

Photocoagulation of Macular Drusen

Policy # 00096

Original Effective Date: 06/05/2002

Current Effective Date: 03/01/2026

Archived Date: 06/20/2012

Returned to Active Status: 02/20/2019

Applies to all products administered or underwritten by Blue Cross and Blue Shield of Louisiana and its subsidiary, HMO Louisiana, Inc. (collectively referred to as the "Company"), unless otherwise provided in the applicable contract. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically.

Investigational or experimental services are not covered. This includes any drug, device, procedure, or service provided under the investigational arm of a clinical trial or clinical study. These services are excluded from coverage under benefits.

Services Are Considered Investigational

Coverage is not available for investigational medical treatments or procedures, drugs, devices or biological products.

Based on review of available data, the Company considers destruction of macular drusen with laser therapy to be **investigational**.*

Background/Overview

Photocoagulation describes the use of focused laser energy to treat disease. Laser photocoagulation of macular drusen has been evaluated as a method of slowing progression to advanced age-related macular degeneration (AMD).

Age-related macular degeneration is a painless, insidious process. In its earliest stages, it is characterized by minimal visual impairment and the presence of large or "soft" drusen, i.e., subretinal accumulations of cellular debris adjacent to the basement membrane of the retinal pigment epithelium.

Large drusen appear as large, pale yellow or pale gray domed elevations and result in thickening of the space between the retinal pigment epithelium and its blood supply, the choriocapillaris. Clinical and epidemiologic studies have shown that the presence of large and/or numerous soft drusen increases the risk of the development of choroidal neovascularization (CNV) in eyes with AMD. For example, in patients with bilateral drusen, the 3-year risk of developing CNV is estimated to be 13%, rising to 18% for those over the age of 65 years. The emergence of CNV greatly increases the risk of subsequent irreversible loss of vision.

FDA or Other Governmental Regulatory Approval

U.S. Food and Drug Administration (FDA)

Two different kinds of low energy laser therapies, argon and infrared laser, have been investigated as techniques to eliminate drusen by photocoagulation in an effort to prevent the evolution to CNV,

Photocoagulation of Macular Drusen

Policy # 00096

Original Effective Date: 06/05/2002

Current Effective Date: 03/01/2026

Archived Date: 06/20/2012

Returned to Active Status: 02/20/2019

ultimately leading to improved preservation of vision. The lasers used are those that are widely used for standard photocoagulation of extrafoveal CNV. Therefore, the treatment of macular drusen represents an additional indication for an existing laser approved by the FDA.

Centers for Medicare and Medicaid Services (CMS)

There is no national coverage determination.

Rationale/Source

This medical policy was developed through consideration of peer-reviewed medical literature generally recognized by the relevant medical community, U.S. Food and Drug Administration approval status, nationally accepted standards of medical practice and accepted standards of medical practice in this community, technology evaluation centers, reference to regulations, other plan medical policies, and accredited national guidelines.

While studies have shown that laser therapy can induce regression of drusen, not only at the treatment site, but also at sites remote from the laser, outcomes of greatest interest are preventing vision loss from atrophy and CNV. Unfortunately, the biologic rationale has not translated into patient benefit, as demonstrated in multiple trials.

Following initially optimistic results Figueroa and colleagues updated follow-up in 46 patients with confluent soft drusen. A total of 30 patients with bilateral drusen were randomized to receive argon green laser therapy in one eye. The remaining 16 patients had CNV in one eye and laser therapy performed on the other eye. Although laser therapy resulted in resolution of the drusen, after three years there was no difference between the groups regarding development of CNV.

The Choroidal Neovascular Prevention Trial (CNVPT) randomized eyes with exudative AMD in one eye and 10 or more large drusen in the other (Fellow Eye Study, 120 patients, 120 study eyes) or bilateral large drusen without exudative AMD (Bilateral Drusen Study, 156 patients, 312 study eyes) to receive argon green laser therapy or observation. Due to an increased incidence of CNV in laser-treated eyes enrollment and treatment was suspended in December 1996. An earlier report excluding eyes developing CNV found eyes with 50% or more drusen reduction at one year had more increases in visual acuity compared to the control group. An updated report from the Fellow Eye Study found no significant differences in visual acuity between photocoagulation or observation eyes during a 4-year follow-up. In addition, the authors noted an increased risk of CNV in eyes treated early during follow-up (23% treated eyes vs. 5% observed at one year) but diminished over time (33% and 32% at 30 months), respectively. Higher intensity laser treatment was associated with greater risk of developing CNV.

The National Eye Institute-sponsored Complications of AMD Prevention Trial (CAPT) enrolled patients with bilateral large drusen (n=1,052); one eye assigned to low-intensity laser treatment and the other to observation. After five years, there were no differences between treated and observed

Photocoagulation of Macular Drusen

Policy # 00096

Original Effective Date: 06/05/2002

Current Effective Date: 03/01/2026

Archived Date: 06/20/2012

Returned to Active Status: 02/20/2019

eyes in worsening visual acuity (20.5% in both groups lost ≥ 3 ETDRS [Early Treatment of Diabetic Retinopathy Study] lines), development of CNV (13.3% in both groups) or geographic atrophy.

A pilot study of infrared laser therapy (810nm) enrolled 152 patients (229 eyes) who had either bilateral drusen or unilateral drusen if CNV was detected in the fellow eye. Eyes were randomized to receive laser therapy or observation. While laser therapy was associated with resolution of drusen and improved visual acuity, the study was not powered to detect an effect on progression to CNV. Based on these results the prophylactic treatment of AMD trial (PTAMD) followed 244 patients with CNV or advanced AMD in one eye and ≥ 5 drusen and no CNV in the fellow eye. Treatment consisted of an extrafoveal grid of subthreshold 810-nm laser spots. Enrollment was halted after 47 months due to an excess of CNV in treated eyes. Choroidal neovascularization occurred more often in treated eyes (15.8% vs. 1.4% at one year); there were no differences in moderate (≥ 3 ETDRS lines) visual loss after six months, with or without treatment.

The drusen laser study randomized patients with eyes at high risk for AMD. Follow-up was completed over three years. A unilateral group (n=177) in the trial included patients with drusen in the study eye and CNV in the fellow eye; the bilateral group (n=105) had drusen in both eyes. The treatment protocol was revised and recruitment ultimately halted after 23 months due to concerns over laser-induced CNV in interim analyses. In the unilateral group, prophylactic laser treatment hastened the onset of CNV (29.7% vs. 17.7% observed, $p=0.06$) and was associated with worsening visual acuity. In the bilateral group, 3-year CNV incidence was 11.6% in laser-treated eyes versus 6.8% without treatment ($p=0.22$). In both groups, visual loss paralleled development of CNV.

A Cochrane review on laser treatment of drusen to prevent progression to advanced AMD was published in 2009. Nine randomized studies with a total of 2,216 patients were included in the systematic review. Two of the studies reported significant drusen disappearance at two years, but photocoagulation did not appear to affect the development of CNV at two years' follow-up. The authors concluded that the trials confirmed the clinical observation that laser photocoagulation of drusen leads to their disappearance. However, there is no evidence that this reduces the risk of developing CNV, geographic atrophy, or visual acuity loss.

Supplemental Information

In summary, evidence from multiple trials indicates that drusen ablation does not prevent visual loss, CNV or AMD. Furthermore, the evidence from trials indicates that drusen ablation may be accompanied by harm. Given these findings, this approach is considered to be investigational.

References

1. Figueroa MS, Regueras A, Bertrand J. Laser photocoagulation to treat macular soft drusen in age-related macular degeneration. *Retina* 1994; 14(5):391-6.
2. Frennesson IC, Nilsson SE. Effects of argon (green) laser treatment of soft drusen in early age-related maculopathy: a six month prospective study. *Br J Ophthalmol* 1995; 79(10):905-9.

Photocoagulation of Macular Drusen

Policy # 00096

Original Effective Date: 06/05/2002

Current Effective Date: 03/01/2026

Archived Date: 06/20/2012

Returned to Active Status: 02/20/2019

3. Frennesson C, Nilsson SE. Prophylactic laser treatment in early age related maculopathy reduced the incidence of exudative complications. Br J Ophthalmol 1998; 82(10):1169-74.
4. Figueroa MS, Regueras A, Bertrand J et al. Laser photocoagulation for macular soft drusen. Updated results. Retina 1997; 17(5):378-84.
5. Ho AC, Maguire MG, Yoken J et al. Laser-induced drusen reduction improves visual function at one year. Choroidal Neovascularization Prevention Trial Research Group. Ophthalmology 1999; 106(7):1367-73.
6. The Choroidal Neovascularization Prevention Trial Research Group. Choroid neovascularization in the Choroidal Neovascular Prevention Trial. Ophthalmology 1998; 105(8):1364-72.
7. The Choroidal Neovascularization Prevention Trial Research Group. Laser treatment in fellow eyes with large drusen: updated findings from a pilot randomized clinical trial. Ophthalmology 2003; 110(5):971-8.
8. Complications of Age-Related Macular Degeneration Prevention Trial Research Group. Laser treatment in patients with bilateral large drusen: the complications of age-related macular degeneration prevention trial. Ophthalmology 2006; 113(11):1974-86.
9. Olk RJ, Friberg TR, Stickney KL et al. Therapeutic benefits of infrared (810-nm) diode laser macular grid photocoagulation in prophylactic treatment of nonexudative age-related macular degeneration: two-year results of a randomized pilot study. Ophthalmology 1999; 106(11):2082-90.
10. Friberg TR, Musch DC, Lim JJ et al. Prophylactic treatment of age-related macular degeneration report number 1: 810-nanometer laser to eyes with drusen. Unilaterally eligible patients. Ophthalmology 2006; 113(4):622.e1.
11. Owens SL, Bunce C, Brannon AJ et al. Prophylactic laser treatment hastens choroidal neovascularization in unilateral age-related maculopathy: final results of the drusen laser study. Am J Ophthalmol 2006; 141(2):276-81.
12. Parodi MB, Virgili G, Evans JR. Laser treatment of drusen to prevent progression to advanced age-related macular degeneration. Cochrane Database Syst Rev 2009; (3):CD006537.
13. American Academy of Ophthalmology. Age-Related Macular Degeneration, Preferred Practice Pattern. San Francisco: American Academy of Ophthalmology, 2006. Available at: <http://www.aao.org/ppp>

Policy History

Original Effective Date: 06/05/2002

Current Effective Date: 03/01/2026

05/16/2002 Medical Policy Committee review

06/05/2002 Managed Care Advisory Council approval

06/24/2002 Format revision. No substance change to policy.

06/01/2004 Medical Director review

06/15/2004 Medical Policy Committee review

06/28/2004 Managed Care Advisory Council approval

Photocoagulation of Macular Drusen

Policy # 00096

Original Effective Date: 06/05/2002

Current Effective Date: 03/01/2026

Archived Date: 06/20/2012

Returned to Active Status: 02/20/2019

06/07/2006	Medical Director review
06/21/2006	Medical Policy Committee approval. Format revision including addition of FDA and or other governmental regulatory approval and rationale/source. Coverage eligibility unchanged.
06/04/2008	Medical Director review
06/18/2008	Medical Policy Committee approval. No change to coverage eligibility.
06/04/2009	Medical Director review
06/17/2009	Medical Policy Committee approval. No change to coverage eligibility.
06/03/2010	Medical Policy Committee approval
06/16/2010	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
12/31/2010	Coding updated
06/02/2011	Medical Policy Committee review
06/15/2011	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
06/14/2012	Medical Policy Committee review
06/20/2012	Medical Policy Implementation Committee approval. Coverage eligibility unchanged. Archived
02/07/2019	Medical Policy Committee review
02/20/2019	Medical Policy Implementation Committee approval. Brought back to active status.
02/06/2020	Medical Policy Committee review
02/12/2020	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
02/04/2021	Medical Policy Committee review
02/10/2021	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
01/10/2022	Coding update
02/03/2022	Medical Policy Committee review
02/09/2022	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
02/02/2023	Medical Policy Committee review
02/08/2023	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
07/24/2023	Coding update
02/01/2024	Medical Policy Committee review
02/14/2024	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
02/06/2025	Medical Policy Committee review
02/12/2025	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
02/05/2026	Medical Policy Committee review

Photocoagulation of Macular Drusen

Policy # 00096

Original Effective Date: 06/05/2002

Current Effective Date: 03/01/2026

Archived Date: 06/20/2012

Returned to Active Status: 02/20/2019

02/11/2026 Medical Policy Implementation Committee approval. Coverage eligibility unchanged.

Next Scheduled Review Date: 02/2027

Coding

The five character codes included in the Louisiana Blue Medical Policy Coverage Guidelines are obtained from Current Procedural Terminology (CPT®)†, copyright 2025 by the American Medical Association (AMA). CPT is developed by the AMA as a listing of descriptive terms and five character identifying codes and modifiers for reporting medical services and procedures performed by physician.

The responsibility for the content of Louisiana Blue Medical Policy Coverage Guidelines is with Louisiana Blue and no endorsement by the AMA is intended or should be implied. The AMA disclaims responsibility for any consequences or liability attributable or related to any use, nonuse or interpretation of information contained in Louisiana Blue Medical Policy Coverage Guidelines. Fee schedules, relative value units, conversion factors and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein. Any use of CPT outside of Louisiana Blue Medical Policy Coverage Guidelines should refer to the most current Current Procedural Terminology which contains the complete and most current listing of CPT codes and descriptive terms. Applicable FARS/DFARS apply.

CPT is a registered trademark of the American Medical Association.

Codes used to identify services associated with this policy may include (but may not be limited to) the following:

Code Type	Code
CPT	67220, 67299
HCPCS	No codes
ICD-10 Diagnosis	H35.361-H35.369

*Investigational – A medical treatment, procedure, drug, device, or biological product is Investigational if the effectiveness has not been clearly tested and it has not been incorporated into standard medical practice. Any determination we make that a medical treatment, procedure, drug, device, or biological product is Investigational will be based on a consideration of the following:

- A. Whether the medical treatment, procedure, drug, device, or biological product can be lawfully marketed without approval of the U.S. Food and Drug Administration (FDA) and whether such approval has been granted at the time the medical treatment, procedure, drug, device, or biological product is sought to be furnished; or

Photocoagulation of Macular Drusen

Policy # 00096

Original Effective Date: 06/05/2002

Current Effective Date: 03/01/2026

Archived Date: 06/20/2012

Returned to Active Status: 02/20/2019

- B. Whether the medical treatment, procedure, drug, device, or biological product requires further studies or clinical trials to determine its maximum tolerated dose, toxicity, safety, effectiveness, or effectiveness as compared with the standard means of treatment or diagnosis, must improve health outcomes, according to the consensus of opinion among experts as shown by reliable evidence, including:
1. Consultation with technology evaluation center(s);
 2. Credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community; or
 3. Reference to federal regulations.

‡ Indicated trademarks are the registered trademarks of their respective owners.

NOTICE: If the Patient's health insurance contract contains language that differs from the BCBSLA Medical Policy definition noted above, the definition in the health insurance contract will be relied upon for specific coverage determinations.

NOTICE: Medical Policies are scientific based opinions, provided solely for coverage and informational purposes. Medical Policies should not be construed to suggest that the Company recommends, advocates, requires, encourages, or discourages any particular treatment, procedure, or service, or any particular course of treatment, procedure, or service.

NOTICE: Federal and State law, as well as contract language, including definitions and specific contract provisions/exclusions, take precedence over Medical Policy and must be considered first in determining eligibility for coverage.

NOTICE: If an authorization for an ongoing course of treatment has been provided to a member and the member changes from one health plan to another health plan (e.g., a member moves from carrier A to Louisiana Blue), Louisiana Blue may honor the previous health plan's authorization for the same service under the same type of in-network benefit for a 90-day transition period. Documentation of the authorization for the ongoing course of treatment from the previous health plan must be provided to us by the member or their provider and the services provided for the course of treatment must otherwise be a covered service under the Louisiana Blue health plan. This provision does not apply to medications covered under the plan's pharmacy benefit.