Medical Policy

BlueCross BlueShield Kansas
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Title: Corneal Topography/Computer-Assisted Corneal Topography/Photokeratoscopy

Related Policies:	▪ *Corneal Collagen Cross-Linking*

Professional / Institutional
Original Effective Date: January 1, 2007 / December 20, 2010
Latest Review Date: August 12, 2025
Current Effective Date: September 13, 2019

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Populations	Interventions	Comparators	Outcomes
Individuals: • With disorders of corneal topography	Interventions of interest are: • Computer-assisted corneal topography/photokeratoscopy	Comparators of interest are: • Manual corneal topography measurements	Relevant outcomes include: • Test accuracy • Other test performance measures • Functional outcomes

DESCRIPTION
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.

OBJECTIVE
The objective of this evidence review is to evaluate whether computer-assisted corneal topography improves net health outcomes for individuals with disorders of corneal topography, such as keratoconus.

BACKGROUND

Detection and Monitoring Diseases of the Cornea
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 part of the standard ophthalmologic examination of some patients.[1,2,] 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 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. Computer-assisted photokeratoscopy is an alternative to keratometry or keratoscopy for measuring corneal curvature. This technique uses sophisticated image analysis programs to provide quantitative corneal topographic data. Early computer-based programs were combined with keratoscopy to create graphic displays and high-resolution, color-coded maps of the corneal surface. Newer technologies measure both curvature and shape, enabling quantitative assessment of corneal depth, elevation, and power.

REGULATORY STATUS

A number of corneal topography devices have been cleared for marketing by the U.S. Food and Drug Administration (FDA) through the 510(k) process (Table 1). In 1999, the Orbscan® (manufactured by Orbtek, distributed by Bausch and Lomb) was cleared by the FDA. The second-generation Orbscan II is a hybrid system that uses both projective (slit scanning) and reflective (Placido) methods. The Pentacam® (Oculus) is 1 of a number of rotating Scheimpflug imaging systems produced in Germany. In 2005, the Pentacam HR was released with a newly designed high-resolution camera and improved optics.

FDA product code: MXK.

Table 1. Corneal Topography Devices Cleared by the U.S. Food and Drug Administration

Device	Manufacturer	Date Cleared	510.k No.	Indication
MS-39	C.S.L. S.R.O.	09/01/2023	K221601	To capture scans of the anterior segment of the eye
MYAH	VISIA Imaging S.R.L.	03/01/2022	K211868	To measure the axial length of the eye in a population age 5 and above; to capture and store digital images of the meibomian glands in adults
Myopia Master	OCULUS OPTIKGERATE GMBH	07/14/2021	K202989	To measure the axial length of the eye
Pentacam AXL Wave	OCULUS OPTIKGERATE GMBH	10/21/2020	K201724	To scan, map and display the geometry of the anterior segment of the eye
Galilei G6 Lens Professional	SIS AG, SURGICAL INSTRUMENT SYSTEMS	07/25/2019	K182659	To scan, map and display the geometry of the anterior segment of the eye
VX130 Ophthalmic Diagnostic Device	LUNEAU SAS	4/24/2017	K162067	To scan, map and display the geometry of the anterior segment of the eye
Pentacam AXL	OCULUS OPTIKGERATE GMBH	1/20/2016	K152311	To scan, map and display the geometry of the anterior segment of the eye
ARGOS	SANTEC CORPORATION	05/16/2019	K191051	To scan, map and display the geometry of the anterior segment of the eye

Device	Manufacturer	Date Cleared	510.k No.	Indication
ALLEGRO OCULYZER	WAVELIGHT AG	7/20/2007	K071183	To scan, map and display the geometry of the anterior segment of the eye
HEIDELBERG ENGINEERING SLITLAMP-OCT (SL-OCT)	HEIDELBERG ENGINEERING	1/13/2006	K052935	To scan, map and display the geometry of the anterior segment of the eye
CM 3910 ROTATING DOUBLE SCHEIMPFLUG CAMERA	SIS LTD. SURGICAL INSTRUMENT SYSTEMS	9/28/2005	K051940	To scan, map and display the geometry of the anterior segment of the eye
PATHFINDER	MASSIE RESEARCH LABORATORIES INC.	9/2/2004	K031788	To scan, map and display the geometry of the anterior segment of the eye
NGDI (NEXT GENERATION DIAGNOSTIC INSTRUMENT)	BAUSCH & LOMB	7/23/2004	K040913	To scan, map and display the geometry of the anterior segment of the eye
PENTACAM SCHEIMPFLUG CAMERA	OCULUS OPTIKGERATE GMBH	9/16/2003	K030719	To scan, map and display the geometry of the anterior segment of the eye
ANTERIOR EYE-SEGMENT ANALYSIS SYSTEM	NIDEK INC.	8/6/1999	K991284	To scan, map and display the geometry of the anterior segment of the eye
ORBSCAN	TECHNOLAS PERFECT VISION GMBH	3/5/1999	K984443	To scan, map and display the geometry of the anterior segment of the eye

POLICY

A. Non-Computer-Assisted Corneal Topography
Non-computer-assisted corneal topography is considered part of the evaluation and management services of general ophthalmological services, and therefore this service should not be billed separately. There is no separate CPT code for this type of corneal topography.

B. Computer-Assisted Corneal Topography
1. Routine computer-assisted corneal topography is considered **not medically necessary** to detect or monitor diseases of the cornea.

2. Computer-assisted corneal topography may be considered **medically necessary** for any of the following conditions:
    a. Pre- and post-penetrating keratoplasty and pre- and post kerato-refractive surgery for irregular astigmatism, **or**
    b. Corneal dystrophy and complications of transplanted cornea; **or**
    c. Diagnosing and monitoring disease progression in keratoconus; **or**
    d. Post-traumatic or post infectious corneal scarring
    e. Refractive surgery only for symptomatic anisometropia

3. Computer-assisted corneal topography is **non-covered** for the following indications:
    a. When used in conjunction with preoperative evaluation for cataract surgery including refractive intraocular lens (IOL) exchange and premium channel IOL cataract surgery.
    b. For difficult fitting of contact lens not associated with refractive surgery.
    c. Refractive surgery, except when medically necessary for anisometropia.

4. Initial and repeat computer-assisted corneal topography that is not clearly medically indicated will be denied **not medically necessary**.

Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

RATIONALE

This evidence review has been updated regularly with searches of the PubMed database. The most recent literature update was performed through January 18, 2024.

Evidence reviews assess whether a medical test is clinically useful. A useful test provides information to make a clinical management decision that improves the net health outcome. That is, the balance of benefits and harms is better when the test is used to manage the condition than when another test or no test is used to manage the condition.

The first step in assessing a medical test is to formulate the clinical context and purpose of the test. The test must be technically reliable, clinically valid, and clinically useful for that purpose. Evidence reviews assess the evidence on whether a test is clinically valid and clinically useful.

Technical reliability is outside the scope of these reviews, and credible information on technical reliability is available from other sources.

Promotion of greater diversity and inclusion in clinical research of historically marginalized groups (e.g., People of Color [African-American, Asian, Black, Latino and Native American]; LGBTQIA (Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual); Women; and People with Disabilities [Physical and Invisible]) allows policy populations to be more reflective of and findings more applicable to our diverse members. While we also strive to use inclusive language related to these groups in our policies, use of gender-specific nouns (e.g., women, men, sisters, etc.) will continue when reflective of language used in publications describing study populations.

COMPUTER-ASSISTED CORNEAL TOPOGRAPHY/PHOTOKERATOSCOPY

Clinical Context and Test Purpose

The purpose of computer-assisted corneal topography/photokeratoscopy is to provide a diagnostic option that is an alternative to or an improvement on existing therapies, such as manual corneal topography measurements, in individuals with disorders of corneal topography.

The following PICO was used to select literature to inform this review.

Populations

The relevant population of interest is individuals with disorders of corneal topography.

Interventions

The test being considered is computer-assisted corneal topography/photokeratoscopy.

Comparators

Comparators of interest include manual corneal topography measurements.

Outcomes

The general outcomes of interest are test accuracy, other test performance measures, and functional outcomes.

Identifying clinically validity and usefulness requires short-term follow-up. Evaluating functional outcomes may require longer follow-up.

Study Selection Criteria

Below are selection criteria for studies to assess whether a test is clinically valid.

- The study population represents the population of interest. Eligibility and selection are described.
- The test is compared with a credible reference standard.
- If the test is intended to replace or be an adjunct to an existing test, it should also be compared with that test.
- Studies should report sensitivity, specificity, and predictive values. Studies that completely report true- and false-positive results are ideal. Studies reporting other measures (e.g., receiver operating characteristic, area under receiver operating characteristic, c-statistic, likelihood ratios) may be included but are less informative.
- Studies should also report reclassification of diagnostic or risk category.

REVIEW OF EVIDENCE

Clinically Valid

A test must detect the presence or absence of a condition, the risk of developing a condition in the future, or treatment response (beneficial or adverse).

Martinez-Abad et al (2017) sought to determine whether 3 vector parameters, ocular residual astigmatism, topography disparity, and corneal topographic astigmatism (anterior and total), could serve to detect clinical and subclinical keratoconus.[3,] One hundred eighty eyes were studied in this retrospective comparative study: 61 eyes (38 patients) with keratoconus, 19 eyes (16 patients) with subclinical keratoconus, and a control group of 100 healthy eyes. All study participants underwent a thorough eye exam; further, software was used (iASSORT) to calculate ocular residual astigmatism, topography disparity, and corneal topographic astigmatism. Using a receiver operating characteristic curve analysis, the diagnostic capabilities of the 3 parameters were measured; to further assess diagnostic ability, a cutoff was determined that correlated to the highest sensitivity and specificity of the curve. Results showed that ocular residual astigmatism and topography disparity had good diagnostic capability to detect keratoconus (ocular residual astigmatism: cutoff, 1.255 diopters; sensitivity: 82%; specificity: 92%; and topography disparity: cutoff, 1.035 diopters; sensitivity, 78.5%; specificity, 86%). Corneal topographic astigmatism did not show potential as a diagnostic tool.

Section Summary: Clinically Valid

One study has been identified evaluating computer-assisted corneal topography as a clinically valid solution for diagnosing disorders of corneal topography. Authors concluded that topography disparity and ocular residual astigmatism, 2 vector parameters that could serve to detect clinical and subclinical keratoconus, were beneficial tools for detecting the disorder.

Clinically Useful

A test is clinically useful if use of the results informs management decisions that improve the net health outcome of care. The net health outcome can be improved if patients receive correct therapy, more effective therapy, or avoid unnecessary therapy or testing.

Direct Evidence

Direct evidence of clinical utility is provided by studies that have compared health outcomes for patients managed with and without the test. Because these are intervention studies, the preferred evidence would be from randomized controlled trials.

Contact Lens Fitting

In a study of computer-assisted corneal topography, Bhatoa et al (2010) assessed the design of gas-permeable contact lens in 30 patients with keratoconus who were recruited in 2005 and 2006.[4,] The report indicated that the subjects were consecutive, although patients whose topographic plots could not be used were excluded (number not described). The fit of the new lens was compared with the fit of the patient's habitual lens (randomized order on the same day). Clinical evaluation showed a good fit (no or minor modification needed) for more than 90% of the computer-designed lens. However, the progression of keratoconus caused a bias favoring the most recently fitted lens, confounding comparison between the new computer-designed lens and the patient's habitual lens. Trial design and reporting limitations limit conclusions that can be drawn from this study.

Weber et al (2016) reported on a prospective, observational study evaluating the association between computer-assisted corneal topography measurements (Pentacam) and scleral contact lens fit.[5,] The study included 47 patients (63 eyes) with a variety of indications for scleral contact lenses, most commonly (n=24 eyes) keratoconus. Pentacam measurements correlated with a subset of the scleral contact lens parameters (corneal astigmatism, anterior chamber depth, and corneal height; p<.001, not adjusted for multiple comparisons) for the group as a whole.

DeNaeyer et al (2017) investigated the use of the sMap3D™ system (Precision Ocular Metrology), which measures the surface of the eye for patients in need of a scleral contact lens fitting.[6,] The sMap3D captures a series of images to produce a single, wide-field topographic "stitched" image of all captured images. To create these images, the patient is asked to provide several "gazes" (gaze up, gaze down, gaze straight). Twenty-five eyes (23 patients) were examined using the sMap3D. The "stitched" image produced by the sMap3D was then compared with the single captured straight-gaze image. At a diameter of 10 mm from the corneal center, both straight-gaze image and the sMap3D-stitched image displayed 100% coverage of the eye. However, at 14 mm, the straight-gaze image only mapped 68% of the eye; at 15 mm, 53%; at 16 mm, 39%, and at 20 mm, 6%. For the stitched image produced by sMap3D, coverage was: at 14 mm, 98% ; at 15 mm, 96% ; at 16 mm, 93% ; and at 20 mm, 32%. While there was a significant drop off in coverage between 16 mm and 20 mm for the sMap3D image, the stitched image was considerably more accurate than the straight-gaze image. Tables 2 and 3 provide a summary of the above study characteristics and results.

Bandlitz et al (2017) studied the profile of the limbal sclera in 8 meridians by using spectral domain optical coherence tomography and a confocal scanning laser ophthalmoscope.[7,] The objective of this study was to evaluate the relationship between central corneal radii, corneal eccentricity, and scleral radii to improve soft and scleral contact lenses. The limbal scleral radii of 30 subjects were measured. Eight meridians, each 45° apart, were scanned, and it was determined that corneal eccentricity and scleral radii did not correlate in any of the meridians. The authors concluded that the independence between meridians might prove useful in fitting soft and scleral contact lenses.

Table 2. Summary of Key Study Characteristics

Study	Study Type	Country	Dates	Participants	Treatment 1	Treatment 2	Follow-Up
Bhatoa et al (2010)[4,]	Randomized, prospective	U.K.	2005-2006	Patients with keratoconus (N =30)	Gas-permeable contact lenses made using Fitscan RGP fitting software	Patients habitual RGP contact lenses	NR
Weber et al (2016)[5,]	Prospective, observational	Brazil	2013	Patients with a variety of indications	Pentacam derived topography	NA	NR

Study	Study Type	Country	Dates	Participants	Treatment 1	Treatment 2	Follow-Up
				for scleral contact lenses (N =47 patients, 63 eyes)	variables for SCL fit		
DeNaeyer et al (2017)[6,]	Retrospective	U.S.	2016	Patients presenting for scleral lens fitting (N =23 patients, 25 eyes)	sMap3D stitched imaging	Straight-gaze imaging	NR

NA: not applicable; NR: not reported; RGP: rigid gas permeable; SCL: scleral contact lens; U.K.: United Kingdom; U.S.: United States.

Table 3. Summary of Key Study Results

Study	Agreement Levels between Techniques	Correlations between SCL Parameters and ACD and Hm	Eye Coverage at 10, 14, 16, and 20 mm
Bhatoa et al (2010)[4,]	74% to 100%		
Weber et al (2016)[5,]		p<.001, each	
DeNaeyer et al (2017)[6,]			
Straight-gaze			100%, 68%, 39%, 6%
Stitched			100%, 98%, 93%, 32%

ACD: anterior chamber depth; Hm: Pentacam-measured corneal height; SCL: scleral contact lens.

Corneal Astigmatism Measurements for Toric Intraocular Lens Implantation

Lee et al (2012) reported on a prospective comparative study of 6 methods for measuring corneal astigmatism to guide toric intraocular lens implantation.[8,] Astigmatism was evaluated in 257 eyes (141 patients) using manual keratometry, auto keratometry, partial coherence interferometry (IOLMaster®), ray-tracing aberrometry (iTrace®), scanning-slit topography (Orbscan), and Scheimpflug imaging (Pentacam). Each instrument's measurements were masked to the results for the other instruments. The study found no significant difference between instruments, indicating no advantage to computerized corneal topography over manual keratometry.

de Sanctis et al (2017) reported on corneal astigmatism in patients seeking toric intraocular lens implantation.[9,] The authors compared 2 methods for measuring corneal astigmatism: (1) corneal astigmatism total corneal refractive power, which uses a ray-tracing method that sends light through the cornea; and (2) corneal astigmatism simulated keratometry, which is a surface-based exterior measurement that measures the steep radius of the anterior cornea. Both methods relied on the camera system (Pentacam HR) to calculate vector differences. Of 200 patients, 77 (60 eyes) remained for intraocular lens implantation. For a patient to qualify for toric intraocular lens implantation, corneal astigmatism had to be greater than 1 diopter. Using corneal astigmatism total corneal refractive power, 17 eyes were found with greater than 1 diopter; using corneal astigmatism simulated keratometry, 13 eyes were found with greater than 1 diopter. However, of the 77 intraocular lens implantation candidates, the corneal astigmatism simulated keratometry method assessed 17 patients to have corneal astigmatism less than or equal to 1 diopter. Moreover, the corneal astigmatism simulated keratometry method found 13 of 123 patients who were *not* candidates for implantation to have astigmatism greater than 1 diopter. This difference suggested potential issues with patient selection criteria.

Chain of Evidence

Indirect evidence on clinical utility rests on clinical validity. As the evidence is insufficient to demonstrate test performance, no inferences can be made about clinical utility.

A chain of evidence would demonstrate that computer-assisted corneal topography can identify individuals with disorders of corneal topography who would not otherwise be identified, that treatments are available for these patients that would not otherwise be given to patients with disorders of corneal topography, and that these treatments improve health outcomes. Therefore, a chain of evidence cannot be created for clinical utility.

Section Summary: Clinically Useful

Direct evidence for the clinical usefulness of computer-assisted corneal topography in diagnosing those with disorders of corneal topography is lacking. A chain of evidence for clinical validity provides a chain of evidence on clinical usefulness of this testing.

SUPPLEMENTAL INFORMATION

The purpose of the following information is to provide reference material. Inclusion does not imply endorsement or alignment with the evidence review conclusions.

Practice Guidelines and Position Statements

Guidelines or position statements will be considered for inclusion in 'Supplemental Information if they were issued by, or jointly by, a US professional society, an international society with US representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

American Academy of Ophthalmology

A 1999 American Academy of Ophthalmology (AAO) assessment indicated that computer-assisted corneal topography evolved from the need to measure corneal curvature and topography more comprehensively and accurately than keratometry and that corneal topography is used primarily for refractive surgery.[10,] The corneal astigmatism simulated keratometry AAO assessment indicated several other potential uses: (1) to evaluate and manage patients following penetrating keratoplasty, (2) to plan astigmatic surgery, (3) to evaluate patients with unexplained visual loss and document visual complications, and (4) to fit contact lenses. However, the corneal astigmatism simulated keratometry AAO assessment noted the lack of data supporting the use of objective measurements (as opposed to subjective determinants, like subjective refraction) of astigmatism.

U.S. Preventive Services Task Force Recommendations

Not applicable.

Ongoing and Unpublished Clinical Trials

A search of ClinicalTrials.gov in January 2024 did not identify any ongoing or unpublished trials that would likely influence this review.

CODING

The following codes for treatment and procedures applicable to this policy are included below for informational purposes. This may not be a comprehensive list of procedure codes applicable to this policy.

Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

The code(s) listed below are medically necessary ONLY if the procedure is performed according to the "Policy" section of this document.

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

REVISIONS	
12-20-2010	Policy added to the bcbsks.com web site.
12-09-2011	In the Policy section; • Item B, #5, added "symptomatic" to read "Refractive surgery only for symptomatic anisometropia."
	Updated Rationale section.
	Updated Reference section.
07-12-2013	Updated Description section.
	Updated Rationale section.
	In Coding section: ▪ Added ICD-10 Diagnosis codes *(Effective October 1, 2014)*
	Updated Reference section.
07-08-2015	Updated Description section.
	Updated Rationale section.
	Updated References section.
04-27-2016	Updated Description section.
	Updated Rationale section.
04-12-2017	Updated Description section.
	Updated Rationale section.
	Updated References section.
04-11-2018	Updated Description section.
	Updated Rationale section.
	In Coding section: ▪ Removed ICD-9 codes.
	Updated References section.
04-24-2019	Updated Description section.
	Updated Rationale section.
	Updated References section.
09-13-2019	The policy posted to the bcbsks.com website on August 14, 2019 with an effective date of September 13, 2019.
	In Policy section:

REVISIONS	
	▪ In Item II B, added "considered" to read, "Computer-assisted corneal topography may be considered medically necessary for any of the following conditions:"
	In Coding section: ▪ Added ICD-10 code: H18.602.
06-01-2021	Updated Description section.
	Updated Rationale section.
	In Coding section: • Add ICD-10 diagnosis codes: H16.001, H16.002, H16.003, H16.009, H16.011, H16.012, H16.013, H16.019, H16.021, H16.022, H16.023, H16.029, H16.031, H16.032, H16.033, H16.039, H16.041, H16.042, H16.043, H16.049, H16.051, H16.052, H16.053, H16.059, H16.061, H16.062, H16.063, H16.069, H16.071, H16.072, H16.073, H16.079, H16.101, H16.102, H16.103, H16.109, H16.111, H16.112, H16.113, H16.119, H16.121, H16.122, H16.123, H16.129, H16.131, H16.132, H16.133, H16.139, H16.141, H16.142, H16.143, H16.149, H16.201, H16.202, H16.203, H16.209, H16.211, H16.212, H16.213, H16.219, H16.221, H16.222, H16.223, H16.229, H16.231, H16.232, H16.233, H16.239, H16.241, H16.242, H16.243, H16.249, H16.251, H16.252, H16.253, H16.259, H16.261, H16.262, H16.263, H16.269, H16.291, H16.292, H16.293, H16.299, H16.301, H16.302, H16.303, H16.309, H16.311, H16.312, H16.313, H16.319, H16.321, H16.322, H16.323, H16.329, H16.331, H16.332, H16.333, H16.339, H16.391, H16.392, H16.393, H16.399, H16.401, H16.402, H16.403, H16.409, H16.411, H16.412, H16.413, H16.419, H16.421, H16.422, H16.423, H16.429, H16.431, H16.432, H16.433, H16.439, H16.441, H16.442, H16.443, H16.449, H16.8, H16.9
	Updated References section.
05-20-2022	Updated Description Section
	Updated Rationale Section

	Updated Coding Section
	▪ Removed coding bullets
	    o There is a specific CPT code for computer-assisted corneal topography: 92025
	    o Non-computer-assisted corneal topography should be considered inclusive to evaluation and management services.
	▪ Converted ICD-10 Codes to ranges

	Update References Section
04-25-2023	Updated Description Section
	Updated Rationale Section
	Updated Coding Section ▪ Removed ICD-10 codes
	Updated References Section
04-23-2024	Updated Description Section
	Updated Rationale Section
	Updated References Section
08-12-2025	Medical policy reviewed with no changes made

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2. Blue Cross and Blue Shield of Kansas Ophthalmology consultant (#604), March 2, 2010.
3. Blue Cross and Blue Shield of Kansas Ophthalmology consultant (#604), March 16, 2010.
4. MCOP board certified Ophthalmology and Fellowship trained Vitreo-Retinal surgeon consultant, MCOP ID 2065-7017, Reviewer ID 2656, March 29, 2010.
5. Blue Cross and Blue Shield of Kansas Ophthalmology Liaison Committee, May 2010; May 2011; May 2012.
6. Blue Cross and Blue Shield of Kansas Optometry Liaison Committee, June 2010; June 2011; May 2012; May 2013; June 2015.
7. Blue Cross and Blue Shield of Kansas Ophthalmology Liaison Committee CB, August 2010.