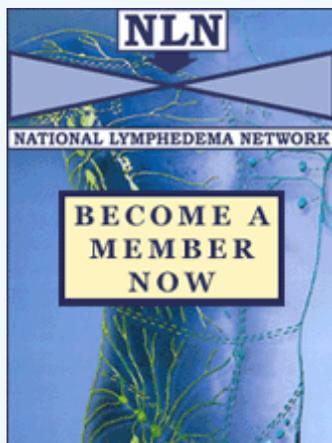



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LymphLink Question Corner

October-December 2009

By Kathleen Francis, MD

Q: I recently developed lymphedema of my right arm as a result of treatment for breast cancer and have spoken to two therapists in my area about treatment. They both do Complete Decongestive Therapy (CDT), but one also offers treatment with low-level laser therapy (LLLT). Will the LLLT offer better results than CDT alone?

A: Your question brings up a multitude of issues which continue to be debated among lymphedema experts and others.

First of all, at this point lymphedema is a condition for which there is currently no curative treatment. Although the condition can nearly always be managed and controlled with a combination of treatments including CDT, use of compression garments and bandages, meticulous skin care, exercises, and weight management, all of us wish there were easier ways to treat it. As a result, there have been many attempts to find alternative treatments for LE.

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Low-Level Laser Therapy (LLLT) is also referred to as cold laser. This modality generates light of a single wavelength that can penetrate skin and tissues without generating heat. Laser radiation may alter cell and tissue function, and "remarkable effects are reported for a surprisingly broad range of conditions from acne to myocardial infarction" (Carati et al., Cancer 2003). However, the mechanism of action by which laser affects cells and tissues continues to be explored and debated. Some theories include increase in cell energy production, stimulation of endorphins, reduction in inflammatory reactions, and improved blood circulation, among others. Many experts in evidence-based medicine feel that the accumulated evidence thus far has not substantially shown the effectiveness of LLLT, and nearly all third party payors (insurance companies) feel that LLLT remains "experimental and investigational" (Aetna Clinical Policy bulletin, 2004).

It is important to realize that research studies can vary greatly in their quality, and often treatments that showed great promise in early research later prove to be ineffective or sometimes even harmful. This is why "evidence-based medicine" has become the byword in evaluating medical treatments and interventions. Evidence-based medicine "grades" research studies on their design, giving the greatest weight of evidence to series of large randomized double-blinded controlled studies with good study design. Unfortunately, in the field of lymphedema there is very little research that meets the highest standards of evidence. All this simply means that we have to be careful in deciding what to believe when it comes to treating LE.

Several studies have examined the use of LLLT in treatment of arm lymphedema and indicated a benefit in reducing arm circumference, decreasing pain, and/or softening hard

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tissue. Some research suggests that LLLT increases lymphatic vessel pumping, stimulates lymph vessel regrowth, reduces pain, and softens firm tissue and scars. Again, the specific mechanism by which these effects may be achieved is unknown.

Research studies assessing LLLT for a variety of other conditions, including musculoskeletal pain, wound healing, nerve compression, and osteoarthritis to name just a few, have been small, apply a range of treatment parameters, and often are not compared to other treatments

or to placebo. Those who have examined efficacy in treating LE have similar limitations.

Fortunately, to my knowledge there have been no published reports of significant adverse effects (harm) caused by LLLT devices used to treat lymphedema.

One last consideration: The LLLT devices currently being used to treat LE were "cleared" by the FDA by a process called 510(K), which is not the same as "FDA approved." The 510(K) process is much less rigorous than the FDA approval process for drugs, and does not require any proof of safety or effectiveness.

In summary, LLLT has shown some promise in relieving some of the distressing symptoms of LE, but the evidence for its effectiveness remains limited. Hopefully future studies and wider experience with LLLT will confirm its usefulness as an adjunct to our current approaches in treating LE. In the meantime, it does not appear to be harmful, so you can make your own decision to try it or not based on the available information and your own comfort level with new treatments. Remember to check with your insurance company regarding reimbursement, since many of them do not cover LLLT for use in treating LE.

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