Exercise and Breast Cancer: Things you can do!

Cancer within the fire service is one of the most dangerous threats to our firefighter’s health & wellness. According to the latest studies firefighters are 102% more likely to be diagnosed with certain types of cancer than others from the general population. Much of this can be attributed to the toxic chemicals, radiant heat, and diesel engine exhaust exposures. Even the sleep disruptions could increase the chance of cancer. According to the University of Chicago and the University of Louisville sleep disruptions (which resembled sleep apnea) in mice had more aggressive tumors than well rested mice. Over 10 types of cancers have been directly associated to the job, and breast cancer is one of them – having an incidence of 1 out of every 26. October is breast cancer awareness month we at the International Cancer Foundation wanted to recognize this dreaded disease by offering some insight on how exercise may benefit those diagnosed with it.

Being diagnosed with cancer is not a death sentence. In fact, the 5 year survival rate for women diagnosed with breast cancer is 89%. This means that many women will live as cancer survivors, hopefully for decades. Yet the treatment itself is very difficult which can lead to negative side effects. Exercise can play a significant role in reducing these negative effects and improve their quality of life during and after treatment.

As a strength & conditioning coach for firefighters one question that often arises is “can I exercise?” and the simplest answer is “It depends”. Certain things may affect your ability to exercise, for example:

- The type of cancer
- Your specific treatment
- Your pre training levels before diagnose (your current strength and fitness levels)

For example: If you were in great shape and exercised on a regular basis you may need to adjust your schedule and reduce the amount of exercise. On the other hand if you never exercised you may need to start at a very low intensity. Either way the goal is to not run yourself down but rather stay active with a good balance between exercise and rest.

A few other things to consider are the emotional and psychological side effects associated with cancer: depression, anxiety, sleep disturbances, and fatigue are among some of the most significant problems that influence the quality of life during treatment, and exercise may be the best medicine.

Does exercise help during treatment for breast cancer?

In the past many doctors would tell the patient to rest and conserve energy, but many studies have proven this method to be ineffective. In fact too much rest can lead to loss of body function, body mass, muscular weakness, and stiff joints. Many women who are being treated for breast cancer often take aromatase inhibitors which can lead to joint pain, and in one study women who performed 150 minutes of aerobic exercise per week greatly reduced their joint pain but more importantly reduce the chance of dying from breast cancer by 25%.

I am sure you are wondering what kind of aerobic exercise? Well, based on research running may actually be more beneficial than walking. According to researchers women who exceeded the weekly recommendations listed above provided greater protection and running seemed to be a better choice than
walking. In fact women who ran had a decrease by 40%, and runners who averaged 2.25 miles per day had a reduction of 45%. **Note:** within healthy populations exercise has in moderation has shown to improve immune function, yet excessive exercise may impair it. Those who are going through treatment already have a weaken immune system due to the chemotherapy, so it is recommended that exercise and rest be balanced.

It is not uncommon to gain weight during treatment, where most women will gain an average of 10lbs during the first year of breast cancer treatment. Why? Usually due to the hormonal therapy to block tumor growth. This weight gain can lead to worse outcomes and even more depression due to an altered physical state and lack of self esteem. So can exercise help? In a study published in Anticancer Research, women who participated in a specific exercise program helped them overcome these barriers. More importantly they felt a sense of mastery over their disease which leads to improved self-esteem and mood. It was also recommended that women work in a group setting, possible with others going through treatment or breast cancer survivors. The peer support created a sense of value as well as a sharing of experiences which increased psychological support and a sense of normality.

**So what happens to your body during treatment?**

Fatigue related to cancer occurs because of both the disease and as a side effect of treatment. It usually begins before treatment and progresses throughout the process. It is not only debilitating during treatment but can last months and even years after treatment. The magnitude and persistence of fatigue during cancer treatment is very different from those of a healthy individual because it not only remains after good rest, but also impacts their ability to perform normal tasks. Research has shown that a combination of treatments results in greater fatigue vs. just one bout of treatment, and that fatigue usually peaks during treatment. Therefore it is recommended that the patient alternate their workout to allow for proper rest during treatment cycles.

The most common methods of treatment include surgery, chemotherapy and radiation therapy. Below is a list of specific physical side effects associated with breast cancer treatment.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Side Effect</th>
<th>Considerations</th>
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</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>- Muscle Damage</td>
<td>- Based on location, perform resistance exercises with muscles on the opposite side of the body until healing is complete.</td>
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<td></td>
<td>- Nerve damage in the immediate and area surrounding the incision</td>
<td></td>
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<tr>
<td></td>
<td>- Impaired movement</td>
<td>- Unilateral exercises to promote “cross education” – improved strength is achieved in the trained muscles group as well as the same muscle group</td>
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<tr>
<td></td>
<td>- Atrophy of muscles associated with limb affected by surgery</td>
<td></td>
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<tr>
<td>Chemotherapy</td>
<td></td>
<td>Radiation</td>
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| - Anemia leads to fatigue as the result of decreased blood flow.  
- Low bone mineral density which can lead to increased fractures  
- Decreased immune function  
- Proprioception and Balance may be impaired.  
- Impaired cardiac function due to chemotherapy drugs | | - Decreased skin elasticity  
- Fibrosis  
- Damage of cardiac tissue, especially those with breast cancer  
- Dehydration |
| - Exercise during treatment at low intensities.  
- Limit cervical spine and trunk flexion due to bone density disorders.  
- Incorporate a good balance between exercise and recovery. Allow for the immune system to improve.  
- Incorporate exercises that will enhance proprioception and balance - unilateral exercises are often a safe and effective.  
- Include exercises that focus on improved cardiovascular function. | | - Include both resistance and cardiovascular training  
- Emphasize hydration before, during, and after training session |
What can you do?

The Canadian Medical Association Journal showed that patients with **advanced cancer** can benefit from a rehabilitation program that includes exercise and nutritional counseling. So doctors today are looking at exercises as something to compliment treatment, not hinder it.

Below is an example of a simple movement program that can help before, during, or after treatment

<table>
<thead>
<tr>
<th>Activation</th>
<th>Movement</th>
<th>Sets / Reps</th>
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</table>
| Posture restoration: | Thoracic External Rotation: Heel Sit | Lay there for 30 – 60 seconds  
  Stretches Anterior Side  
  Focus on Breathing from the belly to relax the body |

| Foam Roller: Thoracic Stretch | T Spine Mobility: Tennis Balls Between Shoulder Blades | 10 – 20 seconds  
  Shoulder Discomfort, Upper Back Stiffness, Neck Discomfort |

| Foam Roller: Latissimus Dorsi | Swiss Ball Reach & Roll Out | 10 – 20 seconds  
  Upper Back Stiffness, Neck Stiffness, Neck Discomfort |

| Foam Roller: Piriformis | Piriformis Stretch | 10 – 20 seconds  
  Low Back Discomfort, Hip Discomfort, Sciatic Relief, |
The following is an example of an exercise routine progressing from easy to hard.

<table>
<thead>
<tr>
<th>Easy: 2 Sets, 12-15 reps</th>
<th>Medium: 3 sets, 8-10 reps</th>
<th>Hard: 3 sets, 5–6 reps</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRX Squat</td>
<td>Goblet Squat</td>
<td>Split Squats</td>
</tr>
<tr>
<td>TRX Row</td>
<td>Squat with Row</td>
<td>Reverse Lunge with Row</td>
</tr>
<tr>
<td>TRX Leg Curl</td>
<td>Swiss Ball Leg Curl</td>
<td>Swiss Ball Leg Curl Chest Press</td>
</tr>
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Cancer and cancer treatments can have an impact physically, emotionally, and psychologically. Understanding the treatments involved and the side effects associated with them can help a patient develop a safe and effective workout program to minimize or reverse the physiological effects resulting from the treatments. Exercise can ultimately help cancer survivors regain their ability to perform activities of daily living and improve their quality of life.