

# Breast Cancer Recovery: A Paradigm Shift

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*Connie will be teaching at the Aquatic Therapy Symposium June 23 – 27 about the Self AquaStretch technique mentioned in this article as well as courses on ROM, Open Kinetic Chain, and Spine Techniques. Go to [www.atri.org](http://www.atri.org) for more info.*

Having been diagnosed with breast cancer in the late 1990s, I have been fortunate to live through a substantial paradigm shift in diagnosis, treatment, and rehabilitation. This article will share some research highlights, as well as the personal observations of this survivor. Ultimately, if you are working with this population, I hope to reinforce best practices for those of us undergoing treatment and recovery.

It is well established that regular exercise is a preventative factor in breast cancer (Peel et al. 2009). Recently, researchers have determined that high levels of insulin and insulin-like growth factor (IGF-1), often present in sedentary individuals, can increase the risk of breast cancer recurrence (Ligibel et al. 2008; Irwin et al. 2009). Along the same lines, a 2005 study of 3,000 breast cancer patients found that just 1 hour of walking per week significantly increased a patient's likelihood of making a full recovery (American Cancer Society 2005). A systematic meta-analysis published in the *Canadian Medical Association Journal* analyzed the data from 14 studies and found that the benefits of exercise were positive even when statistical significance was not achieved (McNeely et al. 2006). The outcomes measured were quality of life, cardiovascular fitness, physical functioning, fatigue, body composition and adverse treatment effects.

## About Lymphedema

People who have had lymph nodes surgically removed (or damaged in treatment), are at increased risk of developing lymphedema. This is a chronic, often progressive swelling of the arm, shoulder, neck or torso. Lymphedema can occur when surgery or radiation therapy cause physical disruption or compression of the axillary lymphatic channels (Ahmed et al. 2006). Surgical follow-up to breast cancer diagnosis has changed radically in the past 20 years. Lymph node inspection is part of cancer staging – looking to see whether the cancer has left the breast and migrated elsewhere. Though stats vary from region to region, “Axillary node dissection” (the standard of care in the 1990s) has been replaced by sentinel node biopsy. This means, a targeted extraction of the first nodes to receive dye injected at the tumor site. Sentinel node biopsy replaces the old ‘cut, look, and scoop’ technique used to search for axillary lymph nodes that might be cancerous. Therefore, axillary lymph node removal is much less invasive or damaging. Radiation techniques are also more targeted than they were decades ago. This means less radiation damage, and lower risk of subsequent lymphedema.

Until recently, the common sentiment (still believed by some medical professionals), was that upper-extremity exercise contributed to the development of lymphedema. People were told to protect their affected limb(s), restricting any activity that could result in damage to the skin. Therefore, many sporting activities, and hobbies like gardening, were restricted or forbidden! Thankfully, research is providing solid evidence that many forms of vigorous exercise are not

only safe, but beneficial, both during and after treatment for breast cancer. Weight training, aquatic exercise, and even dragon boat racing, were not found to increase lymphedema risk. In fact, many health factors – including fitness, strength, endurance, quality of life, self-efficacy and mental health, were significantly *enhanced* by these exercise interventions. (Cuesta-Vargas et al., 2013, McKenzie, D.C. et al., 2003, McNeely, M.L., et al. 2006, Harris & Niesen-Vertommen 2000).

### **Exercise During Cancer Treatment: A Change in Perspective**

The side effects of medical interventions cannot be underestimated. Treatments are unique to each patient. However, fatigue, nausea, hair loss, weight loss or gain, are often accompanied by hormonal effects that trigger (temporary or permanent) menopause. The nature of surgeries, radiation, and chemotherapy vary widely, as do their effects on the body and self-esteem. However, remaining active during treatment and recovery, provides irrefutable physical and psychological benefit. Regular exercise provides the opportunity to shift self-concept from 'sick', to 'strong'; from 'patient' to 'athlete'. *Cancer* is cell growth that is out of control. Medical interventions can make people feel like their life choices are limited. Regular, appropriate exercise provides some degree of autonomy and self-efficacy, along with the health benefits we all derive from movement.

As noted, exercise is preventative for breast cancer, and contributes to strong recovery *after* treatment. We are now learning that regular exercise can mitigate many of the symptoms of cancer *treatment* (including the symptoms of pharmacologically induced early menopause). Benefits of regular exercise include:

- increased functional capacity
- increased postmastectomy mobility and ROM
- decreased body fat
- increased lean muscle mass
- reduced loss of bone mineral density
- decreased nausea and fatigue
- improved circulation (blood and lymph)
- improved mood, self-esteem and sense of control

Medically-supervised exercise for people undergoing cancer treatment is now available in many communities. University of Waterloo, near where I live in Canada, has been a leader in this initiative since 2002. I encourage you to look at this program, as well as researching options in your area. Many survivor friends of mine are 'graduates' of [UW WELL-FIT](#), and rave about how much they enjoyed the program.



<https://uwaterloo.ca/centre-community-clinical-applied-research-excellence/programs/uw-well-fit-cancer-exercise-programs>.

My cancer diagnosis pre-dates the UW WELL-FIT program. However, as a professional movement motivator, I stayed very active during all phases of diagnosis and treatment. This included joining a survivor dragon boat team (thanks, Dr. Don McKenzie), competing locally, nationally and internationally in the sport. Breast Cancer Survivor dragon boating began in Canada 1995, due to Dr. Don McKenzie's research in Vancouver. Teams and festive survivor regattas now occur globally, with paddlers inspiring and perspiring together.

Several members of team BreastStrokes ([www.BreastStrokes.org](http://www.BreastStrokes.org)) participated in the Ph.D. research of Rebecca Brookham at University of Waterloo, published 2014 (<http://hdl.handle.net/10012/8991>). In her dissertation, Rebecca notes that, while survival rates for the 1 in 9 of us who is diagnosed with breast cancer are at 90%, 30 – 82% of us suffer from persistent upper limb morbidity resulting from treatment. Her study includes a detailed 3D analysis of muscular activation and movement compensation due to breast cancer treatment. Anecdotally, our team was 'off the charts' for strength and endurance measures, compared to the other survivors in the trail.



### **So What?**

In short, exercise can be beneficial before, during and after breast cancer diagnosis and treatment. As a movement motivator, therapist or educator, it's important to consider how this affects your work with this population. Consider the following:

- Breast cancer diagnoses, treatments, prognoses, and after-effects vary widely.
- Exercise is preventative for breast cancer occurrence, and re-occurrence (though, there are no guarantees).
- Your expertise can be so helpful in restoring comfortable movement range and optimizing biomechanics.
- Consider the whole person when prescribing appropriate exercise intensity, duration, and type. Rather than yet another 'prescription', exploring enjoyable movement options can open the mind and heart to active possibilities.
- Fascial techniques like AquaStretch™ and Self-AquaStretch can be very useful, given the soft tissue damage that can occur during surgery and treatment.
- The water is an excellent exercise modality for many, because intensity is so easily customized, lymphatic flow is enhanced by vertical immersion, and exercise adherence is often better than for land-based exercise.

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