SYMPTOM

Pupil - white

A white pupil is a pale or white reflection seen through the normally dark centre of the eye.

WHAT IT FEELS LIKE
My pupil looks white, often without discomfort

WHERE IT IS FELT
The dark centre of one or both eyes

MOST COMMON CAUSES
Camera-angle reflection, cataract, corneal clouding

WHEN IT IS URGENT
Repeated white reflection in either eye, especially in a child

USUALLY LASTS
Depends on whether the cause is temporary or structural

SEE A DOCTOR IF
A one-off photo finding causes concern without other symptoms

Overview

A pupil usually looks black because it is an opening that lets light into the eye. A pupil that looks white, pale, silver, or yellow is called leukocoria , meaning "white pupil."

You may notice it in ordinary light or in a flash photograph. Sometimes a camera angle creates a harmless reflection. However, a repeated white reflection can come from clouding or changes inside the eye.

A white pupil is a symptom, not a diagnosis. It can have several causes, ranging from cataract to conditions affecting the retina, the light-sensitive tissue at the back of the eye. In a baby or child, it needs especially prompt assessment because some causes can affect eye development or require urgent treatment.

What it may feel or look like

A white pupil is often painless. Babies and young children may not show that their vision is affected.

You might notice:

A reflection that appears in only one photograph may be caused by the flash and camera angle. A finding that appears repeatedly, in ordinary light, or in photographs taken from different angles is more important to have checked.

- A white, cream, yellow, or silvery glow in the pupil
- One white pupil while the other appears red in flash photographs
- The same unusual reflection in several photographs
- An eye that turns inward or outward
- Cloudy or reduced vision
- Trouble following faces, lights, or moving objects
- A white area that seems to sit on the eye's surface

Common causes

A photograph can sometimes make a healthy pupil look white. This may happen when light reflects from the back of the eye at a particular angle. It is more reassuring if the effect disappears in new photographs and both eyes otherwise look and behave normally.

A cataract is clouding of the clear lens inside the eye. It can make the pupil look grey or white and may cause blurred, faded, or misty vision. Cataracts are common in older adults, but babies and children can also develop them. Cataracts in childhood need prompt specialist assessment because clear vision is important for normal visual development.

Clouding of the cornea , the clear front window of the eye, can also create a white appearance. The cloudy area may look as though it is over the iris and pupil rather than coming from inside the pupil. Causes include scarring, infection, inflammation, or injury.

Less common causes include abnormalities present from birth, retinal detachment, inflammation inside the eye, and Coats disease, in which abnormal retinal blood vessels leak fluid.

A rare but important cause in young children is retinoblastoma , a cancer of the retina. Most white pupils are not assumed to be retinoblastoma, but it is one reason that a repeated white reflection in a child should be assessed without delay.

When to seek medical care

Arrange a same-day eye assessment if a baby or child has a white pupil that is visible directly or

appears repeatedly in photographs. Contact an optometrist, ophthalmologist, primary care service, or urgent eye service. Do not wait for the child to report vision problems.

An adult should also seek prompt assessment for a new white pupil, particularly if it affects one eye, is visible in normal light, or comes with a change in vision.

A single unusual photograph without other symptoms is less likely to be an emergency. Take a few new photographs in similar lighting, with the person looking directly at the camera. Book an eye examination if the white reflection appears again or you remain concerned.

Seek emergency care now for:

After chemical exposure, begin rinsing the eye immediately with plenty of clean, lukewarm water while arranging emergency help.

- Sudden loss or major worsening of vision
- Severe eye pain, marked redness, or swelling
- A white or cloudy eye after an injury
- Chemical exposure to the eye
- Eye symptoms with severe headache, vomiting, weakness, or confusion

How the cause is found

An eye professional will ask when the white appearance began, whether it occurs in one or both eyes, and whether there are changes in vision, eye alignment, or comfort. Bring photographs that show the reflection if you have them.

The examination may include a red reflex test . A light is shone toward the eyes to compare the normal reddish reflection from each retina. An absent, dull, white, or unequal reflection can signal that light is being blocked or reflected unusually.

The pupils may be widened with drops so the lens, retina, and other structures can be examined. The drops can temporarily blur near vision and increase sensitivity to light.

If the back of the eye cannot be seen clearly, an ultrasound scan may be used. Other imaging or tests are sometimes needed, depending on what the examination shows. Children may be referred urgently to a paediatric ophthalmologist, an eye specialist trained in childhood eye conditions.

Treatment and self-care

Treatment depends entirely on the cause. A camera reflection needs no treatment once an eye problem has been excluded.

A cataract may be monitored or treated with surgery, depending on its effect on vision and the person's age. Cataracts in infants and children often need faster decisions because blurred input can interfere with the brain's development of vision.

Corneal infection or inflammation may require prescription medicine. Retinal conditions may be treated with laser therapy, freezing treatment, injections, or surgery. Retinoblastoma is managed by a specialist eye and cancer team, with treatment chosen for the individual child.

There is no home treatment that clears a true white pupil. Do not use leftover eye drops or rely on repeated photographs instead of an examination. Until you are assessed, note any changes in vision, pain, redness, eye movement, or the appearance of the pupil.

What to expect

The outlook depends on what is causing the white appearance and whether vision has been affected. A photographic reflection disappears when the lighting or camera angle changes. Clouding from a cataract or corneal condition usually remains until the underlying problem is treated.

Some causes are easier to treat when found early. This is particularly important in babies and young children, whose visual pathways are still developing. Even if a child seems comfortable and behaves normally, a repeated white pupil should still be checked promptly.

Follow-up may involve vision tests, photographs of the inside of the eye, or repeated examinations. The eye specialist will explain whether monitoring or treatment is needed.

Common questions

Does a white pupil always mean cancer?

No. Camera reflections, cataracts, corneal clouding, and several retinal conditions can cause this appearance. Retinoblastoma is uncommon, but it must be considered in a child with a repeated white pupil.

Why does it appear only in photographs?

Flash light can reflect differently depending on the camera angle and where the eyes are looking. A one-off effect may be photographic. Repeated whiteness in the same eye, especially while the other eye looks red, needs assessment.

Can a cataract make the whole pupil white?

Yes. A dense cataract can make the pupil look grey or white because the lens behind it has become cloudy.

Should I cover the affected eye?

No. Covering an eye without professional advice can interfere with vision, especially in a child. Keep the eye uncovered unless an eye professional recommends otherwise.

Sources

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