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Automated Perimetry or Electroretinography for Visual Field Testing in Eye Examinations: Guideline

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Research Questions

1. What are the evidence-based guidelines for administration of automated perimetry or electroretinography in conjunction with a regular eye examination in individuals aged 0 to 19, 20 to 64, or ≥ 65 years?
2. What are the evidence-based guidelines for administration of automated perimetry or electroretinography 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 automated perimetry or electroretinography 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

Six evidence-based guidelines were identified regarding automated perimetry or electroretinography for visual field testing in eye examinations.

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 17, 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	Q1: Individuals aged 0 to 19, 20 to 64, or ≥ 65 years Q2: Individuals with a family history of diabetes, hypertension, ocular hypertension, cataract(s), glaucoma, and/or age-related macular degeneration Q3: Individuals diagnosed with diabetes, hypertension, ocular hypertension, cataract(s), glaucoma, and/or age-related macular degeneration
Intervention	Automated perimetry (e.g., short wavelength automated perimetry [SWAP], frequency doubling technology perimetry [FDT], high-pass resolution perimetry [HPRP], or motion automated perimetry [MAP]) or electroretinography in combination with a standard eye examination
Comparator	No comparator
Outcomes	Guidelines
Study Designs	Evidence-based guidelines

Results

Six evidence-based guidelines were identified regarding automated perimetry or electroretinography for visual field testing in eye examinations.

Additional references of potential interest are provided in the appendix.

Guidelines and Recommendations

1. Serious eye disorders. (NICE Quality standard 180). London (GB): National Institute for Health and Care Excellence. 2019.
<https://www.nice.org.uk/guidance/gs180/resources/serious-eye-disorders-pdf-75545714656213>. Accessed 2019 Apr 22.
See: Additional Tests, page 9

2. Comprehensive adult eye and vision examination. St. Louis (MO): American Optometric Association. 2015.

Glaucoma or Ocular Hypertension

3. Management of glaucoma. (Clinical practice guidelines). Putrajaya (MY): Ministry of Health Malaysia. 2017.
<http://www.acadmed.org.my/index.cfm?&menuid=67#Ophthalmology>. Accessed 2019 Apr 22.
*See: 4.3.1 Automated visual field analysis, * page 10*

4. Glaucoma referral and safe discharge. (SIGN national clinical guideline 144). Edinburgh (GB): Scottish Intercollegiate Guidelines Network. 2015.
<https://www.sign.ac.uk/assets/sign144.pdf>. Accessed 2019 Apr 22.
See: Monitoring patients with ocular hypertension, page 6.

Appendix — Further Information

Systematic Reviews and Meta-Analyses – Neurological Conditions

5. Hepworth LR, Rowe FJ. Programme choice for perimetry in neurological conditions (PoPiN): a systematic review of perimetry options and patterns of visual field loss. *BMC Ophthalmol.* 2018 Sep 10;18(1):241.
[PubMed: PM30200926](#)

Guidelines and Recommendations – Alternative Population

6. Newman SA, Turbin RE, Bodach ME, et al. Congress of Neurological Surgeons Systematic Review and Evidence-Based Guideline on Pretreatment Ophthalmology Evaluation in Patients With Suspected Nonfunctioning Pituitary Adenomas. *Neurosurgery.* 2016 Oct;79(4):E530-532.
[PubMed: PM27635960](#)

Clinical Practice Guidelines – Methodology Unspecified

Glaucoma

7. Glaucoma (Quality Standards). Toronto (ON): Health Quality Ontario. 2019.
<https://www.hqontario.ca/Portals/0/documents/evidence/quality-standards/qs-glaucoma-qs-en.pdf>. Accessed 2019 Apr 22.
8. Optometric practice reference. Standards of practice. Toronto (ON): College of Optometrists of Ontario. 2014.
https://www.collegeoptom.on.ca/wp-content/uploads/2016/06/COO_Standards-of-Practice.pdf. Accessed 2019 Apr 22.

Review Articles

9. Mooney MA, Herro AM, Fintelman RE, et al. Visual Field Outcome Reporting in Neurosurgery: Lessons Learned from a Prospective, Multicenter Study of Transsphenoidal Pituitary Surgery. *World Neurosurg.* 2018 Dec;120:e326-e332.
[PubMed: PM30144606](#)
10. Wu Z, Medeiros FA. Recent developments in visual field testing for glaucoma. *Curr Opin Ophthalmol.* 2018 Mar;29(2):141-146.
[PubMed: PM29256895](#)