



LYMPHEDEMA

Royal Victoria Regional Health Centre
Cancer Care Program

Watch our video for more info!

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Lymphedema Class - Objectives

- To review the anatomy of the lymphatic system
- To better understand what is lymphedema: definition, risk factors, signs and symptoms, incidence
- To review treatment options and risk reduction guidelines for lymphedema
- To improve awareness on how to reduce your risk of developing lymphedema or better control flares of confirmed lymphedema

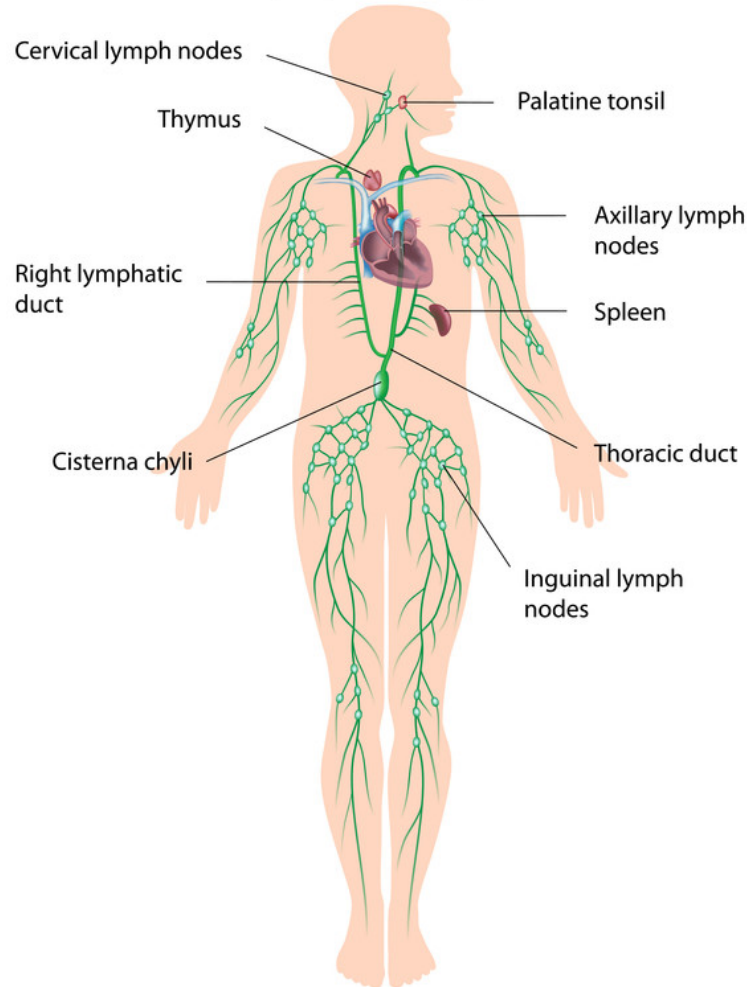
Class now online!

Want a refresher on today's class?
Watch the video!

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Lymph Vessel System

The Lymphatic System



Functions of the Lymphatic System

1. Transport system

- Moves large particles that our circulatory system cannot absorb (protein, long chain fats).
- Moves approximately 2 liters of fluid per day.

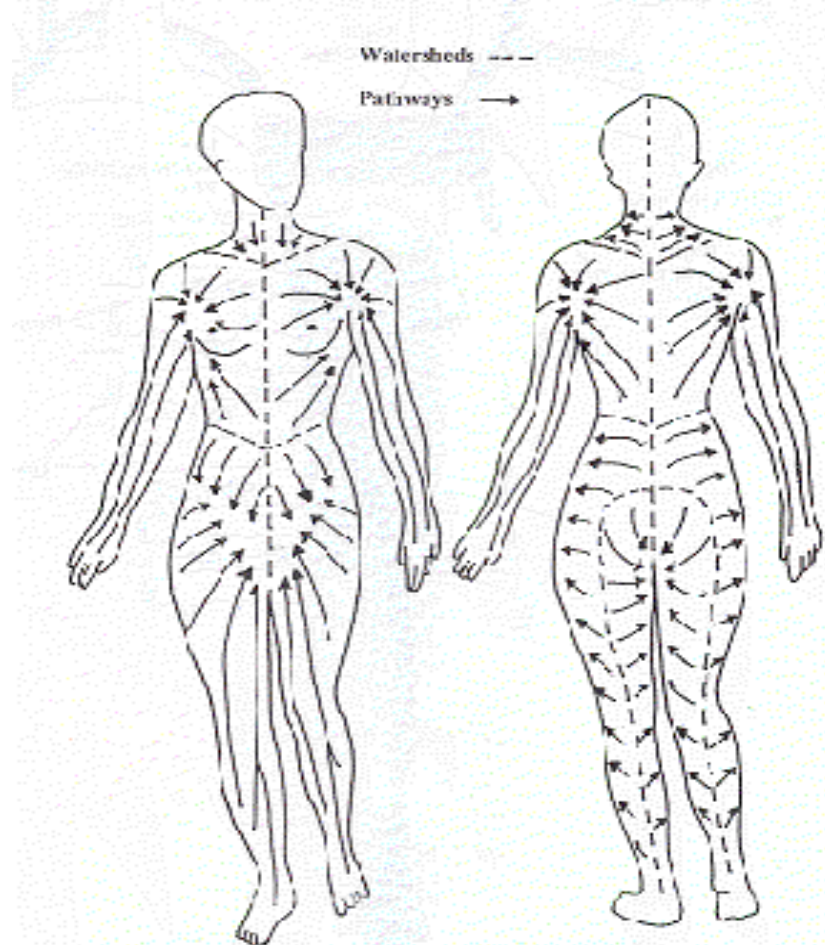
2. Boost our Immunity

- Transportation
- Generates response

3. General “detoxification”

Superficial Drainage Pathways

**Superficial Lymph Drainage Pathways
of the Skin**



Lymphedema

- Definition
 - Abnormal collection of protein rich lymph fluid in the interstitial space caused by damaged lymph vessels
 - Results in edema/swelling, chronic inflammation and fibrosis (hardening) of tissue
 - No cure
 - Can be treated and controlled

Differential Diagnosis

- Lymphedema
- Lipedema
- DVT
- CHF
- Infection
- Recurrence of cancer
- Lymphodynamic edema (eg. kidney failure)

Types of Lymphedema

- **PRIMARY**
 - Occurs without any obvious cause (unknown)
 - Congenital (0-2 years old)
 - Lymphedema praecox (<35 years old)
 - Lymphedema tarda (>35 years old)
- **SECONDARY (acquired)**
 - Occurs when lymph vessels are injured, radiated, removed or infected.
 - North America: usually as a result of lymph node dissection and/or radiation.
 - It can develop immediately after surgery or weeks, months or years later.
 - Filariasis: tropical or subtropical regions.

Incidence of Secondary Lymphedema

- **Breast Cancer**
 - Kligman (2004): 10% from surgery alone
20-30% surgery plus radiation
 - Ozaslan and Kuru (2004): 41% surgery plus axillary radiation
- **Gynecological Cancer**
 - Beesley (2007):
 - Overall 10% diagnosed LE.
 - Highest prevalence of diagnosed among vulvar (36%), cervical (12%), uterine (8%), ovarian (5%)
- **Melanoma**
 - Faries et al (2010): 12%-20%

Triggers of Secondary Lymphedema

- Can include:
 - Injury
 - Weight gain (obesity)
 - Air travel
 - Infection
 - Stress (emotional, physical)
 - Increase heat

Signs and Symptoms of Lymphedema (What to Watch Out for)

- Sense of fullness in limb(s)
- Pins and needles
- “Bursting” sensation
- Shooting pain, discomfort or aching
- Skin changes: feeling tight/thickening/discoloration
- Feeling of heaviness or tightness
- Decrease flexibility in the hand/wrist
- Difficulty fitting into clothing in one specific area
- Ring/watch/bracelet tightness

Signs and Symptoms of Lymphedema (What to Watch Out for)

- Affected limb can be warmer than unaffected one
- Indenting of the skin when swollen area is pressed
- Swelling in arm or chest
- Swelling becomes hardened
- Swelling continues to grow
- Repeated infections in affected area
- Decrease mobility of joints in affected limb
- Leaking of lymph fluid through skin

Stages of Lymphedema

- **STAGE 0**
 - Latent or sub clinical stage
 - Swelling not visible but lymphatic transport impaired
 - Months or years before overt swelling is observed
 - Feeling of fullness, heaviness, tightness, pain
- **STAGE 1**
 - Swelling may come and go
 - Sometimes helped by elevation
 - Edema could be pitting

Stages of Lymphedema

- **STAGE 2**
 - Early stage: Limb elevation rarely reduces edema, pitting
 - Late stage: Edema may or may not be pitting, fibrosis may begin, limb hardens and increase in size
- **STAGE 3**
 - Limb is very large and tissues hard and unresponsive
 - No pitting
 - Skin changes (thickening, hyperpigmentation, skin folds, fat deposits, warty overgrowths)
 - Can be called lymphostatic elephantiasis

Lymphedema Treatment

- Conservative
 - Physical treatment (Combined Decongestive Therapy - CDT)
 - Other physical therapy modalities
 - Hyperbaric oxygen, low level laser therapy, etc
- Pharmacological Treatment
- Psychosocial
- Surgical

Combined Decongestive Therapy (CDT)

- Intensive Phase
 - Skin care
 - Education in self care
 - Manual lymphatic drainage
 - Compression therapy
 - Short stretch compression bandages
 - Remedial exercise
- Maintenance Phase
 - Skin care
 - Manual lymphatic drainage
 - Compression therapy (garments, night compression)
 - Exercise

Skin Care

- Meticulous skin care is important to
PREVENT INFECTION
- Goal is to :
 - Keep skin healthy
 - improve condition
 - deal with problems

Skin Care

- Skin kept soft and supple, clean and in good health.
- Use mild hypoallergenic soap.
- Carefully dry all body parts gently by patting (between digits and crevices).
- Use fragrance free and low ph moisturizing lotion
 - Eg. Lymphoderm, Eurecin, Lubriderm
- Any cuts should be washed and treated with antibiotic cream or ointment and watched carefully.
Any signs of infection: [seek medical attention.](#)

Infections

- Stagnant condition of lymphedema provides a welcoming environment for bacteria which can lead to infections
 - Eg. Cellulitis, lymphangitis
- **SEEK MEDICAL ATTENTION IMMEDIATELY**
- Treatment of choice: **ANTIBIOTIC**
- Stop manual lymphatic drainage and do not wear compression bandages/garments until infection resolves

Signs And Symptoms of Infection

- May include some or the following:
 - Rash, red blotchy skin
 - Discoloration
 - Itching in the affected area of the skin
 - Heavy sensation of limb (more so than usual)
 - Pain
 - Increase swelling or temperature
 - Malaise, chills, fever

Manual Lymph Drainage



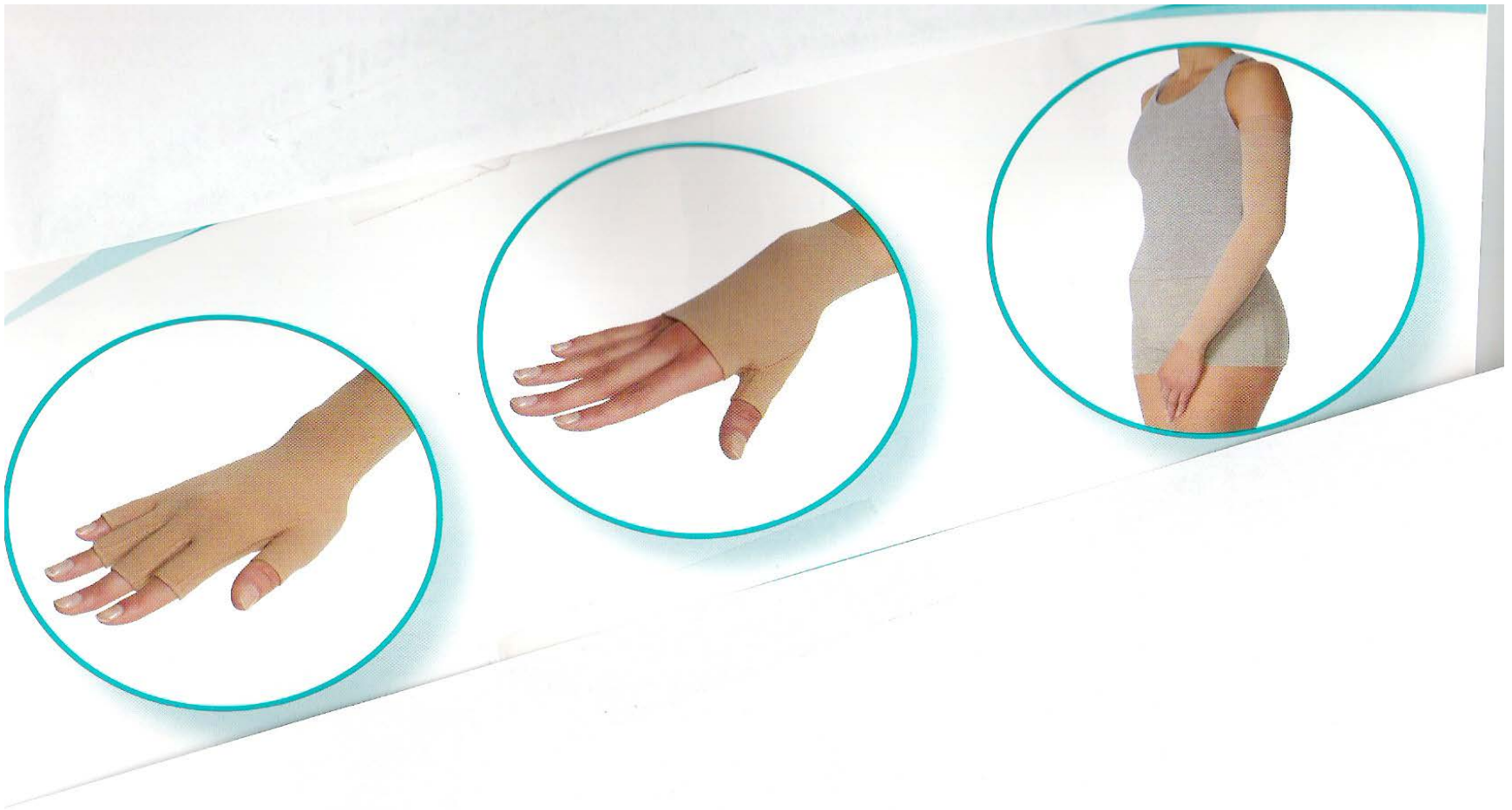
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Compression Bandaging



SMRCP

Compression Garments



Compression Therapy

- Compression garments
 - Worn during the day/during waking hours
 - Good fit is crucial for maintaining limb size
 - How much compression? 20-60 mmHg
 - Should be replaced every 4-6 months (need 2 at a time; one to wear and one to wash)
 - OTC vs custom
 - ADP and/or insurance coverage

Reasons for Garment Failure

- Poor fit
- Fabric
- Appearance
- Sizing
- Poorly instructed in donning/removal
- Poor garment care
- Not replaced frequently enough

Exercise and Lymphedema

Exercise program which incorporates
strength,
stretching,
and aerobic exercises

has been shown to improve quality of life by decreasing distress, enhance well being, improved functioning, and increased positive effect

(Kolden et al 2002, Lundgren, 2003)

Components of Exercise Program in Lymphedema

- **STRETCHING**

- Addresses ROM, myofascial restrictions, scar restrictions, skin changes from radiation
- Improved flexibility can help remove any restrictions to the maximal transport capacity (Miller, 1998)

- **CARDIOVASCULAR**

- Swimming (Tidhar, 2004)
- Walking (Mock et al, 2001)
 - Significantly less fatigue and emotional distress, and higher functional ability and quality of life

Components of Exercise Program in Lymphedema

- **STRENGTHENING**

- Interval training is best. Start with light resistance and increase slowly and gradually (Abreast in a Boat Dragon).
- Not exacerbate existing lymphedema (McKenzie, 1998 and McKenzie and Kalda, 2003) or precipitate new onset of lymphedema (Lane et al, 2005, Harris et al, 2000, Ahmed et al, 2006)

Lymphedema Exercise Guidelines

- Individualized program
- Monitor signs/symptoms after exercising and adjust intensity accordingly.
- Exercise in compression to avoid pooling of fluid in the limb.
- Outdoor sports in summer (avoid extreme midday temperature).

Practical Tips

- Skin care (avoid trauma/injury and reduce infection risk)
- Activity/Lifestyle
- Avoid limb compression
- Compression Garments
- Extremes of Temperature
- Additional practices specific to lower extremity lymphedema



It is important to remember that
**lymphedema can be treated and
controlled**

How to Get Help

- If you experience any of the signs and symptoms of lymphedema or infection, seek medical attention immediately
- Consult your doctor
- Seek treatment for lymphedema:
 - CDT: combined decongestive therapy

Community Resources and Websites

- BROCHURE
- WEBSITES
 - This class is now on video! bit.ly/RVHlymph
 - Cancer Care Ontario (CCO) Evidence-Based Clinical Practice Guidelines www.cancercare.on.ca
 - Lymphedema Association of Ontario www.lymphontario.org
 - Lymphovenous Canada www.lymphovenous-canada.ca
 - www.breastcancer.org
 - Lymphedema circle of hope www.lymphedemacircleofhope.org
 - National Lymphedema Network (NLN) www.lymphnet.org
 - [Lymphedema Risk Reduction Practices](#)
 - [Ministry of Health - Application for Funding Pressure Modification Devices](#)