CONDITION

Night blindness

Night blindness is difficulty seeing or adjusting to vision in dim light or darkness.

WHAT IT IS
Difficulty seeing in dim light or darkness

BODY SYSTEM
Eyes and vision

MAIN SYMPTOMS
Poor dim-light vision, slow dark adaptation, trouble driving at night

WHAT CAUSES IT
Eye disease, inherited conditions, medicines, or vitamin A deficiency

HOW IT IS DIAGNOSED
Dilated eye exam, retinal tests, and targeted blood tests

MAIN TREATMENT
Treatment of the underlying eye or nutritional cause

CAN IT BE CURED?
Sometimes - when the underlying cause is reversible

IS IT AN EMERGENCY?
Sometimes - sudden vision loss or a curtain over vision

LONG-TERM OUTLOOK
Stable, reversible, or progressive according to the cause

Overview

Night blindness means having more difficulty than expected seeing in dim light or darkness. The medical term is nyctalopia . It does not usually mean complete blindness at night. You may still see, but need more light, take longer to adjust, or struggle to make out objects and movement.

Your eyes normally adapt when you move from a bright place into a dark one. This process relies partly on rod cells , which are light-sensitive cells in the retina. The retina is the layer of tissue at the back of the eye that turns light into signals for the brain.

Night blindness is a condition or symptom rather than one single disease. It can result from a focusing problem, clouding of the eye's lens, a retinal condition, a medicine, or a nutritional deficiency. Some causes are inherited.

Finding the cause matters because the outlook and treatment are different. Cataracts or vitamin A deficiency may be treatable, while some inherited retinal conditions need long-term monitoring and practical support.

Symptoms

The main symptom is difficulty seeing when there is little light. You might notice problems in dark rooms, cinemas, poorly lit streets, or at dusk.

Other experiences can include:

The pattern may offer clues to the cause. Cataracts often cause glare, halos around lights, blurred vision, and faded colours as well as poor night vision. Retinal conditions may also affect side vision or make it hard to adjust between bright and dark environments.

Problems such as an outdated glasses prescription, dry eyes, or glare can make night driving difficult without causing true night blindness. An eye examination can help separate these issues.

- Taking an unusually long time to see after entering a dark space
- Difficulty recognising objects, steps, kerbs, or faces in low light
- Trouble driving at night, especially with glare from headlights
- Feeling less aware of objects approaching from the side
- Needing brighter indoor lighting than other people

Causes and risk factors

Night vision depends on light reaching a clear lens, focusing correctly, and being detected by a healthy retina. A problem at any of these stages can reduce low-light vision.

Possible causes include:

Vitamin A deficiency is more likely when the body does not receive or absorb enough vitamin A. Possible reasons include severe dietary deficiency, some bowel or pancreatic disorders, liver disease, and certain types of weight-loss surgery.

A family history of retinal disease may raise the chance of an inherited cause. However, having trouble at night does not by itself mean you have an inherited retinal condition.

- Cataracts: Clouding of the eye's natural lens can scatter light and increase glare, especially at night.
- Short-sightedness: Uncorrected short-sightedness, also called myopia, can make distant objects blurrier in low light.
- Retinal conditions: Retinitis pigmentosa and related inherited conditions damage retinal cells, often affecting night and side vision first.
- Congenital stationary night blindness: This is a group of inherited conditions present from birth. "Stationary" means the retinal problem usually does not steadily worsen.
- Vitamin A deficiency: Vitamin A is needed for normal retinal function. Severe deficiency can cause night blindness and other eye damage.
- Medicine effects: Some medicines can affect pupil size, focusing, alertness, or retinal function. These effects may make low-light vision more difficult.
- Other eye or nerve conditions: Glaucoma and some disorders affecting the retina or optic nerve can interfere with night or side vision.

Diagnosis

An optometrist or ophthalmologist can assess night blindness. An ophthalmologist is a medical doctor who specialises in eye disease.

The assessment usually begins with questions about when the problem started, whether it is changing, and whether bright light, glare, side vision, or colour vision are also affected. Your family history, diet, health conditions, operations, and medicines may be relevant.

A full eye examination may include:

An electroretinogram , or ERG, measures the retina's electrical response to flashes of light. It can help confirm certain retinal disorders. Dark adaptation testing measures how quickly the eyes become sensitive after moving from bright light into darkness.

Blood tests may be used if vitamin A deficiency or another nutritional problem is suspected. Genetic testing may help identify an inherited retinal condition, but it is not needed for every person with poor night vision.

- A vision test and check of your glasses prescription
- Examination of the front of the eye for cataracts or other problems
- A dilated eye examination to inspect the retina and optic nerve
- A visual field test to measure central and side vision

- Retinal imaging to look at the structure of the retina

Treatment and management

Treatment is based on the underlying cause rather than night blindness alone.

An updated glasses or contact lens prescription may improve low-light vision caused by short-sightedness. Cataract surgery can improve vision when cataracts are responsible and the symptoms are affecting daily life.

Vitamin A deficiency requires medical assessment and supervised replacement. The reason for the deficiency may also need treatment. Do not take high-dose vitamin A on your own. Too much can damage the liver and cause other serious effects, and high doses can harm a developing baby during pregnancy.

There is no single treatment that restores night vision in every inherited retinal condition. Management may include retinal specialist follow-up, genetic counselling, low-vision rehabilitation, and help with mobility or lighting. A gene therapy is available for a small group of people with confirmed changes in both copies of the RPE65 gene, but it is not suitable for most causes of night blindness.

Practical steps can reduce difficulty and risk:

Do not stop a prescribed medicine because you suspect it is affecting your vision. A clinician can review whether the medicine, dose, or another condition may be responsible.

- Use bright, even lighting at home, especially on stairs
- Carry a torch or use safe motion-activated lighting
- Allow time for your eyes to adjust after entering darkness
- Keep glasses, windscreens, and vehicle lights clean
- Avoid driving in conditions where you cannot see safely
- Ask about low-vision services if daily tasks are becoming difficult

Complications

Poor vision in dim light can increase the chance of trips, falls, and traffic collisions. It may also limit driving, outdoor activities, work tasks, or independence after dark.

Complications related to eyesight depend on the cause. Cataracts can gradually reduce daytime vision as well as night vision. Untreated severe vitamin A deficiency can damage the

surface of the eye and threaten sight.

Some inherited retinal conditions progress over years. Night vision and side vision may narrow before central vision is affected. Other inherited conditions, including many forms of congenital stationary night blindness, remain relatively stable.

Anxiety about travelling after dark or losing independence is understandable. Vision rehabilitation and mobility training can help you use your remaining vision safely.

Prevention

Night blindness cannot always be prevented. Inherited retinal conditions are caused by genetic changes and are not the result of something you did.

A balanced diet usually provides enough vitamin A. Sources include eggs, dairy products, oily fish, liver, and orange or dark-green vegetables. People with conditions that reduce nutrient absorption may need medical monitoring rather than relying on diet alone.

Protecting your general eye health may reduce some avoidable causes of poor vision. This includes attending recommended eye examinations, managing conditions such as diabetes, not smoking, and using eye protection when needed.

There is no evidence that taking extra vitamin A prevents inherited night blindness. High-dose supplements can be harmful, so they should only be used when a deficiency has been identified and treatment is supervised.

Living with it and what to expect

The long-term course is closely tied to the cause. Poor night vision from an incorrect glasses prescription may improve as soon as the focusing problem is corrected. Vision often improves after effective cataract treatment, although other eye conditions can limit the result.

Night blindness caused by vitamin A deficiency may improve after the deficiency and its cause are treated. Recovery is less predictable if eye damage is already advanced.

Congenital stationary night blindness usually begins early and tends to remain stable. Retinitis pigmentosa and some related retinal conditions can gradually affect side and, later, central vision. The speed and pattern are not the same for everyone.

Regular follow-up is used to check for change, update vision aids, and treat separate problems such as cataracts. It does not mean that sudden loss of sight is expected.

Many people continue working, studying, travelling, and living independently by adjusting

lighting and planning activities. If vision changes over time, low-vision services can offer magnifiers, technology, orientation training, and advice about home or workplace changes.

When to get medical help

Arrange a routine eye examination if you have persistent difficulty seeing at night, need much more light than before, or notice that dark adaptation is worsening. Make an earlier appointment if the change is new, affects driving, or comes with narrowing side vision.

Seek prompt medical advice if poor night vision develops after weight-loss surgery, with severe dietary restriction, or alongside a condition that affects nutrient absorption. Vitamin A deficiency should be tested and treated rather than managed with supplements alone.

Get urgent or emergency eye care for:

These symptoms can have causes other than night blindness, including retinal detachment or a sudden pressure problem inside the eye. Rapid assessment can be important.

- Sudden loss or major reduction of vision
- A dark curtain or shadow moving across your sight
- New flashes of light with many new floaters
- Severe eye pain, redness, nausea, or headache
- Vision changes after an eye injury

Common questions

Is night blindness the same as being blind?

No. Most people with night blindness can still see in low light, but their vision is poorer than expected or takes longer to adjust. The term describes a problem with dim-light vision, not total blindness.

Can glasses fix night blindness?

Glasses may help if uncorrected short-sightedness or another focusing problem is the cause. They do not repair retinal damage or remove a cataract. An eye examination can show whether a prescription change is likely to help.

Does night blindness mean I have retinitis pigmentosa?

Not necessarily. Retinitis pigmentosa is one possible cause, but cataracts, focusing problems, vitamin A deficiency, and other conditions can also affect night vision. Side-vision loss and a

family history may lead to further retinal testing.

Should I take vitamin A for night blindness?

Not unless a deficiency has been identified and treatment is supervised. Vitamin A will not treat most causes of night blindness, and excessive amounts can be toxic. Blood tests and a health assessment may be needed if deficiency is suspected.

Can I drive if I have night blindness?

You should only drive when you can see well enough to do so safely and meet local vision requirements. If headlights, dark roads, or poor contrast prevent safe driving, avoid driving at night until your vision has been assessed.

Can phones or computer screens cause night blindness?

Normal screen use is not known to cause true night blindness. Screens may contribute to temporary eyestrain, dryness, or difficulty adjusting immediately after looking at a bright display. Persistent low-light problems still need an eye assessment.

Sources

- American Academy of Ophthalmology - What Is Night Blindness?
- National Eye Institute - Retinitis Pigmentosa
- National Eye Institute - Cataracts
- NIH Office of Dietary Supplements - Vitamin A and Carotenoids: Fact Sheet for Health Professionals
- GeneReviews - Nonsyndromic Congenital Stationary Night Blindness Overview
- MedlinePlus Medical Encyclopedia - Vision Problems in Low Light