

CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Fundus Photography in Eye Examinations: Guidelines – An Update

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Research Questions

1. What are the evidence-based guidelines for administration of a fundus photography exam in conjunction with a regular eye examination in individuals aged 0 to 19, 20 to 64, or 65 years or older?
2. What are the evidence-based guidelines for administration of a fundus photography exam in conjunction with a regular eye examination in individuals with a family history of diabetes, hypertension, ocular hypertension, cataract(s), glaucoma, and/or age-related macular degeneration?
3. What are the evidence-based guidelines for administration of a fundus photography exam in conjunction with a regular eye examination in individuals diagnosed with diabetes, hypertension, ocular hypertension, cataract(s), glaucoma, and/or age-related macular degeneration?

Key Findings

One evidence-based guideline was identified pertaining to the administration of a fundus photography examination in conjunction with regular eye examinations for relevant patient populations.

Methods

A limited literature search was conducted on key resources including PubMed, the Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. Methodological filters were applied to limit retrieval to guidelines. The search was also limited to English language documents published between January 1, 2014 and April 9, 2019. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	<p>Q1: Individuals aged 0 to 19, 20 to 64, or 65 years or older</p> <p>Q2: Individuals with a family history of diabetes, hypertension, ocular hypertension, cataract(s), glaucoma, and/or age-related macular degeneration</p> <p>Q3: Individuals diagnosed with diabetes, hypertension, ocular hypertension, cataract(s), glaucoma, and/or age-related macular degeneration</p>
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Intervention	Fundus photography in combination with a standard eye examination
Comparator	Not applicable
Outcomes	Guidelines
Study Designs	Evidence-based guidelines

Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Normally, health technology assessment reports, systematic reviews, and meta-analyses are presented first; however, in reports where guidelines are primarily sought, the aforementioned evidence types are presented in the appendix.

One evidence-based guideline¹ was identified in the literature search pertaining to the administration of a fundus photography examination in conjunction with regular eye examinations for relevant patient populations. Four guidelines³⁻⁶ included in the main body of the previous CADTH report² were moved to the appendix as they did not meet the appropriate selection criteria upon further examination.

Additional references of potential interest are provided in the appendix.

Overall Summary of Findings

One guideline¹ was identified in the literature search pertaining to the administration of fundus photography examinations in conjunction with regular eye examinations. The identified guideline¹ suggested the use of a fundus examination as part of a regular examinations in age-related macular degeneration patient populations. Detailed guideline characteristics are included in Table 2, and a summary of the relevant recommendation is included in Table 3.

Table 2: Characteristics of Included Guidelines

First Author, Year	Intended Users, Target Population	Relevant Outcomes Considered	Evidence Collection	Evidence Quality Assessment	Recommendations Development and Evaluation	Guideline Validation
Age-Related Macular Degeneration						
NICE, 2018¹	Intended Users: Healthcare professional, social care professionals, commissioners and providers of ophthalmic and optometric services, people with age-related	This guideline offers information regarding diagnosing and managing age-related macular degeneration in adults.	Evidence collection for NICE guidelines includes: - Tailoring the search approach to the eligibility/inclusion criteria of the review question - Selecting	GRADE or evidence statements are used to assess the quality of evidence and an overall rating of confidence is provided. Confidence is rated as:	Recommendation development includes: - Structured review questions agreement - Literature search - Call for evidence from stakeholders if necessary - Committee	An equality impact assessment is completed by the developer and committee chair and signed off by a member of NICE staff.

First Author, Year	Intended Users, Target Population	Relevant Outcomes Considered	Evidence Collection	Evidence Quality Assessment	Recommendations Development and Evaluation	Guideline Validation
	macular degeneration, their families and care takers. Target Population: Adults with age-related macular degeneration.		appropriate sources according to the eligibility/inclusion criteria - Using supplementary search techniques - Continuous review of how best to find evidence and where	- high (authors are confident that the true effect and estimated effect are similar) - moderate (authors believe that the true effect and estimated effect are probably close) - low (the true effect and estimated effect might be markedly different) - very low (the true effect and estimated effect is probably different).	discusses evidence reviews and develops draft recommendations	

GRADE = Grading of Recommendations, Assessment, Development and Evaluations; NICE = National Institute of Health Care Excellence; NR = not reported

Table 3: Summary of Relevant Recommendations of Included Guidelines

Recommendations	Strength of Evidence and Recommendations
NICE, 2018¹	
<i>“Offer fundus examination as part of the ocular examination to people presenting with changes in vision (including micropsia and metamorphopsia) or visual disturbances.” (p 29)¹</i>	NR

NICE = National Institute of Health Care Excellence; NR = not reported

References Summarized

Guidelines and Recommendations

Age-Related Macular Degeneration

1. National Institute for Health and Care Excellence. Age-related macular degeneration (NICE guideline NG82) 2018;

<https://www.nice.org.uk/guidance/ng82/evidence/full-guideline-pdf-170036251098>.

Accessed 2019 Dec 12.

See: 4.1.5 Summary of Recommendations, page 29

Appendix — Further Information

Previous CADTH Report

2. Fundus photography in eye examinations: guidelines. (*CADTH Rapid response report: reference list*). Ottawa (ON): CADTH; 2019:
<https://cadth.ca/fundus-photography-eye-examinations-guidelines-0> . Accessed 2019 Dec 12.

References Included in Main Body of Previous CADTH Report

In Combination with Regular Eye Exam Not Specified – Diabetic Population

3. VA/DoD clinical practice guideline for the management of type 2 diabetes mellitus in primary care. Washington (DC): U.S. Department of Veterans Affairs; 2017:
<https://www.healthquality.va.gov/guidelines/CD/diabetes/VADoDDMCPGFinal508.pdf>. Accessed 2019 Dec 12.
See: Section E: Selected Complications and Conditions #22, pages 22, 48, 100, 124

In Combination with Regular Eye Exam Not Specified - Diabetic Retinopathy

4. Diabetes Canada Clinical Practice Guidelines Committee, Altomare F, Kherani A, Lovshin J. 2018 Clinical practice guidelines for the prevention and management of diabetes in Canada: retinopathy. *Can J Diabetes*. 2018; 42 Suppl 1:S210-216.
<https://guidelines.diabetes.ca/docs/cpg/Ch30-Retinopathy.pdf>. Accessed 2019 Dec 12.
See: Screening, page S210
5. Hooper P, Boucher MC, Cruess A, et al. Excerpt from the Canadian Ophthalmological Society evidence-based clinical practice guidelines for the management of diabetic retinopathy. *Can J Ophthalmol*. 2017;52 Suppl 1:S45-74.
[https://www.canadianjournalofophthalmology.ca/article/S0008-4182\(17\)31047-5/fulltext](https://www.canadianjournalofophthalmology.ca/article/S0008-4182(17)31047-5/fulltext). Accessed 2019 Dec 12.
See: Retinal photography, page S52

Recommendation Unclear - Glaucoma Population

6. Management of glaucoma. 2nd ed. (*Clinical practice guidelines*). Putrajaya (MY): Ministry of Health Malaysia, Malaysian Health Technology Assessment Section; 2017:
http://www.acadmed.org.my/view_file.cfm?fileid=878. Accessed 2019 Dec 12.
Copy and paste link into web browser
See: 4.2.6 Assessment of the optic disc and retinal nerve fibre layer, page 9

Additional Guidelines and Recommendations

Regular Eye Exam Not Specified

7. Fundus photography (*Clinical Policy no 10.01.05*). Palm Beach Gardens (FL): Prestige Health Choice; 2018:
<https://www.prestigehealthchoice.com/pdf/provider/resources/clinical/policies/ccp1380-1905-fundus-photography.pdf>. Accessed 2019 Dec 12.

In Combination with Regular Eye Exam Not Specified - Diabetic Population

8. Ongoing management. In: Redmon B, Caccamo D, Flavin P, et al. Diabetes mellitus in adults, type 2; diagnosis and management of. 16th ed. (*Health Care Guideline*). Bloomington (MN): Institute for Clinical Systems Improvement; 2014: <https://www.icsi.org/guideline/diabetes/9-ongoing-management/>. Accessed 2019 Dec 12.
See: Specialist dilated eye exam
9. Hudson C, Leong D, Loewen E, et al. 2017 CAO Clinical Practice Guideline: Optometric care of the patient with diabetes. *Can J Optometry*. 2017; 79 Suppl 2:1-32. https://opto.ca/sites/default/files/resources/documents/cjo_diabetes_lores_with_images_en.pdf. Accessed 2019 Dec 12.
See: Retinal Imaging, page 20
10. Hanna S, Optometry Australia Diabetes Guidelines Working Group. Optometry Australia – Guidelines on the examination and management of patients with diabetes. *Clin Exp Optom*. 2016;99(2):120-126. <https://onlinelibrary.wiley.com/doi/epdf/10.1111/cxo.12340>. Accessed 2019 Dec 12.
See: Table 1; page 121 and Table 2; page 122

Clinical Practice Guidelines – Unspecified Methodology

11. Fundus photography (*Clinical UM Guideline no. CG-MED-47*). Virginia Beach (VI): Amerigroup; 2018: https://medicalpolicies.amerigroup.com/medicalpolicies/guidelines/gl_pw_c160717.htm. Accessed 2019 Dec 12.

Age-Related Macular Degeneration

12. Eye Health Council of Ontario. Guidelines for the collaborative management of persons with age-related macular degeneration by health- and eye-care professionals. *Can J Optometry*. 2015;77(1):2-11. https://opto.ca/sites/default/files/resources/documents/cjo_journal_online_ehco_guidelines_eng_v2.pdf. Accessed 2019 Dec 12
See: C) Moderate to Severe Dry AMD, page 4; Optometrist, page 6

Review Articles

13. Pichi F, Abboud EB, Ghazi NG, Khan AO. Fundus autofluorescence imaging in hereditary retinal diseases. *Acta Ophthalmol*. 2018 Aug;96(5):e549-e561. [PubMed: PM29098804](https://pubmed.ncbi.nlm.nih.gov/30998804/)
14. Goh JK, Cheung CY, Sim SS, et al. Retinal imaging techniques for diabetic retinopathy screening. *J Diabetes Sci Technol*. 2016 Feb;10(2):282-294 [PubMed: PM26830491](https://pubmed.ncbi.nlm.nih.gov/26830491/)

Additional Information

15. Holz FG, Sadda SR, Staurengi G, et al. Imaging protocols in clinical studies in advanced age-related macular degeneration: recommendations from classification of atrophy consensus meetings. *Ophthalmology*. 2017 Apr;124(4):464-478.
[PubMed: PM28109563](#)
16. Day A, Strong S, Hurley A, et al. Ophthalmic imaging. (*Ophthalmic Services guidance*). London (GB): The Royal College of Ophthalmologists; 2016:
<https://www.rcophth.ac.uk/wp-content/uploads/2014/12/Ophthalmic-Imaging-November-2016.pdf>. Accessed 2019 Dec 12.
See: Section 3. Retinal imaging