



RETINAL CAMERA TOOLKIT

The Provision of Eye Health and Equipment Training Project

funded by the Australian Government Department of Health

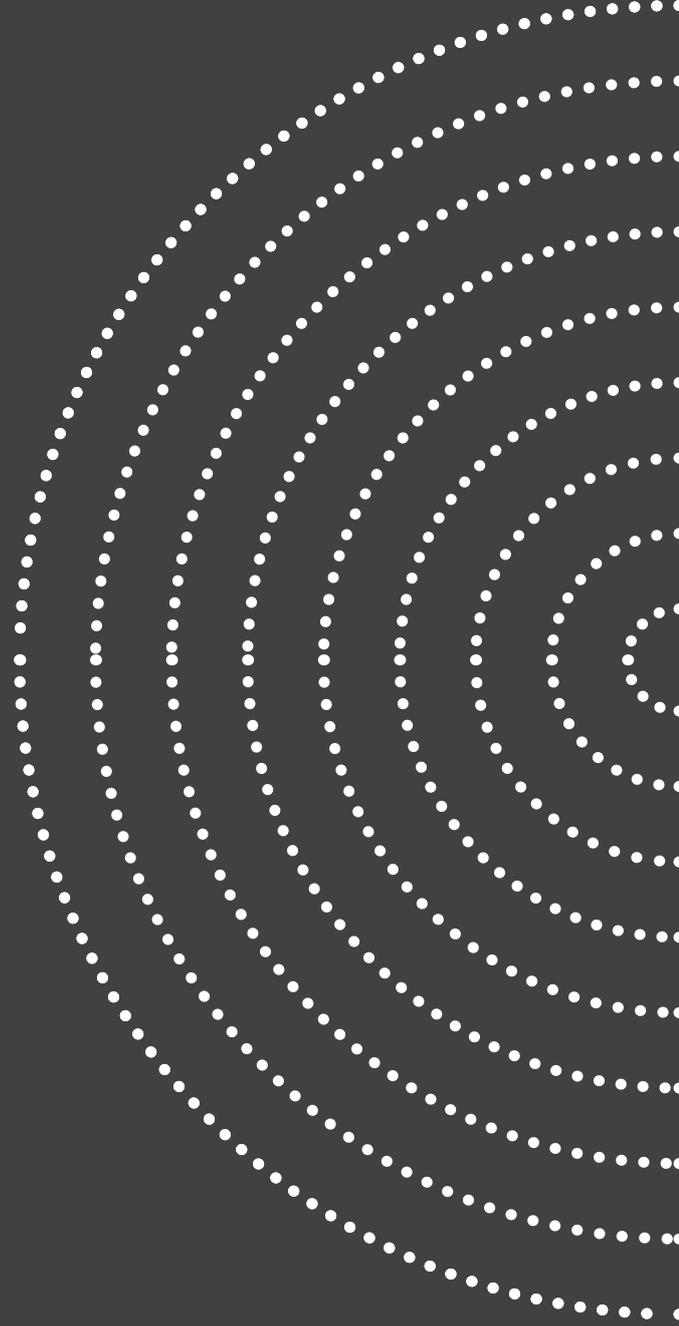
This Toolkit is designed to aid the embedding of retinal cameras into a primary health care service. Although it is designed to accompany the Canon CR-2AF camera, most of the resources are relevant for the embedding of any retinal camera.



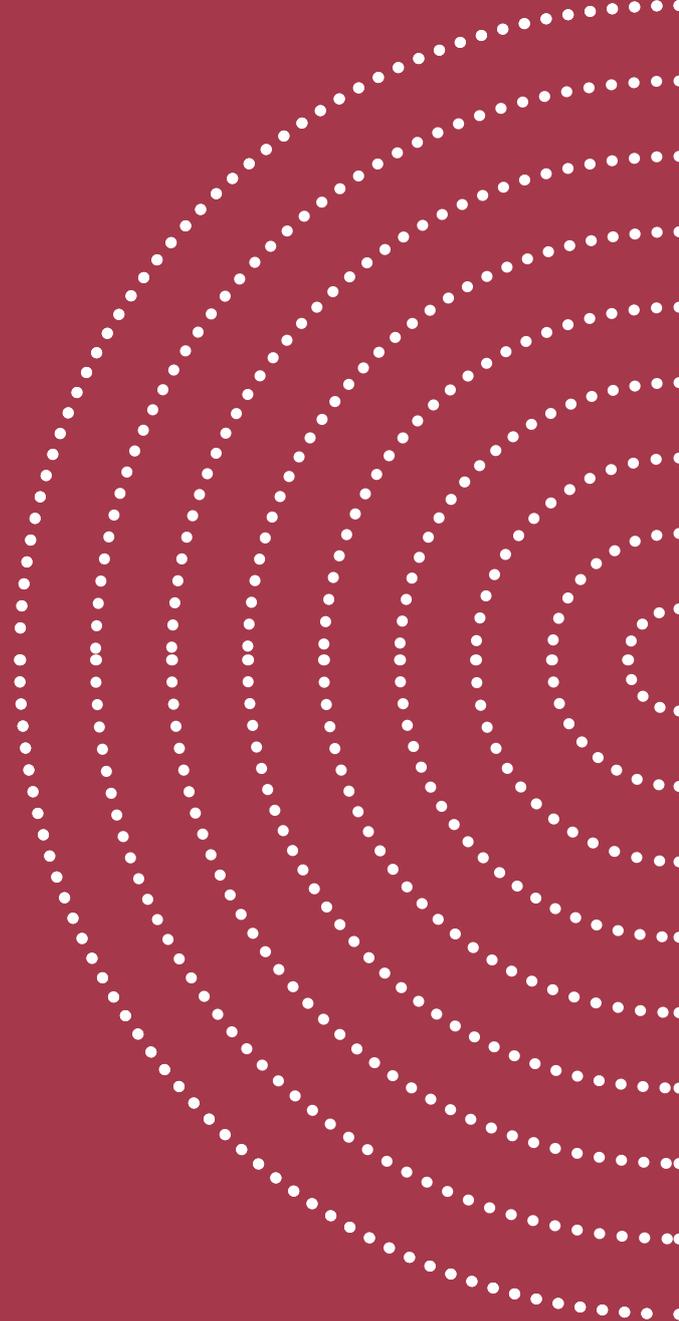
We acknowledge the traditional Aboriginal and Torres Strait Islander Custodians of the many lands that we live and work on, and their continuing connection to Country and Culture.

We pay our respects to Elders past, present and emerging.

We thank all Aboriginal and Torres Strait Islander Peoples whose participation and contribution has been key to the success of this project.

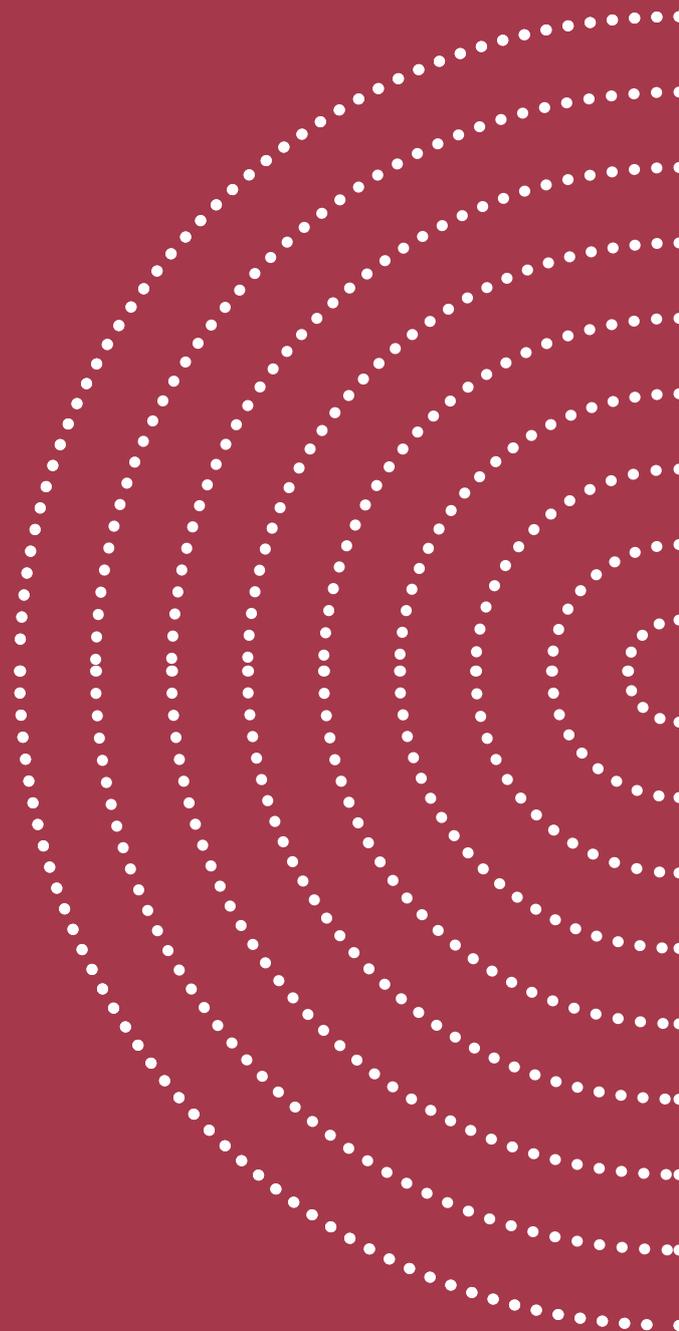


The Consortium thanks those who attended the 2018 November Embedding Workshop and all others who have contributed in the making of this Toolkit.



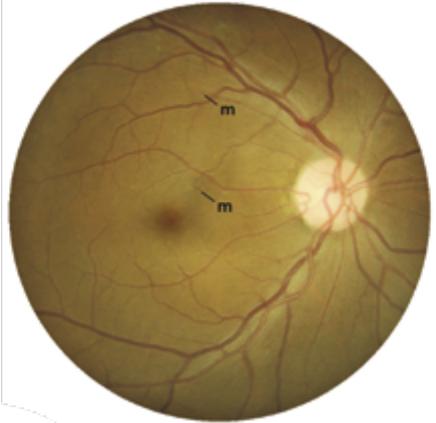
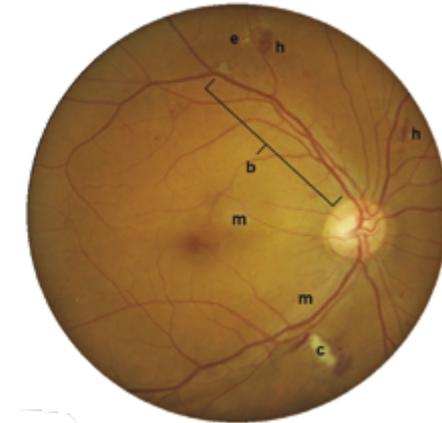
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Section 5
Triaging &
Patient Education



Diabetic Retinopathy Guide

The following staging guidelines and referral recommendations are adapted from the Clinical Diabetic Retinopathy and Diabetic Macular Edema Disease Severity Scales, the National Health and Medical Research Council (NHMRC) Guidelines for Management of Diabetic Retinopathy and A guide for General Practitioners on the use of Digital Retinal Photography developed by Optometry Australia (OA).

No diabetic retinopathy	Mild diabetic retinopathy	Moderate diabetic retinopathy
		
<p>Signs</p> <ul style="list-style-type: none"> • No diabetic retinopathy seen <p>Management</p> <p>Refer for a comprehensive examination with an optometrist within 1 year</p>	<p>Signs</p> <ul style="list-style-type: none"> • Microaneurysms (m): small outpouchings of the blood vessel walls – appear as small red spots <p>Management</p> <p>Refer to an optometrist within 3 months</p>	<p>Signs</p> <ul style="list-style-type: none"> • Microaneurysms (m) • Haemorrhages (h): bleeding due to damaged blood vessels – can be flame, dot or blot shaped • Hard exudates (e): fatty deposits due to leakage of blood vessels and swelling of the retina – well defined yellow lesions or spots • Cotton wool spots (c): swelling of the nerve fibre layer due to reduced oxygen – appear fluffy white • Blood vessel changes (b): due to reduced oxygen supply – blood vessels appear irregular and may loop <p>Management</p> <p>Refer to an optometrist* or ophthalmologist* within 3 months</p>

Severe diabetic retinopathy



Signs

- As with moderate diabetic retinopathy, but more widespread microaneurysms, haemorrhages, blood vessel changes (b), exudate (e), and/or cotton wool spots

Management

Refer to an **ophthalmologist** within 4 weeks

Proliferative diabetic retinopathy



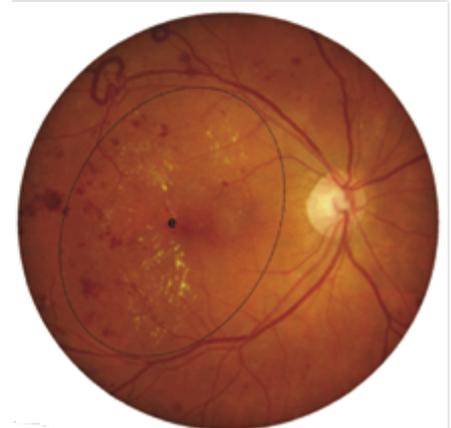
Signs

- Neovascularisation (inset): new blood vessels prone to leakage – appear fan-like and feathery
- Pre-retinal haemorrhage (p): bleeding in front of the retina – typically well-defined and dark coloured
- Vitreous haemorrhage (v): bleeding into the jelly inside the eye – appears hazy and blocks view of the underlying retina

Management

Refer to an **ophthalmologist** within 1 week

Macular oedema



Signs

- Macular oedema: swelling of the macula
- Often indicated by the presence of hard exudate (e) in the macula area
- Swelling may occur without exudate – macula may have a cloudy appearance (difficult to visualise in a photograph)
- Can occur at ANY stage

Management

Refer to an **ophthalmologist** within 4 weeks

National Health and Medical Research Council Guidelines for Management of Diabetic Retinopathy (2008)

https://www.optometry.org.au/wp-content/uploads/Professional_support/Guidelines/nhmrc_diabetic_guidelines.pdf

Optometry Australia A guide for General Practitioners on the use of Digital Retinal Photography (2017)

https://www.optometry.org.au/wp-content/uploads/provided/GPs_Healthcare-professionals/GPs/gp_retinopathy_flowchart_a4_2017.pdf

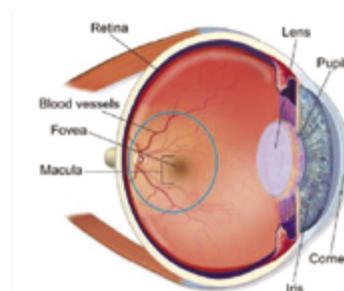
Wilkinson, C. P., Ferris, F. L., III, Klein, R. E., Lee, P. P., Agardh, C. D., Davis, M., Dills, D., Kampik, A., Pararajasegaram, R. and Verdaguer, J. T. (2003) Proposed international clinical diabetic retinopathy and diabetic macular edema disease severity scales. *Ophthalmology*. 110(9), 1677-1682

PATIENT EDUCATION

DIALOGUE GUIDE

ENSURE you have marked unusable photos as 'NG' & save good photos as a report.
ASK patient to come around to your side and see their photos.

1. "So we've just photographed the back of each eye. It's called the retina. **POINT to retina on the screen with a sweeping circular hand motion and mirror this on the 3D eye model, so they know what you've photographed.**
2. "This is the part of your eye that makes up a picture of what you see, and the nerve sends that picture to the brain." **POINT to the nerve.**
3. "See this part here?" **POINT to the macula.**
 "This is your macula. It's like the 'high definition' part of your retina, for sharper focus and the centre of your vision."
4. "For people with diabetes, the retina and macula might stop working properly because the blood vessels get damaged. It's called Diabetic Retinopathy."
5. "Can you see all these blood vessels? **POINT to blood vessels in the photo.** "These can get weak from the sugar, and get tiny holes or tears, which can then leak blood and fat into the eye". **If present, POINT to any blood spots or fat spots in the photo. If not present, use the Diabetic Retinopathy grading sheet for example.** "See those? They shouldn't be there. You need to see the optometrist, to see how bad it is and what to do."



Developed by Chris Reksinis, Eye Health Project Officer, Aboriginal Health Council of South Australia

PATIENT EDUCATION

DIALOGUE GUIDE

6. “The problem is - your vision is usually fine in the beginning, so you won’t know if you have it, and the only way we can find out is to look inside your eyes and see if the blood vessels are damaged from the sugar.”
7. “If it doesn’t get detected or treated, you could lose part of your vision, having patches missing from what you can see, OR other vision problems.”
ASK patient to put on white simulator glasses. Get them to describe what they see – e.g. patchy, speckly, can’t see all around, parts of vision ‘blocked’.
8. “If we catch it early, we can treat it easily and stop it from getting worse.”
9. “But if we don’t, then we can’t really fix it... you will lose parts of your vision, and the treatments become much more difficult, or just won’t work at all.”
10. “If this is happening in your eyes, it might be happening in the rest of your body too. This is why we are checking this today and the optometrist will check the parts we can’t see in the photo.”
11. “So it’s really great you’ve done this today, and we’d like you to see the optometrist. Thanks again for coming in.”

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