

Keyfacts - Diabetic retinopathy

Eye health workers web resource

What is diabetic retinopathy (DR)?

If a person has diabetes it can cause a problem with their eyes called diabetic retinopathy (DR). DR damages the small blood vessels in the light-sensitive tissue in the retina (nerve layer at the back of the eye) which leads to vision loss. At first DR may cause no symptoms or only mild vision problems, but if poor diabetes management continues it can result in blindness.

Diabetes is a sickness that happens when the body does not produce enough insulin (a hormone which controls the amount of sugar in our blood). The level of glucose (sugar) in our blood needs to be kept within narrow limits for all our organs to function properly, including our eyes. If a person has diabetes and does not control their blood glucose level (with medication and/or a healthy lifestyle) it can rise above these limits - this is when damage occurs to the eyes. More information about diabetes can be found at <http://www.healthinonet.ecu.edu.au/chronic-conditions/diabetes/plain-language/background-information>

What are the risk factors for developing DR?

All people with diabetes are at risk of DR but there are certain factors that can increase the risk which include:

- having diabetes for a long time
- poor control of diabetes
- high blood pressure (hypertension)

- high level of fats in the blood (high cholesterol or hyperlipidaemia)
- pregnancy (gestational diabetes)
- smoking cigarettes.

What causes diabetic retinopathy?

Diabetic retinopathy is caused by high blood glucose levels over long periods of time. The small blood vessels in the eye become blocked and the blood supply to the retina is cut-off. In response to the lack of blood supply the eye attempts to grow new blood vessels. Often these new blood vessels do not develop properly, so they are fragile and can leak easily. Leaking blood vessels can cause a loss of vision and scar tissue may also develop, which can pull the retina away from the back of the eye and possibly cause blindness. Raised blood glucose levels can also affect the lens of the eye. With high levels of glucose over long periods of time, the lenses can swell, providing another cause of vision loss.

What are the symptoms of diabetic retinopathy?

Symptoms of DR include:

- sudden changes in vision
- blurred vision
- double vision
- seeing spots or floaters

CORE FUNDING



Australian Government
Department of Health and Ageing

- greater difficulty seeing at night
- pain in the eye.

How is diabetic retinopathy treated?

The treatment for DR will be different for each person depending on how long they have had diabetes and its severity. A retinal camera (a microscope with a camera attached used for viewing the inside of the eye) is used by an eye specialists to check for DR in a simple and pain-free procedure. DR may require laser surgery to repair leaking blood vessels or to discourage new leaky blood vessels from forming. Injections of medications into the eye may be needed to decrease inflammation (swelling/redness) or to stop the formation of new blood vessels. In more advanced cases, a surgical procedure to remove and replace the gel-like fluid in the back of the eye (the vitreous) may be needed. If the retina has detached this may also require surgery.

How can people with diabetes reduce the risk of vision loss from diabetic retinopathy?

All people with diabetes are at risk of developing DR. It is recommended for people with diabetes to:

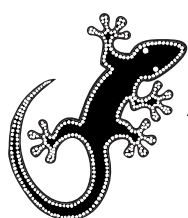
- see an eye care professional and get their eyes checked regularly (every year) or more often if they have DR
- take prescribed medications as instructed
- control blood glucose levels
- follow a healthy diet and exercise.

What is known about diabetic retinopathy in Indigenous Australians?

Almost all of the vision loss caused by diabetes can be prevented if it is detected and treated early. Around 1 in 16 Indigenous people have diabetes, and of these people with diabetes around one in three have DR. Diabetes was the cause of 13% of vision loss and 9% of blindness among Indigenous adults in the 2008 National Indigenous Eye Health Survey. The survey also found that only one in five Indigenous people with diabetes has had an eye exam in the last year.

References and further reading

1. Australian Institute of Health and Welfare (2011) *Eye health in Aboriginal and Torres Strait Islander people*. Canberra: Australian Institute of Health and Welfare
2. Biotext (2008) *Risk factors for eye disease and injury: literature review*. Canberra: National Health and Medical Research Council, Australia
3. Office for Aboriginal and Torres Strait Islander Health (2001) *Specialist eye health guidelines for use in Aboriginal and Torres Strait Islander populations*. Canberra: Commonwealth Department of Health and Aged Care
4. Taylor HR, National Indigenous Eye Health Survey Team (2009) *National Indigenous eye health survey: minum barrang (tracking eyes): full report*. Melbourne: Indigenous Eye Health Unit, The University of Melbourne
5. Australian Bureau of Statistics (2006) *National Aboriginal and Torres Strait Islander Health Survey: Australia, 2004-05*. Canberra: Australian Bureau of Statistics



Australian Indigenous HealthInfoNet

The Australian Indigenous HealthInfoNet is an innovative Internet resource that contributes to 'closing the gap' in health between Indigenous and other Australians by informing practice and policy in Indigenous health.

Two concepts underpin the HealthInfoNet's work. The first is evidence-informed decision-making, whereby practitioners and policy-makers have access to the best available research and other information. This concept is linked with that of translational research (TR), which involves making research and other information available in a form that has immediate, practical utility. Implementation of these two concepts involves synthesis, exchange and ethical application of knowledge through ongoing interaction with key stakeholders.

The HealthInfoNet's work in TR at a population-health level, in which it is at the forefront internationally, addresses the knowledge needs of a wide range of potential users, including policy-makers, health service providers, program managers, clinicians, Indigenous health workers, and other health professionals. The HealthInfoNet also provides easy-to-read and summarised material for students and the general community.

The HealthInfoNet encourages and supports information-sharing among practitioners, policy-makers and others working to improve Indigenous health – its free on line yarning places enable people across the country to share information, knowledge and experience. The HealthInfoNet is funded mainly by the Australian Department of Health and Ageing. Its award-winning web resource (www.healthinfonet.ecu.edu.au) is free and available to everyone.

Director	Professor Neil Thomson
Address	Australian Indigenous HealthInfoNet Edith Cowan University 2 Bradford Street Mount Lawley, WA 6050
Telephone	(08) 9370 6336
Facsimile	(08) 9370 6022
Email	healthinfonet@ecu.edu.au
Web	www.healthinfonet.ecu.edu.au



FEATURED ARTWORK

Life before the drought

by Julie Weekes

© Australian Indigenous HealthInfoNet 2013



This product, excluding the Australian Indigenous HealthInfoNet logo, artwork, and any material owned by a third party or protected by a trademark, has been released under a Creative Commons BY-NC-ND 3.0 (CC BY-NC-ND 3.0) licence. Excluded material owned by third parties may include, for example, design and layout, images obtained under licence from third parties and signatures.

CORE FUNDING



Australian Government
Department of Health and Ageing

