

## Clinical Policy: Corneal Pachymetry

Reference Number: OC.UM.CP.0016

Last Review Date: 11/2022

[Coding Implications](#)

[Revision Log](#)

See [Important Reminder](#) at the end of this policy for important regulatory and legal information.

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### Description

Corneal pachymetry is the ultrasonic measurement of the thickness of the cornea. This policy describes the medical necessity requirements for corneal pachymetry.

### Policy/Criteria

- I. It is the policy of health plans affiliated with Envolve Vision, Inc.<sup>®</sup> (Envolve) that corneal pachymetry is **medically necessary** for the following indications:
  - A. Disorders of endothelial cell function;
  - B. Disorders of corneal thickness;
  - C. Corneal transplantation;
  - D. Ocular hypertension (OHT), glaucoma suspect, and glaucoma diagnosis (once per lifetime);
  - E. Evaluation of the amount of endothelial trauma sustained during surgery;
  - F. Assessment of the health of the cornea pre-operatively in Fuch's dystrophy;
  - G. Post ocular trauma and for the assessment of corneal thickness.
  
- II. It is the policy of health plans affiliated with Envolve that corneal pachymetry is **not medically necessary** for purposes associated with elective refractive surgery.

### Background

Measurement of corneal thickness in individuals presenting with increased intraocular pressure assists in determining if there is a risk of glaucoma or if the individuals increased eye pressure is the result of abnormal corneal thickness. The Ocular Hypertension Treatment Study (OHTS) has identified central corneal thickness as a "...powerful predictor for the development of "primary open angle glaucoma. The OHTS has two significant implications for clinicians by identifying both high and low risk groups for the development of glaucomatous optic neuropathy and visual field loss. For patients with relatively thinner corneas, defined by the OHTS as less than 555um, Goldman applanation pressures can be falsely low relative to the threat of pressure related optic neuropathy. These patients may then develop otherwise preventable visual loss since intra-ocular pressures in the normal range artifacticiously mask the genuine risk for progressive glaucomatous optic neuropathy. African-Americans were found by the OHTS to have relatively thinner corneas and thus to be at an especially increased risk for under-treatment. Conversely, patients with relatively thicker corneas, defined by the OHTS as greater than 588um, are at relatively lower risk of developing visual loss at comparable levels of intra-ocular pressure. In this clinical scenario, physicians may then properly decide to follow patients without therapy and with less intensive surveillance.

Measurement of corneal thickness may assist in clinical decision-making and/or management of corneal disease including pre- and post-operatively for corneal transplantation.

**CLINICAL POLICY**  
**Corneal Pachymetry**

**Coding Implications**

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CPT® Codes	Description
76514	Ophthalmic ultrasound, diagnostic; corneal pachymetry, unilateral or bilateral (determination of corneal thickness)

**ICD-10-CM Diagnosis Codes that Support Coverage Criteria**

ICD-10-CM Code	Description
H18.11	Bullous keratopathy, right eye
H18.12	Bullous keratopathy, left eye
H18.13	Bullous keratopathy, bilateral
H18.211	Corneal edema secondary to contact lens, right eye
H18.212	Corneal edema secondary to contact lens, left eye
H18.213	Corneal edema secondary to contact lens, bilateral
H18.221	Idiopathic corneal edema, right eye
H18.222	Idiopathic corneal edema, left eye
H18.223	Idiopathic corneal edema, bilateral
H18.231	Secondary corneal edema, right eye
H18.232	Secondary corneal edema, left eye
H18.233	Secondary corneal edema, bilateral
H18.311	Folds and rupture in Bowman's membrane, right eye
H18.312	Folds and rupture in Bowman's membrane, left eye
H18.313	Folds and rupture in Bowman's membrane, bilateral
H18.321	Folds in Descemet's membrane, right eye
H18.322	Folds in Descemet's membrane, left eye
H18.323	Folds in Descemet's membrane, bilateral
H18.331	Rupture in Descemet's membrane, right eye
H18.332	Rupture in Descemet's membrane, left eye
H18.333	Rupture in Descemet's membrane, bilateral
H18.421	Band keratopathy, right eye
H18.422	Band keratopathy, left eye
H18.423	Band keratopathy, bilateral
H18.441	Keratomalacia, right eye
H18.442	Keratomalacia, left eye
H18.443	Keratomalacia, bilateral

**CLINICAL POLICY**  
**Corneal Pachymetry**

ICD-10-CM Code	Description
H18.451	Nodular corneal degeneration, right eye
H18.452	Nodular corneal degeneration, left eye
H18.453	Nodular corneal degeneration, bilateral
H18.461	Peripheral corneal degeneration, right eye
H18.462	Peripheral corneal degeneration, left eye
H18.463	Peripheral corneal degeneration, bilateral
H18.511	Endothelial corneal dystrophy, right eye
H18.512	Endothelial corneal dystrophy, left eye
H18.513	Endothelial corneal dystrophy, bilateral
H18.521	Epithelial (juvenile) corneal dystrophy, right eye
H18.522	Epithelial (juvenile) corneal dystrophy, left eye
H18.523	Epithelial (juvenile) corneal dystrophy, bilateral
H18.531	Granular corneal dystrophy, right eye
H18.532	Granular corneal dystrophy, left eye
H18.533	Granular corneal dystrophy, bilateral
H18.541	Lattice corneal dystrophy, right eye
H18.542	Lattice corneal dystrophy, left eye
H18.543	Lattice corneal dystrophy, bilateral
H18.551	Macular corneal dystrophy, right eye
H18.552	Macular corneal dystrophy, left eye
H18.553	Macular corneal dystrophy, bilateral
H18.611	Keratoconus, stable, right eye
H18.612	Keratoconus, stable, left eye
H18.613	Keratoconus, stable, bilateral
H18.621	Keratoconus, unstable, right eye
H18.622	Keratoconus, unstable, left eye
H18.623	Keratoconus, unstable, bilateral
H21.551	Recession of chamber angle, right eye
H21.552	Recession of chamber angle, left eye
H21.553	Recession of chamber angle, bilateral
H40.011	Open angle with borderline findings, low risk, right eye
H40.012	Open angle with borderline findings, low risk, left eye
H40.013	Open angle with borderline findings, low risk, bilateral
H40.021	Open angle with borderline findings, high risk, right eye
H40.022	Open angle with borderline findings, high risk, left eye
H40.023	Open angle with borderline findings, high risk, bilateral
H40.031	Anatomical narrow angle, right eye
H40.032	Anatomical narrow angle, left eye
H40.033	Anatomical narrow angle, bilateral
H40.041	Steroid responder, right eye
H40.042	Steroid responder, left eye
H40.043	Steroid responder, bilateral
H40.051	Ocular hypertension, right eye

**CLINICAL POLICY**  
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ICD-10-CM Code	Description
H40.052	Ocular hypertension, left eye
H40.053	Ocular hypertension, bilateral
H40.061	Primary angle closure without glaucoma damage, right eye
H40.062	Primary angle closure without glaucoma damage, left eye
H40.063	Primary angle closure without glaucoma damage, bilateral
H40.1111	Primary open-angle glaucoma, right eye, mild stage
H40.1112	Primary open-angle glaucoma, right eye, moderate stage
H40.1113	Primary open-angle glaucoma, right eye, severe stage
H40.1121	Primary open-angle glaucoma, left eye, mild stage
H40.1122	Primary open-angle glaucoma, left eye, moderate stage
H40.1123	Primary open-angle glaucoma, left eye, severe stage
H40.1131	Primary open-angle glaucoma, bilateral, mild stage
H40.1132	Primary open-angle glaucoma, bilateral, moderate stage
H40.1133	Primary open-angle glaucoma, bilateral, severe stage
H40.1211	Low-tension glaucoma, right eye, mild stage
H40.1212	Low-tension glaucoma, right eye, moderate stage
H40.1213	Low-tension glaucoma, right eye, severe stage
H40.1221	Low-tension glaucoma, left eye, mild stage
H40.1222	Low-tension glaucoma, left eye, moderate stage
H40.1223	Low-tension glaucoma, left eye, severe stage
H40.1231	Low-tension glaucoma, bilateral, mild stage
H40.1232	Low-tension glaucoma, bilateral, moderate stage
H40.1233	Low-tension glaucoma, bilateral, severe stage
H40.1311	Pigmentary glaucoma, right eye, mild stage
H40.1312	Pigmentary glaucoma, right eye, moderate stage
H40.1313	Pigmentary glaucoma, right eye, severe stage
H40.1321	Pigmentary glaucoma, left eye, mild stage
H40.1322	Pigmentary glaucoma, left eye, moderate stage
H40.1323	Pigmentary glaucoma, left eye, severe stage
H40.1331	Pigmentary glaucoma, bilateral, mild stage
H40.1332	Pigmentary glaucoma, bilateral, moderate stage
H40.1333	Pigmentary glaucoma, bilateral, severe stage
H40.1411	Capsular glaucoma with pseudoexfoliation of lens, right eye, mild stage
H40.1412	Capsular glaucoma with pseudoexfoliation of lens, right eye, moderate stage
H40.1413	Capsular glaucoma with pseudoexfoliation of lens, right eye, severe stage
H40.1421	Capsular glaucoma with pseudoexfoliation of lens, left eye, mild stage
H40.1422	Capsular glaucoma with pseudoexfoliation of lens, left eye, moderate stage
H40.1423	Capsular glaucoma with pseudoexfoliation of lens, left eye, severe stage
H40.1431	Capsular glaucoma with pseudoexfoliation of lens, bilateral, mild stage
H40.1432	Capsular glaucoma with pseudoexfoliation of lens, bilateral, moderate stage
H40.1433	Capsular glaucoma with pseudoexfoliation of lens, bilateral, severe stage
H40.151	Residual stage of open-angle glaucoma, right eye
H40.152	Residual stage of open-angle glaucoma, left eye

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ICD-10-CM Code	Description
H40.153	Residual stage of open-angle glaucoma, bilateral
H40.211	Acute angle-closure glaucoma, right eye
H40.212	Acute angle-closure glaucoma, left eye
H40.213	Acute angle-closure glaucoma, bilateral
H40.2211	Chronic angle-closure glaucoma, right eye, mild stage
H40.2212	Chronic angle-closure glaucoma, right eye, moderate stage
H40.2213	Chronic angle-closure glaucoma, right eye, severe stage
H40.2221	Chronic angle-closure glaucoma, left eye, mild stage
H40.2222	Chronic angle-closure glaucoma, left eye, moderate stage
H40.2223	Chronic angle-closure glaucoma, left eye, severe stage
H40.2231	Chronic angle-closure glaucoma, bilateral, mild stage
H40.2232	Chronic angle-closure glaucoma, bilateral, moderate stage
H40.2233	Chronic angle-closure glaucoma, bilateral, severe stage
H40.231	Intermittent angle-closure glaucoma, right eye
H40.232	Intermittent angle-closure glaucoma, left eye
H40.233	Intermittent angle-closure glaucoma, bilateral
H40.241	Residual stage of angle-closure glaucoma, right eye
H40.242	Residual stage of angle-closure glaucoma, left eye
H40.243	Residual stage of angle-closure glaucoma, bilateral
H40.31X1	Glaucoma secondary to eye trauma, right eye, mild stage
H40.31X2	Glaucoma secondary to eye trauma, right eye, moderate stage
H40.31X3	Glaucoma secondary to eye trauma, right eye, severe stage
H40.32X1	Glaucoma secondary to eye trauma, left eye, mild stage
H40.32X2	Glaucoma secondary to eye trauma, left eye, moderate stage
H40.32X3	Glaucoma secondary to eye trauma, left eye, severe stage
H40.33X1	Glaucoma secondary to eye trauma, bilateral, mild stage
H40.33X2	Glaucoma secondary to eye trauma, bilateral, moderate stage
H40.33X3	Glaucoma secondary to eye trauma, bilateral, severe stage
H40.41X1	Glaucoma secondary to eye inflammation, right eye, mild stage
H40.41X2	Glaucoma secondary to eye inflammation, right eye, moderate stage
H40.41X3	Glaucoma secondary to eye inflammation, right eye, severe stage
H40.42X1	Glaucoma secondary to eye inflammation, left eye, mild stage
H40.42X2	Glaucoma secondary to eye inflammation, left eye, moderate stage
H40.42X3	Glaucoma secondary to eye inflammation, left eye, severe stage
H40.43X1	Glaucoma secondary to eye inflammation, bilateral, mild stage
H40.43X2	Glaucoma secondary to eye inflammation, bilateral, moderate stage
H40.43X3	Glaucoma secondary to eye inflammation, bilateral, severe stage
H40.51X1	Glaucoma secondary to other eye disorders, right eye, mild stage
H40.51X2	Glaucoma secondary to other eye disorders, right eye, moderate stage
H40.51X3	Glaucoma secondary to other eye disorders, right eye, severe stage
H40.52X1	Glaucoma secondary to other eye disorders, left eye, mild stage
H40.52X2	Glaucoma secondary to other eye disorders, left eye, moderate stage
H40.52X3	Glaucoma secondary to other eye disorders, left eye, severe stage

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ICD-10-CM Code	Description
H40.53X1	Glaucoma secondary to other eye disorders, bilateral, mild stage
H40.53X2	Glaucoma secondary to other eye disorders, bilateral, moderate stage
H40.53X3	Glaucoma secondary to other eye disorders, bilateral, severe stage
H40.61X1	Glaucoma secondary to drugs, right eye, mild stage
H40.61X2	Glaucoma secondary to drugs, right eye, moderate stage
H40.61X3	Glaucoma secondary to drugs, right eye, severe stage
H40.62X1	Glaucoma secondary to drugs, left eye, mild stage
H40.62X2	Glaucoma secondary to drugs, left eye, moderate stage
H40.62X3	Glaucoma secondary to drugs, left eye, severe stage
H40.63X1	Glaucoma secondary to drugs, bilateral, mild stage
H40.63X2	Glaucoma secondary to drugs, bilateral, moderate stage
H40.63X3	Glaucoma secondary to drugs, bilateral, severe stage
H40.811	Glaucoma with increased episcleral venous pressure, right eye
H40.812	Glaucoma with increased episcleral venous pressure, left eye
H40.813	Glaucoma with increased episcleral venous pressure, bilateral
H40.821	Hypersecretion glaucoma, right eye
H40.822	Hypersecretion glaucoma, left eye
H40.823	Hypersecretion glaucoma, bilateral
H40.831	Aqueous misdirection, right eye
H40.832	Aqueous misdirection, left eye
H40.833	Aqueous misdirection, bilateral
Q15.0	Congenital glaucoma
T85.318A	Breakdown (mechanical) of other ocular prosthetic devices, implants and grafts, initial encounter
T85.318D	Breakdown (mechanical) of other ocular prosthetic devices, implants and grafts, subsequent encounter
T85.318S	Breakdown (mechanical) of other ocular prosthetic devices, implants and grafts, sequela
T85.328A	Displacement of other ocular prosthetic devices, implants and grafts, initial encounter
T85.328D	Displacement of other ocular prosthetic devices, implants and grafts, subsequent encounter
T85.328S	Displacement of other ocular prosthetic devices, implants and grafts, sequela
T86.8401	Corneal transplant rejection, right eye
T86.8402	Corneal transplant rejection, left eye
T86.8403	Corneal transplant rejection, bilateral
T86.8411	Corneal transplant failure, right eye
T86.8412	Corneal transplant failure, left eye
T86.8413	Corneal transplant failure, bilateral
T86.8421	Corneal transplant infection, right eye
T86.8422	Corneal transplant infection, left eye
T86.8423	Corneal transplant infection, bilateral

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ICD-10-CM Code	Description
T86.8481	Other complications of corneal transplant, right eye
T86.8482	Other complications of corneal transplant, left eye
T86.8483	Other complications of corneal transplant, bilateral
T86.8491	Unspecified complication of corneal transplant, right eye
T86.8492	Unspecified complication of corneal transplant, left eye
T86.8493	Unspecified complication of corneal transplant, bilateral
Z94.7	Corneal transplant status

Reviews, Revisions, and Approvals	Date	Approval Date
Annual Review	12/2019	12/2019
Converted to new template	04/2020	06/2020
Annual Review; Modified criteria to include non-medically necessary indication for elective refractive surgery; Added applicable CPT® codes; Updated ICD-10 diagnoses to include newly established 2021 codes; Updated references	12/2020	12/2020
Annual Review; Updated medical indications to include corneal dystrophies, edema and degeneration; Updated References	12/2021	12/2021
Annual Review	11/2022	11/2022

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**Important Reminder**

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. The Health Plan makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved. “Health Plan” means a health plan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Envolve Vision, Inc., or any of such health plan’s affiliates, as applicable.

The purpose of this clinical policy is to provide a guide to medical necessity, which is a component of the guidelines used to assist in making coverage decisions and administering benefits. It does not constitute a contract or guarantee regarding payment or results. Coverage decisions and the administration of benefits are subject to all terms, conditions, exclusions and limitations of the coverage documents (e.g., evidence of coverage, certificate of coverage, policy, contract of insurance, etc.), as well as to state and federal requirements and applicable Health Plan-level administrative policies and procedures.

This clinical policy is effective as of the date determined by the Health Plan. The date of posting may not be the effective date of this clinical policy. This clinical policy may be subject to applicable legal and regulatory requirements relating to provider notification. If there is a discrepancy between the effective date of this clinical policy and any applicable legal or regulatory requirement, the requirements of law and regulation shall govern. The Health Plan retains the right to change, amend or withdraw this clinical policy, and additional clinical policies may be developed and adopted as needed, at any time.

This clinical policy does not constitute medical advice, medical treatment or medical care. It is not intended to dictate to providers how to practice medicine. Providers are expected to exercise professional medical judgment in providing the most appropriate care, and are solely responsible for the medical advice and treatment of members. This clinical policy is not intended to recommend treatment for members. Members should consult with their treating physician in connection with diagnosis and treatment decisions.



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**Note: For Medicare members**, to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs, LCDs, and Medicare Coverage Articles should be reviewed prior to applying the criteria set forth in this clinical policy. Refer to the CMS website at <http://www.cms.gov> for additional information.

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