

BREAST CANCER- RELATED LYMPHEDEMA

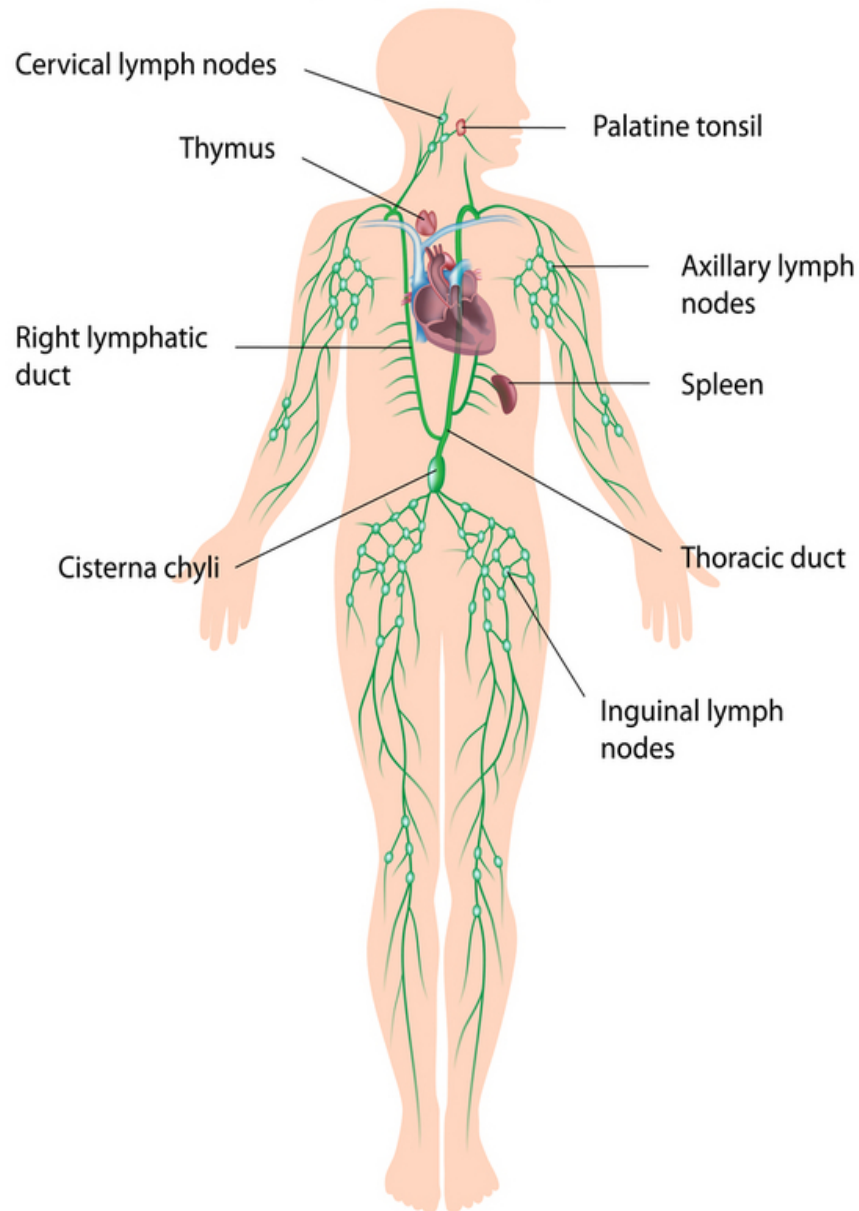
By: Erin Toomey, SPT

Learning Objectives

- Review the anatomical and physiological principles of the lymphatic system
- Understand the role of physical therapy in breast cancer treatment
- Recognize clinical signs and symptoms of lymphedema
- Understand strategies used in the prevention of lymphedema
- Be aware of the theories for which MLD is based on
- Be familiar with the body of literature pertaining to the efficacy of MLD

INTRODUCTION

Review of the Lymphatic System

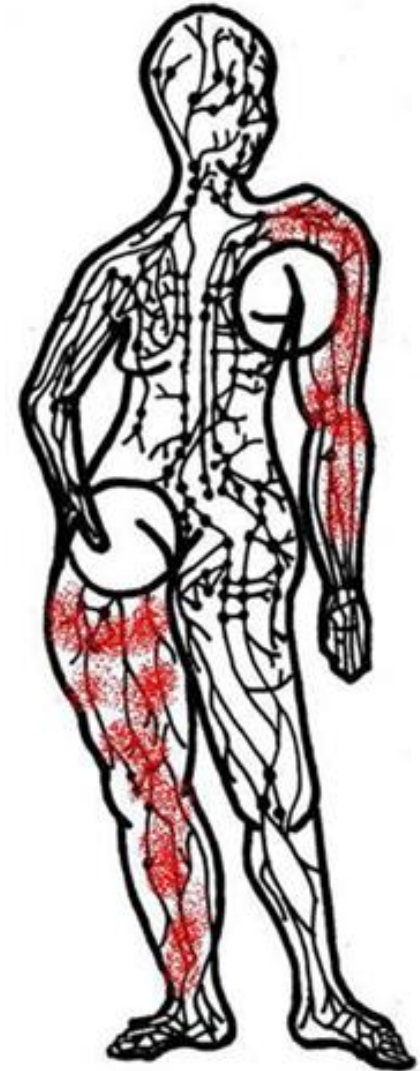


Lymphedema³

- Chronic disease caused by a mechanical failure of the lymphatic system
- It occurs when the lymphatic load exceeds the transport capacity

[2 types]

- Primary
- Secondary*



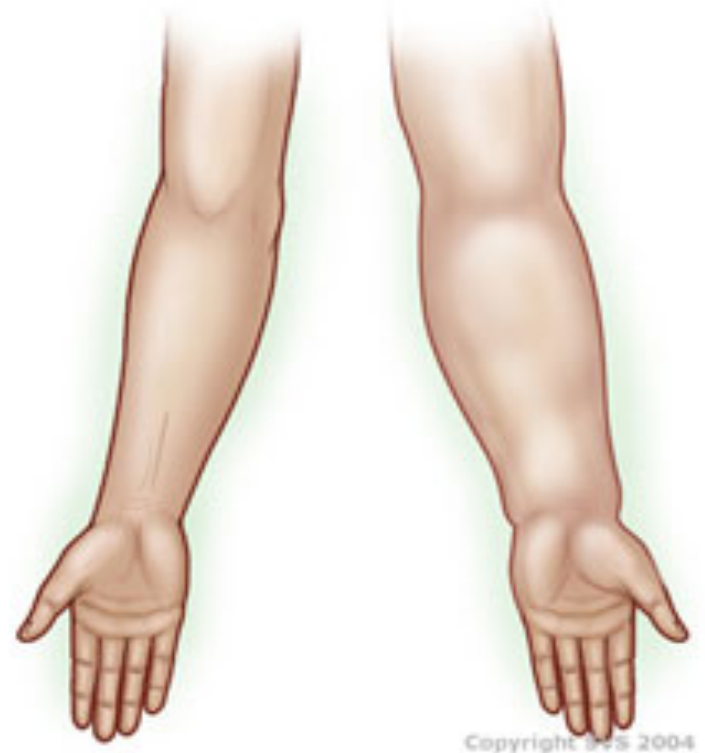
Primary⁸

- Congenital abnormality or dysfunction of lymphatic system
- Lower extremities
- Females>Males
- Swelling distal to proximal
- May not have a known cause
- Typically bilateral



Secondary^{8,9}

- **Acquired** condition resulting from the disruption or obstruction of the normal lymphatic system
- Populations primarily affected include individuals treated for breast cancer
- Approximately 25% of breast cancer patients develop LE following breast cancer treatment
- Typically unilateral



<http://www.vascularweb.org/vascularhealth/Pages/lymphedema.aspx>

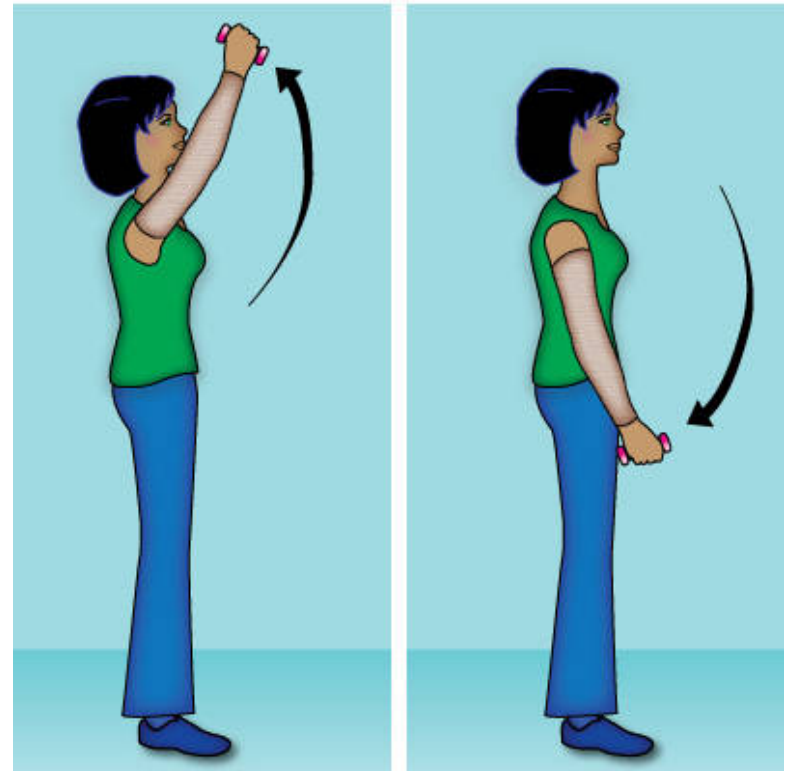
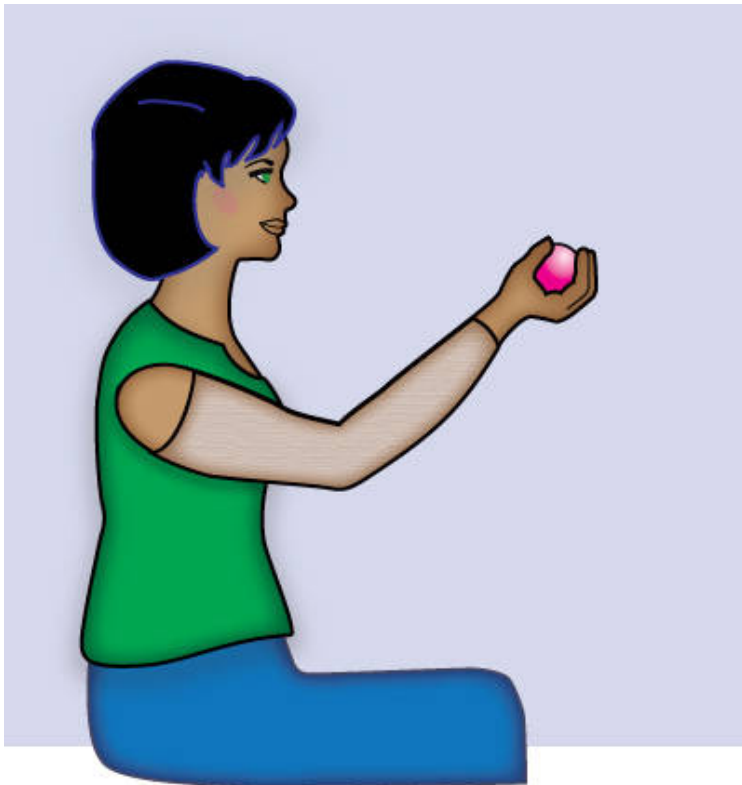
Prevention⁴

- Avoid blood draws, vaccinations, and intravenous lines on the affected side.
- Avoid tight fitting clothing
- Do not take blood pressure in the affected arm.
- Meticulous skin hygiene and nail care should be maintained to prevent any infection or skin irritation.



Prevention^{2,12,13}

- **Exercise!**



Signs and Symptoms⁴

- ✓ Swelling in the arms, hands, fingers, shoulders, or chest
- ✓ A "full" or heavy sensation in the arms
- ✓ Skin tightness
- ✓ Skin changes texture, feels tight or hard, or looks red
- ✓ Decreased flexibility in the UE joints

Be aware of these when treating anyone with h/o breast cancer.



MANAGEMENT

MLD: Basic History¹

- Developed by Emil Vodder and his wife in the 1930's.
- Originally used for the treatment of chronic sinusitis and other immune disorders.
- Now is recognized as a primary practice used in lymphedema management.



MLD: Proposed Mechanisms of action⁵

Nervous system

- Stimulates parasympathetic NS– decreasing pain by relaxing sensory nerve endings.
- Analgesic/ anti inflammatory effect

Immune system

- Increased circulation of lymph in the nodes stimulates immune system response

Circulatory system and fluid elimination

- Activation of lymph function and increased circulation improves elimination of fluid from interstitial tissue

MLD: Contraindications⁸

- *Malignant tumors
- *Cardiac or renal failure
- *DVT
- Acute viral inflammation
- Acute bronchitis
- Asthma d/t heart problems
- Arteriosclerosis
- Acute hypotension



4 Models of MLD¹

Different schools of thought exist, but the underlying principles of MLD techniques remain similar across the various methods.

1. Vodder
2. Földi
3. Casley-Smith
4. Leduc



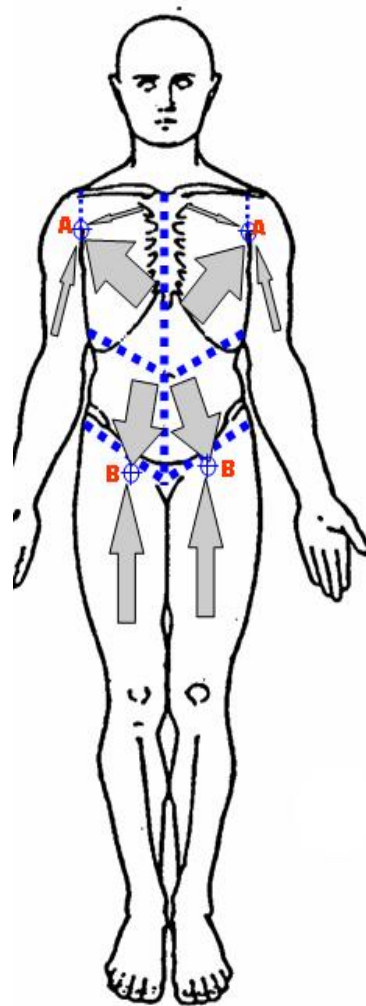
MLD: Clinical Application Principles¹

- Hand movements are used to stretch the skin in specific directions
- Promotes variations in interstitial pressures
- Breathing techniques are commonly used with MLD to influence drainage in the deep abdominal lymphatic vessels and nodes

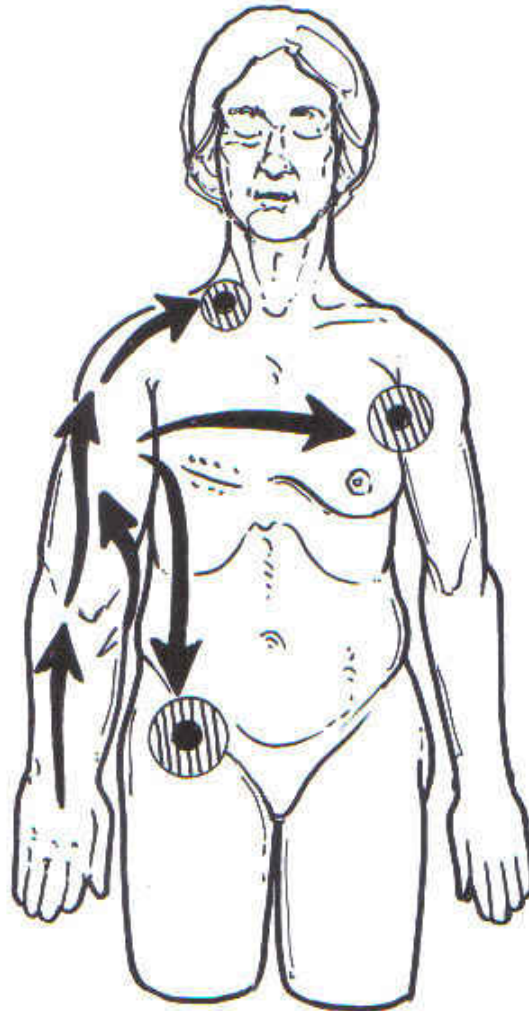
MLD: Clinical application^{1,5}

- Requires precise timing, direction, and pressure.
 - Correct sequencing –proximal to distal before distal to proximal- is important to clear pathway for fluid flowing from distal region.
 - Direction of massage is towards specific lymph nodes
 - No emollient applied
-
- *During the intensive phase, MLD is administered usually 5 times a week for 45-60 minutes per session*

Lymphotomes¹¹



In the case of breast cancer-related lymphedema...

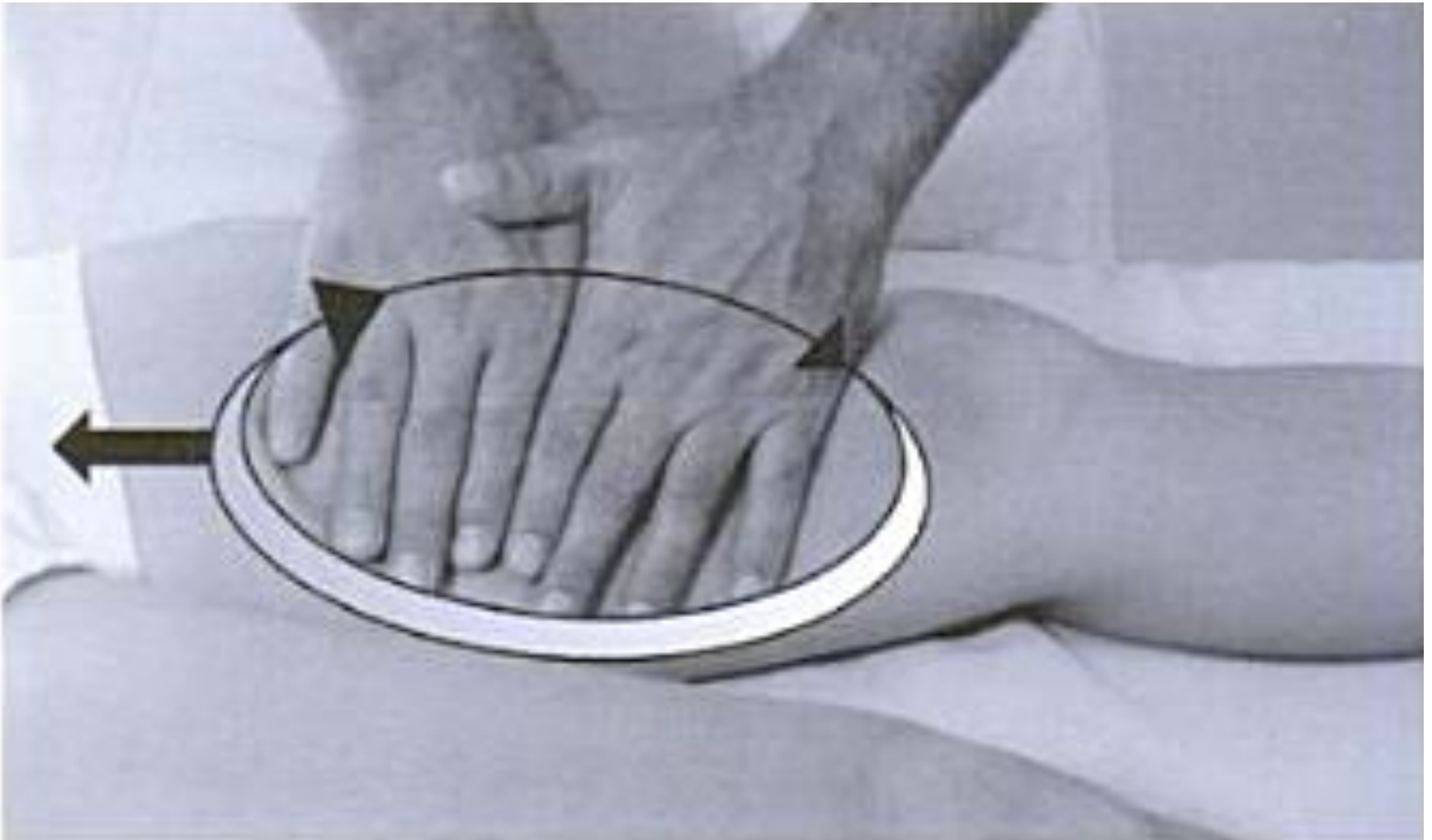


MLD: Basic Techniques^{5,8} (Vodder)

- Stationary circle
- Pump
- Scoop
- Rotary



Stationary Circle

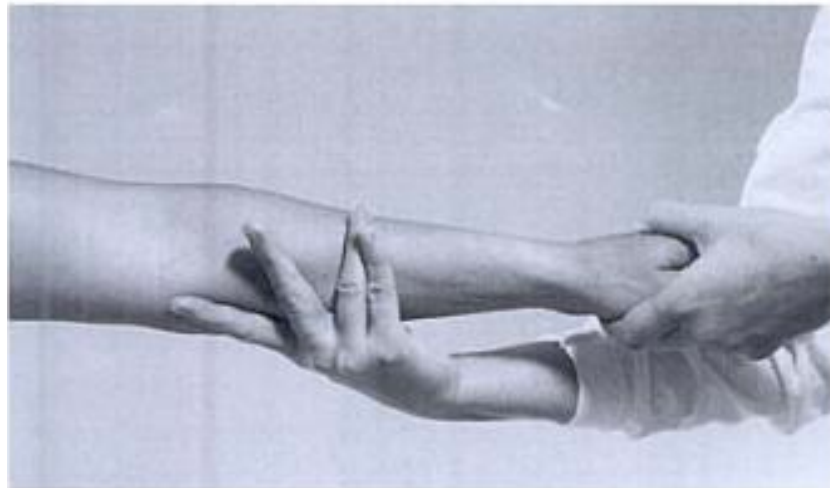
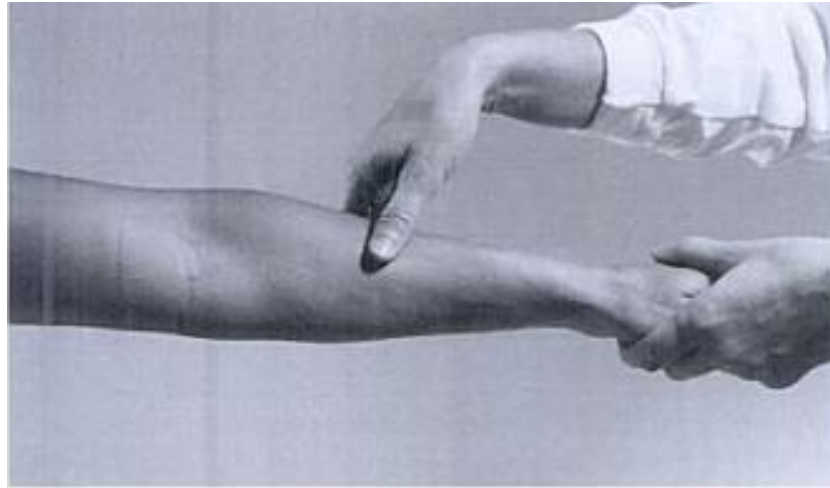


Pump



<http://www.youtube.com/watch?v=Vo2x8eKZAv4>

Scoop



<http://www.youtube.com/watch?v=AtID-dJyVGw>

Rotary



<http://www.youtube.com/watch?v=RgbHc7Wtg5I>

Compression Bandaging^{6,7}

[2 Primary Effects]

- **Improves the efficiency of the muscle and joint pumps**
 - **Prevent the re-accumulation of evacuated lymph fluid**
-
- Standard protocols recommend that bandages be worn 24 hours daily throughout the course of therapy
 - Continued use of compression is usually required to maintain treatment results



Reimbursement

- Ever changing and complex!
- Lymphedema therapy is billed using standard physical therapy codes (CPT)
- Payers typically do not cover compression garments and compression bandages

THE EVIDENCE

What Does The Evidence Say?

MLD^{14,15,16}

- The research remains divided, with some studies concluding that MLD is an unnecessary component of breast cancer-related lymphedema treatment in the short-term.

CB¹⁵

- Compression bandaging is an effective method for reducing lymphedema when used with or without MLD, at least in the short-term.

Please see separate evidence table included as a PDF

TAKING THE NEXT STEP

	CLT (<i>Certified Lymphedema Therapist</i>)	LANA (<i>Lymphology Association of North America</i>)
Course hours	135 hours of study (30 hours online + 11 day course)	40-60 hour course
Cost	~\$3,000	~\$375
Prerequisites	Current, unrestricted licensure	Must accumulate 1 year of clinical treatment experience
Re-certification	No recertification requirements. Refresher courses are offered.	Expires 6 years after successful completion of the exam. Candidates will re-certify by taking the exam again and/or providing proof of completed CEUs.
For more information:	http://www.acols.com/index.php/faqs	http://www.clt-lana.org/

THANK YOU!

Feel free to contact me with any questions...

etoomey@med.unc.edu

Links to Educational Videos

MLD treatment sequence of the upper extremity:

<http://youtu.be/5rR4IHYEOW>

Compression bandaging demonstration:

<http://youtu.be/HdYfiixS0Jg>

A major thank you to Beth Koenig, OTR/L, CLT-LANA and Delane Clark, PT (and soon to be DPT!!) for their contributions to these videos. Thank you also to Lisa Massa PT, WCS, CLT for her contribution to this presentation.

References

1. Williams A. Manual lymphatic drainage: exploring the history and evidence base. *Br J Community Nurs*. 2010;15(4):S18-24.
2. Lane K, Worsley D, McKenzie D: Exercise and the lymphatic system: Implications for breast-cancer survivors. *Sports Med* 35:461-471.
3. Warren AG, Brorson H, Borud LJ, Slavin SA. Lymphedema: a comprehensive review. *Ann Plast Surg*. 2007;59(4):464-72.
4. American Cancer Society. Lymphedema: Signs and Symptoms. Available at: <http://www.cancer.org/treatment/treatmentsandsideeffects/physicalsideeffects/lymphedema/whateverywomanwithbreastcancershouldknow/lymphedema-with-breast-cancer-signs-of-lymphedema>. Accessed on: March 1, 2013.
5. Kurz I. *Textbook of dr. vodder's manual lymph drainage*. Thieme Medical Pub; 1997.
<http://books.google.com.libproxy.lib.unc.edu/books?id=OgKSd7nUtZ8C>.
6. Leduc O, Leduc A, Bourgeois P, Belgrado JP. The physical treatment of upper limb edema. *Cancer*. 1998;83(12 Suppl American):2835-9.
7. Kligman L, Wong RK, Johnston M, Laetsch NS. The treatment of lymphedema related to breast cancer: a systematic review and evidence summary. *Support Care Cancer*. 2004;12(6):421-31.

8. Zuther JE. Lymphedema Management, The Comprehensive Guide for Practitioners. Thieme; 2009.
9. Academy of Lymphatic Studies. Course Offerings. Available at: <http://acols.com/>. Accessed on: March 3, 2013.
10. Casley-smith JR, Boris M, Weindorf S, Lasinski B. Treatment for lymphedema of the arm--the Casley-Smith method: a noninvasive method produces continued reduction. *Cancer*. 1998;83(12 Suppl American): 2843-60.
12. Schmitz KH, Ahmed RL, Troxel AB, et al. Weight lifting for women at risk for breast cancer-related lymph- edema: a randomized trial. *JAMA*. 2010;304(24);2699-2705
13. Johansson K, Tibe K, Weibull A, Newton RC. Low intensity resistance exercise for breast cancer patients with arm lymphedema with or without compression sleeve. *Lymphol*. 2005;38(4):167-180.

14. Andersen, L., Hojris, I., Erlandsen, M., & Andersen, J. (2000). Treatment of breast-cancer-related lymphedema with or without manual lymphatic drainage--a randomized study. *Acta Oncologica (Stockholm, Sweden)*, 39 (3), 399-405.
15. McNeely, M. L., Magee, D. J., Lees, A. W., Bagnall, K. M., Haykowsky, M., & Hanson, J. (2004). The addition of manual lymph drainage to compression therapy for breast cancer related lymphedema: A randomized controlled trial. *Breast Cancer Research and Treatment*, 86(2), 95-106. doi: 10.1023/B:BREA.0000032978.67677.9f
16. Devoogdt, N., Christiaens, M. R., Geraerts, I., Truijen, S., Smeets, A., Leunen, K., et al. (2011). Effect of manual lymph drainage in addition to guidelines and exercise therapy on arm lymphoedema related to breast cancer: Randomised controlled trial. *BMJ (Clinical Research Ed.)*, 343, d5326. doi:10.1136/bmj.d5326