

Medical Coverage Policy | Corneal Topography/Computer-Assisted Corneal Topography/Photokeratoscopy



EFFECTIVE DATE: 10|01|2015

POLICY LAST UPDATED: 03|15|2023

OVERVIEW

Computer-assisted corneal topography (also called photokeratoscopy or videokeratography) provides a quantitative measure of corneal curvature. Measurement of corneal topography is being evaluated to aid the diagnosis of and follow-up for corneal disorders such as keratoconus, difficult contact lens fits, and pre- and postoperative assessment of the cornea, most commonly after refractive surgery.

MEDICAL CRITERIA

Not applicable

PRIOR AUTHORIZATION

Not applicable

POLICY STATEMENT

Medicare Advantage Plans

Computer-assisted corneal topography is not covered to detect or monitor diseases of the cornea as the evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Commercial Products

Computer-assisted corneal topography is considered not medically necessary to detect or monitor diseases of the cornea as the evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

COVERAGE

Benefits may vary between groups and contracts. Please refer to the appropriate Benefit Booklet, Evidence of Coverage or Subscriber Agreement for applicable not medically necessary/not covered benefits/coverage.

BACKGROUND

Corneal topography describes measurements of the curvature of the cornea. An evaluation of corneal topography is necessary for the accurate diagnosis and follow-up of certain corneal disorders, such as keratoconus, difficult contact lens fits, and pre- and postoperative assessment of the cornea, most commonly after refractive surgery.

Assessing corneal topography is a part of the standard ophthalmologic examination of some patients. Corneal topography can be evaluated and determined in multiple ways. Computer-assisted corneal topography has been used for early identification and quantitative documentation of the progression of keratoconic corneas, and evidence is sufficient to indicate that computer-assisted topographic mapping can detect and monitor disease.

Various techniques and instruments are available to measure corneal topography: keratometer, keratoscope, and computer-assisted photokeratoscopy.

The keratometer (also referred to as an ophthalmometer), the most commonly used instrument, projects an illuminated image onto a central area in the cornea. By measuring the distance between a pair of reflected points in both of the cornea's 2 principal meridians, the keratometer can estimate the radius of curvature of 2 meridians. Limitations of this technique include the fact that the keratometer can only estimate the corneal curvature over a small percentage of its surface and that estimates are based on the frequently incorrect assumption that the cornea is spherical.

The keratoscope is an instrument that reflects a series of concentric circular rings off the anterior corneal surface. Visual inspection of the shape and spacing of the concentric rings provides a qualitative assessment of topography.

A photokeratoscope is a keratoscope equipped with a camera that can provide a permanent record of the corneal topography.

For individuals who have disorders of corneal topography who receive computer-assisted corneal topography/photokeratoscopy, the evidence includes a single RCT and multiple nonrandomized studies. Relevant outcomes are test accuracy, other test performance measures, and functional outcomes. With the exception of refractive surgery, a procedure not discussed herein, no studies have shown clinical benefit (eg, a change in treatment decisions) based on a quantitative evaluation of corneal topography. In addition, a large prospective series found no advantage with use of different computer-assisted corneal topography methods over manual corneal keratometry. Computer-assisted corneal topography lacks evidence from appropriately constructed clinical trials that could confirm whether it improves outcomes. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

CODING

Medicare Advantage Plans and Commercial Products

Non-computer-assisted corneal topography is considered part of the evaluation and management services of general ophthalmologic services (CPT codes 92002–92014), and therefore this service should not be billed separately. There is no separate CPT code for this type of corneal topography. Non-computer-assisted corneal topography should be considered inclusive to Evaluation and Management services.

The following CPT code is not covered for Medicare Advantage Plans and not medically necessary for Commercial Products:

92025 Computerized corneal topography, unilateral or bilateral, with interpretation and report

RELATED POLICIES

None

PUBLISHED

Provider Update, May 2023

Provider Update, July 2022

Provider Update, June 2021

Provider Update, June 2020

Provider Update, July 2019

REFERENCES

1. Morrow GL, Stein RM. Evaluation of corneal topography: past, present and future trends. *Can J Ophthalmol.* Aug 1992;27(5): 213-25. PMID 1393805
2. Wilson SE, Klyce SD. Advances in the analysis of corneal topography. *Surv Ophthalmol.* 1991; 35(4): 269-77. PMID2011820
3. Martínez-Abad A, Piñero DP, Ruiz-Fortes P, et al. Evaluation of the diagnostic ability of vector parameters characterizing the corneal astigmatism and regularity in clinical and subclinical keratoconus. *Cont Lens Anterior Eye.* Apr 2017; 40(2):88-96. PMID 27931882

4. Bhatoa NS, Hau S, Ehrlich DP. A comparison of a topography-based rigid gas permeable contact lens design with a conventionally fitted lens in patients with keratoconus. *Cont Lens Anterior Eye*. Jun 2010; 33(3): 128-35. PMID 20053579
5. Weber SL, Ambrósio R, Lipener C, et al. The use of ocular anatomical measurements using a rotating Scheimpflug camera to assist in the Esclera® scleral contact lens fitting process. *Cont Lens Anterior Eye*. Apr 2016; 39(2): 148-53. PMID 264749246.
6. DeNaeyer G, Sanders DR, Farajian TS. Surface coverage with single vs. multiple gaze surface topography to fit scleral lenses. *Cont Lens Anterior Eye*. Jun 2017; 40(3): 162-169. PMID 28336224
7. Bandlitz S, Bäumer J, Conrad U, et al. Scleral topography analysed by optical coherence tomography. *Cont Lens Anterior Eye*. Aug 2017; 40(4): 242-247. PMID 28495356
8. Lee H, Chung JL, Kim EK, et al. Univariate and bivariate polar value analysis of corneal astigmatism measurements obtained with 6 instruments. *J Cataract Refract Surg*. Sep 2012; 38(9): 1608-15. PMID 22795977
9. de Sanctis U, Donna P, Penna RR, et al. Corneal Astigmatism Measurement by Ray Tracing Versus Anterior Surface-Based Keratometry in Candidates for Toric Intraocular Lens Implantation. *Am J Ophthalmol*. May 2017; 177: 1-8. PMID 28185842
10. Corneal topography. *American Academy of Ophthalmology. Ophthalmology*. Aug 1999; 106(8): 1628-38. PMID 10442914

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