



**Macular  
Disease  
Foundation**  
AUSTRALIA



**REDUCING THE RISK  
OF DIABETES-RELATED  
EYE CONDITIONS**

# Diabetes and your eyes

Diabetes is a complex, chronic condition characterised by high blood glucose (sugar) levels. Over time diabetes affects many parts of the body including your eyes because of changes to blood vessels and blood supply.

Diabetes can affect your eyes in several ways. Diabetic retinopathy is the most common type of eye disease experienced by people with diabetes. Others include cataract, glaucoma and transient blurring of vision. Everyone with diabetes is at risk of diabetes-related eye conditions.

Most vision loss from diabetic retinopathy can be prevented, provided it's detected early and steps are taken to keep it under control. Careful management of diabetes can delay the onset or even reverse the progression of diabetic retinopathy.

Optimising the management of your diabetes together with early diagnosis and treatment of eye disease dramatically improves the likelihood of saving sight.

## What is diabetic retinopathy?

Diabetic retinopathy is a complication of diabetes caused by damage to the small blood vessels in the retina, the light-sensitive tissue at the back of the eye. Over time, high blood glucose levels can weaken and damage these vessels, leading to vision problems and, if untreated, even blindness.

Diabetic retinopathy is the leading cause of avoidable vision loss in working-age Australians. Most people with diabetes will develop some form of diabetic retinopathy during their lifetime, but the severity and progression of the condition are closely linked to how well diabetes is managed.

## Diabetic macular oedema

Diabetic macular oedema can occur at any stage of the disease. It occurs when leaking fluid from retinal blood vessels accumulates in the macula, the area of the retina that is specialised for detailed vision. This can cause the loss of detailed, central vision and even legal blindness.







# Risk factors and prevention

There are factors that can increase your risk of developing diabetic retinopathy that you can control. Preventing diabetic retinopathy is strongly linked to how well you manage your risk factors and manage your diabetes.

## Healthy lifestyle

Healthy eating and regular physical activity help insulin to work better. They also help lower your blood pressure, reduce weight, and reduce stress. Losing just five to 10 per cent of your current weight can significantly reduce your risk.

Aim to incorporate physical activity into your daily routine and adopt a healthy eating program. Healthy eating for diabetes includes selecting high fibre, lower glycemic index (GI) carbohydrate foods and reducing fat, especially saturated fat.

Make sure you talk to your GP or endocrinologist before making any changes to your diet.

## Manage blood glucose levels

If your blood glucose levels are regularly above target levels, you're at risk of developing diabetic retinopathy. It is important to work with your GP or endocrinologist to keep your blood glucose at optimal levels.

## Manage blood pressure

If you have high blood pressure, diabetic retinopathy can develop more rapidly. It may also aggravate any diabetic macular oedema.

## Manage blood lipids

If you have abnormal blood lipids (fats in the blood) you're at greater risk of developing diabetic retinopathy. Ask your GP or endocrinologist about managing your blood lipid levels.

## If you smoke, quit

Smoking significantly increases your risk of diabetes and its related conditions. If you smoke, seek help to quit.

**Careful management** of the above risk factors reduces your risk of developing diabetic retinopathy.



### Other risk factors

Not all factors that increase your risk for diabetic retinopathy can be controlled. Knowing if you have these is important to determine whether you need to visit your eye health professional more frequently.

**Duration of diabetes:** Duration of diabetes is the strongest risk factor for diabetic retinopathy. The longer you've had diabetes, the more likely you are to have diabetic retinopathy.<sup>1</sup> That's why it's important to keep having regular eye exams, even if all previous exams have been normal.

**Diabetes requires multidisciplinary care.** A diabetes care team may include your general practitioner or endocrinologist, diabetes educator, podiatrist, eye health professional (optometrist and/or ophthalmologist), and dietitian.

**Ethnicity:** Aboriginal and Torres Strait Islander Australians are two to four times more likely than non-Indigenous Australians to develop diabetes, and therefore, are at a much higher risk of developing diabetes-related eye conditions.<sup>1</sup>

Other higher risk groups include some Middle Eastern and Asian populations and Pacific Islanders.

**Genetics:** Studies have found that many genetic factors can influence the onset of complications in diabetes, including the severity and speed of onset of diabetic retinopathy.<sup>1</sup>

**Medical history:** Women who have previously had gestational diabetes or polycystic ovary syndrome are at increased risk of developing type 2 diabetes,<sup>1</sup> and therefore diabetic retinopathy, later in life. Being aware of risk factors can help you understand the importance of managing your diabetes and the need for regular eye exams.

# Symptoms

Early diabetic retinopathy typically has no symptoms, and progressive damage can occur before you notice any changes to your vision. Sometimes disease progression can be rapid, leading to sudden vision loss.

**The following symptoms could be due to diabetic retinopathy, and should always be checked:**

- dark spots or gaps in your vision
- blurred, distorted, or dim vision
- frequent changes in glasses or contact lens prescription
- flashes of light seen repeatedly, often in the peripheral vision
- sudden onset of haze, shadows or 'floaters' moving across the vision (floaters are dots, circles, lines or cobwebs that move across the field of vision, most noticeable when looking at a white wall or clear sky).

**If you notice any new or worrying symptoms**, whether or not you've been diagnosed with diabetic retinopathy, visit your eye health professional as soon as possible, as early treatment can help to save sight.

**An image of the inside of the eye showing a healthy retina**



**An eye with diabetic retinopathy – the arrows show multiple areas of leaking blood vessels in the retina. This person's vision is at risk but they are unlikely to notice any changes at this stage.**





# Regular eye exams

Along with managing your diabetes, regular eye exams with your eye health professional are vital to reduce the risk of vision loss. Eye exams can identify a diabetes-related eye condition at its earliest stage before vision loss has occurred.



If you have diabetes, you should have an eye exam when first diagnosed with diabetes, followed by regular eye exams at least every two years thereafter.

If you have diabetes-related eye conditions, you should have an eye exam at least once a year, or as advised by your eye health professional.

When you see your eye health professional, it's important to tell them that you have diabetes, how long you've had it, your most recent HbA1c result (this provides a summary of the average blood sugar level over the past three months), and any medications you're taking.

**Even if your results have been normal in the past, continue having regular eye exams. Try to avoid cancelling or delaying eye appointments.**

## Treatments

There are treatments available for diabetes-related eye conditions. If you develop one of these conditions and you require treatment, you will be referred to an ophthalmologist.







## Preventing diabetic retinopathy checklist

- ☐ have regular eye exams as advised by your eye health professional.
- ☐ eat a healthy well-balanced diet.
- ☐ be physically active regularly and control your weight.
- ☐ aim to keep your blood glucose at optimal levels.
- ☐ aim to keep your blood pressure at healthy levels.
- ☐ aim to manage your blood lipids.
- ☐ if you smoke, get help to quit.
- ☐ follow the advice of your GP and/or diabetes specialist.





## Join Eye Connect today

Living with a diabetes related eye condition is not easy and there may be challenges ahead. Macular Disease Foundation Australia's Eye Connect support service is free of charge, independent and endorsed by Australia's leading eye health professionals. It offers tailored support and information to assist people living with diabetes related eye conditions.

To find out if Eye Connect is right for you visit [www.mdfoundation.com.au/join-eye-connect](http://www.mdfoundation.com.au/join-eye-connect) or call us on **1800 111 709**.

Connect with us to receive a free newsletter and keep up to date with our latest news and research.

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**W** [www.mdfoundation.com.au](http://www.mdfoundation.com.au)

## Diabetes Australia

Diabetes Australia is the national body for people affected by all types of diabetes and those at risk. You can find information about living with diabetes, managing your condition, and preventing complications on their website at [www.diabetesaustralia.com.au](http://www.diabetesaustralia.com.au).

## KeepSight

KeepSight is a national diabetes eye screening program encouraging people with diabetes to get their eyes checked. By registering with KeepSight, you'll receive important information and alerts. You can sign up for KeepSight at [www.keepersight.org.au](http://www.keepersight.org.au).

**References:** 1. Out of sight, 2013, Baker IDI & CERA, 2. Keech A et al, Lancet 2007;370;1687

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