

## Corporate Medical Policy

### Laser Treatment of Port Wine Stains

**File Name:** laser\_treatment\_of\_port\_wine\_stains  
**Origination:** 9/2010  
**Last CAP Review:** 9/2011  
**Next CAP Review:** 9/2012  
**Last Review:** 12/2011

#### Description of Procedure or Service

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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. Laser treatment is proposed; several types of lasers are available including pulsed dye lasers, intense pulsed light (IPL), Alexandrite and Nd:YAG lasers.

#### Background

Port wine stains are the most common of the vascular malformations, affecting approximately 3 in 1000 children. They are composed of networks of ectatic 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 1400 nm. Compared to other types of lasers, IPL devices both include 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 pulsed-dye laser system

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(Candela Corp.; Wayland, MA), the Cynosure Photogenica pulsed-dye laser (Cynosure Inc; Westford, MA) and the Cynosure Nd:YAG laser system. In addition, the Cynergy Multiplex Laser (Cynosure), a combined Nd:YAG and pulsed dye laser was approved by the FDA in 2005 for treatment of benign vascular and vascular dependant lesions, including port wine stains.

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

**\*\*\*Note: This Medical Policy is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.**

## Policy

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**Laser Treatment of port wine stains causing functional impairment may be considered medically necessary.**

**Treatment of port wine stains with lasers in combination with photodynamic therapy or topical angiogenesis inhibitors is considered investigational. BCBSNC does not provide coverage for investigational services or procedures.**

## Benefits Application

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This medical policy relates only to the services or supplies described herein. Please refer to the Member's Benefit Booklet for availability of benefits. Member's benefits may vary according to benefit design; therefore member benefit language should be reviewed before applying the terms of this medical policy.

## When Laser Treatment of Port Wine Stains is covered

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Laser treatment is covered for port wines stains causing functional impairment. Functional impairment may include, but is not limited to:

1. Lesions located where there is potential compromise or actual compromise (see numbers 3 and 4 below) of vital structures (e.g. nose, eyes, ears, lips, tongue or larynx)
2. Lesions which are symptomatic (e.g. bleeding, painful, ulcerated, prior infection, or pedunculated and symptomatic)
3. Lesions which involve the eyelids or periorbital tissue and result in impaired vision or strabismus
4. Lesions which result in auditory impairment and secondary speech delay ( lesions which are located on or around the ear)
5. Lesions which result in a risk of bleeding caused by bleb formation or incidental trauma

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## **When Laser Treatment for Port Wine Stains is not covered**

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Treatment of port wine stains with lasers in combination with photodynamic therapy or topical angiogenesis inhibitors is considered investigational.

Laser treatment of port wine stains that do not cause functional impairment is considered not medically necessary.

## **Policy Guidelines**

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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 one type of laser results in more lightening than another. There is insufficient evidence that the combination of laser treatment and photodynamic therapy or topical agents is superior to laser treatment alone for improving the appearance of port wine stains or reducing complications.

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.

## **Billing/Coding/Physician Documentation Information**

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This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at [www.bcbsnc.com](http://www.bcbsnc.com). They are listed in the Category Search on the Medical Policy search page.

*Applicable codes: 17106, 17107, 17108*

*Diagnosis code that is subject to medical necessity review: 757.32*

BCBSNC may request medical records for determination of medical necessity. When medical records are requested, letters of support and/or explanation are often useful, but are not sufficient documentation unless all specific information needed to make a medical necessity determination is included.

## **Scientific Background and Reference Sources**

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BCBSA Medical Policy Reference Manual [Electric Version]. 7.01.40, 6/10/10

Senior Medical Director Review 8/2010

National Institutes of Health (NIH). Combined Use of Pulsed Dye Laser and Topical Antiangiogenic Agents for Treatment of Port Wine Stain Birthmarks. Clinical trial #NCT00969397. Retrieved on August 3, 2011 from <http://clinicaltrials.gov/ct2/show/NCT00969397>

BCBSA Medical Policy Reference Manual [Electronic Version]. 7.01.40, 6/9/11

Specialty Matched Consultant Advisory Panel review 9/2011

# Laser Treatment of Port Wine Stains

## Policy Implementation/Update Information

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12/10/10 New policy implemented. Laser treatment of port wine stains in the presence of functional impairment related to the port wine stain may be considered medically necessary. Treatment with lasers in combination with photodynamic therapy or topical angiogenesis inhibitors is considered investigational. References added. Notice given 9/14/10 for Policy effective 12/21/2010. (mco)

8/30/11 Updated Description section. Updated Policy Guidelines. References updated. No changes to policy statements. (mco)

10/11/11 Re-worded policy statement to read: "Laser treatment of port wine stains causing functional impairment may be considered medically necessary." Specialty Matched Consultant Advisory Panel review 9/2011. (mco)

12/6/11 "When Covered" section revised. Bullet #1 changed to state: "Lesions located where there is potential compromise or actual compromise, (see numbers 3 and 4 below) of vital structures (e.g. nose, eyes, ears, lips, **tongue** or larynx)" and bullet #3 changed to state: "Lesions which involve the eyelids or periorbital tissue and result in impaired vision or strabismus." Medical Director review 12/2011. (mco)

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Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.