow in their child's eye(s) for months before diagnosis, without knowing the seriousness of what they are looking at.

Liz's daughter lost one eye and has minimal vision in the remaining eye due to late diagnosis of this cancer in both eyes.

"I used Abode Photo Shop to put a "black pupil" on a white one prior to printing out Christmas photos of Abby. She wasn't diagnosed for 7 more months. It has been very hard for me to deal with that. The simple instruction of paying attention to eye reflexes in photos or dim light would have stayed with me, and could have saved Abby's vision."

WHAT IS RETINOBLASTOMA?

Retinoblastoma (RB) is a rare, fast growing childhood eye cancer. It may affect one or both eyes, and typically develops before 5 years of age. Some children are born with tumours, though their parents and doctors may be unaware of this..

Incidence

Approximately 45 children are newly diagnosed each year in the UK, 300 in the USA, and 24 in Canada. In countries with high birth rates, like India, more than 1500 children develop retinoblastoma each year.

Symptoms

The most recognisable sign is an abnormal white pupil, like a cat's eye. This is usually only visible in low artificial light or flash photography. Occasionally a squint or crossed eyes can be the first sign or a tumour.

Treatment

Treatments include cryotherapy (freezing the tumour), laser, systemic local and systemic chemotherapy, brachytherapy (radioactive plaque applied directly to the eye), radiotherapy and enucleation (surgical removal of the eye).

Prognosis

With early diagnosis and appropriate treatment, 96% of children with retinoblastoma are cured today in developed countries. However, without early intervention, the cancer will quickly spread beyond the eye, travelling directly to the brain, or invading the bone marrow. Untreated retinoblastoma is fatal.

PHOTOGRAPHING RED AND WHITE EYES

What Causes "Red Eye"?

In dim light, the pupil expands to allow more light into the eye for clearer vision. When a flash photograph is taken, the pupil does not have time to contract, and the camera picks up a red glow from light reflecting off pigment and vascular layers supporting the retina.

Most modern cameras have feature called **red eye reduction**, which makes the flash bulb light up twice, milliseconds apart. The actual photograph is taken with the second flash, as the pupils begin to contract. This significantly reduces the appearance of red eye

Why is it so important to take photographs without Red Eye Reduction?

If red eye is naturally absent in a photograph, it could indicate a serious eye problem, such as a cataract or retinoblastoma eye cancer.

Taking a photograph without Red Eye Reduction will also help to check a child's eyes for the typical white "cat's-eye" symptom of retinoblastoma.



Retinoblastoma is a life-threatening condition which is eminently treatable with vision-saving therapies if diagnosed in its earliest stages.