



1012 Harrison Ave Ste 3  
Harrison OH 45030  
[www.FitnessLearningSystems.com](http://www.FitnessLearningSystems.com)

## **An Introduction to: Fitness for Breast Cancer Survivors June 6, 2017**

**Course Type: Recorded 1 Hour Webinar**

**Course Level: All Levels**

### **Course Objectives**

1. Name 6 surgical options for breast cancer
2. List the 3 types of systemic treatments
3. Name 10 potential side effects of breast cancer treatments
4. Describe a safe progression of exercise
5. List when you should stop exercise with breast cancer clients

### **Course Description**

Did you know that there are almost 3 million breast cancer survivors in the United States today? Improved education, detection, and treatment has led to increased survival rates. These women and men are looking to fitness professionals to provide exercise options and modifications to meet them where they are at. What is a safe and effective program? What does the fitness professional need to know to work with this population?

Some of the questions to be answered through this webinar include:

What treatments do breast cancer survivors undergo?

What are some of the side effects of these treatments? What is a safe progression of exercise?

What precautions should be adhered to?

### **About the Presenter**

Naomi Aaronson, MA OTR/L CHT CET CPI

Naomi Aaronson is an occupational therapist, mat Pilates instructor and Cancer Exercise Trainer. She specializes in hand therapy and breast cancer rehabilitation. Naomi is co-author of the recently published book *Pilates for Breast Cancer Survivors: A Guide to Recovery, Healing, and Wellness* which is available on Amazon.com. Writing and creating courses has become one of Naomi's passions, and she has been busy designing webinars for occupational therapists. Her webinars include *Finger and Hand Fitness for School Based Therapists*, *An Introduction to Pilates for Occupational Therapists*, and *Critical Knowledge When Working with Breast Cancer Survivors*. Naomi lectures regularly to Masters Level Occupational Therapy students on breast cancer rehabilitation as well as non- traditional areas of practice.

### **Course Outline**

Client case study

Emily is a 56 year old woman diagnosed with Breast cancer in May 2016. She received a Modified radical mastectomy in June 2016 followed by chemotherapy in August. She just contacted you to begin a fitness program in January 2017. Emily reports feeling fatigue , having chemo-brain, and gaining a lot of weight

- What questions should you ask?
- Any precautions that should you follow?
- Are there any exercise contraindications?

What do you need to know about Breast Cancer?

- There are almost 3 million Breast Cancer survivors in the US Today
- What are the issues that affect their participation in exercise?
- How does treatment effect your exercise plan?

Everyone is unique

- cancer treatment is individualized
- Everyone's needs are different and treatments differ dependent on staging and Chosen treatment options. Each person's fitness is different as well
- No cookie cutter approach
- Generally, Surgery first but chemotherapy can be performed on occasion to shrink the tumor.
- Radiation usually performed with lumpectomies and mastectomies. Dependent on staging of the disease.
- Your clients will have good and bad days. Your Flexibility is an asset.

What is BREAST Cancer? Who is a cancer survivor?

- CANCER IS THE UNCONTROLLED GROWTH AND REPRODUCTION OF abnormal CELLS.
- BREAST CANCER IS A CARCINOMA THAT BEGINS IN THE LINING OF THE BREAST
- YOU ARE A SURVIVOR FROM AN INITIAL DIAGNOSIS OF CANCER TO During/After treatment OR CAN EVEN BE SOMEONE LIVING WITH CANCER
- CANCER CAN METASTASIZE OR SPREAD FROM THE ORIGINAL SITE TO OTHER SITES SUCH AS THE BRAIN, BONES, LUNGS AND LIVER.

What are the treatments?

Local treatment includes surgery and radiation

- Surgery is the first line of treatment
- The main treatment types are as follows:
  - Lumpectomy- EXCISION OF TUMOR AND MARGIN OF TISSUE
  - Mastectomy- REMOVAL OF BREAST TISSUE
  - Nipple sparing mastectomy -EXCISION OF BREAST TISSUE WHILE PRESERVING THE NIPPLE, SKIN AND AREOLA
  - Modified Radical Mastectomy - REMOVAL OF BREAST TISSUE AND LYMPH NODES
  - Skin Sparing Mastectomy- Preserves as much breast skin possible. Small opening created

LYMPH NODE Removal – Surgical procedures to help stage the disease

AXILLARY LYMPH NODE DISSECTION

- REMOVAL OF SAMPLING OF LYMPH NODES

SENTINEL LYMPH NODE BIOPSY

- FIRST NODE TO WHICH CANCER CELLS ARE LIKELY TO SPREAD. 5 OR LESS REMOVED < Lymphedema risk

Lumpectomy- What does this effect?

Mastectomy- What Does this effect?

Reconstruction- Can be done same time as surgery or delayed years later to make breast

1. 2 Stage Implants – Expander and then permanent implant placed under pectoralis major. Gradual filling of expander for 1-3 months. Saline injected. Avoid overhead lifting or stressful exercise to the chest and arm with the expander in and 4-6 weeks after permanent implant.
  - DIRECT TO IMPLANT: EXPANDER STAYS IN PLACE WITH MESH WITH DERMAL MATRIX without need for expander. usually done immediately after mastectomy without need for an expander
2. Autologous - Tissue based: Tissue taken from other parts of the body to form a breast
  - a. Pedicled – tissue and blood vessels moved together
  - b. Free- Tissue cut from blood supply
    - TRAM- Abdominal area fat and muscle
    - DIEP- Abdominal area mostly fat TRANSFERRED TO MAKE BREAST
    - LAT – Latissimus- dorsi transferred around to the breast region and combined with implant
    - GAP – TISSUE REMOVED FROM BUTTOCKS

Implant based reconstruction photo courtesy of American society of plastic surgeons

- NO PECTORAL STRETCHING WITH EXPANDERS UNTIL 8 WEEKS HAS PASSED

TRAM Flap

What are the issues post-surgery and reconstruction?

- Decreased Shoulder range of motion
- AWS- Axillary web syndrome
- Pain
- Weakness
- Decreased function
- Fatigue
- Pectoralis tightness
- Lymphedema
- Donor site morbidity
- Trunk weakness
- Back pain
- Breast pain
- <Scapula mobility
- Abdominal weakness and tightness
- Poor posture

Axillary Web syndrome

- Visible and palpable cord or web of tissue in axilla that can extend to wrist. Limits shoulder abduction/ external rotation. Too much activity or too early activity can cause it

Lymphedema- What is it?

- Build up of protein rich fluid due to impaired lymphatic system resulting from lymph node removal and/or radiation.
- C/o heaviness or achiness in UE
- >d BMI, Infections linked to lymphedema risk
- Strength training does not increase lymphedema risk- Still must be cautious.
- Paramandiam, V. and Roberts, D. (2014) Weight training is not harmful for women with breast cancer related lymphedema: A systematic review *Physiotherapy*,60; (3):136-143

What is radiation? Local treatment

High energy X RAYS, ELECTRON BEAMS OR RADIOACTIVE ISOTOPES TO DESTROY CANCER

Short term Issues:

- Breast Soreness
- Breast roughness
- Redness to peeling skin
- Moist reaction – skin folds and under breast
- Fatigue
- <D ROM IN NECK AND SHOulder

\*\*\* CAREFUL WITH EXCESSIVE Stretching or EXERCISE WHEN SKIN IS BEING TEATED

Long term effects

- Breast firmness/shrinking
- Mild tanning
- > risk of lymphedema the more lymph nodes removed

Rare

- Rib Fx.
- Brachial plexopathy

REHABILITATION AFTER LOCAL TREATMENT- you will not be seeing them most likely at this time

- 0-2 WEEKS (Drains in place)
- AROM FLEXION/ABDUCTION TO 90, FOCUS ON BREATHING, NO LIFTING
- 2-4 WEEKS
- SLOW PROGRESSION AROM, SCAPULA STABILIZATION, NO LIFTING
- 4-8 WEEKS
- FULL AROM . CAN START LIFTING weights AFTER 8 WEEKS.
- \*\* THIS MUST BE INDIVIDUALIZED
- \*\*Please work in conjunction with Rehab staff once you start seeing them

What is systemic treatment? Systemic treatment effects the entire body

- CHEMOTHERAPY
- HORMONAL TREATMENTS

- BIOLOGICAL TREATMENTS
- CYTOTOXIC DRUGS
- 2 OR MORE USED
- KILLS ALL FAST DIVIDING CELLS
- SERMS- TAMOXIFEN BLOOD CLOTS, FATIGUE, HOT FLASHES,
- STROKE
- >D BONE DENSITY
- AI- FEMARA, AROMASIN
- >D JOINT PAIN, BONE LOSS,
- USED FOR WOMEN WHO ARE HER+
  - HERCEPTON
  - CARDIOTOXIC

What are the issues after systemic treatment?

CHEMOTHERAPY

HORMONAL

BIOLOGICAL

FATIGUE

OSTEOPOROSIS

PERIPHERAL NEUROPATHY

INFECTIONS

CHEMO-BRAIN

ANEMIA

Hair loss

Weight gain

Cardiotoxicity

Fracture risk

Joint pain

Menopausal like symptoms

CARDIOTOXICITY

Exercise during chemotherapy treatment-confer with medical provider

Stop exercise:

Dizziness, blurred vision

Sudden onset of nausea

Unusual SOB

Irregular heart beat

Sudden onset of weakness or pain

Port -a- CATH

Under skin into svc (superior vena cava in heart) or subclavian vein to just above the right atrium of heart

Maintains venous quality

Decreases lymphedema risk

Precautions

prominent veins around site could be a clot > refer to MD

If line uncomfortable >hold off on UE exercises

Chemotherapy – PICC LINE

- Peripherally inserted central catheter
- Inserted into vein into arm and terminates at large vein near heart subclavian vein or svc
- \*\*\*\*\*Same precautions as port a Cath

Cancer related FATIGUE #1 ISSUE AFTER CHEMOTHERAPY

- FEELING TIRED EVEN AFTER SLEEPING
- DIFFICULTY CONCENTRATING
- INCIDENCE- 58%- 94% OF BC SURVIVORS HAVE FATIGUE DURING CHEMO
- DUE TO CANCER, ANEMIA, NUTRITION, ANXIETY, DEPRESSION, DECONDITIONING
- Combination of exercise and psychological treatment reduce fatigue during and after tx.
- BERGER, A. ET AL. (2012) CANCER RELATED FATIGUE: IMPLICATIONS FOR BREAST CANCER SURVIVORS CANCER (4)

## CIPN- CHEMOTHERAPY INDUCED PERIPHERAL NEUROPATHY

PIGNATURA, R. SWISHER, A. (2010) REHAB ONCOLOGY 28(2)

- AUTONOMIC
- SENSORY
- MOTOR
- DRY MOUTH
- CONSTIPATION
- ORTHOSTATIC HYPOTENSION
- PAIN
- SENSORY LOSS
- LOSS OF PROPRIOCEPTION
- DISTAL WEAKNESS
- DECREASED BALANCE
- GAIT IMPAIRMENTS

Osteoporosis- Low Bone density >fracture risk. Bone loss is 2-3x that of healthy controls (hadji,P. 2015)

- Kyphotic posture
- What osteoporosis looks like
- Fracture sites

### Cardio-Toxicity

- CO -MORBID CONDITIONS CAN EFFECT RISK ie hTN, Arrhythmias, Heart disease, DM
- GREATEST RISK FIRST 5 YEARS after Dx.
- Potential for adverse cardio-pulmonary events higher in cancer survivors due to treatment toxicity ie radiation, chemotherapy drugs
- Women's health initiative found that women with B. C. who performed 5 hours of moderate exercise per week before dx. Were 40% less likely to have a cardiac issue and 60% less likely to die from coronary artery disease or
- Heart disease
- Bird, BR et al. (2008) Cardiac toxicity in breast cancer survivors: Review of potential cardiac problems Clin Cancer Res 14 (1):1-10

What are the benefits of Exercise for breast cancer survivors?

- 30-60 minutes of moderate to high intensity exercise each day to decrease breast cancer risk
- Exercise improves mortality
- Those who expended at least 9 MET hours/week improved mortality by 69% for those active in the year before dx. And 33% for those active 2 years after dx.
- Those who decreased physical activity after diagnosis had a 4x greater risk of dying
- Significant improvement in depression, anxiety, and self esteem
- Reduction in BMI and insulin
- The optimal type, timing, and intensity is not known
- Kelly, M. (2016) Exercise and cancer IDEA Fitness journal 13,42-49

What are the goals of an exercise program for Breast cancer survivors?

- Psychological Goals
- Increase sense of control
- Enhance self esteem
- Increase independence
- Distract from treatment side effects
- Physical Goals
- Improve physical function
- Prevent lymphedema
- Improve QOL
- Decrease weight gain and fatigue
- Improve body composition

What does a good exercise program for survivors include? aerobic conditioning Recommendations

- Rehabilitation post surgery and reconstruction indicated after Surgery . Can begin exercise program usually 8 weeks post surgery as long as post surgical issues resolved and cleared to resume normal activities
- Return to normal daily activities as quickly as possible after surgery – Avoid inactivity
- 150 minutes /week of moderate intensity activity or 75 minutes of vigorous activity\*\* Formal exercise testing for complications such as heart disease or chemotherapy effects on cardiovascular system \*\* Consult with medical team
- Exercise testing not required for survivors participating in low –moderate intensity activities ie walking, flexibility exercises, or resistance training
- Begin at a low intensity level and slowly progress in dose, duration, and intensity as tolerated for all components of your program
- Wolin, K. Schwartz. A et al. (2012) Implementing the Exercise guidelines for Cancer survivors J support Oncology 10(5):171-177

#### Aerobic Activities

##### LIGHT – MODERATE 40-65% OF MAXIMUM HEART RATE

- Light <3 METS
- Moderate 3-6 METS
- Vigorous 6-9 METS
- Stationary cycling/ergometer
- Walking\*\*
- Stretching (modified)
- Pilates/Yoga
- Brisk walking
- Bicycling
- Low impact aerobics
- Weight training
- Mountain climbing
- Step aerobics
- Spin
- Jump rope
- Competitive sports

#### Flexibility component RECOMMENDATIONS

- Stretching for all major muscle groups 3-5x/week
- Emphasis upon neck, pectoralis group and rotator cuff on a daily basis or minimum 3-5x/week
- Stay within a pain free zone
- Regular stretches to hamstrings, quads, etc.

#### Strength training component- Clients lose 10-15% of total body mass after chemo

- 2-3x/week working all major muscle groups
- Target the shoulders, neck, wrist and back along with usual core and leg muscles
- If you work the core first and use diaphragmatic breathing, you can > lymphatic drainage
- \*Adhere to lymphedema precautions Person should wear sleeve if has lymphedema
- 8-12 repetitions of all exercises gradually building to 3 sets, but start slowly to see how affected arm responds
- Avoid planks and exercises that place too much weight on the affected arm at first if at lymphedema Risk \*\*\*\*\*
- Can use resistance machines and free weights
- Start with no weight or 1lb. For upper body movements . Weight increases gradually by ½ lb. if no flare ups of lymphedema
- Lower body movements 8-12 reps to fatigue
- \*\*\*\*If there is a break in strength training , back off the level of resistance by 2 weeks for every week of no exercise if have lymphedema

Swan- video

Wall push up modification

## Balance training

- Decrease risk of falls
- Improve weight bearing on one leg

## Exercise precautions

- individuals who are receiving or received hormonal therapy: Evaluation of fracture risk recommended VIA BONE DENSITY SCREENING. Bone density screening for women aged 60-64 at high risk for bone loss and women aged 65>
- Survivors with known metastatic disease to the bone: recommended for medical evaluation first. /common sites are Vertebrae(69%) , pelvis(41%) ribs(25%) femur(25%)
- Lymphedema risk assessed by rehabilitation and precautions adhered to
- Peripheral neuropathy> risk of falls > should undergo neuropathy evaluation prior to start of exercise
- Monitor patients closely. Status can vary especially if still undergoing treatment

## Exercise Warnings

- Initial wound healing after surgery- ROM to 90 until drains are removed. Then clients receive rehabilitation
- FEVER, ACTIVE INFECTION, Extreme fatigue, Ataxia or anemia no EXercise
- NO Exercise on day of chemotherapy – still needs to be investigated
- Severe tissue reactions to radiation no exercise to UE

## Cardiovascular contraindications to exercise

- Chest pain
- Resting pulse>100bpm OR <50BPM
- Resting blood pressure>145Hg Systolic
- Resting Blood PRESSURE< 85
- SWOLLEN ANKLES- CALL DOCTOR

## HEMATOLOGICAL GUIDELINES TO EXERCISE

- PLATELETS – NORMAL :150,000-400,00
- 50,000 -150,000 AVOID activities THAT INCREASE RISK OF BLEEDING (Contact Sports)
- WHITE BLOOD CELL COUNTS –NORMAL:5,000 TO 10,000 /CM
- 3,000 NO EXERCISE
- 11,000 MAY FEEL SICK
- HEMOGLOBIN MEN 14-18 G/DL WOMEN 12-16 G/DL
- <8G/DL REDUCED EXERCISE CAPACITY 8-10 G/DL MAY HAVE REDUCED EXERCISE CAPACITY> low or moderate intensity exercise

## Pearls of wisdom

- Doctors clearance for exercise with co-morbidities
- Clear instructions to client
- Reassure clients that exercise is safe
- Start slowly and progress slowly
- Find enjoyable activities
- Include strength training, aerobic, flexibility, and balance training
- may need to monitor vital signs ie BP and HR if participating in vigorous exercise
- May need to modify depending on treatment side effects
- Exercise dosages should be individualized based on health, immune status, cancer stage, training history, treatment.
- Monitor closely and program adjusted accordingly

## REFERENCES AND RESOURCES

- Hadji, P. (2015)Cancer treatment induced bone loss in women with breast cancer Bone key reports , (4) article number :692 doi:10.1038./bonekey.2015.60
- Irwin, M., Schmitz, K. et al. (2016) The Effect of exercise on body composition and bone mineral density in breast cancer survivors taking aromatase inhibitors Doi: 10.1002/oby.21729
- Mustian, K., Alfano, C. et al. (2017) Comparison of pharmaceutical, psychological, and exercise treatments for cancer related fatigue JAMA oncolol doi: 10.1001.jamaoncolol.2016.6914
- Nelson, N. (2016) Breast cancer –related lymphedema: Is Resistance training safe? (26), 7-11

- PARAMANANDAM, V. ROBERTS, D. (2014) WEIGHT TRAINING IS NOT HARMFUL FOR WOMEN WITH BREAST CANCER RELATED LYMPHOEDEMA: A SYSTEMATIC REVIEW PHYSIOTHERAPY, 60(3):136-143
- Schmitz ,KH et al. (2010)Weight lifting in women with breast cancer related lymphedema: A randomized trial JAMA, 304,(24):2699-2705
- WOLIN, K SCHWARTZ, A. ET AL. (2012) IMPLEMENTING THE EXERCISE GUIDELINES FOR CANCER SURVIVORS J SUPPORT ONCOL SEPT- OCT;10(5): 171-177
- Zhu, G. et al. (2016) Effects of exercise intervention in breast cancer survivors: A meta-analysis of 33 randomized controlled studies onco targets Therapy;9:2153-2168
- Resources
- Aaronson, N and Turo, Ann Marie Pilates for breast cancer survivors : A guide to recovery, healing and wellness (2014) Demos health
- Http:// www. amazon. com/pilates -breast-cancer-survivors-recovery/ dP/1936303574
- Aaronson, N. and Turo, A.M. Return to life: Breast Cancer Recovery using Pilates (2015 ) www. fitnesslearningsystems.com
- Aaronson, N and Essert, Mary Breast Cancer Recovery: On Land and in water( 2016) [www.fitnesslearningsystems.com](http://www.fitnesslearningsystems.com)

#### WEB sites

- Susan g. Komen [www.komen.org](http://www.komen.org)
- American cancer society [www.cancer.org](http://www.cancer.org)
- Living beyond breast cancer [www.lbbc.org](http://www.lbbc.org)
- Position statement by the National lymphedema network Topic: Exercise 2011 <http://www.lymphnet.org>
- Breast cancer related lymphedema essential knowledge for fitness trainers,yoga teachers, and Pilates teachers <http://www.stepup-speakout.org>

#### Question and Answer Segment