

Teleretina screening for diabetic retinopathy

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1 Ophthalmic screening is essential for detection of diabetic retinopathy

Diabetes Canada recommends eye exams every 1–2 years upon diagnosis of type 2 diabetes.¹ A systematic review found that an average of 175 (range 75–267) screening sessions are required to detect 1 case of sight-threatening diabetic retinopathy in patients without retinopathy at baseline.²

2 Teleretina screening is a viable adjunct to in-person screening

Teleretina screening involves digital transmission of ocular images obtained by a technician for remote evaluation by a specialist (Appendix 1, available at www.cmaj.ca/lookup/doi/10.1503/cmaj.202141/tab-related-content). Technicians typically require one-on-one training with a teleophthalmology expert to effectively capture images.³ High-level evidence shows > 95% sensitivity and specificity for detection of diabetic retinopathy using teleretina screening.¹ Teleretina screening is associated with reduced costs relative to in-person assessment.³

3 Patients with diabetes are more likely to participate in remote screening than in-person visits

A recent meta-analysis found significantly greater patient attendance for teleretina screening compared with traditional in-person assessment (odds ratio 13.15, 95% confidence interval 8.01–21.61, $p < 0.001$).⁴ Patients in poor health with limited access to health care professionals have challenges attending in-person screening; these patients are a target demographic for teleretina assessment.¹

4 Teleretina screening is not available or recommended for all patients

Current evidence-based guidelines for teleretina screening apply only to nonpregnant patients aged 12 years or older with type 2 diabetes.⁵ Occasionally, images obtained during telescreening may be deemed “ungradable,” requiring an in-person assessment.¹ Conditions that may interfere with the digital photo acquisition include dense cataracts or corneal scars.⁶

5 Centralized teleretina referral systems are in development in Canada

Several teleretina clinics have been initiated across Canada.¹ Primary care providers are encouraged to contact the Canadian Retina Society (www.crrsrc.ca) for further information and guidance on referral to telescreening programs.

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