

Lymphedema

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Lymph Flow

Lymph fluid moves through the body via:

- Muscle contraction and pressure gradient (exercise)
- Diaphragmatic (deep) breathing
- Artery contraction
- Helped by massage and compression

Lymphedema

- ❖ Protein-rich fluid accumulation
- ❖ **Improper management** can lead to:
 1. Chronic pitting edema
 2. Chronic cellulitis
 3. Pain
 4. Fatigue
 5. Fibrosis

Who Gets Lymphedema?

- ❖ Secondary - damage/trauma to lymph system:
 - Parasites (Filarial worms)
 - Lymph node dissection
 - Radiation
 - Malignant lymphedema = tumor blockage
 - Trauma/burns/paralysis
 - Liposuction
 - Incidence: not fully known, around 15.5% of all cancers (2010 ACS):
 - up to 40% of breast cancer
 - upper extremity melanoma = 5%, lower = 28%,
 - gynecologic = 20%, genitourinary = 10%, head/neck = 4%
 - sarcoma = 30%, pelvic node dissection = 22%, radiation = 31%
- ❖ Primary – congenital
- ❖ Difficult to know there's a problem without *palpating* and *measuring*

Lymphedema Triggers

Lymph fluid overload secondary to:

1. Flight
2. Elevation/altitude
3. Heat
4. Overexertion during exercise
5. Infection
6. Obesity: body mass index of overweight to obese = a 40-60% higher risk of lymphedema *
7. Seroma and cording might contribute

It can occur anytime after surgery and/or radiation

There is NO cure for lymphedema

Lymphedema Risk Reduction

1. Automatic referral
2. Education/re-education of ALL patients at risk
3. Fibrosis reduction and scar tissue work
4. Baseline girth measurements
5. Teach patient daily skin checks
6. Teach self-MLD
7. Get patient on comprehensive ex. program
8. Address weight loss
 - Rec'd nutrition consult if needed
 - Decrease salt intake before/during flight



Scars Make a Difference!

- Visible scar is the “tip of the iceberg”
- Immobile scars can cause long-term pain syndromes and local edema
- All incisions should have scar tissue work done 4-6 weeks post surgery - taught to caregiver
- Once scar is mobilized, no further treatment needed

Range of Motion

- Normalized motion after surgery is critical
- Loss of motion affects function and may make lymphedema worse
- Recommend stretches before and after radiation healing – no end point

Lymphedema Treatment

- Fibrosis reduction
- Manual lymph drainage massage
 - PT, OT, MT
 - Self
- Compression bandaging
- Compression garment (leg/abdomen/chest wall/scrotum)
- Exercise, weight reduction



Bandaging Supplies



Garments

1. Prophylactic versus treatment
2. Cost
3. Replacement: every 6 months
4. Types:
 - a. Juzo
 - b. Medi
 - c. JOBST
 - d. Sigvaris
5. Indication with exercise:
 - Need to be on before, during and after
 - No garments needed for swimming



2009 NEJM U Penn Study

141 patients post breast cancer resection, ALND and lymphedema

1. 70 = control group
2. 71 = weightlifting group (WLG) participated 2x/week x 90-minute exercise classes for 13 weeks @ YMCA in PA, NJ and DE
 - a. Next 39 weeks, continued 2x/week unsupervised exercise
 - b. Wore custom-fit compression garment during workouts
 - c. Asked weekly about symptom changes, arms measured monthly
 - 1) 19 control patients had a flare vs. 9 of WLG
 - 2) **Weightlifting group:**
 - Fewer lymphedema flares, improved strength
 - Improved self-report of lymphedema symptoms

Schmitz, K, et al, Weight Lifting in Women with Breast Cancer–Related Lymphedema; NEJM, Volume 361:664-673, Number 7, August 13, 2009.

Healthy Living Recommendations

1. Lifetime risk but lymphedema is not inevitable
2. Stay healthy, maintain proper weight
3. Daily skin checks, seek MD promptly with any changes
4. Return to PT/OT as needed
5. If you have a garment, replace it every 6 months and make sure it fits you properly, especially if you gain/lose weight
6. Slow, gentle exercise progression is always best

If you follow your precautions and take good care of yourself, you should be able to do almost any activity

Continued Recommendations

2. Early intervention with chemo-related toxicities such as neuropathy and swelling
3. Address weight loss or maintain proper weight, especially of abdominal area
4. Exercise prescription
5. Find a PT: [apta.org](https://www.apta.org)

On our Radar

- Kinesiotape
- Physio touch
- Low-level laser
- Acupuncture
- Lymph vessel to vein anastomosis or lymph node transfer
- Acebilustat as treatment for arm lymphedema at Stanford

Trial # NCT05203835

Bottom Line

Whether at risk or currently have lymphedema:

1. Daily **cardiovascular exercise** with combination of weight bearing and non-weight bearing exercise x minimum 30 min.
2. Appropriate **whole body weight training program** 2-3x/week specific to medical issues, osteopenia/osteoporosis levels
3. **Flexibility** exercises 3-7x/week depending on specific needs
4. Swimming
5. Unproven: rebounder – but might be helpful
6. Avoid infection