

Diabetic retinopathy

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Reviewed by Prof. Alan Stitt, Queen's University Belfast



The retina is the light-sensitive layer of tissue at the back of the inner eye. It converts light that enters the eye into nerve signals that are sent to the brain. During diabetes, the retina and its blood supply can be damaged. Over time, poorly controlled blood can cause damage to the small blood vessels within the retina. So-called diabetic retinopathy may cause hemorrhages and swelling of the retina which may lead to severe vision-loss. Diabetic retinopathy remains a leading cause of blindness in working-age people although it is known that good blood glucose control and regular retinal screening for both type 1 and type 2 patients helps to lower risk.

Often people with early diabetic retinopathy have no symptoms before swelling or bleeding occurs in the eye. This is why diabetic patients need annual, dilated eye exams. Diabetic retinopathy symptoms include:

- Blurred vision, slow vision loss over time
- Floaters
- Shadows or missing areas of vision
- Poor night vision

Did you know?

The chance of developing retinopathy and having a more severe form is greater if:

- A person has been diagnosed with diabetes for a long time
- Diabetes has been poorly controlled



Diabetic retinopathy is divided into two stages: non-proliferative which develops first and proliferative which is more advanced and severe.

In **non-proliferative**, early stage diabetic retinopathy, a health care provider may observe:

- Blood vessels are blocked or damaged (microaneurysms)
- Small amounts of bleeding (retinal hemorrhages) with fluid leaking into the retina (macular oedema)

In **proliferative** retinopathy, a health care provider may detect:

- New blood vessels starting to grow on top of the retina that can bleed and cause detachment
- Small scars forming on the retina and in other parts of the eye (the vitreous)

Diabetic retinopathy

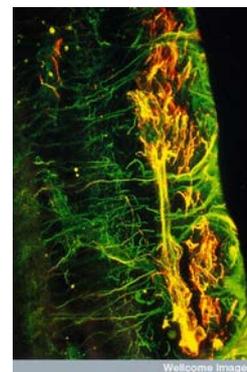
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Other eye problems that may develop in patients with diabetes include:

- Cataracts - cloudiness of the eye lens
- Glaucoma - increased pressure in the eye that can lead to blindness
- Dry eye – scratchy sensation, burning, itching, blurred and fluctuating vision, light sensitivity and redness.



Diabetic retinal scarring

Treatment

Non-proliferative diabetic retinopathy may not require treatment. However, patients should be closely followed by an eye doctor trained to treat diabetic eye diseases. If there is oedema or appearance of new blood vessels in the retina treatment is usually needed.

Several procedures or surgeries are the main treatment for diabetic retinopathy.

Laser eye surgery creates small burns in the retina where there are abnormal blood vessels. This process is called photocoagulation. It keeps vessels from leaking or gets rid of abnormal, fragile vessels.

A new drug (called Lucentis) is currently available to reverse macular oedema and this may be used in combination with laser.

Vitrectomy is a surgical procedure used when there is bleeding into the eye. It may also be used to repair retinal detachment.

If vision is impaired, make sure the home is safe to prevent falls and organized to be able to easily locate essential items, and obtain assistance to ensure that medicines are taken correctly.

Funded by the European Commission's FP7, REDDSTAR is a three year, 10 partner project that will comprehensively examine if stromal stem cells derived from bone marrow can safely control blood glucose levels while also alleviate damage caused by six diabetic complications.

www.REDDSTAR.eu