

# The Diabetes & Eye Health Project

Effective messaging to reduce the risk of vision loss among adults with newly diagnosed type 2 diabetes



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### **Funding**

The Vision Initiative, an integrated health promotion program funded by the Victorian Government, and managed by Vision 2020 Australia, funded this project.

Vision 2020 Australia aims to prevent avoidable blindness and address the impact of vision impairment in the Victorian community. See: [vision2020australia.org.au](http://vision2020australia.org.au).

### **Human research ethics approval and trial registration**

The project received ethics approval from Deakin University ethics human research ethics committee (DUHREC 2013-157, 2014-156).

The randomised controlled trial (Phase 5 of the project) was registered with the Australian New Zealand Clinical Trials Registry (ACTRN12614001110673).

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## EXECUTIVE SUMMARY

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### Background

Diabetes is the fastest growing chronic condition in Australia [1], currently affecting 1.1 million Australians [2]. Diabetic retinopathy (DR) is a microvascular complication of diabetes affecting approximately 25% of Australians with diabetes [3]. It damages the tiny blood vessels in the retina at the back of the eye and is asymptomatic in the early stages. DR is preventable but left undetected and untreated, it can cause vision loss or blindness, severely impacting the individual and their family. Key risk factors for DR are duration of diabetes, elevated blood glucose and elevated blood pressure. National guidelines for the management of DR recommend tight blood glucose and blood pressure management, and regular eye examinations (at diagnosis, and a minimum of every 2 years thereafter) [4].

Anyone with diabetes is at risk of DR but adults with young-onset type 2 diabetes (T2D; aged 18-39 years) and adults with T2D from rural and regional areas have below-average eye examination rates and are at increased risk of developing DR.

### Project objectives

The **primary objective** of the Diabetes and Eye Health Project was to develop effective eye health communications in the form of theory-based psycho-educational leaflets, which:

- raise awareness of the importance of maintaining optimal blood glucose and blood pressure levels to minimise the risk of DR
- increase intentions to engage in regular eye examinations
- increase self-reported eye examination rates

The project target groups include adult Victorians diagnosed with T2D in the previous three years who:

- are young adults (aged 18-39 years; YA), or
- reside in rural and regional areas (RR)

A third group (people of Aboriginal and Torres Strait Islander origin) was originally targeted but removed from the project at an early stage due to unsuccessful recruitment to key informant interviews (see summary in Appendix 1).

**Secondary objectives** included:

- promoting the project where appropriate in line with the Vision Initiative objectives and in collaboration with Diabetes Victoria, and
- conducting a state-wide mail out of the eye health leaflet to all eligible NDSS registrants.



## Methods

Using a mixed methods approach, the project was conducted in six consecutive phases:

**Phase 1** – comprehensive literature review focused on diabetes, eye health, psychosocial factors influencing uptake of eye examinations for the early detection of DR, and behaviour change.

**Phase 2** – in-depth key informant interviews with representative volunteers from the two target groups to explore the barriers and enablers to eye examinations.

**Phase 3** – online survey of the two target groups to determine psychosocial antecedents to eye examination behaviour. This is referred to as the pre-intervention questionnaire. The structure was informed by the Information-Motivation-Behavioural skills (IMB) model [5], a key behaviour change theory which has been used as a model for understanding numerous health behaviours.

**Phase 4** – development of the eye health and retinal screening leaflets, tailored to the needs and psychosocial characteristics of each target group. The messages were informed by the results of Phases 1 to 3 and debriefed with people from each target group to ensure relevance and understanding.

**Phase 5** – a rigorous evaluation of the efficacy of the leaflet interventions, using a randomised controlled trial (RCT) design. The same sample that participated in Phase 3 also participated in Phase 5.

**Phase 6** – a state-wide mail-out of the leaflets, distributed throughout Victoria to 27,367 NDSS registrants with newly diagnosed T2D, including 25,313 adults living in rural/regional areas and 2,054 young adults.

## Findings

- The literature review (Phase 1) provided context to the project, identifying effective communication interventions for delivering the diabetes and eye health messages, and informing the development of the communication strategy and persuasive messages.
- The qualitative key informant interviews (Phase 2, N=25) and quantitative online questionnaire (Phase 3, N=213) highlighted cohort-specific barriers and enablers to eye examination, as well as psychosocial determinants to the behaviour, including:
  - Information, such as lack of knowledge/awareness of the need for eye examinations,
  - Motivation, such as less positive attitudes towards the value, relevance and benefit of eye examinations, and practical considerations, such as cost and time,
  - Feelings of reassurance and good eye examination experiences provided positive reinforcement, and
  - Strong social support and approval of the behaviour encouraged participants to continue to have eye examinations.
- In Phase 4, leaflets specific to each target group were developed. All target group participants involved in the debrief activity strongly endorsed the resources, commending that the design and layout were “perfect”, length was “just right”



and content was “easy to understand”, “highly relevant” and “targeted to my demographic”.

- A total of 171 adults participated in the RCT (Phase 5). High attrition and higher than anticipated eye examination rates for both target groups meant there was insufficient power to demonstrate significance for key outcomes. However, data trends and other performance indicators demonstrated that the leaflet was a helpful resource, and qualitative comments indicate that it was well received by members of each target group.
- In Phase 6, Diabetes Victoria successfully completed the state-wide distribution of the leaflets to 27,367 Victorian NDSS registrants (2,054 YA, 25,313 RR) in May 2015.

### Key recommendations

Given the rigorous development of the leaflets and promising findings of this evaluation, we recommend that Diabetes Victoria continue to make the eye health leaflets available to adults with T2D, including online versions. The young adult version is designed and suitable for 18-39 year olds. We believe the rural/regional version of the leaflet is suitable for use with all adults with T2D over the age of 40 years. In addition, we recommend:

- the persuasive messages (specific to each target group) be adapted and used in other formats, e.g. social media, and promotion opportunities / campaigns, e.g. World Sight Day or National Diabetes Week.
- future diabetes or eye health promotion messaging / resources should be informed by cohort-specific barriers and enablers and other motivational factors, given the benefits of rigorous design highlighted here.
- the project findings be disseminated to the wider diabetes and eye health communities to inform diabetes self-management interventions, particularly for the YA target group, whose needs are rarely met by conventional resources.
- similar evidence-based eye health resource be developed, tailored to the needs and characteristics of at-risk cultural minority groups. To facilitate this process, research and development should be conducted in collaboration with health organisations representing those specific groups.