Physical Rehabilitation Needs of Cancer Survivors

Anne K. Swisher PT, PhD, CCS, FAPTA
West Virginia University
When is a patient a ‘survivor’?

• “cancer survivorship begins at diagnosis and includes people who continue to receive treatment to either reduce the risk of the cancer returning or to manage chronic disease.” (journeyforward.org)

• This means that we don’t wait for the end of active treatment to assess needs.

• However, there is an important transition from active treatment to recovery.
Survivorship During Active Treatment

• Anticipate and ask about problems
  • Maybe not an issue now, but opens the door to mention later

• Counsel on prevention
  • Physical activity
  • Weight management
  • Stress management
  • Tobacco cessation

• Make referrals to rehabilitation
Distress

• Practical problems
  • Transportation, cost
• Family problems
  • caregiving
• Emotional problems
  • Fear, worry
• Spiritual problems
• Physical problems
Lung Cancer and Physical Impacts

- Breathing difficulties
- Fatigue
- Weakness
- Impaired balance

- Impaired cognition
- Pain
- Impaired sleep
- Weight loss
Intertwined

- Fatigue
  - Weight loss
  - Shortness of breath
  - Difficulty concentrating
The Survivorship Team

- Oncologist
- PCP
- Dietitian
- Nurses/midlevels
- Rehabilitation team
- Psychosocial team
It’s a Team Sport, with Roles for Everyone!

From Cheville et al, Cancer Rehabilitation: An overview of current need, delivery models, and levels of care.
*Phys Med Rehabil Clin N Am* 2017
Effects of Medical Treatment

• Surgery—incision pain, limited chest wall/shoulder mobility
• Radiation therapy—fibrosis, weakening bones in radiation field, fatigue
• Chemotherapy—peripheral neuropathy, changes in appetite
• Global issues:
  • Weakness
  • Deconditioning
  • Anxiety/impaired mood
  • Pre-existing comorbidities.....
Effects of Rehabilitation for Cancer (all types)

- Improve pain
- Improve physical function
- Improve quality of life
- Decrease degree of physical and mental impairment at EVERY stage of treatment
  - ‘Prehabilitation’
  - During active treatment
  - Following active treatment
Physical Activity Significantly Decreases Recurrence Rates, but...

- Cancer Related Fatigue (CRF) is #1 complaint of survivors
- Fatigue is improved with low-to-moderate physical activity, however...
- Many perceived barriers:
  - “Time”
  - Lack of knowledge of exercise specialists about cancer
  - Lack of acceptable facilities
Latest Research....

Comparison of Pharmaceutical, Psychological, and Exercise Treatments for Cancer-Related Fatigue A Meta-analysis


Analysis of over 11,000 participants, 113 studies
How Much/How Hard to Exercise?

GENERAL PRINCIPLES OF PHYSICAL ACTIVITY

- All patients should be encouraged to be physically active and return to daily activities as soon as possible.
- Physical activity recommendations should be tailored to individual survivor’s abilities and preferences.
- General recommendations for cancer survivors:
  - Overall volume of weekly activity of at least 150 minutes of moderate-intensity activity or 75 minutes of vigorous-intensity activity or equivalent combination.
  - Two to three weekly sessions of strength training that include major muscle groups.
  - Stretch major muscle groups and tendons on days other exercises are performed.

NCCN Survivorship Guidelines 2013
## ACSM’s Exercise Guidelines for Cancer Patients

<table>
<thead>
<tr>
<th>Prevention</th>
<th>During Treatment</th>
<th>After Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobic activity</td>
<td>Aerobic activity</td>
<td>Aerobic activity (same as prevention)</td>
</tr>
<tr>
<td>150 min/wk moderate intensity OR 75 min/wk vigorous intensity</td>
<td>10-30 min/day light intensity</td>
<td></td>
</tr>
<tr>
<td>Resistance training</td>
<td>Resistance training</td>
<td>Resistance training (same as prevention)</td>
</tr>
<tr>
<td>2-3x/wk 1 or more sets of 10-15 repetitions</td>
<td>As tolerated (no specific recommendations)</td>
<td></td>
</tr>
<tr>
<td>Avoid inactivity!</td>
<td>Avoid inactivity!</td>
<td>Avoid inactivity!</td>
</tr>
<tr>
<td></td>
<td>Adapt for treatment-related effects (neutropenia, etc)</td>
<td>Rehabilitation of treatment-related issues (PT&amp;OT)</td>
</tr>
</tbody>
</table>
Where to Start Exercise and with Whom?

Physical Activity

• Maintain adequate levels of physical activity (category 1) (See SE-1 and SE-4)

• Survivors at higher risk of injury (e.g., those living with neuropathy, cardiomyopathy, lymphedema, or other long-term effects of therapy or other comorbidities) should be referred to a physical therapist or exercise specialist.

• Make use of local resources to help patients increase exercise
  > Exercise classes at cancer centers
  > Community programs focused on cancer survivors
  > American College of Sports Medicine certification program for exercise professionals
  > For patients with severe fatigue interfering with function, consider referral to a physical therapist or physiatrist

• Lack of appropriate facilities and personnel to address this issue?
Physical Rehabilitation Challenges

• Severely underutilized
  • 98-99% of people with physical impairments do NOT receive rehabilitation referral

• Barriers cited (Granger et al Eur Resp J 2016)
  • Institution level: lack of protocols, lack of knowledge, limited staff/resources, limited time, lower prioritization vs. medical treatment, advice to limit physical activity (‘you need to rest’), not required by accrediting organizations (except CoC)
  • Patient level: low motivation, fear of exercise, lack of knowledge about benefits, environment/social support challenges

• Ways to address barriers (Cheville et al Phys Med Rehabil Clin N Am)
  • Create standard referral pathways, screen at key visits (diagnosis, transitions between treatment modalities, end of active treatment, follow-up), equip rehabilitation staff with necessary knowledge of cancer & treatment effects, equip oncology staff with necessary knowledge about physical activity
Start with Physical Therapist for the Patient with Complications...

• Musculoskeletal issues
  • Back pain, limited joint mobility, weak bones

• Metabolic issues
  • Diabetes, thyroid problems

• Cardiovascular issues
  • Chemotoxicity, atherosclerosis

• Neurologic issues
  • Peripheral neuropathy, balance impairments, “chemobrain”

• Integumentary issues
  • Lymphedema, surgical scars, radiation fibrosis
Dyspnea & Physical Activity

Patients avoid dyspnea by becoming less active, leading to

The dyspnea / inactivity downward spiral

Dyspnoea with activities

Becomes more sedentary to avoid dyspnoea-producing activity (decreases activity)

Deconditioning aggravates dyspnoea; patients adjust by reducing activity further

Pulmonary Rehab and Lung Cancer

• Pulmonary rehab is more than just exercise...
  • Managing dyspnea, disease self-management, handling stress/anxiety, tobacco cessation, group support
  • Multidisciplinary team surrounding patient

• Has been shown to improve fatigue and quality of life, in addition to exercise capacity following treatment in people with early stage NSCLC (Janseen et al JCRP 2017)

• Pre-operative exercise training shown to decrease surgical complications, shorten hospital length-of-stay (Granger & Cavalheri Cochrane Review Am J Respir Crit Care Med 2017)
Challenges in Accessing Pulmonary Rehab for People with Lung Cancer

• Documentation of limitations necessary (PFTs, 6-min walk test)
  • Extra referrals/testing

• Lack of familiarity of program staff with lung cancer specific effects
  • What is different in lung cancer vs. COPD?

• Limited number of programs in WV
Fuel for Physical Activity in People with Lung Cancer

• Weight loss is common
• Underlying COPD & CO₂ retention
• Dyspnea with eating
• Need for protein to retard/reverse sarcopenia
• Need for overall calories
• Calorie-dense foods but limit refined sugars and increase fresh fruits/vegetables
• Consult with a specially trained Registered Dietitian for specific recommendations
Adapting Activities & Energy Conservation

• How to accomplish important activities when you have limited energy?
• Strategize about modifying tasks or using adaptive equipment
• Pro-active rest periods
• Exercise muscle groups that are key to task performance
• Stress management—being anxious or fearful takes more energy than being calm
• Consult with an Occupational Therapist
Our Goals!!!