

Policy Name	Clinical Policy – Corneal Topography and Tomography
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Department	Clinical Product & Development
Subcategory	Medical Management
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Company Entities Supported (Select All that Apply) <input checked="" type="checkbox"/> Superior Vision Benefit Management <input checked="" type="checkbox"/> Superior Vision Services <input checked="" type="checkbox"/> Superior Vision of New Jersey, Inc. <input checked="" type="checkbox"/> Block Vision of Texas, Inc. d/b/a Superior Vision of Texas <input checked="" type="checkbox"/> Davis Vision (Collectively referred to as ‘Versant Health’ or ‘the Company’)

ACRONYMS	
CT	Corneal topography or corneal tomography

PURPOSE

To provide the medical necessity criteria to support the indication(s) for corneal topography/tomography and to render medical necessity determinations. Applicable procedure codes are also defined.

POLICY

A. BACKGROUND

Both corneal topography and corneal tomography are used to assess the shape and structure of the cornea. Corneal topography, also known as photokeratometry or video keratometry, is a non-invasive imaging technique for mapping the surface curvature of the cornea particularly when astigmatism is present. Corneal tomography offers a more comprehensive evaluation of the corneal shape using advanced imaging technologies such as scanning slit technology, Scheimpflug-based imaging and optical coherence tomography. It provides a three-dimensional map of the entire cornea, including both the anterior and posterior surfaces.

B. Medically Necessary

1. Corneal topography or tomography is medically necessary when the information garnered from an eye exam is insufficient to assess the patient's condition, as in the following conditions:
 - a. Bullous keratopathy,
 - b. Clinically significant irregular corneal astigmatism,
 - c. Complications of transplanted cornea,
 - d. Corneal dystrophies,
 - e. Keratoconus or pellucid marginal degeneration,
 - f. Monocular diplopia,
 - g. Post-surgical or post-traumatic astigmatism,
 - h. Pterygium and/or corneal ectasia that cause visual impairment.
2. Repeat corneal topography or tomography for the stated conditions above, may not be medically necessary except under the following circumstances:
 - a. A change in vision is reported due to one of the listed conditions; or,
 - b. Pediatric keratoconus; or,
 - c. When history and subjective vision changes are unreliable; and,
 - d. When early crosslinking would provide maximum benefit.
3. Corneal topography or tomography is appropriate as an adjunct to the fitting of medically necessary contact lenses.

C. Not Medically Necessary

Corneal topography or tomography may not be medically necessary when:

1. It is performed as baseline documentation of a healthy eye such as during an evaluation for refractive surgery or as preventive medicine to screen for potential disease; or,
2. It is used on an eye without signs, symptoms, serious ophthalmic disease, ocular abnormalities, or contributory medical history; or,
3. It is used prior to cataract surgery when there is no indication of corneal disease; or,
4. It is used to confirm a diagnosis that has already been determined; or,
5. It is used to determine the need for corneal cosmetic refractive surgery; or,
6. It is used to refine the selection of an astigmatism correcting or presbyopia correcting intraocular lens related to a cosmetic refractive procedure; or,
7. It is without a documented medical rationale in the medical record.

D. Documentation

Medical necessity must be supported by adequate and complete documentation in the patient's medical record that describes the procedure and the medical rationale for it as in the requirements above. All medical record items must be available upon request to initiate or sustain previous payments. For any retrospective review, a full operative report and medical plan of care are needed.

Every page of the record must be legible and include appropriate patient identification information (e.g., complete name, date(s) of service). Services provided/ordered must be authenticated by the physician, in a handwritten or electronic signature. Stamped signatures are not acceptable.

Corneal topography or tomography requires an interpretation and report which includes:

1. Physician's order for CT with medical rationale
2. Date performed
3. Reliability of the CT (Do not bill a CT of dubious value.)
4. Patient cooperation
5. CT findings
6. Comparison of results from previous tests
7. Assessment, diagnosis
8. Impact on treatment, prognosis

E. Procedural Detail

CPT Code	
92025	Computerized corneal topography, unilateral or bilateral, with interpretation and report. (CPT code includes computerized tomography. Do not report 92025 in conjunction with CPT codes 65710 corneal transplant – 65771 Radial keratotomy).
Invalid Modifiers	
Anatomical Modifiers	RT, LT, 50

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RELATED POLICIES AND PROCEDURES	
1304	OCT/SCODI

DOCUMENT HISTORY		
<i>Approval Date</i>	<i>Revisions</i>	<i>Effective Date</i>
02/06/2018	Initial Policy	02/06/2018
03/13/2019	Annual review; no criteria changes.	03/13/2019
02/19/2020	Annual review; no criteria changes.	04/01/2020
01/06/2021	Annual review; no criteria changes.	04/01/2021
01/05/2022	Annual review; no criteria changes.	04/01/2022
01/04/2023	Annual review; no criteria changes.	04/01/2023
09/20/2023	Administrative review for CMS 2024 final rule Medicare Part C equity: no changes.	n/a
01/03/2024	Clarify indication for medically necessary contact lens fitting.	04/01/2024
01/08/2025	Added indications where CT is allowed without vision changes: pediatric cases, when subjective vision change is unreliable and early crosslinking would be beneficial.	05/01/2025

REFERENCES

1. Aghaei H, Es'haghi A. Importance of corneal topography in surgical planning for toric intraocular lenses. *J Cataract Refract Surg.* 2020 Oct;46(10):1450. doi: 10.1097/j.jcrs.0000000000000387. PMID: 32925644.
2. Alqudah N. Keratoconus: imaging modalities and management. *Med Hypothesis Discov Innov Ophthalmol.* 2024 Jul 1;13(1):44-54. doi: 10.51329/mehdiophthal1493. PMID: 38978828; PMCID: PMC11227666.
3. Anitha V, Vanathi M, Raghavan A, et.al. Pediatric keratoconus - Current perspectives and clinical challenges. *Indian J Ophthalmol.* 2021 Feb;69(2):214-225. doi: 10.4103/ijo.IJO_1263_20. PMID: 33463562; PMCID: PMC7933850.
4. Bandlitz S, Bäumer J, Conrad U, et.al. Scleral topography analysed by optical coherence tomography. *Cont Lens Anterior Eye.* 2017 Aug;40(4):242-247. doi: 10.1016/j.clae.2017.04.006. Epub 2017 May 8. PMID: 28495356.
5. Binder PS. Topography and Tomography Findings in Patients with Down Syndrome. *JAMA Ophthalmol.* 2018 Sep 1;136(9):979-980. doi: 10.1001/jamaophthalmol.2018.2374. PMID: 29931036.
6. Bussi eres N, Ababneh OH, Abu Ameerh MA, et.al. Keratoconus Asymmetry between Both Eyes Based on Corneal Tomography. *Middle East Afr J Ophthalmol.* 2017 Oct-Dec;24(4):171-176. doi: 10.4103/meajo.MEAJO_311_16. PMID: 29422750; PMCID: PMC5793447.
7. Damian A, Seitz B, Langenbacher A, et.al. Optical coherence tomography-based topography determination of corneal grafts in eye bank cultivation. *J Biomed Opt.* 2017 Jan 1;22(1):16001. doi: 10.1117/1.JBO.22.1.016001. PMID: 28055053.
8. Delrivo M, Ruise or V azquez PR, Galletti JD, et.al. Agreement between placido topography and Scheimpflug tomography for corneal astigmatism assessment. *J Refract Surg.* 2014 Jan;30(1):49-53. doi: 10.3928/1081597x-20131217-06. PMID: 24864328.
9. Fan R, Chan TC, Prakash G, Jhanji V. Applications of corneal topography and tomography: a review. *Clin Exp Ophthalmol.* 2018 Mar;46(2):133-146. doi: 10.1111/ceo.13136. Epub 2018 Jan 11. PMID: 29266624.
10. Flockerzi E, Seitz B. Keratectasia severity staging and progression assessment based on the biomechanical E-staging. *Eye Vis (Lond).* 2024 Jul 1;11(1):24. doi: 10.1186/s40662-024-00392-3. PMID: 38946004; PMCID: PMC11215830.
11. Fouda SM, Al-Nashar HY, Ibrahim BM, et.al. Predictability of Sirius dual-scanning corneal tomography in the measurement of corneal power after photorefractive surgery. *Int Ophthalmol.* 2016 Feb;36(1):85-90. doi: 10.1007/s10792-015-0075-5. Epub 2015 May 19. PMID: 25982158.
12. Ghemame M, Charpentier P, Mouriaux F. Corneal topography in clinical practice. *J Fr Ophthalmol.* 2019 Dec;42(10): e439-e451. doi: 10.1016/j.jfo.2019.09.001. Epub 2019 Nov 11. PMID: 31727328.
13. Ghemame M, Charpentier P, Mouriaux F. Topographie corn enne en pratique [Corneal topography in practice]. *J Fr Ophtalmol.* 2020 Jan;43(1):67-79. French. doi: 10.1016/j.jfo.2018.12.033. Epub 2019 Nov 25. PMID: 31780331.
14. Gokul A, Vellara HR, Patel DV. Advanced anterior segment imaging in keratoconus: a review. *Clin Exp Ophthalmol.* 2018 Mar;46(2):122-132. doi: 10.1111/ceo.13108. Epub 2017 Dec 21. PMID: 29160595.
15. Gonz alez-P erez J, Queiruga Pi eiro J, S anchez Garc a  , et.al. Comparison of Central Corneal Thickness Measured by Standard Ultrasound Pachymetry, Corneal Topography,

- Tono-Pachymetry and Anterior Segment Optical Coherence Tomography. *Curr Eye Res.* 2018 Jul;43(7):866-872. doi: 10.1080/02713683.2018.1461910. Epub 2018 Apr 13. PMID: 29634372.
16. Goto S, Maeda N. Corneal Topography for Intraocular Lens Selection in Refractive Cataract Surgery. *Ophthalmology.* 2021 Nov;128(11): e142-e152. doi: 10.1016/j.ophtha.2020.11.016. Epub 2020 Nov 19. PMID: 33221325.
 17. Martin R. Cornea and anterior eye assessment with placido-disc keratometry, slit scanning evaluation topography and scheimpflug imaging tomography. *Indian J Ophthalmol.* 2018 Mar;66(3):360-366. doi: 10.4103/ijo.IJO_850_17. PMID: 29480244; PMCID: PMC5859588.
 18. Mülhaupt M, Dietzko S, Wolffsohn J, et.al. Corneal topography with an aberrometry-topography system. *Cont Lens Anterior Eye.* 2018; 41(5):436–441; 2018.
 19. Nasrin F, Iyer RV, Mathews SM. Simultaneous Estimation of Corneal Topography, Pachymetry, and Curvature. *IEEE Trans Med Imaging.* 2018 Nov;37(11):2463-2473. doi: 10.1109/TMI.2018.2836304. Epub 2018 May 15. PMID: 29994760.
 20. Ono T, Kawasaki Y, Chen LW, et.al. Corneal topography in keratoconus evaluated more than 30 years after penetrating keratoplasty: a Fourier harmonic analysis. *Sci Rep.* 2020 Sep 10;10(1):14880. doi: 10.1038/s41598-020-71818-w. PMID: 32913233; PMCID: PMC7483710.
 21. Schiano-Lomoriello D, Bono V, Abicca I, et.al. Repeatability of anterior segment measurements by optical coherence tomography combined with Placido disk corneal topography in eyes with keratoconus. *Sci Rep.* 2020 Jan 24;10(1):1124. doi: 10.1038/s41598-020-57926-7. PMID: 31980662; PMCID: PMC6981210.
 22. Shao X, Zhou KJ, Pan AP, et al. Age-Related Changes in Corneal Astigmatism. *J Refract Surg.* 2017; 33(10):696–703.
 23. Sulley A, Osborn LK, Wolffsohn JS, et.al. Theoretical fitting characteristics of typical soft contact lens designs. *Cont Lens Anterior Eye.* 2017; 40(4):248–252.
 24. Tăbăcaru B, Stanca TH. Corneal topography in preoperative evaluation for laser keratorefractive surgery - a review. *Rom J Ophthalmol.* 2020 Oct-Dec;64(4):333-341. doi: 10.22336/rjo.2020.55. PMID: 33367171; PMCID: PMC7739023.
 25. Uçakhan Ö. Current Corneal Topography/Tomography Systems. *Eye Contact Lens.* 2020 May;46(3):127-128. doi: 10.1097/ICL.0000000000000707. PMID: 32324686.
 26. Wylęgała A, Mazur R, Bolek B, et.al. Reproducibility, and repeatability of corneal topography measured by Revo NX, Galilei G6 and Casia 2 in normal eyes. *PLoS One.* 2020 Apr 2;15(4): e0230589. doi: 10.1371/journal.pone.0230589. PMID: 32240192; PMCID: PMC7117679.
 27. Zhang Y, Chen YG, Yang HY, et.al. [Analysis on the role of Sirius combined topography and tomography system in screening for suspect keratoconus]. *Zhonghua Yan Ke Za Zhi.* 2018 Jan 11;54(1):33-38. Chinese. doi: 10.3760/cma.j.issn.0412-4081.2018.01.007. PMID: 29429285.
 28. Zéboulon P, Debellemanière G, Gatinel D. Unsupervised learning for large-scale corneal topography clustering. *Sci Rep.* 2020 Oct 12;10(1):16973. doi: 10.1038/s41598-020-73902-7. PMID: 33046810; PMCID: PMC7550569.
 29. Zhang YH, Wang Y, Li LY, et.al. Study on Corneal Biomechanical properties of suspicious keratoconus patients in corneal topography. 2019; 55(6):442–447; 2019.

SOURCES

1. American Academy of Ophthalmology, Cornea/External Disease Summary Benchmarks. 2023. <https://www.aao.org/education/guidelines-browse?filter=Preferred%20Practice%20Patterns&sub=AllPreferredPracticePatterns>. Accessed 11/2024.
2. American Academy of Ophthalmology, Preferred Practice Pattern: Corneal Edema and Opacification, 2023. <https://www.aao.org/education/guidelines-browse?filter=Preferred%20Practice%20Patterns&sub=AllPreferredPracticePatterns>. Accessed 11/2024.
3. American Academy of Ophthalmology, Preferred Practice Pattern, Corneal Ectasia PPP. 2023. <https://www.aao.org/education/guidelines-browse?filter=Preferred%20Practice%20Patterns&sub=AllPreferredPracticePatterns>. Accessed 11/2024.