ND

Medical Policies

Print

Policy Number:	S-5162		
Policy Name:	Surgical Treatments for Breast Cancer-Related Lymphedema		
Policy Type:	Medical	**Policy Subtype:**	Surgery
Effective Date:	09-15-2025	**End Date:**	11-02-2025

Description

Lymphedema is an accumulation of fluid due to disruption of lymphatic drainage. Lymphedema can be caused by congenital or inherited abnormalities in the lymphatic system (primary lymphedema) but is most often caused by acquired damage to the lymphatic system (secondary lymphedema).

Diagnosis and Staging

A diagnosis of secondary lymphedema is based on history (e.g., cancer treatment, trauma) and physical examination (localized, progressive edema and asymmetric limb measurements) when other causes of edema can be excluded. Imaging, such as magnetic resonance imaging, computed tomography, ultrasound, or lymphoscintigraphy, may be used to differentiate lymphedema from other causes of edema in diagnostically challenging cases.

Table 1 lists International Society of Lymphology guidance for staging lymphedema based on "softness" or "firmness" of the limb and the changes with an elevation of the limb.

Table 1. Recommendations for Staging Lymphedema

Populations	Interventions	Comparators	Outcomes
Individuals: • With breast cancer-related secondary lymphedema	Interventions of interest are: • Physiologic microsurgery to treat lymphedema along with continued conservative therapy	Comparators of interest are: • Conservative therapy • Complete decongestive therapy	Relevant outcomes include: • Symptoms • Morbid events • Functional outcomes

		• Pneumatic compression pumps	• Health status measures • Quality of life • Resource utilization • Treatment-related morbidity
Individuals: • Who are undergoing lymphadenectomy for breast cancer	Interventions of interest are: • Physiologic microsurgery to prevent lymphedema	Comparators of interest are: • Standard of care	Relevant outcomes include: • Symptoms • Change in disease status • Morbid events • Quality of life • Treatment-related morbidity
Stage	Description		
Stage 0 (subclinical)	Swelling is not evident and most individuals are asymptomatic despite impaired lymphatic transport		
Stage I (mild)	Accumulation of fluid that subsides (usually within 24 hours) with limb elevation; soft edema that may pit, without evidence of dermal fibrosis		
Stage II (moderate)	Does not resolve with limb elevation alone; limb may no longer pit on examination		
Stage III (severe)	Lymphostatic elephantiasis; pitting can be absent; skin has trophic changes		

Breast Cancer-Related Lymphedema

Breast cancer treatment is one of the most common causes of secondary lymphedema. Both the surgical removal of lymph nodes and radiotherapy are associated with development of lymphedema in individuals with breast cancer.

In a systematic review of 72 studies (N=29,612 women), DiSipio et al (2013) reported that approximately one (1) in five (5) women who survive breast cancer will develop arm lymphedema. Reviewers reported that risk factors for development of lymphedema that had a strong level of evidence were extensive surgery (i.e., axillary-lymph-node dissection, greater number of lymph nodes dissected, mastectomy) and being overweight or obese. The incidence of breast cancer-related lymphedema was found by DiSipio et al as well as other authors to be up to 30% at three (3) years after treatment.

Studies have also suggested that Black breast cancer survivors are nearly 2.2 times more likely to develop breast cancer-related lymphedema compared to White breast cancer survivors. These observations may be linked to racial disparities with regards to access to treatment and the types of treatments received. Black women are more likely than White women to undergo axillary lymph node dissection, which is associated with greater morbidity than the less invasive sentinel lymph node biopsy. While this may be explained in part by Black individuals having a higher likelihood of being diagnosed with more aggressive tumors, there is evidence that even when adjusting for stage and grade of tumors, Black women are more likely to undergo axillary lymph node dissection, putting Black women at greater risk of breast cancer-related lymphedema. Additionally, Black breast cancer survivors, on average, have higher body mass indexes than White breast cancer survivors, which could contribute to development of lymphedema in this setting as well.

Management and Treatment

Early and ongoing treatment of lymphedema is necessary. Conservative therapy may consist of several features depending on the severity of the lymphedema. Individuals are educated on the importance of self-care including hygiene practices to prevent infection, maintaining ideal body weight through diet and exercise, and limb elevation. Compression therapy consists of repeatedly applying padding and bandages or compression garments. Manual lymphatic drainage is a light pressure massage performed by trained physical therapists or by individuals designed to move fluid from obstructed areas into functioning lymph vessels and lymph nodes. Complete decongestive therapy is a multiphase treatment program involving all of the previously mentioned conservative treatment components at different intensities. Pneumatic compression pumps may also be considered as an adjunct to conservative therapy or as an alternative to self-manual lymphatic drainage in individuals who have difficulty performing self-manual lymphatic drainage. In individuals with more advanced lymphedema after fat deposition and tissue fibrosis has occurred, palliative surgery using reductive techniques such as liposuction may be performed.

Regulatory Status

Physiologic microsurgery for lymphedema is a surgical procedure and, as such, is not subject to regulation by the U.S. Food and Drug Administration (U.S. FDA).

For individuals who have breast cancer-related secondary lymphedema who receive physiologic microsurgery to treat lymphedema along with continued conservative therapy, the evidence includes a randomized controlled trial (RCT), observational studies, and systematic reviews. Relevant outcomes are symptoms, morbid events, functional outcomes, health status measures, quality of life, resource utilization, and treatment-related morbidity. Several physiologic microsurgeries have been developed; examples include lymphaticovenular

anastomosis and vascularized lymph node transfer. No RCTs of lymphaticovenular anastomosis or similar surgeries involving the venous system were identified. One RCT of vascularized lymph node transfer with 36 participants has been conducted. Systematic reviews have indicated that the preponderance of the available evidence comes from single-arm clinical series from individual institutions. Surgical technique, outcomes metrics, and follow-up time have varied across these studies. These types of studies might be used for preliminary estimates of the amount of volume reduction expected from surgery, the durability of the reduction in volume, and the rates of adverse events. However, these studies are not adequate for determining the comparative efficacy of physiologic microsurgery versus conservative treatment or decongestive therapy, or the comparative efficacy of different microsurgery techniques. Randomized controlled trials are needed. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who are undergoing lymphadenectomy for breast cancer who receive physiologic microsurgery to prevent lymphedema, the evidence includes a RCT, observational studies, and systematic reviews. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. Lymphatic Microsurgical Preventing Healing Approach is a preventive lymphaticovenular anastomosis performed during nodal dissection. One RCT including 46 individuals has been conducted. The trial reported that lymphedema developed in 4% of women in the Lymphatic Microsurgical Preventing Healing Approach group and 30% in the control group by 18 months of follow-up. However, because the cumulative incidence of lymphedema after breast cancer treatment approximates 30% at three (3) years, longer follow-up is needed to assess the durability of the procedure. The trial methods of randomization and allocation concealment were not described and there was no blinding, potentially introducing bias. The remaining evidence consists of uncontrolled studies and systematic reviews of these studies. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Policy Application

All claims submitted for this policy will be processed according to the policy effective date and associated revision effective dates in effect on the date of service.

Criteria

Coverage is subject to the specific terms of the member's benefit plan.

Lymphatic physiologic microsurgery to treat lymphedema (including, but not limited to, lymphatico-lymphatic bypass, lymphovenous bypass, lymphaticovenous anastomosis, autologous lymph node transplantation, and vascularized lymph node transfer) in individuals who have been treated for breast cancer is considered investigational.

Lymphatic physiologic microsurgery performed during nodal dissection or breast reconstruction to prevent lymphedema (including, but not limited to, the Lymphatic Microsurgical Preventing Healing Approach) in individuals who are being treated for breast cancer is considered investigational.

Procedure Codes

15878	24999	38999

Professional Statements and Societal Positions Guidelines

Practice Guidelines and Position Statements

Guidelines or position statements will be considered for inclusion in 'Supplemental Information' if they were issued by, or jointly by, a US professional society, an international society with US representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

National Lymphedema Network

The National Lymphedema Network published a position paper on the diagnosis and treatment of lymphedema in 2011. The paper provided the following statements, although notably, the document has been retracted and the Network is currently in the process of drafting a new position statement:

"Microsurgical and supramicrosurgical (much smaller vessels) techniques have been developed to move lymph vessels to congested areas to try to improve lymphatic drainage. Surgeries involve connecting lymph vessels and veins, lymph nodes and veins, or lymph vessels to lymph vessels. Reductions in limb volume have been reported and a number of preliminary studies have been done, but there are no long-term studies of the effectiveness of these techniques."

An update of this position paper is in development as of July 2022.

International Society of Lymphology

The International Society of Lymphology published an updated consensus document on the diagnosis and treatment of peripheral lymphedema in 2020.The document stated the following on lymphaticovenous (or lymphovenous) anastomoses (LVA):

"LVA are currently in use at multiple centers around the world. These procedures have undergone confirmation of long-term patency (in some cases more than 25 years) and some demonstration of improved lymphatic transport (by objective physiologic measurements of long-term efficacy). Multiple lymphatic-venous anastomoses in a single surgical site, with both the superficial and deep lymphatics, allow the creation of a positive pressure gradient (lymphatic-venous) and evade the phenomenon of gravitational reflux without interrupting the distal peripheral superficial lymphatic pathways. Some centers particularly in areas of endemic filariasis also practice lymph nodal-venous shunts as a derivative method. Multiple centers are using LVA (LYMPHA) as a preventative measure in high risk patients."

American Society of Breast Surgeons

The American Society of Breast Surgeons published recommendations from an expert panel on preventive and therapeutic options for breast cancer-related lymphedema in 2017. The document stated that "the Panel agrees that LVA and VLNT may be effective for early secondary breast cancer-related lymphedema."

National Comprehensive Cancer Network

The National Comprehensive Cancer Network (NCCN) published recommendations on management of lymphedema as part of its guideline on survivorship; however, it does not discuss physiologic microsurgical techniques. The guideline states that high-level evidence in support of treatments for lymphedema are lacking. In addition, the NCCN guideline on breast cancer does not give recommendations on use of physiological microsurgical techniques for preventing or treating lymphedema.

American Association of Plastic Surgeons

The American Association of Plastic Surgeons sponsored a conference to create consensus statements and recommendations for surgical treatment and prevention of upper and lower extremity lymphedema. The recommendations were based on the results of a systematic review and meta-analysis. The relevant recommendations include:

"There is evidence to support that lymphovenous anastomosis can be effective in reducing severity of lymphedema (grade 1C). There is evidence to support that vascular lymph node transplantation can be effective in reducing severity of lymphedema (grade 1B). Currently, there is no consensus on which procedure (lymphovenous bypass versus vascular lymph node transplantation) is more effective (grade 2C). A few studies show that prophylactic lymphovenous bypass in patients undergoing extremity lymphadenectomy may reduce the incidence of lymphedema (grade 1B). More studies with longer follow-up are required to confirm this benefit."

Diagnosis Codes

I89.0	I89.1	I89.8	I89.9	I97.2

CURRENT CODING

CPT:

15878	SUCTION ASSISTED LIPECTOMY UPPER EXTREMITY	Commercial
24999	UNLISTED PROCEDURE HUMERUS/ELBOW	Commercial
38999	UNLISTED PROCEDURE HEMIC OR LYMPHATIC SYSTEM	Commercial
15878	SUCTION ASSISTED LIPECTOMY UPPER EXTREMITY	Medicaid Expansion
24999	UNLISTED PROCEDURE HUMERUS/ELBOW	Medicaid Expansion
38999	UNLISTED PROCEDURE HEMIC OR LYMPHATIC SYSTEM	Medicaid Expansion

References

1. International Society of Lymphology Executive Committee. The Diagnosis and Treatment of Peripheral Lymphedema: 2016 Consensus Document of the International Society of Lymphology. 2016; https://journals.uair.arizona.edu/index.php/lymph/article/view/20106. Accessed July 26, 2022.
2. DiSipio T, Rye S, Newman B, et al. Incidence of unilateral arm lymphoedema after breast cancer: a systematic review and meta-analysis. Lancet Oncol. May 2013; 14(6): 500-15. PMID 23540561
3. Ribeiro Pereira ACP, Koifman RJ, Bergmann A. Incidence and risk factors of lymphedema after breast cancer treatment: 10 years of follow-up. Breast. Dec 2017; 36: 67-73. PMID 28992556
4. Zou L, Liu FH, Shen PP, et al. The incidence and risk factors of related lymphedema for breast cancer survivors post-operation: a 2-year follow-up prospective cohort study. Breast Cancer. May 2018; 25(3): 309-314. PMID 29397555
5. Dean LT, Kumar A, Kim T, et al. Race or Resource? BMI, Race, and Other Social Factors as Risk Factors for Interlimb Differences among Overweight Breast Cancer Survivors with Lymphedema. J Obes. 2016; 2016: 8241710. PMID 27433356
6. Pusic AL, Cemal Y, Albornoz C, et al. Quality of life among breast cancer patients with lymphedema: a systematic review of patient-reported outcome instruments and outcomes. J Cancer Surviv. Mar 2013; 7(1): 83-92. PMID 23212603
7. Coriddi M, Dayan J, Sobti N, et al. Systematic Review of Patient-Reported Outcomes following Surgical Treatment of Lymphedema. Cancers (Basel). Feb 29 2020; 12(3). PMID 32121343
8. Leung N, Furniss D, Giele H. Modern surgical management of breast cancer therapy related upper limb and breast lymphoedema. Maturitas. Apr 2015; 80(4): 384-90. PMID 25747119
9. Cornelissen AJM, Beugels J, Ewalds L, et al. Effect of Lymphaticovenous Anastomosis in Breast Cancer-Related Lymphedema: A Review of the Literature. Lymphat Res Biol. Oct 2018; 16(5): 426-434. PMID 29356596
10. Scaglioni MF, Fontein DBY, Arvanitakis M, et al. Systematic review of lymphovenous anastomosis (LVA) for the treatment of lymphedema. Microsurgery. Nov 2017; 37(8): 947-953. PMID 28972280
11. Carl HM, Walia G, Bello R, et al. Systematic Review of the Surgical Treatment of Extremity Lymphedema. J Reconstr Microsurg. Jul 2017; 33(6): 412-425. PMID 28235214
12. Chang DW, Dayan J, Greene AK, et al. Surgical Treatment of Lymphedema: A Systematic Review and Meta-Analysis of Controlled Trials. Results of a Consensus Conference. Plast Reconstr Surg. Apr 01 2021; 147(4): 975-993. PMID 33761519
13. Salgarello M, Mangialardi ML, Pino V, et al. A Prospective Evaluation of Health-Related Quality of Life following Lymphaticovenular Anastomosis for Upper and Lower Extremities Lymphedema. J Reconstr Microsurg. Nov 2018; 34(9): 701-707. PMID 29689576
14. Ozturk CN, Ozturk C, Glasgow M, et al. Free vascularized lymph node transfer for treatment of lymphedema: A systematic evidence based review. J Plast Reconstr Aesthet Surg. Sep 2016; 69(9): 1234-47. PMID 27425000
15. Forte AJ, Cinotto G, Boczar D, et al. Omental Lymph Node Transfer for Lymphedema Patients: A Systematic Review. Cureus. Nov 25 2019; 11(11): e6227. PMID 31807393
16. Li Y, Dong R, Li Z, et al. Intra-abdominal vascularized lymph node transfer for treatment of lymphedema: A systematic literature review and meta-analysis. Microsurgery. Nov 2021; 41(8): 802-815. PMID 34562039
17. Demiri E, Dionyssiou D, Tsimponis A, et al. Donor-Site Lymphedema Following Lymph Node Transfer for Breast Cancer-Related Lymphedema: A Systematic Review of the Literature. Lymphat Res Biol. Feb 2018; 16(1): 2-8. PMID 29087763
18. Dionyssiou D, Demiri E, Tsimponis A, et al. A randomized control study of treating secondary stage II breast cancer-related lymphoedema with free lymph node transfer. Breast Cancer Res Treat. Feb 2016; 156(1): 73-9. PMID 26895326
19. Nguyen AT, Suami H, Hanasono MM, et al. Long-term outcomes of the minimally invasive free vascularized omental lymphatic flap for the treatment of lymphedema. J Surg Oncol. Jan 2017; 115(1): 84-89. PMID 27439587

20. Ciudad P, Agko M, Perez Coca JJ, et al. Comparison of long-term clinical outcomes among different vascularized lymph node transfers: 6-year experience of a single center's approach to the treatment of lymphedema. J Surg Oncol. Nov 2017; 116(6): 671-682. PMID 28695707
21. Gennaro P, Gabriele G, Salini C, et al. Our supramicrosurgical experience of lymphaticovenular anastomosis in lymphoedema patients to prevent cellulitis. Eur Rev Med Pharmacol Sci. Feb 2017; 21(4): 674-679. PMID 28272717
22. Drobot A, Bez M, Abu Shakra I, et al. Microsurgery for management of primary and secondary lymphedema. J Vasc Surg Venous Lymphat Disord. Jan 2021; 9(1): 226-233.e1. PMID 32446874
23. Cemal Y, Pusic A, Mehrara BJ. Preventative measures for lymphedema: separating fact from fiction. J Am Coll Surg. Oct 2011; 213(4): 543-51. PMID 21802319
24. Armer JM. The problem of post-breast cancer lymphedema: impact and measurement issues. Cancer Invest. 2005; 23(1): 76-83. PMID 15779870
25. Armer JM, Stewart BR. A comparison of four diagnostic criteria for lymphedema in a post-breast cancer population. Lymphat Res Biol. 2005; 3(4): 208-17. PMID 16379589
26. Jorgensen MG, Toyserkani NM, Sorensen JA. The effect of prophylactic lymphovenous anastomosis and shunts for preventing cancer-related lymphedema: a systematic review and meta-analysis. Microsurgery. Jul 2018; 38(5): 576-585. PMID 28370317
27. Ciudad P, Escandon JM, Bustos VP, et al. Primary Prevention of Cancer- Related Lymphedema Using Preventive Lymphatic Surgery: Systematic Review and Meta-analysis. Indian J Plast Surg. Feb 2022; 55(1): 18-25. PMID 35444756
28. Boccardo FM, Casabona F, Friedman D, et al. Surgical prevention of arm lymphedema after breast cancer treatment. Ann Surg Oncol. Sep 2011; 18(9): 2500-5. PMID 21369739
29. Hahamoff M, Gupta N, Munoz D, et al. A Lymphedema Surveillance Program for Breast Cancer Patients Reveals the Promise of Surgical Prevention. J Surg Res. Dec 2019; 244: 604-611. PMID 29397949
30. National Lymphedema Network Medical Advisory Comittee. The Diagnosis and Treatment of Lymphedema. Position Statement of the National Lymphedema Network 2011; https://lymphnet.org/position-papers. Accessed July 22, 2022.
31. Executive Committee of the International Society of Lymphology. The diagnosis and treatment of peripheral lymphedema: 2020 Consensus Document of the International Society of Lymphology. Lymphology. 2020; 53(1): 3-19. PMID 32521126
32. McLaughlin SA, DeSnyder SM, Klimberg S, et al. Considerations for Clinicians in the Diagnosis, Prevention, and Treatment of Breast Cancer- Related Lymphedema, Recommendations from an Expert Panel: Part 2: Preventive and Therapeutic Options. Ann Surg Oncol. Oct 2017; 24(10): 2827- 2835. PMID 28766218
33. National Comprehensive Cancer Network (NCCN). NCCN Clinical Practice Guidelines in Oncology: Survivorship. Version 1.2022. https://www.nccn.org/professionals/physician_gls/pdf/survivorship.pdf. Accessed July 22, 2022.

ND Committee Review

Internal Medical Policy Committee 5-23-2023 Adopted - *Effective July 03, 2023*

Internal Medical Policy Committee 5-14-2024 Annual Review - no changes in criteria *Effective July 01, 2024*

- *Added* Policy Application

Disclaimer

Current medical policy is to be used in determining a Member's contract benefits on the date that services are rendered. Contract language, including definitions and specific inclusions/exclusions, as well as state and federal law, must be considered in determining eligibility for coverage. Members must consult their applicable benefit plans or contact a Member Services representative for specific coverage information. Likewise, medical policy, which addresses the issue(s) in any specific case, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and the Company reserves the right to review and update medical policy periodically.