Title

Ophthalmologic Techniques to Evaluate the Retinal Nerve Fiber Layer

Description

Glaucoma, the leading cause of blindness for Americans over the age of 40, is a disease characterized by degeneration of portions of the optic nerve. When a significant number of nerve fibers are damaged, blind spots develop in the field of vision. Once nerve damage and visual loss occur, it is permanent. Most people don't notice these blind areas until much of the optic nerve damage has already occurred. Glaucoma is usually treated with medications. Since blindness results if the entire nerve is destroyed, it is important that eye care professionals be able to determine who is at risk for developing glaucoma and create an effective medical treatment plan to control the progression of nerve damage.

Traditionally it was thought that the degeneration of the optic nerve was caused by increased pressure within the eye (known as increased intraocular pressure, or increased IOP). However, glaucoma can occur and progress in some people with normal IOP, while some people with elevated IOP do not develop glaucoma. One indication of the health of the optic nerve is the thickness of the nerve fiber layer of the retina (retinal nerve fiber layer, or RNFL). The thickness of the RNFL can be evaluated by viewing it directly, using either an ophthalmoscope or a slit lamp. However, this method is subjective and poorly reproducible. Three measurement techniques have been developed that more accurately measure the thickness of the retinal fiber layer.

Confocal Scanning Laser Ophthalmoscopy uses a specially designed laser ophthalmoscope, such as the Heidelberg Retinal Tomograph, to create a high-contrast image of the retina which can be used to estimate the thickness of the retinal nerve fiber layer.

Scanning Laser Polarimetry takes advantage of the fact that the retinal nerve fiber layer acts as a polarizer of light. The degree of polarization, which can be measured with a detector, is proportional to the thickness of the RNFL.

NOTE: Confocal Scanning Laser Ophthalmoscopy (also known as Heidelberg Retinal Tomography) and Scanning Laser Polarimetry are two methods of Scanning Computerized Ophthalmic Diagnostic Imaging, or SCODI.

Optical Coherence Tomography (OCT), also known as posterior eye segment optical imaging, is a technique that uses light waves in a similar manner to how ultrasound uses sound waves to visualize biological structures. By measuring how light waves from a laser are reflected back to the source, a visual image of the retina is created, from which the thickness of the RNFL can be measured.

Confocal scanning laser ophthalmoscopy has been the most commonly used technique for RNFL thickness measurement. OCT is being used by ophthalmologists with increasing frequency.

When services are covered for commercial products and for Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx

We cover **retinal nerve fiber analysis (RNFA) also known as scanning computerized ophthalmic diagnostic imaging (SCODI), including posterior segment optical coherence tomography**, for the following indications: [1]

- Diagnose early glaucoma and monitor glaucoma treatment
- Differentiate causes of other optic nerve disorders when a diagnosis is in doubt.
- Diagnose and manage the patient's condition when visual field results are insufficient; or when reliable visual field testing cannot be performed, due to visual, physical, mental, or age constraints.
- Differentiate when a discrepancy exists between the clinical appearance of the optic nerve and the visual fields
- Detect further loss of optic nerve or retinal nerve fiber layer changes in the presence of advanced optic nerve damage and advanced visual field loss
- Diagnose and manage medically and surgically retinal and neuro-ophthalmic diseases which involve changes in the optic nerve, subretinal and intraretinal changes, vitreo-retinal relationships and changes in the nerve fiber layer.
- Follow glaucoma suspects

Note: For diagnoses that are considered medically necessary for commercial products and for Medicare HMO Blue, Medicare PPO Blue and Blue Medicare PFFS PlusRx products, see footnote 2.

Note: Coverage of OCT for Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx products, effective 8/08. Coverage of OCT for commercial products (excluding Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx), **effective 11/08**.

When services are not covered for commercial products or for Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx

We **do not cover retinal nerve fiber analysis/SCODI, including optical coherence tomography**, for all products for conditions not listed above (including but not limited to screening). [1]

Individual consideration

All our medical policies are written for the majority of people with a given condition. Each policy is based on medical science. For many of our medical policies, each individual's unique clinical circumstances may be considered in light of current scientific literature. For consideration of an individual patient, physicians may send relevant clinical information to:

For services already billed	Prior to performance of service
Blue Cross Blue Shield of Massachusetts Provider Appeals P. O. Box 986065 Boston, MA 02298	Blue Cross Blue Shield of Massachusetts Case Creation/Medical Policy One Enterprise Drive Quincy, MA 02171 Tel: 1-800-327-6716 Fax: 1-888-641-5330

Authorization Information

For Managed Care members:

- No authorization is required for this service; *see **Managed Care Guidelines** for additional requirements.*

For Indemnity and PPO members:

- No authorization is required for this service; *see **Indemnity and PPO Guidelines** for additional requirements.*

Managed Care Guidelines

All authorization requirements are determined by the individual's subscriber certificate, explanation of coverage, or summary plan description, however;

- **For Medicare HMO Blue members:** The service must meet the criteria for coverage noted in this policy, be medically necessary, prescribed by a plan physician and provided by a network provider.
- **For Medicare HMO Blue members:** Referrals are required for all visits to a specialist.
- For all other Managed Care plans, any specialist visit requires a referral, except for visits performed by OB/GYN specialists.
- Authorization is required for an inpatient admission.

Indemnity and PPO Guidelines

All authorization requirements are determined by the individual's subscriber certificate, explanation of coverage, or summary plan description, however;

- Authorization is required for an inpatient admission.
- Authorizations are not required for most outpatient services as determined by the individual's subscriber certificate.
- Referrals to a specialist are not required.

Coding information

Procedure codes are from current CPT, HCPCS Level II, Revenue Code, and/or ICD-9-CM manuals, as recommended by the American Medical Association, Centers for Medicare and Medicaid Services and American Hospital Associations. Blue Cross Blue Shield Association national codes may be developed when appropriate.

The following codes are included below for informational purposes. Inclusion or exclusion of a code 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 as it applies to an individual member.

CPT code:

- **92135:** scanning computerized ophthalmic diagnostic (e.g., scanning laser) with interpretation and report, unilateral

Note: The above code will deny, leaving no patient balance if submitted with a diagnosis other than the covered listed conditions. See footnote 2 for medically necessary diagnoses for commercial products and for Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx products.

Note: Coverage for Optical Coherence Tomography for Medicare Advantage products, ***effective 8/1/08.*** Coverage for Optical Coherence Tomography for commercial products, ***effective 11/1/08.***

Other information

RNFA: This procedure is payable for the indications noted above when performed by either an ophthalmologist or an optometrist. The effective date for optometrists is 7/1/06.

Documentation Requirements for our Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx products for posterior segment optical imaging

- Indications for SCODI must be described in the medical record.
- The primary diagnosis for SCODI, listed on the claim form, must support the medical necessity of the testing.
- The diagnosis must be present for the procedure to be paid.

- Medical records need not be submitted with the claim; however, the record must be furnished upon request or if services exceed the utilization guideline.
- Complete ophthalmology examination describing the indications supporting medical necessity must be available in the patient's medical record. This description should include any evidence of the following for patients who are/have:

Glaucoma Suspect:
- Anomalous appearing optic nerve
- Intraocular pressure > 22mmHg as measured by applanation
- Symmetric or vertically elongated cup enlargement, neural rim intact, cup to disc ratio > 0.4
- Focal optic disk notch
- Optic disk hemorrhage or history of optic disk hemorrhage

Glaucoma- No Glaucomatous Damage:
- Medical or surgical therapy has been initiated to prevent visual field loss

Glaucoma- Mild Glaucomatous Damage:
- Nasal step or small paracentral or arcuate scotoma
- Mild constriction of visual field isopters

Glaucoma- Moderate glaucomatous damage:
- Enlarged optic cup with neural rim remaining but sloped or pale, cup to disc ratio > 0.5, but <0.9
- Definite focal notch with thinning of the neural rim
- Definite glaucomatous visual field defect, e.g., arcuate or paracentral scotoma, nasal step, pencil wedge, or constriction of isopters.

Glaucoma- Advanced glaucomatous damage:
- Severe generalized constriction of isopters (i.e., Goldmann 14e> 10 degrees of fixation)
- Absolute visual field defects within 10 degrees of fixation
- Severe generalized reduction of retinal sensitivity
- Loss of central visual acuity, with temporal island remaining
- Diffuse enlargement of optic nerve cup, with cup to disc ratio > 0.8
- Wipe-out of all or a portion of the neural retinal rim

Utilization guidelines for Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx products for posterior segment optical imaging

- In the management of a glaucoma patient, ***when SCODI is rendered more frequently that once in a 6 month period,*** the claim may be reviewed on a post-payment basis.
- In the management of a patient who is glaucoma suspect, ***when SCODI is rendered more frequently than once in a twelve month period,*** the claim may be reviewed on a post-payment basis.

Policy update history

Issued 1/02 to exclude coverage for retinal nerve fiber analysis for the diagnosis or management of glaucoma, effective date 6/01/02. Updated 11/02 to include coverage for retinal nerve fiber analysis for all plans, effective 1/01/03. Updated 01/03 to clarify medically necessary diagnoses under footnote 2 according to the 10/02 Medicare guidelines. Reviewed 2/04 MPG Psychiatry, Ophthalmology and Endocrinology, no changes in coverage were made. Reviewed 2/06 MPG- Psychiatry, Ophthalmology and Endocrinology, no changes in coverage were made. Reviewed 2/07 MPG- Psychiatry, Ophthalmology and Endocrinology, no changes in coverage were made. Updated 5/07 to reformat coding information section and remove deleted codes. Updated 11/07 to include that RNFA may be billed by optometrists effective 7/1/06; this is noted under Other Information. Updated 7/08 to include coverage of optical coherence tomography for our Medicare Advantage

Plan members only, effective 8/1/08. Updated 10/08 to add coverage of retinal nerve fiber analysis for our commercial members, mirroring Local Medicare LCD identified ICD-9 CM diagnoses, effective 11/08; included coverage of optical coherence tomography for our commercial members effective 11/08. New Medical Policy, posted 11/1/08. Reviewed 2/09 MPG – Psychiatry, Ophthalmology and Endocrinology, no changes in coverage were made. Updated 9/09 after review of Medicare LCD (L30266) Scanning Computerized Ophthalmic Diagnostic Imaging (SCODI) effective 10/5/09, added coverage of ICD-9 CM diagnoses 362.06 and 363.61 for posterior segment optical coherence tomography (OCT) for commercial and Medicare Advantage products, effective 10/5/09.

Footnotes

[1] While retinal nerve fiber analysis, including optical coherence tomography, in the diagnosis and evaluation of patients with glaucoma is still considered investigational by the Blue Cross Blue Shield Association's Technology Evaluation Center (BCBSA national policy 9.03.06), BCBSMA has decided to provide coverage of retinal nerve fiber analysis and optical coherence tomography for identified ICD-9 CM diagnoses based upon local expert opinion as well as Local Medicare LCD, for all products, ***effective 11/08.***

Coverage for optical coherence tomography for our Medicare Advantage Products, ***effective 8/08.***
Coverage for optical coherence tomography for our commercial products, ***effective 11/08.***

BCBSMA covered retinal nerve fiber analysis for our commercial products only, ***effective 12/02***, with identified ICD-9 CM diagnoses by local expert opinion.

BCBSMA covered RNFA for our Medicare HMO Blue, Medicare PPO Blue and Blue Medicare PFFS PlusRx products, in accordance with local Medicare LCD, ***issued 10/02***
Retinal nerve fiber analysis is covered in accordance with NHIC Local Medicare Coverage Determination (LCD, #L10804: http://www.cms.hhs.gov/mcd/viewlcd.asp?lcd_id=10804&lcd_version=43&show=all **This LCD was retired 10/5/09.**

NHIC Local Medicare Coverage Determination (LCD), #L30266, **effective 10/5/09**:
http://www.cms.hhs.gov/mcd/viewlcd.asp?lcd_id=30266&lcd_version=3&show=all

[2] **ICD-9 CM diagnoses that support medical necessity for all products (including Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx products) include:**

- 190.6 Choroidal melanoma
- 191.0-198.3 Brain neoplasms, malignant
- 224.6 Choroidal nevus
- 225.0-239.7 Brain neoplasms, benign
- 228.03 Retinal hemangioma
- 360.11 Sympathetic uveitis
- 360.21 Progressive high myopia
- 360.30-360.34 Hypotony

- 361.00-361.07 Retinal detachment
- 361.10 Retinoschisis
- 361.2 Serous retinal detachment
- 361.81 Traction retinal detachment
- 362.01 Background diabetic retinopathy
- 362.02 Proliferative diabetic retinopathy
- 362.06 Severe nonproliferative diabetic retinopathy
- 362.07 Diabetic macular edema
- 362.10-362.18 Retinal vascular changes
- 362.31-362.32 Retinal artery occlusion
- 362.35-362.37 Retinal vein occlusion
- 362.40-362.43 Separation of retinal layers
- 362.50-362.77 Degeneration of macula
- 362.81 Retinal hemorrhage
- 362.82 Retinal exudate
- 362.83 Retinal edema
- 362.85 Retinal nerve fiber bundle defects
- 363.00-363.08 Focal chorioretinitis
- 363.10-363.15 Disseminated chorioretinitis
- 363.20-363.35 Other chorioretinitis
- 363.43 Angioid streaks
- 363.61 Choroidal hemorrhage, unspecified
- 363.63 Choroidal rupture
- 363.70-363.72 choroidal detachment
- 364.22 Glaucomatocyclitic crises
- 364.53 Pigmentary Iris degeneration
- 364.73 Goniosynechiae
- 364.74 Pupillary membranes
- 364.77 Recession of chamber angle
- 365.00-365.04 Borderline glaucoma (glaucoma suspect)
- 365.10-365.15 Open-angle glaucoma
- 365.20-365.24 Primary angle-closure glaucoma
- 365.31-365.32 Corticosteroid-induced glaucoma
- 365.41-365.44 Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes
- 365.51-365.59 Glaucoma associated with disorders of the lens
- 365.60-365.65 Glaucoma associated with other ocular disorders
- 365.81-365.89 Other specified glaucoma
- 365.9 Unspecified glaucoma
- 368.40-368.45 Visual field defects
- 376.00-376.9 Disorders of the orbit
- 377.00-377.03 Papilledema
- 377.04 Foster-Kennedy syndrome
- 377.10 Optic atrophy
- 377.14-377.16 Glaucomatous atrophy
- 377.21 Drusen of the optic disc
- 377.22 Crater-like holes of the optic disc
- 377.23 Coloboma of the optic disc
- 377.24 Pseudopapilledema

- 377.41-377.49 Other disorders of the optic nerve
- 377.51-377.54 Disorders of the optic chiasm
- 377.61-377.63 Disorders of other visual pathways
- 377.9 Unspecified Disorder of optic nerve and visual pathways
- 379.11-379.19 Disorders of the sclera
- 379.21-379.29 Disorder of vitreous body
- 743.20-743.22 Buphthalmos
- 743.57-743.58 Optic nerve hypoplasia
- 743.59 Coloboma of choroid
- 854.00-854.09 intracranial injury
- 921.3 Contusion of eyeball