



## LYMPHEDEMA

.....

WHAT YOU HAVEN'T BEEN  
TOLD – AND WHAT YOU  
NEED TO KNOW!



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*A special thanks to my husband Geoff for your help and encouragement and your constant support in my mission to help build an army of Cancer Exercise Specialists throughout the world!*



This book offers guidance on ways to prevent lymphedema, how to identify it at its earliest stage, and how to begin an exercise program after diagnosis of lymphedema. The information in this book is not meant to replace appropriate medical care. The authors have consulted medical experts in the field of cancer and exercise, reviewed the scientific literature, and used every means possible to ensure that the information presented is accurate and up-to-date at the time of publication. It is important to note that new research may alter or invalidate some of the information presented in this book.

Although the many benefits of regular exercise are well documented, the authors make no guarantees or representations regarding

*“Lymphedema –*

*What You Haven’t Been Told –*  
*and What You Need to Know!”-*

and its materials, including, but not limited to accuracy, completeness, currency, reliability, merchantability, fitness for a particular purpose, or results that will be achieved from this program. Results are individual and may vary.

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# FOREWARD

## THE BEST ADVICE

### YOU WILL EVER RECEIVE

*"I feel like knowledge is power: If you know how to take care of yourself, you can be a better version of yourself."*

Miranda Kerr

Most medical professionals know very little about this disease. More Americans have lymphedema and lymphatic diseases than AIDS, Parkinson's disease, multiple sclerosis, muscular dystrophy and Alzheimer's disease – combined according to [lymphaticnetwork.org](http://lymphaticnetwork.org) [1].

Up to 10 million Americans, over a million Canadians, and hundreds of millions worldwide suffer from lymphedema. It will occur in up to 50% of breast cancer survivors, and 100% of those with head and neck cancer. Lymphedema is a risk for all cancer surgery survivors and that includes prostate, ovarian and melanoma [1].

In 2016, the Lymphatic Education & Research Network (LE&RN) petitioned the U.S. Senate and governments around the world for long overdue recognition of lymphedema (LE) and lymphatic diseases. In response, the US Senate unanimously passed a bill establishing March 6 as World Lymphedema Day (WLD). Governments and organizations worldwide followed suit and celebrated WLD.

*"The goal is to make lymphedema and lymphatic diseases a global priority, to engage governments and researchers around the world to dedicate themselves to finding advanced treatments and cures, and to address the incredible psycho-social burden of those with lymphedema who have felt themselves marginalized, are unable to find treatment, and whose quality of life has been negatively transformed by this disease." [1] – Lymphatic Education and Research Organization*

## PREFACE

It was my senior year of high school, 1984. All year long my friends and I had been saving every penny so that we could rent a house at the beach for the summer. I could hardly wait to be on my own, hang-out with my friends, and do what teenagers do when their parents aren't around.

In May I went for my college physical. I complained to the doctor that I had been gaining weight, my periods were irregular, and I had no energy. She rubbed her hands up and down my neck and then paused. There was a lump. It concerned her enough to perform a needle aspiration to look for cancer cells. AS far as I can remember, we left her office and I didn't give much more thought to the possibility of having cancer.

I was no stranger to the disease; I had watched my mom suffer terribly in the aftermath of her mastectomy just three years prior. She had been in chronic pain from nerve damage , became addicted to narcotics to try and manage the pain, and spent the summer going through detox at John's Hopkins the previous summer.

Graduation day came and no sooner did my friends and I toss our hats into the air , than we were off to the beach to live-out our dream summer.

It was about two weeks later that I got the call. I remember it as clear as day; "You have PROBABLE cancer. You need to come home and have surgery."

The next thing that I remember is waking up from surgery with my grandfather holding my hand. "Do I have cancer Pop," I asked him in my groggy just-out-of-amnesia voice. He didn't need to say a word. Tears started rolling down his cheek.

As soon as the initial shock had subsided, I was back to being a teenager. I was ready to go back to the beach! I believe that I had surgery on a Friday and was back to the beach on Monday.

As my body acclimated to not having a thyroid, I began to gain weight and lose my youthful energy. The fatigue hit me like a car hitting a brick wall. Nonetheless, I continued to hang out at the beach and party with my friends. The night that would change my life and my self-image forever had arrived. The bar was Tiffany's, the game was Selectrocution. Everyone had a name tag with a fictional name on it. There were L.E.D. screens throughout the bar in which people would send messages to one another using the fictional names on our badges.

To my surprise, the guy that I was dating showed up at the bar. If I remember correctly, he was not supposed to be in town. Suddenly out of the corner of my eyes, I see a message directed toward my fictional name pop-up on the L..E.D. sign; "LOSE WEIGHT IT'S OVER."

I'm sure that I spent the next few days , weeks, maybe even months crying. I would show him! I was going to lose the 20 lbs. that I had gained post-op, maybe even more, and I would get him back!

## PREFACE

For the next month or so I ate nothing but grapefruit. I lost the weight, looked great, and took a bus from my dorm to his apartment about 15 minutes away. His sister answered the door and told me he was not home, but invited me in to hang-out with her. A few minutes later there was a knock at the door. His sister Robyn opened the door. A very attractive, skinny (somewhat sleepy) gal with long frosted hair was at the door. She said “Louie has a message for you—he has a new girlfriend.” She walked away, the door slammed shut, and I began to cry hysterically.

In my complete despair, Robyn offered me some cocaine. I had never done it before; never even considered it. At this point I didn’t care. My life was over anyway (as far as I was concerned). She cut-up a line of the white powdery substance and handed me a rolled-up dollar bill. I looked at her with sheer confusion in my eyes and she instructed me to snort it though my nose. Suddenly I wasn’t sad anymore. In fact, I felt pretty awesome. Now I knew what all the hype was about!

The best part about doing cocaine was that you were never hungry. This was my new weight-loss solution. I found myself working in bars as a waitress or bartender for the next few years. Cocaine was readily being handed off between patrons by sliding a matchbox across the bar. My circle of friends had changed and I was partying all of the time. I was skinny!

I didn’t do the drug consistently. Who could afford to at \$100/gram. My weight went up and down, but I was okay with myself. Fast forward to 1989. I was dating a super hot Greek guy with black hair and green eyes. He was drop-dead gorgeous. We were going to a Christmas party and he pulled-out a small folded square of newspaper with the magic powder in it. It had been a while since the last time I had done it. I forgot how much I loved it and how it made me lose my appetite. In just two days I lost 5 pounds. I had to get some more.

I found out who his dealer was and went straight to the source. For a little more than a year, I was a drug addict. I had a \$200/day habit and was taking cash advanced off of a credit card to pay for it. I had completely changed. My life was controlled by the drug. I couldn’t stop doing it from the moment I woke up in the morning (actually it was usually the afternoon), until I finally passed-out from exhaustion at some point.

There were times that I remember being “coked-out of my mind,” my heart was beating so hard and so fast that I was sure I was going to have a heart attack. I couldn’t stop myself. I knew I had a problem. My heart was giving me sharp pains and my nose was bleeding regularly. I was emaciated. I was going to stop,; at least that’s what I kept telling myself.

## PREFACE

On the day of April 3, 1990, I was at my drug dealers' house doing lines and listening to Whitesnake on MTV. This was a fairly regular ritual of ours. The coke seemed to be exceptionally potent on that day.

I had decide that I was moving back to my parents. My mom had kicked me out a few years prior and I was not allowed to move back in. I didn't care. I wasn't asking this time. I knew I needed help.

I pulled-up to my parents house in my red Camaro. As usual, I was "coked-out." Fortunately they weren't home. I snuck in like a thief in the night and locked-myself in my bedroom. I continued to do lines until I felt like my heart was going to beat out of my chest. I was exhausted and my eyes wanted to close to spite the amount of cocaine circulating through my veins. I remember closing my eyes for a moment and the room beginning to spin out of control. I felt like I was going to die. This happened to me twice. After the second time I had a conversation with God. "God, if you let me live through this night, I promise I will never do cocaine again." I closed my eyes and prayed that my parents would not find me dead the next morning.

April 4, 1990. I was still alive. I took the remaining cocaine that I had in my possession and flushed it down the toilet. "Thank you God." I told my mom I was addicted and I needed help. The rest is history. I have never even considered doing it again.

I knew that I needed to find a way to get and stay healthy and fit. I had worked at a health club during my senior year and loved lifting weights and aerobics. I was even in a commercial for Holiday Spa (now Bally's with Heather Locklear.

I had always wanted to be a C.I.A. agent, but I certainly would divulge my drug habit and all of the terrible things that went along with it if I had to take a polygraph test. I guess my degree in criminal justice was going to prove to be worthless.

Personal training was a relatively new "thing" in the fitness industry. I learned about it through a friend and thought that it would be a perfect career for me, force me to stay in shape, and I could help others who suffered with the safe body-image issues. I snapped up every certification that I could get my hands on and got my first job at the YMCA in Washington, D.C. I quickly worked my way up to director of personal training and after a few years there and the birth of my son, went off on my own as an independent contractor at a studio in Georgetown.

While being in the industry has certainly helped me remain passionate about exercise and eating right, it is a constant struggle. I am 100% dependent on thyroid hormone to regulate my energy and metabolism. There are times where it seems that for no reason, it just stops working. My weight has fluctuated by 20 lbs. up and down more times than I can remember.

I have tried every diet know to mankind.



## PREFACE

I have done Paleo, Atkins, South Beach, Whole 30 and injected myself countless times with HCG. For those of you who don't know what HCG is, it is the pregnancy hormone. I'm not going to waste my time or yours explaining the diet protocol, I am going to just say NO! Don't do it. It is a vicious cycle and impossible to maintain the weight loss.

We all know that there are no shortcuts to weight-loss and health. There is no magic pill, injection, or shake, that is going to strip away the fat and make you a super-model for eternity; yet even I keep trying. I can finally admit that I have an eating disorder. I am not anorexic or bulimic (although back-in-the-day, I did stick my finger down my throat a few times). I have body dysmorphic disorder. When I look at myself in the mirror, I always think that I am fat. Sometimes I will look in different mirrors just to compare. It is absolutely psychotic at times.

So why is an internationally recognized personal trainer sharing this with you? Why, because I am human. I suffer from the same illnesses, struggle with depression and anxiety at times, and have been known to binge on Ben and Jerry's once in a blue moon.

In order to heal, improve, or rise above any given situation, you must first admit that there is a problem. Until that time, you can not begin the healing process.

Since 1992 when I first became certified as a personal trainer, I have trained 100's of clients; many with cancer. I have trained thousands of fitness professionals in 26 countries to become Cancer Exercise Specialists. I have written 17 books on cancer and exercise, I have presented at national and international conference, been on tv, and in countless magazine articles, and I am IMPERFECT.

Life is hard. Love is hard. Exercise is hard. And Lord knows, eating right is hard! After all of my personal trials and tribulations, I know what works and what doesn't work. I know that with even a modest amount of discipline, the unhealthiest person can turn their life around and have the physique, energy, and enthusiasm they never thought possible.

You are not alone. You need to believe me when I say those words. I am a 35-year cancer survivor! I don't want you to just survive though. I truly want you to thrive. I want you to have the life, the family, the retirement, that you have always dreamed of and for you to not let cancer take that from you. I want to give you back some of what cancer has taken from you.

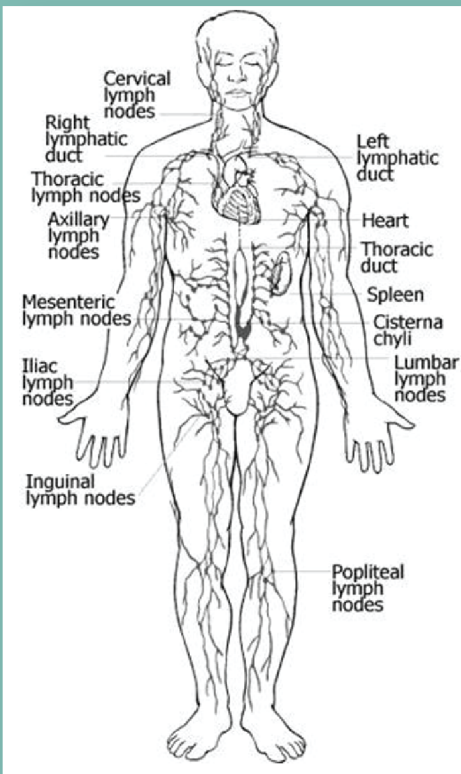
Let me help you to regain your strength, flexibility, energy, self-confidence and self-esteem. Let's do it together and help you to reach heights that you never thought possible!

With much love and gratitude,

Andrea

## CHAPTER ONE

### WHAT IS LYMPHEDEMA?

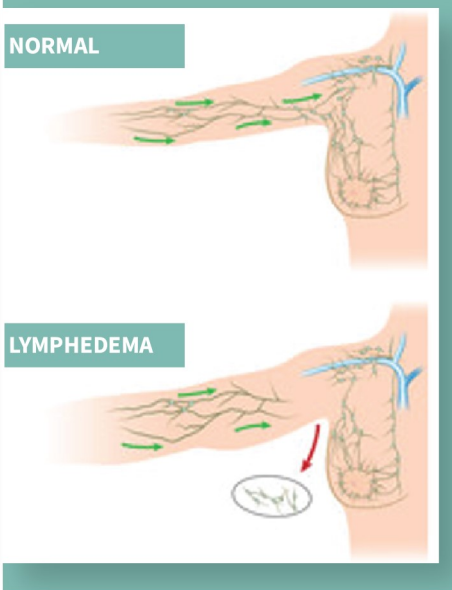


Lymphedema is swelling produced by an accumulation of lymph fluid in the tissue. For cancer patients, the swelling in the area in *which lymph nodes have been removed, or from radiation to that area*. For breast cancer clients, the swelling occurs in the arm of the affected side due to damage to the lymph vessels in the armpit area caused by the removal of the axillary lymph nodes or from radiation to that area. For prostate cancer, or other lower extremity cancers, the swelling can take place in the abdomen, pelvis, or in either leg or foot. The job of the lymphatic vessels is to drain fluid from the tissue cells in the body, along with protein molecules, bacteria, cellular waste products, and other unusable matter. This protein-rich fluid, called lymph once it is in the lymphatic system, travels in one direction: toward the heart. It is transported through the lymphatic vessels to the lymph nodes, where it is filtered and cleansed before returning to the venous system and moving on to the heart. In the heart, the fluid is simply returned to the blood to be circulated by the body.

If the lymphatic system has been injured, as in the case of lymph node dissection or radiotherapy (for all types of cancer), the lymph can become backed up. If untreated, the backed-up fluid can provide a breeding ground for bacteria that can result in infection and can delay wound healing. A long-term accumulation of this fluid eventually results in thick and hardened tissues (fibrosis), which creates further resistance to draining the fluid from the limb. [1, 2, 3]

While lymphedema may not occur immediately after surgery, it can occur at any time during your life after cancer treatment. Sometimes extensive trauma can be the contributing factor while at other times it may be due to a bug bite, cat scratch, or burn. [1, 2, 3]

Radiotherapy also increases the chance of developing lymphedema. Radiotherapy is generally recommended to patients with a high risk of recurrence of cancer, such as those who have large, aggressive tumors. It is also recommended for those whose lymph nodes test positive for cancer cells or show an incidence of microscopic residual disease after surgery. Because lymph nodes are radiosensitive, radiotherapy depletes the lymphocytes in the nodes and decreases their filtering function and immune function. Lymphedema can only affect the area where the nodes have been irradiated, not the overall immune system. [1, 2, 3] After radiotherapy, the nodes become scarred and fibrotic, increasing the potential for blockage.



The amount of lymphatic fluid that is transported through the affected areas is directly related to the amount of blood flow to those areas. Heavy lifting with the affected arm or leg, extreme climatic temperatures, extreme water temperatures when bathing, showering, or washing dishes, hot tubs, saunas, sunburn, and vigorous repetitive movements against resistance, all of which will increase blood and lymphatic flow to the affected area, should be avoided. When you are fighting off an infection there will typically be an increase in lymphatic load as well as a decrease in transport capacity. *When you are traveling by airplane, it is important to wear a fitted sleeve or stocking due to pressure changes which allow fluid to pool in the extremities.* Due to the lack of movement during flight, the vessels which normally pump the lymph towards the regional lymph nodes are working at a very low level. Therefore, it is not only important to wear compression garments, but to move around the cabin whenever possible to prevent the pooling that can increase lymphatic load.

While each of these precautions, as well as those listed on the following pages, make perfect sense, there are several other factors that can also influence a potential lymphedema outcome. These include, but are not limited to, the number of lymph nodes that were removed from a given location, the extent of surgical disruption and how many nodes were removed, the amount of lymphatic scarring from radiation, age, and the degree of obesity.

All cancer treatment survivors, including those of melanoma, prostate and ovarian cancer, are susceptible to developing lymphedema. [1, 2, 3] Breast cancer survivors can be at a high risk for developing lymphedema and 100% of those treated for neck and head cancer will develop the disease, according to the Lymphatic Education and Research Network. With proper education and care, lymphedema can be avoided or, if it develops, kept well under control. Older individuals and those with poor nutrition face an increased risk, as do individuals with infections. Removal of the nodes and damage to the area prevent the lymph fluid from draining properly, allowing it to accumulate in the tissue by restricting pathways and causing back-up. It has been well documented that the development of lymphedema is related to the extent of the lymph node dissection, the extent of the surgery, and whether radiotherapy was given.

If lymphedema goes untreated, it can result in decreased function, range of motion, numbness, and swelling of the affected area. In addition, this damage may result in pain and tightness in the area as the lymph vessels close-up, tighten, and sometimes snap.

Guarding against infection is extremely important because the affected area will be more susceptible to infection and infection can cause increased swelling. If any signs of infection are noticed, you should contact your doctor immediately. These signs include swelling, fever, or skin that is red, tender, warm, persistently itchy or blotchy.

## THERE ARE FOUR STAGES OF LYMPHEDEMA:

- **STAGE 0** – also known as the latent or preclinical stage This is a newly added classification. At this stage the patient is at risk of developing lymphedema, however no swelling or other visible evidence of impaired lymph transport is present. You may, however, notice slight tingling, unusual tiredness, or slight heaviness at this stage.
- **STAGE 1** - when the skin is pressed the pressure will leave a pit (holds an indentation – much like Silly Putty) that takes some time to fill back in. This is referred to as **pitting edema**. Sometimes the swelling can be reduced by elevating the limb for a few hours. According to Breastcancer.org, There is little or no fibrosis at this stage, so it is usually reversible with treatment. The goal of treatment is to reduce the swelling and ease the pain by using techniques like wrapping the limb, compression bandages, massage, pneumatic compression, complete decongestive therapy, and exercising regularly.
- **STAGE 2** - when the swollen area is pressed, it does not pit, the area is even more swollen, and the swelling is not reduced very much by elevation. There are changes happening to the tissue under the skin that include inflammation, hardening, and thickening. If left untreated, the tissue of the limb gradually hardens and becomes fibrotic.
- **STAGE 3** - the lymphedema is often referred to as **lymphatic elephantiasis**. It occurs almost exclusively in the legs after progressive, long-term, and untreated lymphedema. At this stage the skin may take on a leathery and wrinkled appearance. There may even be some leakage of fluid through the tissue in the affected area, especially if there is a cut or sore. While lymphedema will respond to treatment, at this stage it is rarely reversible.

## THERE ARE FOUR STAGES OF LYMPHEDEMA:

- ***Lymphedema is a very serious condition and should not be taken lightly.***  
It frequently results in complications, such as lymphangitis (a bacterial infection of the lymphatic system), skin changes, fibrosis, and infection. There are even a few life-threatening complications, although rare, such as the development of a rare type of cancer, lymphangiosarcoma, in the affected area. This can occur in patients with long-term, untreated, or improperly treated lymphedema. Unfortunately, this condition requires immediate amputation. [1, 2, 3] Lymphedema may worsen with time if it is not attended to. It can become disabling by stiffening the joints or making the limbs heavy and may cause significant cosmetic deformities.
- Once you have mild lymphedema, you are at a higher risk for moderate-to-severe lymphedema than someone who has never had any symptoms. The risk persists even if your symptoms go away with treatment.
-



## CHAPTER TWO PREVENTION

Providing information on how to prevent Lymphedema is so important and yet is often overlooked by many medical professionals. So many cancer patients are needlessly suffering with this deforming and debilitating disease that with proper education, could be totally prevented! Make a copy of the following list and keep it in your purse, briefcase, glove compartment, or on your refrigerator! Share it with your medical care team and encourage them to share it with their patients.

Precautions to Avoid or Manage Upper/  
Lower Extremity Lymphedema

## PRECAUTIONS TO AVOID OR MANAGE UPPER/ LOWER EXTREMITY LYMPHEDEMA

- Avoid insect bites, burns, skin irritants, hangnails, and torn cuticles (wearing gloves while doing housework or gardening is a great idea)
- Avoid tight fitting jewelry on the affected area
- Wear loose fitting clothing on affected area
- Don't overheat – avoid saunas, whirlpools, steam rooms, hot baths, and sun-bathing
- Don't receive shots, have blood drawn, or have blood pressure taken on affected arm (breast cancer)
- If you are overweight or experience swelling, losing weight can help reduce it by reducing the amount of fatty tissue which retains fluid and blocks lymphatic pathways
- Remember that tennis, racquetball, golf, and bowling are all considered risky sports for upper extremity lymphedema (because of repetitive shoulder movements)
- Keep the at-risk area spotlessly clean and use lotion after bathing
- Avoid repetitive day-to-day movements such as scrubbing, pushing, or pulling, if you are at risk for upper extremity lymphedema
- Avoid heavy lifting with the affected limbs (arms or legs). Never carry heavy handbags or bags with over-the-shoulder straps on the affected arm (breast cancer and head and neck cancer)
- When traveling by air, if you have lymphedema, or are at risk for it, you must wear a well-fitted compression garment
- Use an electric razor when shaving neck (cervical lymph nodes), armpits (axillary node dissection), or legs (anyone at risk for lower extremity lymphedema)





## CHAPTER THREE

### EXERCISE FUNDAMENTALS

One of the most important and often over-looked components of exercise is *breathing*. Not only does breathing allow precious oxygen to be circulated through the bloodstream, but it is also effective for moving fluid through a gentle pumping action of the abdominal muscles. The fluid is pumped through the central lymphatic vessel in the chest cavity, stimulating the flow of lymph. When you breathe in, using your abdominal muscles, the pressure in the chest cavity changes, because the belly breath moves your diaphragm.



When you exhale, the pressure changes once again. This back-and-forth alternation in the pressure acts like a pump on the large lymphatic trunk that runs up through the chest cavity and drains into the venous system of the neck.

**Here's how** - sit in an upright position. Take a deep breath through your nose and exhale through your mouth, flattening your belly and squeezing out every bit of air. Emptying the lungs completely and removing all the stale air from the bottom of the lungs automatically stimulates a diaphragmatic breath. Breathe in through your nose and notice how your belly expands. Repeat the sequence again. Let the air out through your mouth, making sure your belly flattens. Try another one or two breaths this way. If you get light-headed, try to slow down your inhalation, and pause before breathing in again. It is not necessary to breath with a giant breath – just one that goes to the bottom of your lungs, while your chest remains still. Imagine a balloon in your stomach that inflates when you inhale and deflates when you exhale.

Everyone knows the benefits of exercise for seemingly healthy individuals, but they carry even more a punch for those suffering from lymphedema. Those who exercise have a lower percentage of body fat. Keeping body fat in check can help to prevent lymphedema. Fat can be a special problem with an impaired lymphatic system. Fat is deposited in the interstitial tissue and can make it more difficult for the fluid to pass through and into the lymph vessels. [1, 2, 13]

The lymphatic system is stimulated by the pumping action of the blood vessels, as well as the pumping action of muscles, so anything one does to improve their circulatory system will be helpful for the lymphatic system. [1, 2, 13]



A good exercise goal, for aerobic activity, is thirty minutes three or four times a week. [8,16,17, 19] Choose an exercise that will allow you to mildly increase your heart rate without “over-doing” it. It is important that you wear your support garment or bandage (if one has been prescribed for you) while exercising. Bandages increase pressure against the skin during exercise. The pressure, coupled with the contraction of your muscles, encourages the lymph to move. Exercise, in and of itself, will help to pump the muscles, improve circulation, and move lymph from congested areas into an area where it can drain more efficiently. [1,2,3,15,12]

It is important to start out very slowly with few repetitions and wait until the next day to see how the affected limb has responded. You can gradually increase their repetitions, based on what the limb will tolerate. Take your time and use good form and posture.

Infections are possible at any stage of lymphedema, but occurrence becomes greater as stages progress. A swollen limb, left untreated, becomes hard (fibrotic) and full of lymph fluid which is high in protein and a perfect medium for bacteria and infections. [1, 2, 3]

*REMEMBER: the risk of lymphedema doesn't increase or decrease with time!*

## COMPRESSION BANDAGES



Compression bandages apply external pressure to a swollen limb. When swelling has persisted in an area, the tissue loses some of its elasticity and does not return to its original position and shape, even when the fluid decreases. The bandages support the skin and underlying blood vessels. [1, 2, 13] Bandaging usually starts with gauze tape at the fingers and then continues with a series of different sized short-stretch bandages around the hand, progressing up the arm to within a short distance of the shoulder. The number of bandages used depends on the size of the arm or leg and how effectively the compression is achieved. [1, 2, 13] Many therapists recommend wearing the bandages while sleeping, as well as anytime that you are engaging in physical activity or exercising. [1, 2, 13] In addition to bandaging, most patients should be fitted with a compression garment that is worn during the daytime. The garments are not designed to reduce swelling, however, but to maintain the size of the limb and prevent swelling from increasing.

Some clients will use a compression garment when flying on an airplane in order to reduce their chances of getting lymphedema due to the changes in cabin pressure.



## CHAPTER FOUR

### EXERCISE OPTIONS

## SWIMMING



Swimming offers many benefits to the patient with lymphedema. The support of the water makes it possible for the patient to perform motions that they may not be able to achieve in other settings. The water relaxes the muscles which can reduce the pain associated with lack of blood flow to the area (ischemia). The buoyancy and support of the water allows exercise without the impact of on the joints that would be present with land-based exercises. The hydrostatic pressure of the water can also provide resistance, similar to weights, that strengthens muscles, with the added benefit of improving cardiac and respiratory conditioning (aerobic capacity).

For those of you that have been fitted with a compression garment, you may be able to leave them at home during pool time! If the affected area remains under water the majority of the time, the hydrostatic pressure of the water replaces the need for wearing a compression garment. Make sure to consult with your doctor or therapist to find out what is best for you!

If you plan on swimming laps, you will want to make sure that you are in a cooler swimming pool. The cooler water will allow you to stay in the pool for extended periods of time. Make sure that it is between 68°F (20°C) and 86°F (30°C) degrees; water above 94°F (34.4°C) should be avoided. If the water is too warm, it will raise your core temperature and can make lymphedema worse (I don't recommend hot tubs, or a jacuzzi for this reason). If your only option is to exercise in a higher temperature pool, make sure to perform gentle exercises, trying not to get your heart rate elevated too much. If you are in a pool that feels comfortably warm, it may have the added benefit of softening fibrotic tissue as well as relaxing tight muscles [1, 13].

Make sure to stay hydrated; keep a plastic water bottle handy during your session and take frequent water breaks. Protect your affected limb with a doctor-recommended lotion to keep your skin from drying out while in the water. It's also a good idea to wear protective footwear, while walking around the pool, to prevent fungal infections and avoid getting a cut.

If you are heading to the beach and wondering if you can swim in the sea water, there are a couple of things for you to keep in mind.

- Always wear protective footwear.  
There may be rocks, coral, or seashells that could cut you and lead to infection.
- Wear protective sunscreen.
- The Centers for Disease Control and Prevention (CDC) now includes *Mycobacterium marinum* on its list of “Emerging Infectious Diseases.” Also known as fish tank granuloma, this slow-growing bacteria can infect fish and people. *Mycobacterium marinum* infections produce nodular (bump-like) lesions or ulcerating (open) skin sores on the extremities. As the disease progresses, multiple sores may form in a line along the lymphatic vessel that drains the site. When there is a delay in diagnosing this condition, this pathogen continues to invade into the deeper tissues of the affected limb. It is best to avoid swimming in water that is not properly chlorinated

## AEROBIC EXERCISE



Aerobic or “cardio” exercise will strengthen your heart and lungs (which may be negatively impacted by chemotherapy and radiation), help you to lose body fat (which can increase your risk or worsen lymphedema and increase your risk for heart disease, diabetes, and future cancers), and produce endorphins that will help counter cancer-related fatigue. [17,19] Examples of aerobic exercise are walking, jogging, running, bicycling (outdoors or stationary), swimming (advisable in cooler temperature water), dancing, and a variety of group exercise classes.



## RESISTANCE TRAINING



Weight-bearing exercise, also known as resistance training, will help you to build healthy lean muscle and strengthen your bones. Many cancer patients have an increased risk of osteoporosis due to various cancer therapies. Performing weight-bearing exercises several times a week may prevent and/or minimize your risk. [12,19] Examples of weight-bearing exercise are weight-lifting (barbells, dumbbells, etc.), TRX, push-ups, pull-ups, squats, lunges, yoga, walking, hiking, and climbing. When using any type of exercise band, make sure it is not compressing the affected area as it may interfere with the flow of lymphatic fluid. For example, if you are at risk for, or have lower extremity lymphedema, you will not want to wrap a band around your legs or ankles. If you are at risk for lymphedema in your arm, avoid wrapping a band around your hand or placing it anywhere on your arm.

Another thing to note is that doing too much too soon is not in your best interest. Your lymphatic system is not functioning with the same efficiency it once did prior to your surgery/treatment. No one knows what its 'new limits are, not even your doctor. A Cancer Exercise Training Institute Cancer Exercise Specialist like myself understands how to safely and effectively progress your exercise program to maximize results and minimize your risk of lymphedema.

## FLEXIBILITY/STRETCHING



Following cancer surgery and/or radiation therapy you may have noticed some tightness and restricted mobility in the affected area(s) of your body. This may be the result of scar tissue and/or adhesions as well as poor posture. Poor posture can place undue stress on muscles and joints that can lead to faulty movement patterns and muscle imbalances. [4,12] When there are areas of tightness throughout the body, it may limit range of motion at a particular joint(s) and interfere with your ability to perform day-to-day tasks or other activities.

Prior to beginning any strength-training, it is critical to identify any limited patterns of movement (range of motion) in your affected limbs. You **MUST** correct faulty movement patterns prior to strengthening that area through a limited pattern of movement. This is one of the fundamentals of my initial assessment with any client I work with who has undergone cancer surgery or treatment.

Many of you may be struggling with chronic, painful muscle spasms. The main reason that pain arises is from ischemia. Ischemia is a lack of proper blood flow to tissues, causing a shortage of oxygen that is needed for cellular metabolism [3].



Flexibility/stretching exercises can minimize joint contractures that may interfere with lymph flow. Optimal lymphatic function requires full mobility of muscles and joints. I can perform a comprehensive postural and range of motion assessment to determine the proper combination of stretching and strengthening exercises that will help you to return to your pre-cancerous level of fitness, or better!

## YOGA



If you already have lymphedema, it is advisable that you wear your compression garment while performing yoga. If you are at risk for lymphedema it is important that you do not put your full weight on the affected limb(s) for extended periods of time. Modifications may be made to incorporate a vinyasa flow rather than holding a position. This would also apply for anyone who has limited patterns of movement as I described in the last section. A properly instructed yoga series can help improve lymphatic flow through its slow-moving and rhythmic movements.

### *Do not practice yoga in a heated room!*

As your body temperature is elevated, circulation increases, and extra fluid is sent to the affected area. [1,13,15] Make sure to take breaks if you are tired or your affected limb is beginning to feel heavy or achy. If you notice any tingling, numbness, or swelling, please consult your doctor. Always get a clearance from your medical care team prior to beginning, or resuming, any exercise program.

## REBOUNDING



Your lymphatic system defends your body against infection and other harmful agents and rids it of toxins; consider it like a metabolic trash can. [1, 2, 14] Unlike the cardiovascular system, the lymphatic system does not have a pump to drive the fluid throughout the body. [1, 2, 14] The jumping motion on a mini-trampoline (rebounder) creates a “pumping” effect which helps to move the lymph and blood supply through the circulatory system, helping to drain away waste and toxins from your body. Rebounding can be done as all or part of your aerobic exercise training. It also makes for a great warm-up and cool-down and it’s FUN too!



## CHAPTER FIVE

### LYMPHATIC DRAINAGE


One of the most important and often over-looked components of exercise is breathing. Not only does breathing allow precious oxygen to be circulated through the bloodstream, but it is also effective for moving fluid through a gentle pumping action of the abdominal muscles. The fluid is pumped through the central lymphatic vessel in the chest cavity, stimulating the flow of lymph. When you breathe in, using your abdominal muscles, the pressure in the chest cavity changes, because the belly breath moves your diaphragm.

The following lymphatic drainage exercises should be done before and/or after every exercise session. This includes recreational activities that will cause your body temperature to elevate, or require repetitive movements with the affected limb. The risk of lymphedema will always be there. It does not go away with time although some organizations state that the incidence lessens over time.

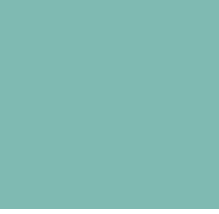
If you have been prescribed a compression garment by your doctor, make sure to always wear it during exercise. If you have not been fitted for one, you should insist on it. Always wear it during air travel as well! The change in cabin pressure can bring on lymphedema.

## UPPER BODY LYMPH DRAINAGE


As you begin each of the following exercises make sure to take several deep abdominal breaths (as were described earlier).




**PELVIC TILT** – lie on your back with your knees bent and feet flat on the floor. Tilt your hips so that you are able to press the small of your back against the floor. Pause for several seconds then release the contraction. Repeat 5-10 times.



**MODIFIED SIT-UP** – lie on your back with your knees bent and feet flat on the floor. Perform a pelvic tilt, pressing the small of your back to the floor. Keep your neck in neutral and your chin pointing to the ceiling. As you exhale, lift up your chest and shoulders, pausing when you feel your abdominal muscles tighten up. Slowly lower yourself back to starting position (trying not to rest between repetitions). Repeat as many times as you can comfortably.



**NECK STRETCHES** – begin by standing or sitting erect. Exhale and turn your head slowly to the right, looking over your shoulder. Inhale as you return to center. Repeat this to the left. Next, tilt your head to the right, allowing your chin to drop toward your shoulder. Maintain this position for 15-30 seconds, breathing regularly. Slowly bring your head back to center. Repeat this to the left. Finally, tilt your head to the right, allowing your ear to drop toward your shoulder. Maintain this position for five seconds, breathing regularly. Slowly bring your head back to center. Repeat this to the left.



**SHOULDER SHRUGS** – shrug both shoulders, lifting them towards your ears as you inhale. Exhale, and return to a relaxed position. Next, exhale and press your shoulders down as far as possible, pause. Inhale and return to the relaxed position. Repeat 5-10 times.



**SHOULDER ROLLS** – lift your shoulders up to your ears then rotate your shoulders back and down, making a smooth, continuous motion. Repeat 5-10 times. Repeat in the other direction.



**ISOMETRIC SHOULDER BLADE SQUEEZE** – bend your elbows to a right angle, parallel to the floor. Exhale and pull them towards the center of your back, squeezing the shoulder blades together. Pause. Inhale and return to starting position. Repeat 5-10 times.



**ISOMETRIC CHEST PRESS** – place the palms of your hands together, with their elbows bent and arms parallel to the floor at shoulder level. Exhale and push your hands firmly together. Pause. Inhale and relax. Repeat 5-10 times. Repeat this to the left.



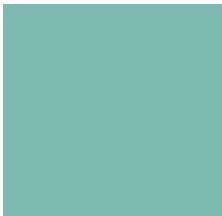
**SHOULDER CIRCLES** – hold your arms at shoulder height, parallel to the floor, with your palms facing down. Exhale and rotate your arms so that your palms are facing upward. Inhale and return palms to starting position. Repeat 5-10 times.



**WRIST CIRCLES** – rotate your fists in small circles, isolating the movement to the wrist only. Repeat 5-10 times in one direction, then in the other.



**WRIST FLEXION AND EXTENSION** – bend your wrist towards you, then away from you, isolating the movement to the wrist only. Repeat 5-10 times.



**FIST CLENCH** – open your hands and stretch your fingers, spreading them apart. Then slowly clench each hand to make a fist. Hold for five seconds, breathing regularly, and release. Repeat 5-10 times.



If you are at risk for lymphedema in your torso or lower body please do the following lymph drainage exercises:

LOWER BODY LYMPH DRAINAGE

As you begin each of the following exercises make sure to take several deep abdominal breaths (as were described earlier).



**PELVIC TILT** – lie on your back with your knees bent and feet flat on the floor. Tilt your hips so that you are able to press the small of your back against the floor. Pause for several seconds then release the contraction. Repeat 5-10 times.



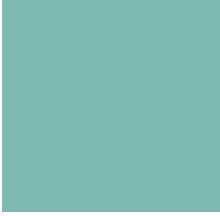
**MODIFIED SIT-UP** – lie on your back with your knees bent and feet flat on the floor. Perform a pelvic tilt, pressing the small of your back to the floor. Keep your neck in neutral and your chin pointing to the ceiling. As you exhale, lift up your chest and shoulders, pausing when you feel your abdominal muscles tighten up. Slowly lower yourself back to starting position (trying not to rest between repetitions). Repeat as many times as you can comfortably. Repeat this to the left.



**BICYCLES** – lie on your back with your knees bent at ninety degrees (shins are parallel to the floor). Maintain a neutral pelvis and keep your upper body relaxed on the floor. Raise your legs towards the ceiling, keeping them bent at about 45 degrees. Circle your legs like a bicycle 5-10 in each direction.



**LEG CIRCLES** – lie on your back with your left knee bent and foot on floor and right leg extended up toward the ceiling. Engage your abdominal muscles and “anchor” your hips to the floor as you perform clockwise and counter-clockwise hip circles, using very small and controlled movements, 5-10 times in each direction. Repeat the entire process on the other leg.



**KNEE FLEXION/EXTENSION** – lie on your back with both legs extended up toward the ceiling. Bend and extend your legs 5-10 times at the knees.



**ISOMETRIC CHEST PRESS** – place the palms of your hands together, with their elbows bent and arms parallel to the floor at shoulder level. Exhale and push your hands firmly together. Pause. Inhale and relax. Repeat 5-10 times. Repeat this to the left.



**FOOT CIRCLES** – lie on your back with both legs extended up toward the ceiling. Perform clockwise and counter-clockwise circles with both feet . Repeat 5-10 times.



## CHAPTER SIX READY-SET-GO

Whether you are currently undergoing treatment, or are several years out, you will benefit from the advice in this book. In either case, **it is essential that you get your doctor's permission** and pace yourself according to your level of fitness and your energy level on any given day.

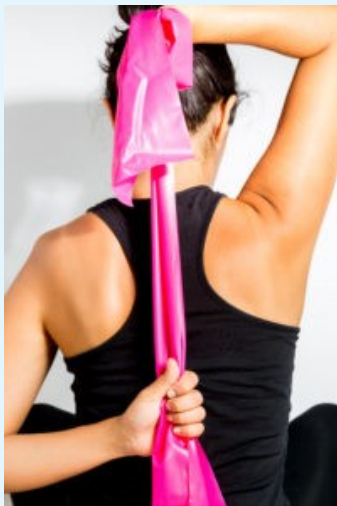
If you are a member of a health club, you may be interested in participating in a group class. The camaraderie and support is wonderful, however, it is easy to over-exert in an effort to keep up with classmates. Make sure that you stay very well hydrated and don't overheat. You may be fortunate enough to find a class specifically designed for cancer patients. The advantage is that the teacher will know your needs and, in many cases, can make recommendations during the class. The disadvantage is that most classes cater to beginning level exercisers and the class may be too novice for you. Another potential disadvantage is that there are many types of cancers, surgeries, and treatments, and everyone is put together in one class. In this situation, it is difficult to meet each person's needs. Remember that variety is key; try different classes until you find one that you like and are comfortable with and do your home-based program 2-3 times per week for optimal results. Most of all go at your own pace and have fun!

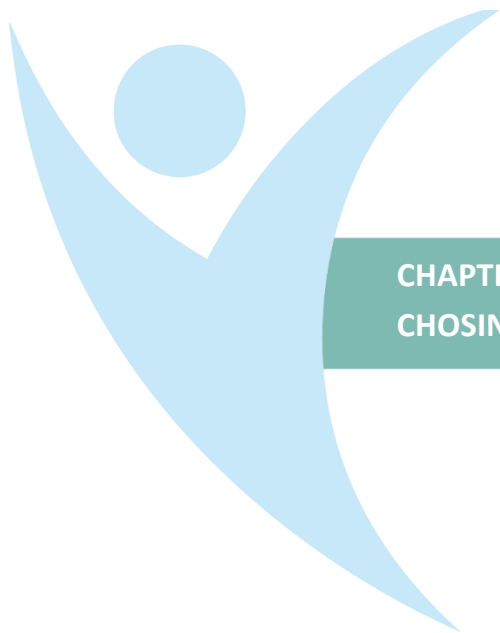
#### Remember the following points when performing all exercises:

- Get your doctor's permission before beginning this or any exercise program
- Begin each exercise session with a five to ten-minute cardiovascular (aerobic) warm-up

- Following your warm-up, perform your lymphatic drainage exercises
- DO NOT HOLD YOUR BREATH! Breathe smoothly and consistently while performing all exercises. Exhale on the exertion phase and inhale on the relaxation phase. If you have high blood pressure (even if you are being treated with medication) this is even more critical.
- When strength training with weights, or rubber resistance, always lower the resistance in a slow and controlled manner; never drop them down haphazardly.
- Proceed with caution and at your own pace. Too much weight (resistance), or too many repetitions (times you lift the weight), can overload the muscles and may increase your risk for, or worsen lymphedema. Exercise can, in fact, help to prevent and/or manage lymphedema. There is no "magi number" here. You must start with the lightest amount of resistance possible and work your way up incrementally as your body allows for it. If at any point following a workout you notice swelling in the affected area, it may be an indication that you have overloaded the limb. Consult your doctor first if you have not already been diagnosed with lymphedema. On your next workout, you will need to go back to the resistance you were using prior to your last workout and see how it goes. There is no exact science here unfortunately. This truly is a bit of trial and error. I can help you determine the appropriate variables that will keep your exercise program both safe and effective.

- When strength training with rubber resistance, never wrap the band around your affected limb. If you are at risk for lower extremity lymphedema, you must protect both legs.
- If you notice any redness, swelling, or heat in the area where lymph nodes were removed or irradiated, consult your doctor immediately. If you can press your finger into the affected area and it holds the indentation, it may be stage 1 – “Pitting Edema.” If caught early, it is *usually* reversible.
- Always cool-down and stretch at the end of your workout session





## CHAPTER SEVEN

### CHOSING A CANCER EXERCISE SPECIALIST

#### - Andrea Leonard

In 1995, after my mother's second diagnosis with breast cancer, she asked me if I would help her through her recovery. Following her initial mastectomy in 1981, she was never told about lymphedema, never told to move her affected arm following surgery, and ended up with a frozen shoulder, permanent nerve damage and chronic pain. She dreaded the thought of having to relive that misery.

I had only been a personal trainer for five years but had the good fortune of training her breast surgeon, Dr. Katherine Alley. I remember asking Dr. Alley if she thought it would be a good idea to write a book on exercises for breast cancer survivors. She thought it was a brilliant idea and agreed to help me orchestrate the compilation of information. We were joined by Dr. Theodore Tsangaris, Jr. of Georgetown University Medical Center, Dr. Shawna Willey of the George Washington Hospital Medical Center, and a team of other medical and fitness professionals. The book was published by Harvard Common Press in 2000 and is entitled “Essential Exercises for Breast Cancer Survivors.”

Shortly thereafter I realized the need to help ALL cancer patients. There were millions of people suffering needlessly in the aftermath of cancer surgery and treatment and I could not help each and every one of them! In 2004 I founded the Cancer Exercise Training Institute. My mission was, and still is, to educate health and fitness professionals to EMPOWER cancer patients and survivors. My life’s mission is to have a credentialed Cancer Exercise Specialist in every city, state, province, and country worldwide. I have trained

Each of these individuals has studied a 500+-page manual, participated in a live workshop or watched many hours of power point and video lectures, and completed an incredibly difficult 125-question exam with a score of 80% or better. To ensure the ongoing competency of the Cancer Exercise Training Institute’s Cancer Exercise Specialists, they are required to re-test and re-qualify every two years with updated material. There are no other organizations in the industry that have such stringent requirements.

Do not compromise your health, safety, and well-being by working with an under-qualified fitness professional. There are no cookie-cutter workouts that can be used for each and every cancer patient. Every patient has their own story and their own response to surgery and treatment. It takes a specially trained individual who is educated, patient, and empathetic to take the proper steps necessary to create YOUR CUSTOMIZED exercise program.



## INSPIRING TESTIMONIALS

I remember that day so vividly...the day that I got the call with my diagnosis. To say that I was shocked would be an understatement. I was 42, in the best shape of my life and I had cancer. I was diagnosed with grade 3 DCIS and LCIS in my left breast. Because of the aggressive nature of my grade of cancer, and that my cancer was estrogen and progesterone receptor positive, I chose to undergo a bilateral, nipple-sparing, mastectomy with reconstruction.

Two weeks after my mastectomy I started physical therapy. I was so anxious to get back to my training. The PT that I worked with specialized in lymphedema treatment. I went to see him prior to my mastectomy to take baseline measurements. These measurements are used in the post-surgery follow-up appointment to check for lymphedema when lymph nodes are removed. At my next appointment he was truly amazed at how fast I was healing. He made a comment that I'll never forget. In his many years of practice, he hadn't seen someone bounce back that quickly!

I attribute this 100% to my active, fit lifestyle and healthy diet going into treatment. Don't wait for sickness to focus on wellness! I only attended two therapy sessions before he graduated me to doing workouts on my own. I did what my body would allow to bounce back, primarily walking for cardio, mobility work and slowly incorporating strength training back into my program.

I had a total of three surgeries, two being reconstructive over the course of a year and a half. Recovery wasn't always easy, and my workouts were definitely challenging with the new physical changes, but fitness was my saving grace in times of pain and frustration. The benefits of fitness go so much further than physical progress. Staying active and focusing on health also helped me with the mental struggle of dealing with cancer treatment.

Exactly one year after my breast cancer diagnosis I competed at the Masters Nationals Olympic Weightlifting competition in Savannah, Georgia. Even though I didn't place, it was my way of giving the middle finger to cancer and not giving up on my body. Now I chose to focus on honoring my body with nourishing foods and working on getting stronger in a sport that I really love. Fitness will always be a non-negotiable part of my everyday life. Before I was diagnosed, I was working as a trainer at a local gym and my whole life revolved around fitness and nutrition. My cancer experience motivated me to add certifications to help other cancer fighters and survivors. Fitness might not have prevented my illness, but it had a tremendous impact on managing it and getting back to good health.

***Amee L. – Breast cancer survivor***



I went to my family doctor in June 2016 with a nagging little unproductive cough that I attributed to allergies. After a failed antibiotic attempt an x-ray was performed which showed fluid in my left lung. An analysis of the fluid revealed cancer cells. I vividly remember going to the pulmonary doctor assuming I had pneumonia or bronchitis or some weird allergy only to be floored with a stage 4 lung cancer diagnosis.

I never smoked or worked in hazardous environments and owning my own personal training business, Beach Better Bodies since the early 1990's, I was always in good if not great shape. Stage 4 with cancer cells in both lungs as well as various bones in my body. It's true, if you have lungs you CAN get lung cancer. My family has a history of cancer with both parents, my grandmother and older sister succumbing to cancer. One of my sisters is a breast cancer survivor.

Further testing proved that the cancer was a genetic disorder and following 2 weeks of radiation for my bones, I was started on Tarceva as a daily oral chemo targeted therapy. Scans after 3 months showed I was getting worse; the drug wasn't working. I had lost my appetite, energy, 25 pounds and had barely any drive or motivation at all. This just wasn't me and my wife and sons worried at Thanksgiving fearing this may very well be a quick end of the fight and I may not make it to Christmas. I continued to train clients in my gym but often needed to lie on the floor following the sessions to gather enough strength for the 10-minute drive home.

My doctors always told me to stay strong, eat right keep working out that my physical condition would only help my fight. I tried but had very little energy. While continuing to struggle through training clients I hadn't myself worked out in a several days, actually weeks. My doctor told me if plan A doesn't work, we go to plan B, Plan C, we keep fighting. Further testing showed I had the T790M mutation and began Tagrisso daily oral chemo treatments on Dec 5, 2016.

On Dec 6, 2016, just one day after starting Tagrisso, I felt pretty good and decided to workout myself in the gym. I did whatever my body would allow me to do while working with free weights and machines, TRX® equipment, the Lebert Equalizers, resistance bands and Sand bells to rebuild my body and strength, both mentally and physically. I have trained 5 days a week since that day, gaining back my weight my energy my appetite my drive and my life. I am in better shape and stronger in the gym today than I have been in years.

Researching lung cancer was dismal, the 50% survival rate was 9 months; with less than a 4% survival rate for 5 years. I chose to quit looking and start writing my own history. Part of that new history involves raising awareness and using my skills and position to give back and make a difference by becoming certified as a Cancer Exercise Specialist through CETI and develop a program specifically designed to help other cancer patients. I'm currently in discussions with my local hospital system to initiate fitness classes for cancer patients and their caregivers. It's time to give back and lead sessions to help others who may not be in the same shape as me but could use some fitness,

Today I feel perfectly fine and my mind-set is that I'm going to beat this. Even if it hasn't happened before, there's no reason I can't beat it with all our medical advances. With my plant-based diet and consistent workout regimen, I WILL beat this.

My license plate, "WIN DAY," shows my philosophy that I share with whoever will listen to "win the day." Win the day. Don't give up. Make history. Some days you may not win, but you CAN wake up and win tomorrow.

### ***Frank M – Lung cancer survivor***

My name is Tara & I was diagnosed with stage 3 lobular carcinoma Nov 5, 2014. Cancer attempted to take away my life, but it failed. With 10/10 lymph nodes involved I run a very good chance of battling this bastard again. I'll be ready, just as I was before.

As a personal trainer I had unknowingly been preparing for this diagnosis. My body was strong. I won't lie, it did mess with my emotions. But before long, I mastered that as well. It's difficult to not feel responsible. That maybe something you did brought this into your world. I initially wanted to hide but decided to confront it. I taught large group fitness classes at the time & I was connected to so many of them. So, one night I stood in the middle of my class & told them. It was almost a relief. 1<sup>st</sup> thing I got to take away from cancer!

After my mastectomy I started stretching right away. I wouldn't recommend that to everyone, but I knew my body. .

Chemo started a month later. I was told that my cancer was very aggressive. Range of motion is very important to me.

At the beginning exercising was no different than it had ever been for me. I was no longer "allowed" to work at the recreation center, but I still continued to train friends & a few clients in the safety of my private studio attached to my house. The day of chemo became almost something to look forward to. It was a social event followed by lunch & a serious walk. A personal trainer & good friend of mine who was diagnosed within one week of me was on the same schedule as I was. We sweet talked our oncologist. But that is a totally another story! In my mind I could visualize my heart pumping the chemo to every corner of my body & crushing any hidden cancer cells. I have no doubts that those power walks aided in my success with the effects of the chemo, I took very few anti-nausea drugs.

As the chemo progressed, exercise became more of a challenge. I'll never forget the defeat I felt when I could no longer run. My oncologist looked at me with a half-smile & told me I was fortunate to have been able to run at all. But I didn't stop moving. The elliptical became my best friend. There were many days that I had to really push myself. I would literally slide off the couch, put on my runners & head into the studio. I used to tell my husband that I felt like a half a million bucks after I was done. On a side note, it's amazing how sweat runs off your head without hair! 2<sup>nd</sup> thing I took away from cancer!

Radiation & three more surgeries have brought me to today.

I gave up my recreation job to pursue my private studio more seriously. I started teaching a cancer exercise class after obtaining my certification. Life is good. If there is another battle, I will be even more prepared. My advice to other women going through treatment is to never stop looking forward. My advice to anyone is to be prepared for what could potentially be. My moto - "Be your best when your best is needed!

***Tara F. – Breast cancer survivor***

Diagnosis. Colon cancer. Stage 4. After a whole summer of wondering what was going in my stomach, a trip to the ER on the last weekend in August brought it all to light.

A couple of days later, I met with my local oncologist and she gave me her plan. Aggressive chemotherapy and possible surgery in the spring. And that is what happened. As of today, I will have completed twenty-three rounds of chemo plus recovery from an 11-hour surgery.

How? Why? Me? A pure athlete for most of my life. Took care of myself. Ate well. No tobacco. No drugs. No hard living. And I get cancer. Go figure. So, what do we do? Wrap ourselves in a blanket and hold your arm out and say, "drug me up and cure my cancer."

Sorry, it cannot work like that. You must take ownership of what is yours...bad as it is. Then make a plan and destroy it. Beat it like it owes you money.

I started out as a simple working guy. Twenty-two years behind the wheel of a school bus on the mountain roads of West Virginia. ACE Certified Personal Trainer & Strength Coach. RKC (Russian Kettlebell Challenge). I recently just completed/ passed one of my greatest accomplishments. The Cancer Exercise Specialist Advanced Qualification course through The Cancer Exercise Training Institute.

And we fight. We fight together. We are stronger together, especially when knowledge empowers us to overcome some of the worst things we can ever think of.

Civilize the mind. Make savage the body.

***John F. – Colon cancer survivor***

## ABOUT THE AUTHORS

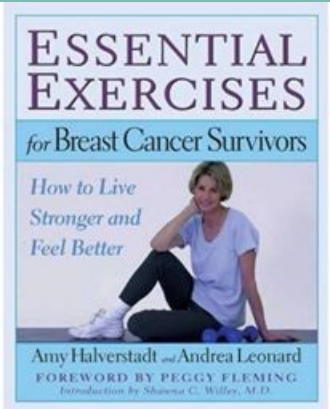
At the age of eighteen, I was diagnosed with thyroid cancer and underwent a complete [thyroidectomy](#) and [radioactive iodine treatment](#). Following her surgery, I was challenged with a new, sluggish metabolism, and weight gain. It was through my own personal struggles to regain my previous energy level and physique that I decided to become a personal trainer. I wanted to be able to help others, like myself, who struggled with the same issues of weight gain and poor self-esteem. I graduated from the University of MD in 1990 with a degree in Criminal Justice, but quickly realized that I was in the wrong profession. I avidly pursued a career as a personal trainer.

I began training in 1992 and worked at the National Capital YMCA in Washington, D.C. She quickly worked my way up to Director of Personal Training and ran the department for several years. While working at the YMCA, I started Leading Edge Fitness and EMPOWER- Energizing, Mobilizing, Post-Operative Workout Enhancing Recovery. While training the “movers and shakers” on Capitol Hill, my mom was diagnosed, for the second time, with breast cancer. I watched my mother struggle through the trauma of multiple surgeries, reconstruction, a [frozen shoulder](#), and addiction to narcotics in order to cope with the pain associated with her surgeries.

Inspired by my mother, I along with a medical advisory board from Washington D.C.’s premier medical centers, set out to write “[Essential Exercises for Breast Cancer Survivors](#).”

The goal was to help the millions of men and women, like my mother, to gain back their strength, range of motion, and self-esteem (among other things), following breast cancer surgery and treatment. The book was published by Harvard Common Press in 2000. Shortly thereafter, I founded The Breast Cancer Survivor’s Foundation, a 501c3 public charity—to better the lives of cancer survivors and their families.

Realizing that I was limited to helping a certain number of clients per week, I founded The Cancer Exercise Training Institute in 2004 and developed the [Cancer Exercise Specialist®](#) and [Breast Cancer Recovery BOSU\(R\) Specialist™ Advanced Qualifications](#) for health and fitness professionals. Through this program I have been able to pass on my knowledge, and enable health and fitness professionals around the world, to work safely and confidently with cancer patients.



Through CETI's [Advanced Qualification live workshops](#) and [home study](#), participants learn about twenty-six types of cancer and pediatrics, their surgeries, treatments, [lymphedema](#) identification, prevention, and treatment, reconstructive procedures, contraindications, side-effects and so much more. Following a comprehensive examination, attendees are awarded the [Cancer Exercise Specialist®](#) and/or [Breast Cancer Recovery BOSU® Specialist™ Advanced Qualifications](#).

I have presented the Cancer Exercise Specialist Workshop across the U.S., Singapore, and Canada and have been a guest speaker at IDEA World, CPTN Personal Training Conference, IRHSA, TSI Summit, Medical Fitness Tour, Kaiser Permanente Thriving with Cancer Conference, Winona State University – Survivors Unite, McHenry Community College, New York Institute of Technology, OHSU School of Nursing, Edwards Hospital, Georgetown University Hospital, Suburban/Johns' Hopkins, Mennonite Cancer Foundation, South Georgia Medical Center, Cary Medical Center Lynchburg General Hospital, Chesapeake Regional Medical Center, Sibley Hospital, Memorial Hermann, Sanford Health System, Avera McKennan Prairie Cancer Center, Baptist Hospital East, Patricia Neal Rehab. Center, St. Mary's, Baptist Health System, Southeast Georgia Cancer Coalition, and Fort Bliss Army Installation.

The Cancer Exercise Training Institute is considered the gold-standard of education on cancer recovery and prevention through exercise; and has trained more individuals

I have written 17 books on the subject of cancer and exercise and am a sought after speaker and author. I have contributed to PFP Magazine, CURE magazine, ACE Certified, ACE Blog, NOU Magazine, Club Solutions Magazine, Bethesda Today, Capital Gazette, NASM's Training Edge Magazine, Lake Oswego Review, Portland Tribune, The Oregonian, The Tidings inHealthOhio Blog and News, Capital Style, The Examiner, The Washington Post, Dallas Morning News, 4Wholeness.com, SpecialFit, and has appeared in countless videos including the Heartflex Breast Cancer Recovery video and been a regular fitness expert on AMNW.



*In 2014 I lost my father to prostate and bladder cancer and myelodysplastic syndrome and my mother was diagnosed in the fall of 2018 with stage IV metastatic breast cancer after being in remission for 23-years. I am working with her to help her beat this dreaded disease!*





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- Prevent, identify, & manage lymphedema
- Improved self-esteem & self-confidence

**503-502-6776** [www.thecancerspecialist.com](http://www.thecancerspecialist.com)

Schedule your appointment with Andrea Leonard President/Founder of the Cancer Exercise Training Institute

## GLOSSARY

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