MEDICAL POLICY

POLICY TITLE	LASER TREATMENT OF PORT WINE STAINS
POLICY NUMBER	MP 1.008

CLINICAL BENEFIT	☐ MINIMIZE SAFETY RISK OR CONCERN. ☒ MINIMIZE HARMFUL OR INEFFECTIVE INTERVENTIONS. ☐ ASSURE APPROPRIATE LEVEL OF CARE. ☐ ASSURE APPROPRIATE DURATION OF SERVICE FOR INTERVENTIONS. ☐ ASSURE THAT RECOMMENDED MEDICAL PREREQUISITES HAVE BEEN MET. ☐ ASSURE APPROPRIATE SITE OF TREATMENT OR SERVICE.
Effective Date:	**5/1/2025**

I. POLICY

Laser treatment of port wine stains in the presence of functional impairment related to the port wine stains may be considered **medically necessary**.

In the absence of functional impairment, laser treatment for port wine stains may be considered **medically necessary** when the lesions are located on the face or neck in infants and young children**.**

Treatment of port wine stains with lasers in combination with photodynamic therapy or topical angiogenesis inhibitors is considered **investigational.** There is insufficient evidence to support a general conclusion concerning the health outcomes or benefits associated with this procedure.

Policy Guidelines

Performance of a prior spot test is necessary to select suitable candidates for treatment and to determine the degree of scarring that may occur.

The size of the lesion may require more than one treatment.

Cross-Reference:
MP 1.004 Cosmetic and Reconstructive Surgery

II. PRODUCT VARIATIONS

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This policy is only applicable to certain programs and products administered by Capital Blue Cross and subject to benefit variations as discussed in Section VI. Please see additional information below.

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FEP PPO - Refer to FEP Medical Policy Manual. The FEP Medical Policy manual can be found at: https://www.fepblue.org/benefit-plans/medical-policies-and-utilization-management-guidelines/medical-policies.

III. DESCRIPTION/BACKGROUND

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Port wine stains are common vascular malformations that start as pink macules and, if untreated, tend to become darker and thicker over time. They usually occur on the face and neck but can be located elsewhere on the body. Treatment with lasers (including pulsed dye lasers [PDL] is considered the standard of treatment for port wine stains as previously established treatments such as cryotherapy, electrocautery and excision, resulted in scarring. Near-infrared lasers, such as the alexandrite, diode, and 1064 nm neodymium-doped yttrium aluminum garnet (Nd:YAG) lasers, have also been used.

Port wine stains are the most common of the vascular malformations, affecting approximately 3 to 5 in 1000 children. They are composed of networks of ectactic vessels and primarily involve the papillary dermis. Unlike many other birthmarks, port wine stains do not resolve spontaneously. In contrast, they typically begin as pink macules and become redder and thicker over time due to decreased sympathetic innervation. The depth of the skin lesions ranges from about 1 to 5 mm. Port wine stains are generally located on the face and neck but can occur in other locations such as the trunk or limbs.

Prior to the availability of laser treatment in the 1980s, there were no effective therapies for port wine stains. A laser is a highly focused beam of light that is converted to heat when absorbed by pigmented skin lesions. Several types of lasers have been used to treat port wine stains. Currently, the most common in clinical practice is the pulsed dye laser (PDL) which uses yellow light wavelengths (585-600nm) that selectively target both oxyhemoglobin and deoxyhemoglobin. Pulsed dye lasers penetrate up to 2 mm in the skin. Newborns and young children, who have thinner skin, tend to respond well to this type of laser the response in thicker and darker lesions may be lower. Other types of lasers with greater tissue penetration and weaker hemoglobin absorption are used for hypertrophic and resistant port-wine stains. In particular, alternatives to the pulsed-dye laser are the long-pulsed 1064 nm Nd: YAG and 755 nm pulsed Alexandrite lasers. The 1064 nm Nd: YAG laser requires a substantial amount of skill to use to avoid scarring. Carbon dioxide and argon lasers are relatively non-selective; they were some of the first lasers used to treat port wine stains but were associated with an increased incidence of scarring and are not currently used frequently in clinical practice to treat port wine stains. Intense pulsed light (IPL) devices emit polychromatic high-intensity pulsed light. Pulse duration is in the millisecond range, and devices use an emission spectrum ranging from 500 to 1,400 nm. Compared to other types of lasers, IPL devices include both the oxyhemoglobin selective wavelengths emitted by PDL systems and longer wavelengths that allow deeper penetration into the dermis.

Regulatory Status

Several laser systems have been cleared for marketing by the U.S. Food and Drug Administration (FDA) through the 510(k) process for a variety of dermatologic indications, including treatment of port wine stains. Approved lasers for this indication include the Candela® PDL system (Candela Corp., Wayland, MA), the Cynosure Photogenica® PDL (Cynosure Inc., Westford, MA), and the Cynosure Nd:YAG laser system. In addition, the Cynergy™ Multiplex Laser (Cynosure), a combined Nd:YAG and PDL was approved by FDA in 2005 for treatment of benign vascular and vascular dependent lesions, including port wine stains.

In 2003, the Lumenis® family of IPL systems was approved by FDA; indications for use include dermatologic applications. Subsequently, the NannoLight® IPL system (Global USA Distribution) was approved by FDA in 2008 and the Mediflash3 and Esterflash3 systems (Dermeo) were approved in 2010 for indications specifically including treatment of port wine stains.

IV. RATIONALE

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Studies have generally found that laser treatment can be effective at lightening port wine stains. The preponderance of evidence is on the pulsed dye laser; there is insufficient evidence from comparative studies that 1 type of laser results in more lightening than another. There is insufficient evidence that adding topical angiogenesis inhibitor to laser therapy results in better outcomes than lasers alone. There was 1 positive RCT and 1 negative RCT. No comparative studies were identified on lasers combined with any other treatments. Thus, laser treatment may be considered medically necessary in certain situations for patients with port wine stains and combination treatment is considered investigational.

V. DEFINITIONS

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BASIC ACTIVITIES OF DAILY LIVING include and are limited to walking in the home, eating, bathing, dressing, and homemaking.

CONGENITAL refers to something that is present at birth.

FUNCTIONAL IMPAIRMENT is a condition that describes a state where an individual is physically limited in the performance of basic daily activities.

HEMANGIOMA is a benign tumor of dilated blood vessels.

VI. BENEFIT VARIATIONS

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The existence of this medical policy does not mean that this service is a covered benefit under the member's health benefit plan. Benefit determinations are based on the applicable health benefit plan language. Medical policies do not constitute a description of benefits. Members and providers should consult the member's health benefit plan for information or contact Capital Blue Cross for benefit information.

VII. DISCLAIMER

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Capital Blue Cross' medical policies are developed to assist in administering a member's benefits. These medical policies do not constitute medical advice and are subject to change. Treating providers are solely responsible for medical advice and treatment of members. Members should discuss any medical policy related to their coverage or condition with their provider and consult their benefit information to determine if the service is covered. If there is a discrepancy between this medical policy and a member's benefit information, the benefit information will govern. If a provider or a member has a question concerning the application of this medical policy to a specific member's plan of benefits, please contact Capital Blue Cross' Provider Services or Member Services. Capital Blue Cross considers the information contained in this medical policy to be proprietary and it may only be disseminated as permitted by law.

VIII. CODING INFORMATION

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Note: This list of codes may not be all-inclusive, and codes are subject to change at any time. The identification of a code in this section does not denote coverage as coverage is determined by the terms of member benefit information. In addition, not all covered services are eligible for separate reimbursement.

Covered when medically necessary:

Procedure Codes								
17106	17107	17108						

ICD-10-CM Diagnosis Code	Description
Q82.5	Congenital non-neoplastic nevus

IX. REFERENCES

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1. *Faurschou A, Olesen AB, Leonardi-Bee J et al. Lasers or light sources for treating port-wine stains. Cochrane Database Syst Rev 2011; (11):CD007152.*
2. *Faurschou A, Togsverd-Bo K, Zachariae C et al. Pulsed dye laser vs. intense pulsed light for port-wine stains: a randomized side-by-side trial with blinded response evaluation. Br J Dermatol 2009; 160(2):359-64.*
3. *Babilas P, Schreml S, Eames T et al. Split-face comparison of intense pulsed light with short- and long-pulsed dye lasers for the treatment of port-wine stains. Lasers Surg Med 2010; 42(8):720-7.*
4. *Klein A, Szeimies RM, Baumler W et al. Indocyanine green-augmented diode laser treatment of port-wine stains: clinical and histological evidence for a new treatment option from a randomized controlled trial. Br J Dermatol 2012; 167(2):333-42.*

5. *Liu L, Li X, Zhao Q, et al. Pathogenesis of Port-Wine Stains: Directions for Future Therapies. Int J Mol Sci. 2022 Oct 12;23(20):12139. PMID 36292993*
6. *Passe laser and topical timolol: a multicenter randomized controlled trial. Br J Dermatol 2013.*
7. *Tremaine AM, Armstrong J, Huang YC et al. Enhanced port-wine stain lightening achieved with combined treatment of selective photothermolysis and imiquimod. J Am Acad Dermatol 2012; 66(4):634-41.*
8. *Galbraith S. Capillary malformations (port wine stains) and associated syndromes. In: UpToDate Online Journal [serial online]. Waltham, MA: UpToDate; updated September 5, 2023. Literature review current through December 2024*
9. *Kelly K. Laser and light therapy for cutaneous vascular lesions. In: UpToDate Online Journal [serial online]. Waltham, MA: UpToDate; updated July 17, 2024. Literature review current through December 2024*
10. *Blue Cross Blue Shield Association Medical Policy Reference Manual.* 7.01.40, *Laser Treatment of Port Wine Stains. Archived November 2015.*

Other:

Taber's Cyclopedic Medical Dictionary, 19th edition.

X. POLICY HISTORY

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MP 1.008	**02/10/2020 Consensus Review**. No change to policy statements. Background and references reviewed.
	12/23/2020 Consensus Review. No change to policy statements. Background and references and coding reviewed.
	01/04/2022 Consensus Review. No change to policy statements. References updated. Coding review.
	01/23/2023 Consensus Review. No change to policy statement. Background updated. References added.
	01/29/2024 Consensus Review. No change to policy statement. Background updated. References added.
	01/17/2025 Consensus Review. No change to policy statement. References updated.

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