



# 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

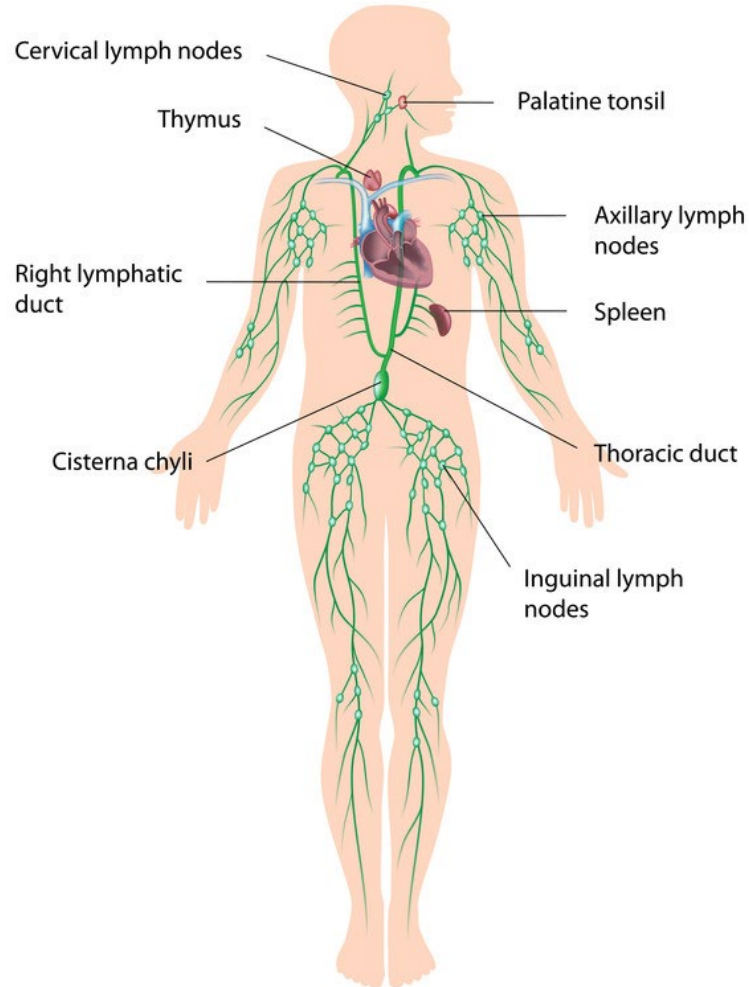
# Class now online!

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.

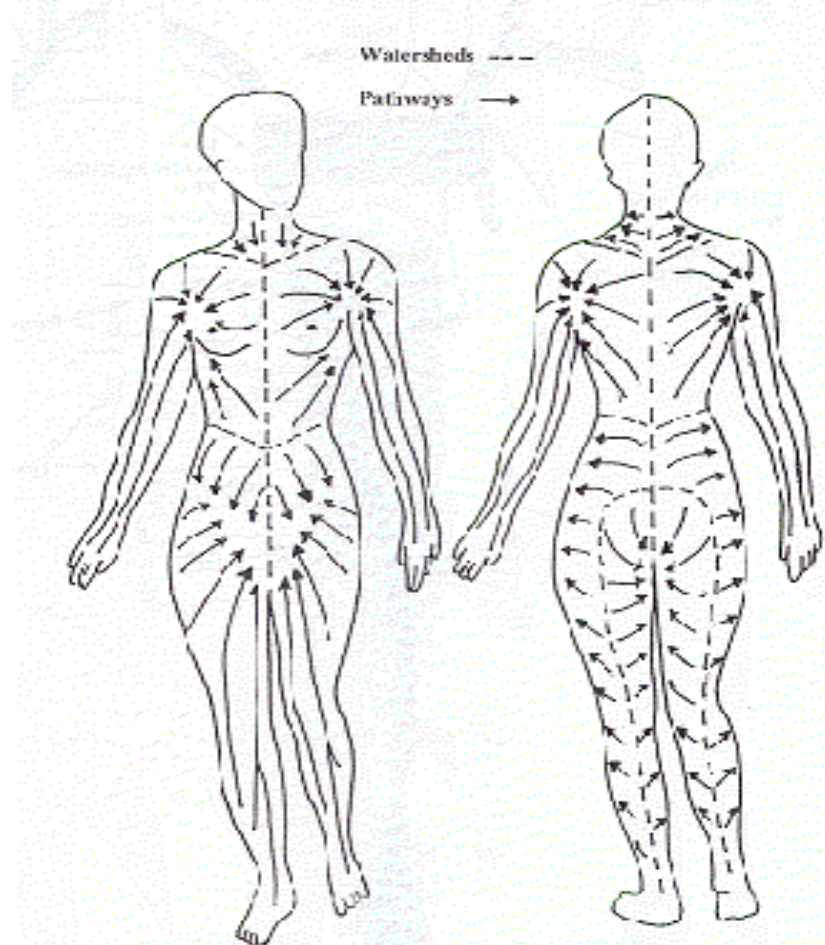
## 2. Boost our Immunity

- 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



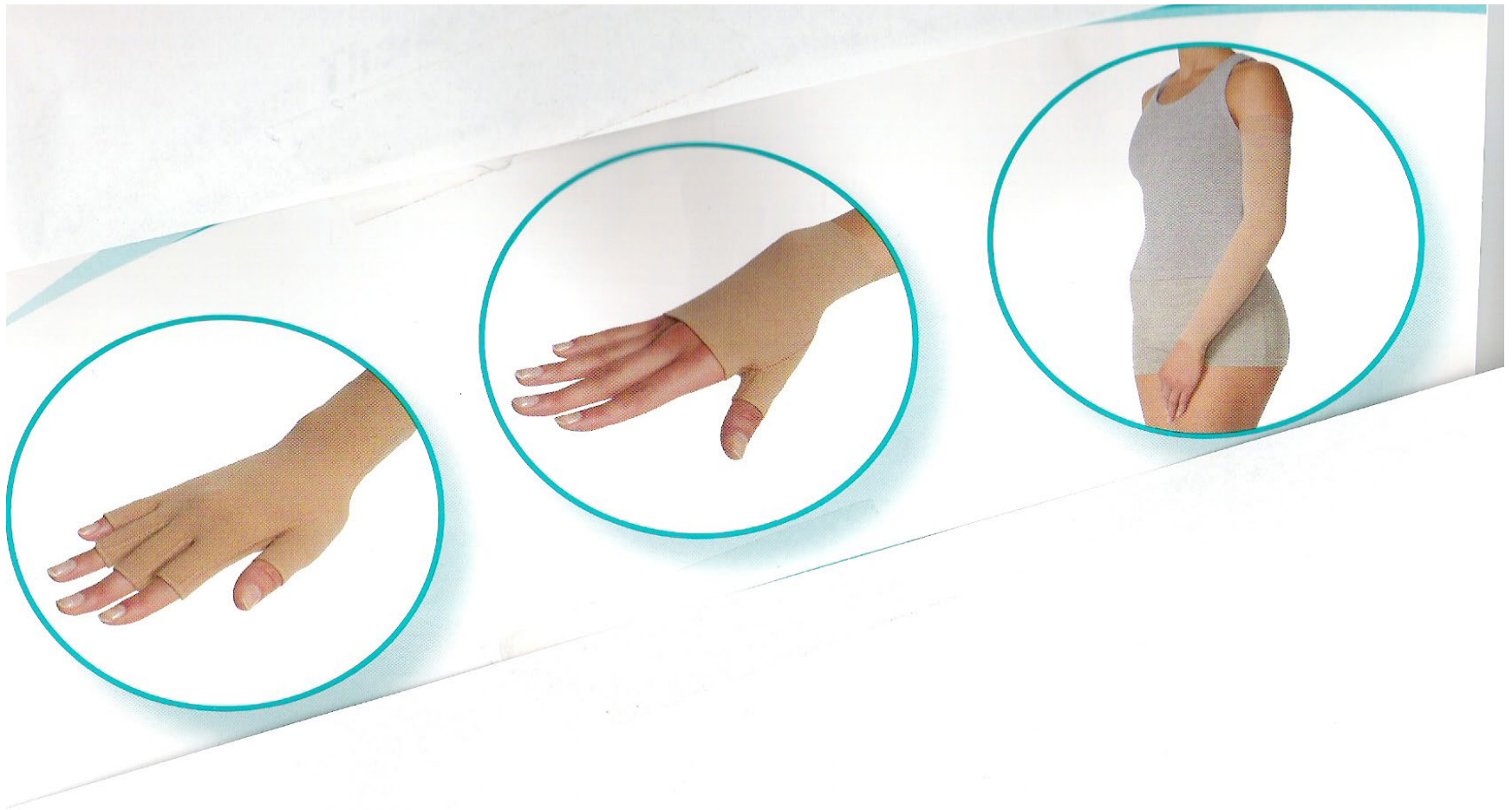
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# Compression Bandaging



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](http://bit.ly/RVHlymph)
  - Cancer Care Ontario (CCO) Evidence-Based Clinical Practice Guidelines [www.cancercareontario.ca](http://www.cancercareontario.ca)
  - Lymphedema Association of Ontario [www.lymphontario.org](http://www.lymphontario.org)
  - Lymphovenous Canada [www.lymphovenous-canada.ca](http://www.lymphovenous-canada.ca)
  - [www.breastcancer.org](http://www.breastcancer.org)
  - Lymphedema circle of hope [www.lymphedemacircleofhope.org](http://www.lymphedemacircleofhope.org)
  - National Lymphedema Network (NLN) [www.lymphnet.org](http://www.lymphnet.org)