Low level laser therapy (LLLT) for Oral Mucositis
(Photobiomodulation [PBM])

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Dates Reviewed: 03/2026

Developed By: Medical Necessity Criteria Committee

I. Description

Oral complications resulting from systemic anticancer therapy include mucositis, saliva changes, taste alterations, infection, and gingival bleeding. These complications can cause pain and/or impair nutrition. Oral mucositis is a common and debilitating side effect induced by stem cell transplantation that is experienced by cancer patients undergoing chemotherapy or radiation therapy. This condition involves inflammation and ulceration of the oral mucosa, leading to pain, difficulty with eating and speaking, and an increased risk of infections. Mucositis not only compromises the quality of life for cancer patients but also affects treatment outcomes and may necessitate dose reductions or treatment delays. Mucositis typically begins without symptoms, but can progress to cause redness, burning sensations, and an increased sensitivity to hot and spicy foods. In severe cases, areas of skin may peel off and ulcers may form, leading to difficulty swallowing.

Low-level laser therapy (LLLT), also known as photobiomodulation (PBM), is an effective, non-invasive treatment for reducing pain and inflammation or swelling, severity of chemotherapy/radiotherapy-induced oral mucositis. It is thought to have an anti-inflammatory effect by inhibiting prostaglandin concentration and does not produce sensation or burn skin with direct application to the affected areas.

Low-level laser therapy (LLLT), also referred to as photobiomodulation, has been evaluated as a preventive intervention for oral mucositis in multiple randomized controlled trials (RCTs) and systematic reviews. The available evidence includes numerous RCTs and meta-analyses demonstrating that prophylactic use of LLLT is associated with a statistically significant reduction in the incidence, severity, and duration of oral mucositis. Meta-analyses pooling data from over 1,000 patients have reported a meaningful reduction in the risk of severe mucositis, along with improvements in patient-reported pain and functional outcomes. These benefits are most consistently observed in patients undergoing high-risk cancer treatments, including head and neck radiotherapy and hematopoietic cell transplantation.

More recent systematic reviews continue to support the efficacy of LLLT; however, variability in study design, treatment protocols (e.g., wavelength, dose, frequency), and patient populations contributes to some heterogeneity in results. Evidence in certain subgroups, such as pediatric populations or lower-risk chemotherapy regimens, is more limited and less consistent. LLLT is generally well tolerated, with minimal reported adverse effects across studies.

Clinical practice guidelines from organizations such as the Multinational Association of Supportive Care in Cancer and the International Society of Oral Oncology recommend the use of LLLT for prevention of oral mucositis in specific high-risk populations, based on the available evidence.

II. Criteria:

A. Moda Health considers Low level laser therapy (LLLT) to be medically necessary for prevention of oral mucositis in members undergoing cancer treatment associated with an increased risk of oral mucositis, including chemotherapy or radiotherapy or hematopoietic cell transplantation.

B. LLLT is considered **NOT** medically necessary for treatment of all other indications including but not limited the following:

   a. Adhesive capsulitis
   b. Bell palsy
   c. Carpal tunnel syndrome
   d. Fibromyalgia
   e. Hair loss
   f. Heel pain e.g. plantar fasciitis
   g. Low back pain
   h. Lymphedema
   i. Neck pain
   j. Osteoathritic knee pain
   k. Pressure ulcers
   l. Rheumatoid arthritis
   m. Skin burn
   n. Wound healing

III. Information Submitted with the Prior Authorization Request:

1. Clinical documentation indicating medical necessity
2. History and physical clinical notes for requiring low-level laser therapy

IV. CPT or HCPC codes covered:

Codes	Description
0552T	Low-level laser therapy, dynamic photonic and dynamic thermokinetic energies, provided by a physician or other qualified health care professional
1011T	Photobiomodulation (PBM) therapy of oral cavity, including placement of an oral device, monitoring of patient tolerance to treatment, and removal of the oral device
20560	Needle insertion(s) without injection(s); 1 or 2 muscle(s)
20561	3 or more muscles

V. CPT or HCPC codes NOT covered:

Codes	Description
97037	Application of a modality to 1 or more areas; low-level laser therapy (ie, nonthermal and non-ablative) for post-operative pain reduction
S8948	Application of a modality (requiring constant provider attendance) to one or more areas; low-level laser; each 15 minutes

V. Annual Review History

Review Date	Revisions	Effective Date
3/2026	New policy	6/1/2026

VI. References

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2. Gouvea de lima et al 2012; Oral Mucositis Prevention By Low-Level Laser Therapy in Head-and-Neck Cancer Patients Undergoing Concurrent Chemoradiotherapy: A Phase III Randomized Study. Retrieved from https://www.redjournal.org/article/S0360-3016(10)03431-0/fulltext
3. Negrin, RS, and Treister NS 2026; Oral toxicity associated with systemic anticancer therapy. Retrieved from https://www.uptodate.com/contents/oral-toxicity-associated-with-systemic-anticancer-therapy?search=Low%20Level%20laser%20therapy%20(LLLT)%20for%20Oral%20Mucositis%20(Photobiomodulation%20%5BPBM%5D)&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H2465454887
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5. Elad et al. 2020; MASCC/ISOO Clinical Practice Guidelines for the Management of Mucositis Secondary to Cancer Therapy. Retrieved from https://pmc.ncbi.nlm.nih.gov/articles/PMC7540329/pdf/CNCR-126-4423.pdf
6. Zadik Yet al 2019; Systematic review of photobiomodulation for the management of oral mucositis in cancer patients and clinical practice guidelines. Retrieved from https://link.springer.com/article/10.1007/s00520-019-04890-2
7. Hanna R et al (2020). Photobiomodulation Therapy in Oral Mucositis and Potentially Malignant Oral Lesions: A Therapy Towards the Future. Retrieved https://pmc.ncbi.nlm.nih.gov/articles/PMC7409159/
8. Oberoi et al 2023. Effect of prophylactic low level laser therapy on oral mucositis: a systematic review and meta-analysis. Retrieved from https://ichgcp.net/clinical-trials-

registry/publications/101808-effect-of-prophylactic-low-level-laser-therapy-on-oral-mucositis-a-systematic-review-and-meta?utm_source=chatgpt.com
9. Marques et al. 2025. Photobiomodulation as a preventive strategy for oral mucositis in pediatric oncology: a systematic review and meta-analysis.Retreived from https://www.sciencedirect.com/science/article/abs/pii/S0300571225005202?utm

Appendix 1 – Applicable Diagnosis Codes:

Codes	Description
K12.30-K12.39	Oral mucositis (ulcerative)

Appendix 2 – Centers for Medicare and Medicaid Services (CMS)

Medicare coverage for outpatient (Part B) drugs is outlined in the Medicare Benefit Policy Manual (Pub. 100-2), Chapter 15, §50 Drugs and Biologicals. In addition, National Coverage Determination (NCD) and Local Coverage Determinations (LCDs) may exist and compliance with these policies is required where applicable. They can be found at: http://www.cms.gov/medicare-coverage-database/search/advanced-search.aspx. Additional indications may be covered at the discretion of the health plan.

Medicare Part B Covered Diagnosis Codes (applicable to existing NCD/LCD):

Jurisdiction(s): 5, 8	NCD/LCD Document (s):

NCD/LCD Document (s):

Medicare Part B Administrative Contractor (MAC) Jurisdictions		
Jurisdiction	Applicable State/US Territory	Contractor
F (2 & 3)	AK, WA, OR, ID, ND, SD, MT, WY, UT, AZ	Noridian Healthcare Solutions, LLC