CLINICAL ASPECTS OF LIGHT THERAPY ON LYMPHEDEMA
Lynette Barnet, Australia

- Lymphedema = edema due to lymphatic malfunction
  - Due to excess fluid extravasation overwhelms lymphatic reserve capacity OR
  - Reduced interstitial fluid removal due to reduced lymphatic function
  - Maybe both
- Greater than 20% incidence after surgical dissection the axilla, groin, and radiotherapy increases risk (approx. 70%)
- 150,000,000 affected world-wide (many have filariasis)
- Often a trigger brings on: infection, long flight, burn, bite etc
- Conventional TX: massage, compression garments, pumps, skin care

Low-level laser treatment:
- LTU 904 LLLT
- Placebo controlled, double blind
- 904 nm pulsed
- Treat week 4 to 7, and 15 to 18, placebo group had placebo instead of the first treatment course
- Total energy 5.1 joules, dose 1.5 J/cm2
- Results:
  - Arm volume decreased after the second course of treatment
  - ECF-bioimpedance measure limb volume: significant improvements after two courses of laser treatment: in affected arm, trunk and unaffected arm. But the affected arm bioimpedance was better after 2 courses
  - Tonometry: tissue resistance: significant improvements with two courses of treatment in the upper arm but not the forearm, and also in the posterior thorax
  - Subjective improvements: pain, tightness, heaviness, cramp, limb temp, size, pins and needles
  - No significant difference in quality of life and ADL
- Two courses of 3 week treatment (3x/wk)
  - Reduces volume and ECF content
  - Increases drainage?
  - Or reduces fluid inflow into the affected arm?

PATIENT TREATMENT:
- She is P.T. who specializes in lymphedema
- Explain to patient requirement for ongoing treatment
- Case presentation: s/p mastectomy: lymphedema in both arms, large pouches under both arms, sensitive raised scarring, distended abdomen, malnutrition
o Did PT: Vodder MLD technique
o Treatment twice week for 2 wks
o Then weekly for 4 wks, then q 2 wks
o Now just treat with laser, and PT every 3 months
o Results: reduction in edema, softening of congested areas, muscles relaxation and cording control, pain reduction
o Laser 40 seconds per spot, max 1 min
o Use of probe shield
o Treatment time approximately 25 minutes
o Laser: 8 positions in both axillas, plus scar areas, plus areas of muscle cording
• Can use for pregnancy induced LE lymphedema
• Discussion: very short pulses, very high peaks, very high milliwatts average, this laser type is very different, though dose sounds low, probably isn’t
• Treats from proximal to distal