Exercise for Cancer Survivors

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Typical Patient Concerns

- Stress, anxiety, depression
- Poor appetite
- Decreased muscle mass
- Osteoporosis
- Swelling issues
- Fatigue
- Decreased balance and safety/fall risk
- Decreased functional independence
1/3 of Cancer Deaths expected in 2017

1. Physical Inactivity
2. Obesity
3. Poor Nutrition
Survivors tend to decrease their physical activity levels after their diagnosis of cancer.

Most continue lower levels of activity through treatment and beyond, rarely returning to their pre-diagnosis levels of activity.”

Irwin, Crumley, McTiernan, et al. 2003; Courneya & Friedenreich 1997
What Do Patients Want?

2002 study by Courneya: a majority of 307 cancer survivors preferred face-to-face exercise prescription during cancer treatments and also reported preference of this training to be done by trained staff from a cancer center.
“Exercise has been shown to improve cardiovascular fitness, muscle strength, body composition, fatigue, anxiety, depression, self-esteem, happiness, and several components of quality of life in cancer survivors.”

Specific Benefits of Exercise

- Cardiovascular exercise offsets heart damage from chemotherapy or radiation
- Exercise lowers blood pressure and can prevent blood clots
- Balance training exercises can help to decrease fall risk
- Exercise releases endorphins, reducing chronic pain and stress

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Specific Benefits of Exercise

- Certain types of cardio and resistance training will cause an increase in bone density with fracture risk reduction.

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Surgery

- Seroma
- Infection
- Scar tissue restrictions
  - Limited range of motion
- Lymphatic cording
- Reduced strength
- Swelling
- Phantom sensation and pain
- Change of body image

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Surgery: Scars Make a Difference

- Visible scar is the “tip of the iceberg”
- Immobile scars can cause long-term pain syndromes and swelling
- Incisions should have scar tissue work 4-6 weeks post op
- Taught to caregiver
- Once scar is mobilized, no further tx needed
- Stretching program helps to remodel scar tissue!

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Normalizing joint motion after surgery is critical
Loss of motion affects function and may make lymphedema worse
Recommend stretches before and after radiation healing (lifetime)
Chemo: Exercise Implications

- Low blood counts
- Low blood pressure
- Fatigue
- Nausea
- Infection risk
- Peripheral edema
- Heart function decline

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Chemo: Benefits of Exercise

- Decrease risk of or treat swelling/lymphedema
- Reduce fall risk/hospital admits
- Improve fatigue, pain, nausea, need for meds
- Improve function
Chemo: Benefits of Exercise

Improve ability to tolerate treatment:

Aerobic or resistance exercise significantly improved self-esteem, physical fitness, body composition, and chemotherapy completion rate in breast cancer patients without causing lymphedema or significant adverse events.


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Peripheral Neuropathy

- Post surgery, chemotherapy, diabetes
- Rate of nerve return
- Pain/hypersensitivity, decreased fine motor skills
- Foot drop, decreased balance and safety
  - Balance exercise and stretching
  - Fall risk management; bracing may be needed
  - Swelling management
  - Proper footwear essential
- Swimming
- Exercise and massage can increase circulation and healing

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Radiation

- Fatigue
- Osteopenia
- Radiation induced fibrosis contracture
- Chronic pain
- Lymphedema

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1. Moderate intensity aerobic exercise shown to improve anemia during radiation for breast cancer patients *
2. Neutropenia
3. Skin breakdown: no deep tissue massage for at least 6 mo.
4. Swelling disorders
5. Radiation-induced fibrosis

* Drouin, JS, et al; Random Control Clinical Trial on the Effects of Aerobic Exercise Training on Erythrocyte Levels During Radiation Treatment for Breast Cancer; Cancer; 2006; Nov. 15;107(10):2490-5.

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Fatigue (CRF) has been reported by 60-100% of patients undergoing treatment for cancer.

CRF has been identified as a research priority by the Oncology Nursing Society for a decade.

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Causes of Fatigue

- Surgery
- Radiation
- Multiple rounds of chemo, hormonal or biotherapies
- Cardiac or pulmonary issues
- Co-morbid disease
- Muscle atrophy
- Chronic pain
- Chronic fatigue syndrome

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“My Get Up and Go, Got Up & Went”

- Impaired nutrition/GI absorption/nausea
- Fever, infections, anemia, bleeding events
- Medication – i.e. Prednisone, sleep meds
- Swelling
- Peripheral neuropathy
- Home/job demands
- Depression/feelings of isolation/decreased social interaction

- Lack of regular daily exercise

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LACK OF RESTORATIVE SLEEP!

- Stress
- Pain
- Poor sleeping habits
- Diarrhea/frequent urination
- Restless leg syndrome
- Muscle cramping
- Being in the hospital
- Inability to take naps:
  - Frequent medical appts., long appointment wait times
  - Visitors
- Fatigue may be unrelieved by rest

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Fatigue: Exercise Implications

Begin Exercise Appropriately:

1. Monitor lab values
2. Graded cardiopulmonary exercise is an excellent way to manage fatigue
3. “Less is more”: slow, gentle progression
4. AM or PM exercise routines, appointment scheduling
5. Continue activity, but in smaller quantities
6. Use energy conservation techniques

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8. Schedule frequent rest periods
9. Use adaptive equipment as necessary
10. Recognize “chemo brain” and adapt interventions
11. Try exercise groups
12. Involve caregiver/family in exercise
13. Consider beginning with only one mode x 1-2 weeks before adding another
Exercise Precautions

- Work with an oncology physical therapist:
  Find a PT: apta.org

- Consult with your MD for exercise clearance
  - Heart conditions
  - Metastases
  - Lymphedema
  - Chronic orthopedic injuries
  - Blood lab values (platelets, hematocrit, hemoglobin)

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Other Considerations

- Best to wait 1-2 weeks post surgery drains are removed to start an exercise program
- Gradually increase time and intensity – go slow and gentle and add only one type of exercise at a time
- Proper hydration and rest
- Appropriate equipment/dressing properly
- Never walk barefoot at the gym. Clean equipment well before use

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Lymphedema: Exercise Implications

1. No blood pressure on affected side(s)
2. No exercise if symptoms of cellulitis are present
3. Slow progression with close patient monitoring of affected side(s); therefore, no specific weight restrictions needed *
4. Any new swelling or signs of infection, see MD first ASAP, then PT

* Sander, A.P.; A Safe and Effective Upper Extremity Resistive Exercise Program for Women Post Breast Cancer Treatment; Rehabilitation Oncology; 2008.; Vol. 26, Iss. 3; pg. 3.
Lymphedema and Exercise

1. Lifetime risk but lymphedema is not inevitable
2. If you develop it, stay healthy, maintain proper weight
3. Self monitor, seek MD promptly with any changes
4. Return to your PT as needed
5. If you have a garment, replace it every 6 months and make sure it fits you properly, especially if you gain/lose weight
6. Slow, gentle exercise progression is always best

If you follow your precautions and take good care of yourself, you should be able to do almost any activity
New NEJM U Penn Study

141 patients post breast cancer resection, ALND and lymphedema

a. 70 = control group

b. 71 = weight lifting group (WLG) participated 2x/week x 90-minute exercise classes for 13 weeks @ YMCA’s in PA, NJ and DE

  a. Next 39 weeks, continued 2x/week unsupervised exercise
  b. Wore a custom-fit compression garment during workouts
  c. Each week asked about changes in symptoms
  d. Arms measured monthly

  a. 19 control patients had a flare versus 9 of the WLG
  b. Weight lifting group:

- Fewer lymphedema flares
- Improved self-report of lymphedema symptoms
- Improved strength


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Cardiorespiratory Exercise

- All cancer patients and survivors should be on a proper cardio program
- Daily or 3-5x/week
- Weight loss: 5-7x/week
- Walk, bike, swim, etc.
- Spinal support if necessary
- Monitor platelet counts
- Target heart rate calculation

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Muscle Atrophy (sarcopenia)

- Core muscles
- Proximal muscles
- Glut medius
- Pelvic floor
Weight Training

1. 2-3/week, possibly anti-gravity only daily in beginning
2. May need to start without weights - work on endurance & muscle mass, rec’d 2 sets of 10 reps
3. Monitor platelet counts
4. Focus especially on:
   a. Upper back
   b. Rhomboids
   c. Gluts - especially glut medius
   d. Tibialis Anterior and Gastroc/Soleus

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General Stretching Recommendations

- 2-3x/week
- Specific areas post radiation for at least 5 years
- Whole body (yoga)
1. 2-3x/week
2. Check/maintain at joint post XRT regularly
3. Focus especially on:
   a. HS/iliopsoas stretching
   b. Pect stretching
4. Consider steroid-induced connective tissue fragility
5. Cautious for fractures
6. Bone mets: weight limitation – MD input
Yoga for Survivors

- Excellent for balance, strength, toning and flexibility
- Highly rec’d for patients > 6 months post XRT to improve/maintain AROM
- Caution:
  - Lymphedema
  - Sprain/strains
  - Peripheral neuropathy
  - History of falls or hypotension

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- Join a team (accountability)
- Exercise with spouse, best friend, children, animals
- Exercise journal/log
- Local classes/support groups
- Join a gym