

Policy Number	SUR713.023
Policy Effective Date	01/01/2026

Phototherapeutic Keratectomy

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Disclaimer

Carefully check state regulations and/or the member contract.

Each benefit plan, summary plan description or contract defines which services are covered, which services are excluded, and which services are subject to dollar caps or other limitations, conditions or exclusions. Members and their providers have the responsibility for consulting the member's benefit plan, summary plan description or contract to determine if there are any exclusions or other benefit limitations applicable to this service or supply. **If there is a discrepancy between a Medical Policy and a member's benefit plan, summary plan description or contract, the benefit plan, summary plan description or contract will govern.**

Coverage

CONTRACT: Each benefit plan, summary plan description or contract defines which services are covered, which services are excluded, and which services are subject to dollar caps or other limitations, conditions or exclusions. Members and their providers have the responsibility for consulting the member's benefit plan, summary plan description or contract to determine if there are any exclusions or other benefit limitations applicable to this service or supply. If there is a discrepancy between a Medical Policy and a member's benefit plan, summary plan description or contract, the benefit plan, summary plan description or contract will govern.

Phototherapeutic keratectomy (PTK) **may be considered medically necessary** for ANY of the following indications:

- Superficial corneal dystrophy (including granular, lattice and Reis-Bückler's dystrophy); OR
- Epithelial membrane dystrophy; OR
- Irregular corneal surfaces due to Salzmann's nodular degeneration or keratoconus nodule; OR
- Corneal scars and opacities, including post-traumatic, post-infectious, postsurgical and secondary to pathology; OR

- Recurrent corneal erosions when more conservative measures (e.g., lubricants, hypertonic saline, patching, bandage contact lenses, gentle debridement of severely aberrant epithelium) have failed to halt the erosions.

PTK is considered experimental, investigational, and/or unproven for all other indications.

Policy Guidelines

NOTE: Phototherapeutic keratectomy (PTK) should not be confused with photorefractive keratectomy (PRK). Although technically the same procedure, PTK is used for the correction of particular corneal diseases, whereas PRK involves use of the excimer laser for correction of refractive errors (e.g., myopia, hyperopia, astigmatism, and presbyopia) in persons with otherwise non-diseased corneas.

Description

Phototherapeutic keratectomy (PTK) involves the use of the excimer laser to treat visual impairment or irritative symptoms relating to diseases of the anterior cornea by sequentially ablating uniformly thin layers of corneal tissue. PTK may be performed in the office setting with the use of local anesthetic eye drops prior to the removal of the corneal epithelium. A laser is then used to uniformly ablate thin layers of corneal tissue. Essentially, PTK functions by removing anterior stromal opacities or eliminating elevated corneal lesions while maintaining a smooth corneal surface. The objective of PTK is to create a smooth stromal surface to improve postoperative corneal clarity, decrease existing scarring and to facilitate epithelial adhesion. (1) Potential complications of PTK include refractive errors, most commonly hyperopia, corneal scarring, glare and halos. PTK must be distinguished from photorefractive keratectomy (PRK), which involves the use of the excimer laser to correct refractive errors of the eye (i.e., myopia, astigmatism, hyperopia, and presbyopia). (2)

When PTK is used to remove only the epithelial surface of the cornea, the alternative technology is mechanical superficial keratectomy (i.e., corneal scraping). When PTK is used to remove deeper layers of the cornea, (i.e., extending into Bowman's layer), competing technologies include lamellar keratoplasty. In addition, candidates for PTK should have exhausted medical approaches. Recurrent corneal erosions can be treated conservatively with lubricants, patching, bandage contact lenses, or anterior stromal punctures, while keratoconus can be treated with rigid contact lenses to correct the astigmatism.

Regulatory Status

The United States (U.S.) Food and Drug Administration (FDA) approval for the excimer laser identifies the following ophthalmologic therapeutic indications for use (3):

- Superficial corneal dystrophies (including granular, lattice, and Reis-Buckler's dystrophies);
- Epithelial basement membrane dystrophy;

- Irregular corneal surfaces (secondary to Salzmann's degeneration, keratoconus nodules, or other irregular surfaces);
- Corneal scars and opacities (i.e., post-traumatic, post-infectious, and secondary to pathology).

NOTE: Although not included in the initial Food and Drug Administration (FDA) labeling, phototherapeutic keratectomy (PTK) is utilized as a treatment option for recurrent corneal erosions in patients who have not responded to conservative therapy with patching, cycloplegia, topical antibiotics, and lubricants.

Rationale

This policy is based on the FDA approval of the excimer laser used for phototherapeutic keratectomy (PTK) and relevant professional society guidelines.

Professional Guidelines and Position Statements

National Institute for Health and Clinical Excellence (NICE)

In 2010, NICE issued guidance related to the use of laser PTK for corneal surface irregularities.

(1) NICE states that symptomatic corneal surface irregularities may result from a range of pathologies including band keratopathy, corneal scarring, nodular degeneration, epithelial basement membrane dystrophy or other dystrophies. Standard treatment includes lubrication of the ocular surface, bandage contact lens placement or topical medication. Surgical procedures may include anterior stromal puncture, mechanical debridement, lamellar keratoplasty or resurfacing keratectomy using a diamond burr. Corneal transplantation may be considered in eyes refractory to treatment. NICE states evidence on the safety and efficacy of phototherapeutic laser keratectomy for corneal surface irregularities is adequate to support the use of this procedure provided that normal arrangements are in place for clinical governance, consent and audit.

American Academy of Ophthalmology (AAO)

In 2013, the AAO (2) published a paper on the use and principles of the excimer laser in PTK which states "surface irregularities can severely disrupt the optical performance of the anterior cornea. Patients may complain of diminished visual acuity and optical aberrations such as monocular diplopia, glare, or halos. Common causes of surface irregularities include:

- Anterior corneal dystrophies, including basement membrane dystrophy, Reis-Bucklers' dystrophy, Schnyder crystalline corneal dystrophy, and anterior granular and lattice stromal dystrophies;
- Elevated corneal scars, including apical scars associated with keratoconus; and
- Degenerations, such as Salzmann nodule formation and band keratopathy. Irregular astigmatism also can occur after refractive surgery.

Many sources of surface irregularity are also associated with corneal opacities. Smoothing the optical surface alone sometimes significantly improves the patient's visual function without the

hyperopic shift and potential scarring that can be associated with the deeper ablations often necessary for removal of opacities.”

In 2024, the AAO (4) updated their summary benchmarks related to external disease of the cornea. Overall, the therapeutic goal is to determine and manage the cause for the opacity and enhance the individual’s quality of life by improving visual acuity and comfort. In most cases treatment starts with medical management. When medical management is insufficient then surgery may be considered and is dependent on the tissue layer(s) involved. The AAO offers the following surgical management guidance:

- Lamellar keratoplasty may be indicated for removal of deeper deposits;
- Penetrating keratoplasty may be indicated for removal of even deeper multilevel opacities;
- Ethylenediaminetetraacetic acid (EDTA) may be used to remove calcific band keratopathy.

Coding

Procedure codes on Medical Policy documents are included **only** as a general reference tool for each policy. **They may not be all-inclusive.**

The presence or absence of procedure, service, supply, or device codes in a Medical Policy document has no relevance for determination of benefit coverage for members or reimbursement for providers. **Only the written coverage position in a Medical Policy should be used for such determinations.**

Benefit coverage determinations based on written Medical Policy coverage positions must include review of the member’s benefit contract or Summary Plan Description (SPD) for defined coverage vs. non-coverage, benefit exclusions, and benefit limitations such as dollar or duration caps.

CPT Codes	65400, 65435, 65436, 66999
HCPCS Codes	S0812

*Current Procedural Terminology (CPT®) ©2024 American Medical Association: Chicago, IL.

References

1. National Institute for Health and Clinical Excellence (NICE). Phototherapeutic laser keratectomy for corneal surface irregularities. Interventional procedure guidance 358 (Sep 22, 2010). Available at <<https://www.nice.org.uk>> (accessed December 12, 2025).
2. Garg S, McColgin A, Steinert R, et al. American Academy of Ophthalmology. Phototherapeutic Keratectomy (Nov 12, 2013). Available at <<https://www.aao.org>> (accessed December 12, 2025).
3. FDA – Premarket Approval of Summit Technology Inc ExciMed UV200LA Excimer Laser System SVS Apex Excimer Laser System. Food and Drug Administration – Center for Devices and Radiologic Health (1995). Available at <<https://www.govinfo.gov>> (accessed December 12, 2025).
4. American Academy of Ophthalmology (AAO). Cornea/external disease summary benchmarks. 2024. Available at <<https://www.aao.org>> (accessed December 12, 2025).

Centers for Medicare and Medicaid Services (CMS)

The information contained in this section is for informational purposes only. HCSC makes no representation as to the accuracy of this information. It is not to be used for claims adjudication for HCSC Plans.

The Centers for Medicare and Medicaid Services (CMS) does not have a national Medicare coverage position. Coverage may be subject to local carrier discretion.

A national coverage position for Medicare may have been developed since this medical policy document was written. See Medicare's National Coverage at <<https://www.cms.hhs.gov>>.

Policy History/Revision	
Date	Description of Change
01/01/2026	Document updated. Coverage unchanged. No new references added; others updated.
06/15/2024	Document updated with literature review. Coverage unchanged. Added reference 8; others updated.
07/15/2023	Reviewed. No changes.
12/01/2022	Document updated with literature review. Coverage unchanged. Updated reference 8.
05/15/2021	Reviewed. No changes.
04/15/2020	Document updated with literature review. Coverage unchanged. Added references 7, 8.
07/15/2018	Reviewed. No changes.
09/15/2017	Document updated with literature review. Coverage unchanged.
09/15/2016	Reviewed. No changes.
03/01/2015	Policy updated with literature review. The following indications were added to the coverage section as may be considered medically necessary: 1) Superficial corneal dystrophy (including granular, lattice and Reis-Bückler's dystrophy) 2) Corneal scars and opacities, including post-traumatic, postinfectious, postsurgical and secondary to pathology; 3.) Recurrent corneal erosions when more conservative measures (e.g., lubricants, hypertonic saline, patching, bandage contact lenses, gentle debridement of severely aberrant epithelium) have failed to halt the erosions. The following note was added to coverage: PTK should not be confused with PRK. Although technically the same procedure, PTK is used for the correction of particular corneal diseases, whereas PRK involves use of the excimer laser for correction of refractive errors (e.g., myopia, hyperopia, astigmatism, and presbyopia) in persons with otherwise non-diseased corneas. All sections of this policy significantly revised.
09/15/2011	Policy updated with literature review. Coverage unchanged. This policy is no longer scheduled for routine literature review and update.

08/15/2009	Policy reviewed with literature search, no change in coverage. This policy is no longer scheduled for routine literature review and update.
09/01/2005	Revised/Updated Entire Document.
02/01/2002	New medical document