CONDITION

Diabetic retinopathy

Diabetic retinopathy is damage to the light-sensitive tissue at the back of the eye caused by diabetes.

WHAT IT IS
Diabetes-related damage to retinal blood vessels

BODY SYSTEM
Eyes and vision

MAIN SYMPTOMS
Blurred vision, floaters, dark patches, vision loss

WHAT CAUSES IT
Diabetes-related retinal blood vessel damage

HOW IT IS DIAGNOSED
Dilated retinal exam and retinal photographs

MAIN TREATMENT
Diabetes control, eye injections, laser, or surgery

CAN IT BE CURED?
No - damage can be controlled

IS IT AN EMERGENCY?
Sometimes - sudden vision loss, curtain, or many floaters

LONG-TERM OUTLOOK
Often manageable, but untreated progression can threaten sight

Overview

Diabetic retinopathy is an eye condition caused by diabetes. It affects the retina, the thin layer of light-sensitive tissue at the back of the eye. The retina turns light into signals that travel to your brain and allow you to see.

Over time, high blood glucose can damage the retina's small blood vessels. They may leak, close off, or grow in abnormal places. These changes can affect one or both eyes.

Early diabetic retinopathy often causes no symptoms. You may have clear vision while damage is developing, which is why regular diabetic eye screening or dilated eye examinations matter.

There are two main stages. In non-proliferative diabetic retinopathy, existing blood vessels leak or become blocked. In proliferative diabetic retinopathy, the retina grows fragile new

blood vessels. These vessels can bleed or pull on the retina.

Diabetic macular edema can occur at any stage. This is swelling in the macula, the central part of the retina used for reading, driving, and recognizing faces.

Diabetic retinopathy can threaten sight, but monitoring and treatment can often slow or control it. Managing diabetes and blood pressure also helps protect the eyes.

Symptoms

Most people have no symptoms during the early stages. Retinopathy may be found during a routine eye examination before you notice any change.

When symptoms occur, they may include:

Symptoms can come and go. For example, vision may temporarily become blurry when blood glucose changes quickly because this can alter the shape of the eye's lens. That does not confirm retinopathy, but ongoing or unexplained changes still need assessment.

A sudden shower of floaters may mean that an abnormal blood vessel has bled into the clear gel inside the eye. A dark curtain or shadow may be a sign that the retina has detached. These symptoms need urgent eye care.

- Blurred, distorted, or changing vision
- Dark spots, strings, or cobweb-like shapes called floaters
- Blank or dark areas in your field of vision
- Trouble seeing in dim light or distinguishing colours
- Gradual or sudden loss of vision

Causes and risk factors

Diabetic retinopathy develops when diabetes damages small retinal blood vessels. Some vessels become weak and leak fluid or blood. Others close, reducing the retina's oxygen supply. The oxygen-starved retina may then release signals that cause fragile new vessels to grow.

The condition can occur with type 1 or type 2 diabetes. The risk generally rises the longer you have diabetes, although the timing and rate of progression differ between people.

Factors linked with a higher risk of developing or worsening retinopathy include:

Pregnancy can make existing retinopathy progress more quickly. If you have diabetes and are

planning a pregnancy or become pregnant, you may need eye examinations at different times from your usual screening schedule.

Having one or more risk factors does not show how much eye damage you have. Only an appropriate eye assessment can do that.

- Blood glucose that remains above your agreed target over time
- High blood pressure
- Abnormal blood fat levels, including cholesterol
- Kidney problems related to diabetes
- Smoking
- Pregnancy in someone who had diabetes before becoming pregnant

Diagnosis

Diabetic retinopathy is usually detected through diabetic eye screening or a dilated eye examination. These checks are important even when your sight seems normal.

During a dilated examination, eye drops widen your pupils. An eye specialist then examines the retina using a light and magnifying equipment. Your vision may be blurred and sensitive to light for several hours afterward, so you may need help getting home.

Digital retinal photography creates detailed pictures of the back of each eye. Screening programs use these images to look for small areas of bleeding, leaking vessels, or other changes.

If retinopathy is found, further tests may include optical coherence tomography, or OCT. This painless scan uses light to produce cross-sectional images of the retina and measure swelling.

Fluorescein angiography may be used when more detail is needed. A dye is injected into a vein, usually in the arm, and photographs show how it travels through retinal blood vessels. This can reveal leakage or areas with poor blood flow.

Your results may describe the severity of retinopathy, whether the macula is involved, and how soon another examination or treatment is needed. A standard glasses test cannot rule out diabetic retinopathy.

Treatment and management

Treatment depends on the type and severity of the retinal changes, whether the macula is

swollen, and how your vision is affected. Early changes may only need regular monitoring.

Managing blood glucose and blood pressure can reduce the risk of progression. Cholesterol management and stopping smoking may also support overall blood vessel health. Changes should be made with the healthcare professionals responsible for your diabetes care rather than by altering medicines yourself.

Eye injections are commonly used for diabetic macular edema and some cases of proliferative retinopathy. Anti-VEGF medicines block a protein that promotes leaking and abnormal blood vessel growth. They are injected into the eye after numbing drops are applied. Treatment often requires a series of visits, followed by monitoring and possible further injections.

Steroid injections or implants may be considered in selected cases of macular edema. They can raise pressure inside the eye and increase the chance of cataracts, so follow-up examinations are needed.

Laser treatment seals leaking areas or treats wider areas of the retina. Panretinal laser is often used for proliferative retinopathy to reduce signals that drive abnormal vessel growth. It can protect against severe sight loss, although it may reduce night or side vision.

Vitrectomy is an operation that removes blood or scar tissue from the gel inside the eye. It may be needed for bleeding that does not clear, severe scar tissue, or a retinal detachment caused by pulling on the retina.

Treatment cannot always restore vision that has already been lost. Its main purpose is often to prevent further damage. Attending follow-up appointments is important because retinopathy can become active again without obvious symptoms.

Complications

Diabetic macular edema can blur or distort central vision. This may make reading, driving, and recognizing faces difficult.

Fragile new vessels can bleed into the eye, causing floaters, haze, or sudden loss of vision. Small bleeds may clear, but larger or repeated bleeds can require treatment.

Scar tissue may contract and pull the retina away from the back of the eye. This is called a tractional retinal detachment. Without timely treatment, it can cause lasting sight loss.

Abnormal vessels can also block the eye's normal fluid drainage. This may cause neovascular glaucoma, a form of raised eye pressure that can be painful and damage the optic nerve.

Severe retinopathy can lead to major vision loss or blindness. Regular screening and treatment reduce this risk but cannot remove it completely.

Prevention

Diabetic retinopathy cannot always be prevented. Diabetes can affect the retina even when it is being carefully managed.

You can lower the chance of developing severe retinopathy by keeping blood glucose, blood pressure, and cholesterol within the targets agreed for you. Avoiding smoking also supports blood vessel health.

Do not wait for symptoms before having your eyes checked. Follow the screening or examination schedule offered to you. The timing may change if retinopathy is found, your diabetes treatment changes substantially, or you become pregnant.

Report new vision changes rather than waiting for the next routine appointment. Early assessment may allow treatment before more sight is affected.

Living with it and what to expect

Diabetic retinopathy usually changes over months or years. Mild changes may remain stable for a long time, improve with diabetes management, or gradually progress. It is not possible to predict the exact course from symptoms alone.

Many people with early retinopathy continue their usual activities without noticeable vision problems. Regular photographs or examinations may be the only management needed.

If macular edema or proliferative retinopathy develops, you may need repeated injections, laser treatment, surgery, or a combination of treatments. Eye treatment controls retinal damage but does not treat diabetes itself. Ongoing diabetes care remains important.

Vision may not return fully after treatment, especially if the macula, retina, or optic nerve has been damaged. However, treatment can still preserve useful sight and reduce the risk of further loss.

If reduced vision affects daily life, low-vision services can help. Magnifiers, brighter task lighting, screen-reading software, and mobility training may support independence. You may also need advice about whether your vision meets local driving requirements.

Keep a record of eye appointments and ask what changes were found. Knowing whether the macula is affected and when your next assessment is due can make long-term care easier to manage.

When to get medical help

Routine follow-up: Attend diabetic eye screening and planned retina appointments even if your vision is clear. Arrange a non-emergency review for gradual blurring, increasing difficulty reading, or other persistent changes.

Urgent, same-day eye assessment: Seek urgent help for a sudden increase in floaters, flashes of light, a new dark patch, or a rapid drop in vision. These symptoms can occur with bleeding or a retinal tear or detachment.

After an eye injection or operation, urgently report increasing eye pain, marked redness, worsening vision, or strong sensitivity to light. These can be signs of infection or another complication needing prompt treatment.

Emergency help: Go to an emergency department or contact emergency services if sudden vision loss occurs with facial weakness, arm weakness, difficulty speaking, severe imbalance, or another possible stroke symptom.

Common questions

Can diabetic retinopathy go away?

Early retinal changes may improve, especially when blood glucose and blood pressure are well managed. Treatment can also reduce swelling or abnormal blood vessels. However, the condition can return or progress, so continued monitoring is needed.

Can I have diabetic retinopathy with good eyesight?

Yes. Early and sometimes advanced changes can be present before you notice vision loss. A normal glasses prescription or clear day-to-day vision does not replace retinal screening.

Does diabetic retinopathy always cause blindness?

No. Many people retain useful vision, particularly when the condition is detected and managed early. Severe untreated retinopathy can cause major sight loss, but screening and modern treatments reduce that risk.

Can glasses fix diabetic retinopathy?

Glasses can correct focusing problems, but they do not repair leaking or abnormal retinal blood vessels. If retinopathy has caused swelling, bleeding, or retinal damage, eye-specific treatment may be needed.

Are eye injections painful?

Numbing drops are used before the injection. You may feel pressure, a brief scratch, or mild

irritation afterward rather than sharp pain. Increasing pain, redness, or worsening vision after an injection needs urgent assessment.

How often should my eyes be checked?

The interval depends on your type and duration of diabetes, previous eye findings, pregnancy status, and local screening program. If retinopathy is detected, examinations are usually more frequent than routine diabetes eye screening.

Sources

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