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Molly Bumsted, PT, DPT, CLT

2004: graduate of the Creighton Physical Therapy Doctor of Physical Therapy Program

2013: Certified Lymphatic Therapist

2020-current: Member of the Outpatient Lymphatic therapy team at Nebraska Medicine

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Lecture Objectives

- Identify the risk factors in the development of lymphedema
- List the signs and symptoms of lymphedema
- Describe the standard lymphatic treatment by a certified lymphatic therapist.
- List 4 elements of independent self management of lymphedema.

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What is the Lymphatic System?

- Made up of a network of vessels that move fluid/water, protein, fat and cellular debris to lymph nodes that filter the particles to eventually drain back into the cardiovascular system
- Its main job is to maintain fluid balance in our body
- Plays a role in immunity

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How does the Lymphatic System Work?

- No central pump like the circulatory system
- Moves fluid and its contents via pressure gradients
 - Fluid from the interstitium-area that surrounds all our vessels, muscles, organs, bones, etc-gets pulled into the lymphatic system, the fluid is then considered lymph fluid
 - Volume increases, the lymphatic system opens, fluid moves, and pressure equalizes, the system closes, the cycle repeats
- There are no valves in the superficial capillaries so fluid can move freely in all directions

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Lymphatic Flow

- Volume increases → lymphatic system opens → fluid moves → pressure equalizes → the system closes
- The cycle repeats and can reverse spilling the lymphatic fluid back into the interstitium causing a build up of heavy protein rich fluid in that area of the body.

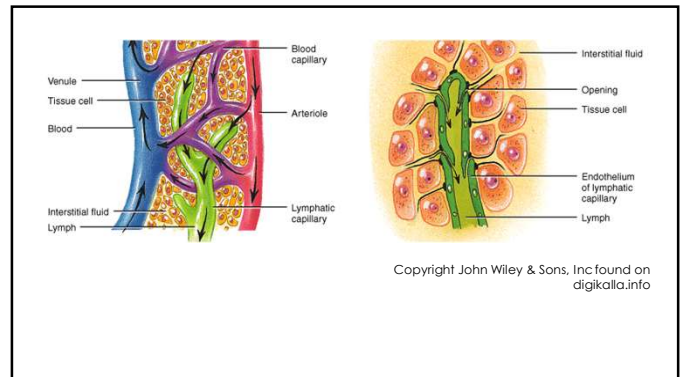


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Lymphatic Flow Continued

- Lymphatic Flow is influenced by:
 - Muscle pumping of skeletal muscle
 - Arterial and Venous propulsion
 - Production of new lymphatic fluid
 - Diaphragmatic breathing
 - Contraction of smooth muscles in the deeper vessels
 - Manual lymphatic drainage

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What is Lymphedema?

- A mechanical dysfunction of the lymphatic system
- The systems' inability to adequately remove water, protein, fat and cell debris from surrounding tissues
 - An abnormal swelling in a part of the body
- Lymphedema can happen anywhere in the body
 - Arms/hands
 - Legs/feet
 - Head/neck
 - Trunk/Abdomen/breasts
 - Genitals

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What are the Types of Lymphedema?

Primary

- Developmental Abnormalities
- May be present at birth but more commonly develops later in life without cause

Secondary

- Known damage to the lymphatic system
 - Cancer treatments
 - Injuries
 - Infections
 - Blood clots
 - Venous disease

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What are the Signs and Symptoms of Lymphedema?

- Heaviness
- Achiness
- Symptoms are on one side or one limb (for secondary)
- Intermittent or unexplained swelling
- Steadily progressing swelling
- Skin feels tight
- Numbness and tingling on the affected side/limb
- Clothing or jewelry that are commonly worn are suddenly ill fitting or too tight on only the affected side
- Size and/or volume differences of 2 cm or greater on the affected side

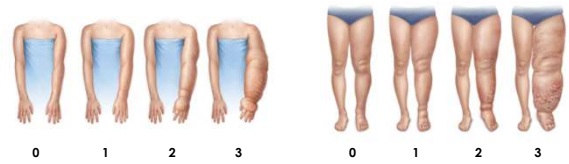
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Stages of Lymphedema

- Stage 0
 - Clinic stage; known mechanical dysfunction of the lymphatic system; no outward signs of lymphedema
- Stage 1
 - Visible swelling; spontaneous reversal of intermittent swelling; pitting edema; elevation is helpful
- Stage 2
 - Irreversible swelling with severity of the swelling changing; elevation is no longer helpful; decreased tissue mobility
- Stage 3
 - Severe swelling, skin changes

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Stages of lymphedema



Photos found at: signavis.com

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How is Lymphedema conservatively treated?

- Phase One: Decongestive Phase
 - Several treatment sessions per week until plateau in progress
 - Manual Lymphatic drainage
 - Skin care
 - Multi-layer, Multi-component wrapping focused on short stretch bandages
- Phase Two: Maintenance Phase
 - Compression garments
 - Self lymphatic massage
 - Skin care
 - Home lymphatic pumps
 - Exercise

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Other treatment options

- Surgical
 - Immediate lymphatic reconstructions
 - Lymphovenous bypass
 - Lymph node transplant
 - Liposuction

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Breast Cancer and Lymphedema

- 3-5 million people are diagnosed with breast cancer world-wide each year
- Over 200,000 in the US
- Breast cancer related lymphedema affects 1 in 5 or 20-40% of breast cancer survivors
- Can occur 5 months to 7 years post procedures and treatments for breast cancer
- Most often affects the arm of the affected side but can also affect the trunk or breast

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Breast Cancer and Lymphedema

- Literature suggests the following demographics are associated with the development of breast cancer related lymphedema
 - age: 40-60
 - High body mass index
 - Excessive lymph node dissection
 - Lymph node status
 - Chest wall surgeries (early onset of lymphedema)
 - Radiation (later onset of lymphedema)
 - Decreased physical activity level
 - Infections such as cellulitis

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Breast Cancer and Lymphedema

- Costly
- Time consuming
- Increases anxiety and depression
- Can cause social avoidance
- Can cause increased concerns with body image
- Decreases overall quality of life

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What can we do about it? Breast cancer related treatment

- Multidisciplinary team approach
 - Patient and provider education for early detection
 - Research suggests that the earlier lymphedema is detected and treated the more successfully it can be maintained at a stage 1
 - Prevention or mitigation for risk reduction
 - Surveillance
 - Successful therapy for reduction and appropriate management tools
 - Successful self management

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Self Management

- Self manual lymphatic drainage
- Skin care
- Compression garment use
- Exercise
- Home pump

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Things to consider with Lymphedema Management?

- Be consistent and diligent in both treatment and self management.
- If you require the use of daily compression wear-wear it!
- Avoid excess exposure to heat and humidity
- Avoid hot tubs (water temps in excess of 102 degrees)
- Limits time in saunas and steam rooms
- *Avoid injections into the affected limb*
- *Avoid blood pressure taken on the affected limb*
- *Wear compression both for long car rides and air travel*

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Further Considerations...

- Practice good skin and nail care
- Treat scratches, abrasions and cuts on the affected limb as soon as possible to avoid infection
- Maintain a health weight
- Perform regular physical activities/exercise
- Water exercise/submersion is great for lymphedema – hydrostatic pressure

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Other Aspects of Care a lymphatic therapist will address for successful management

- Empower their patients with the knowledge that successful management and return to their necessary and desired activities is possible
- Skin care needs
- Reduction of and increased mobility of scar tissue
- Improve or restore Range of motion
- Increase Strength
- Improve Posture

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Questions or comments



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References

- Anuszkiewicz, Karolina, Jankau, Jerzy, Kur, Martyna; (2022); What do we know about treatment breast-cancer-related lymphedema? Review of the current knowledge about therapeutic options. Breast Cancer; 30; 187-199.
- McEvoy, Marueen P., Gomberawall, Ameer, Smith, Mark, Boccardo, Francesco M., Holmes, Dennis, Djohan, Risal, Thriuchelvam, Paul, Klimber, Suznne, Dietz, Jill, Feldman, Sheldon; (2022); The Prevention and treatment of breast cancer-related lymphedema: A review. Frontiers in Oncology; December; 1-12.

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References

- Ren, Yumeng, Kebede, Michael, Ogunleye, Adeyemai A., Emerson, Marc A., Evenson, Kelly R., Carey, Lisa A., Hayes, Sandra C., Troester, Melissa A. (2022); Burden of Lymphedema in Long-term Breast Cancer Survivors by race and age; Cancer; December; (23); 4119-4128.
- Manrique, Oscar J., Bustos, Samyd S., Ciudad, Pedro, Adabi, Kian, Chen, Wei F., Forte, Antonio J., Cheville, Andrea L., Jakub, James W., McLaughlin, Sarah A., Chen, Hung-Chi. (2022); Overview of Lymphedema for Physicians and Other Clinicians: A Review of Fundamental Concepts; October; (97); 1

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References

- Center for Disease Control and Prevention (www.CDC.gov)
- The World Health Organization (www.who.int)
- The Lymphatic Education and Research Network (www.lymphaticnetwork.org)
- Comprehensive Cancer Information-NCI. (<https://www.cancer.gov>)

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References

- Zuther, Joachim E. and Norton, Steve. Lymphedema Management, The Comprehensive Guide for Practitioners; 3rd Edition. New York, Thieme Stuttgart, 2013.
- Vaillant-Newman, Anne-Marie, 2012, Pacific Therapy Education, Coast to Coast School of Lymphedema Management. Lymphedema management-Leduc Method-Basic Course, Stanford University School of Medicine, Palo Alto, CA.
- Vaillant-Newman, Anne-Marie, 2012, Pacific Therapy Education, Coast to Coast School of Lymphedema Management. Lymphedema management-Leduc Method-Advanced Course, Stanford University School of Medicine, Palo Alto, CA.

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