Physical Rehabilitation Needs of Cancer Survivors

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When is a patient a ‘survivor’?

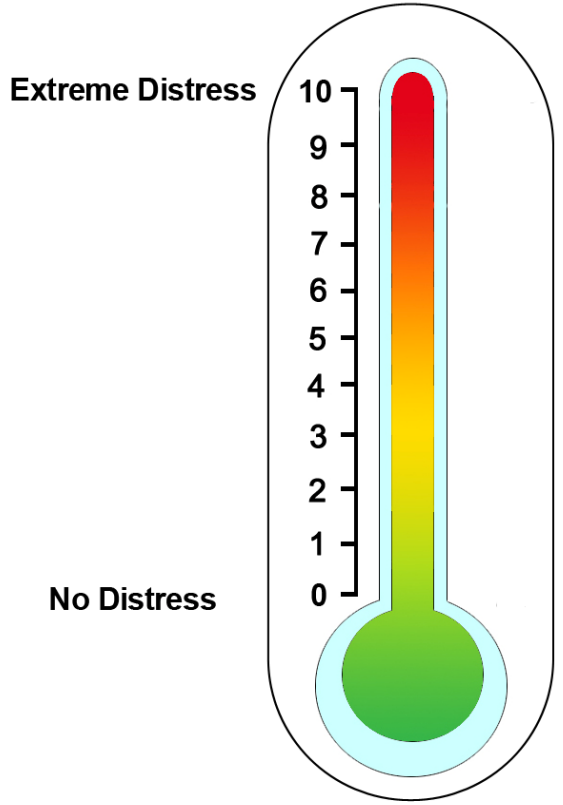
- ”cancer survivorship begins at diagnosis and includes people who continue to receive treatment to either reduce the risk of the cancer returning or to manage chronic disease.” (journeyforward.org)
- This means that we don’t wait for the end of active treatment to assess needs.
- However, there is an 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

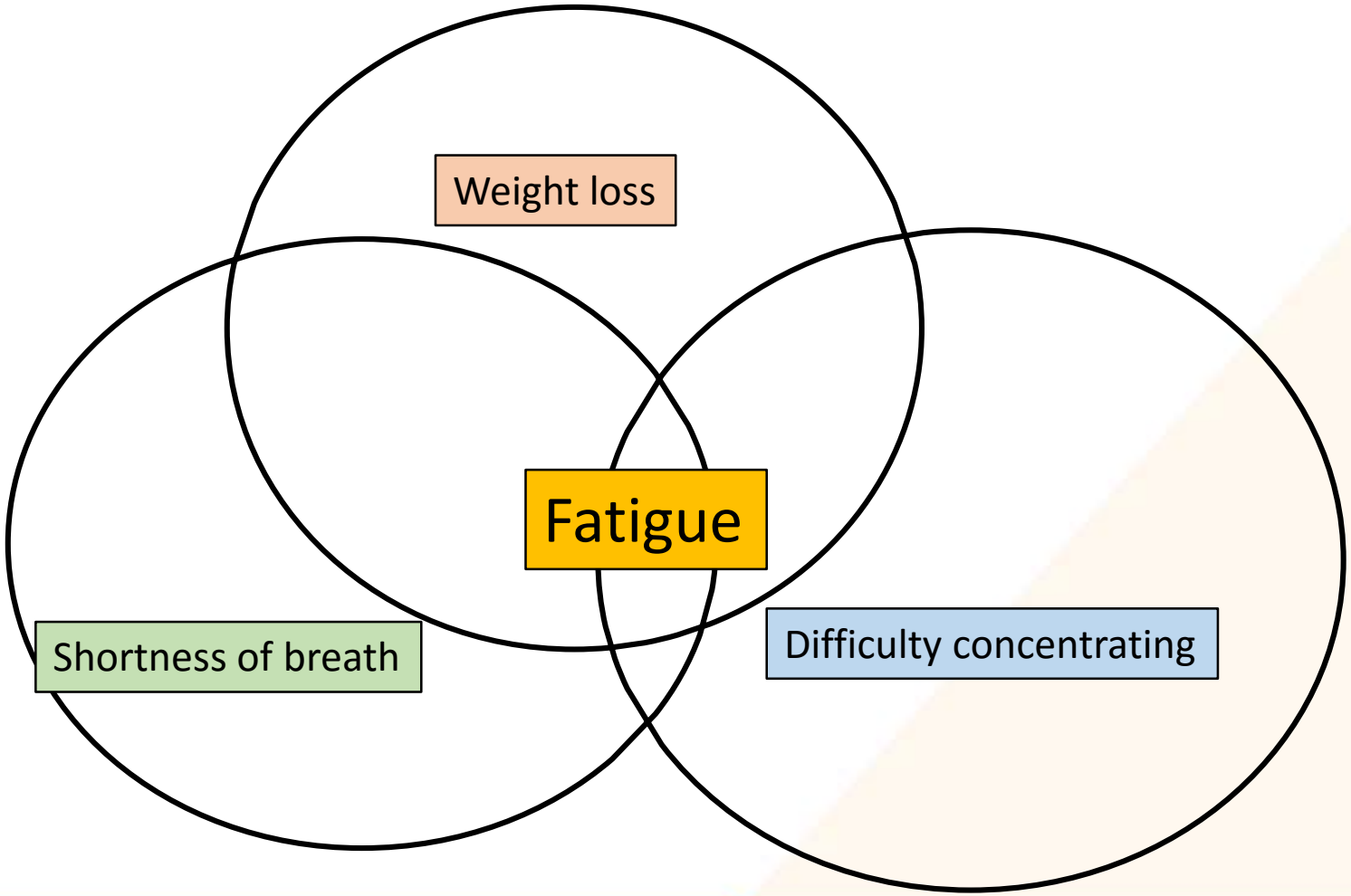
- Practical problems
  - Transportation, cost
- Family problems
  - caregiving
- Emotional problems
  - Fear, worry
- Spiritual problems
- Physical problems



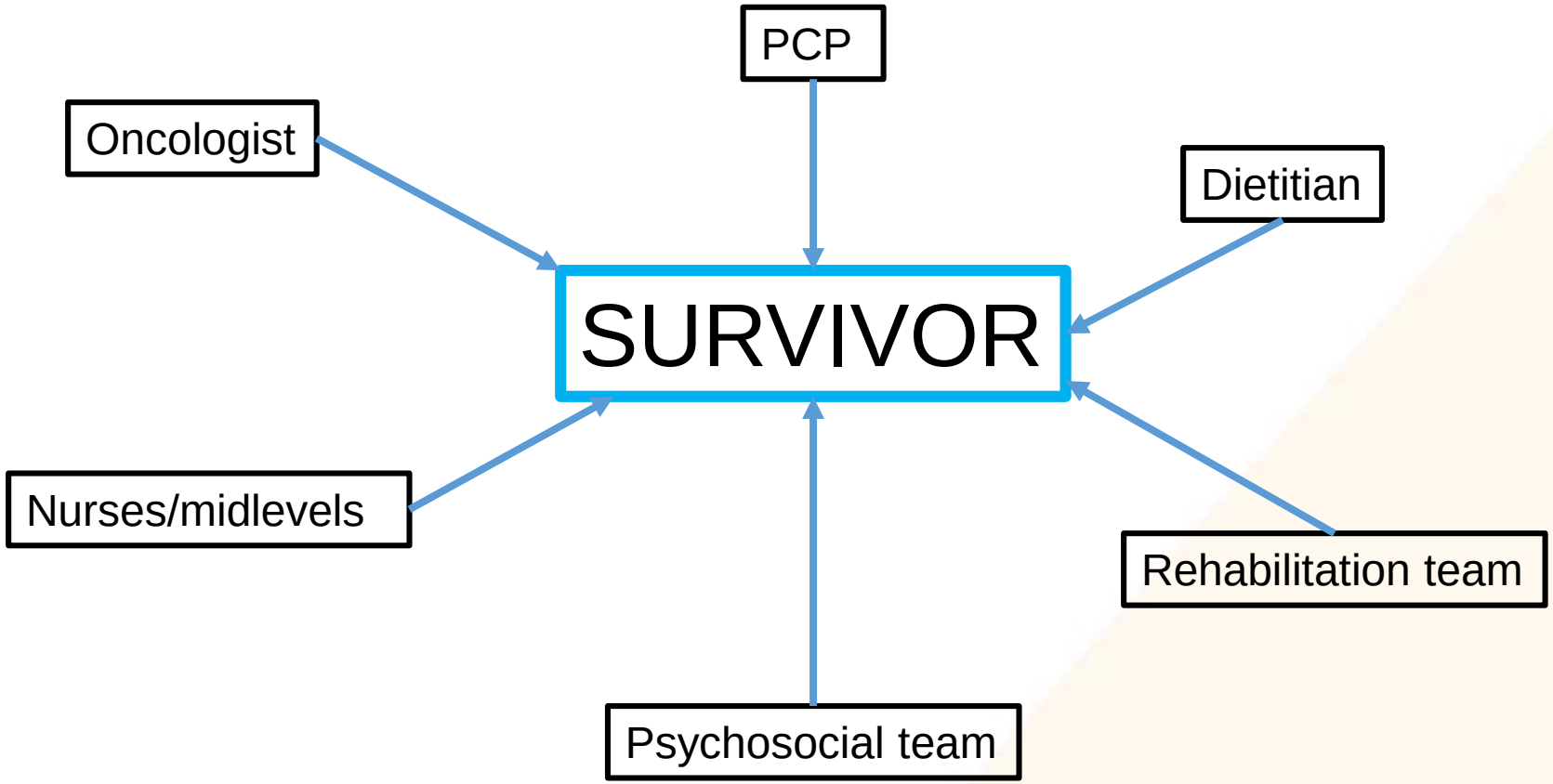
Lung Cancer and Physical Impacts

- Breathing difficulties
- Fatigue
- Weakness
- Impaired balance
- Impaired cognition
- Pain
- Impaired sleep
- Weight loss

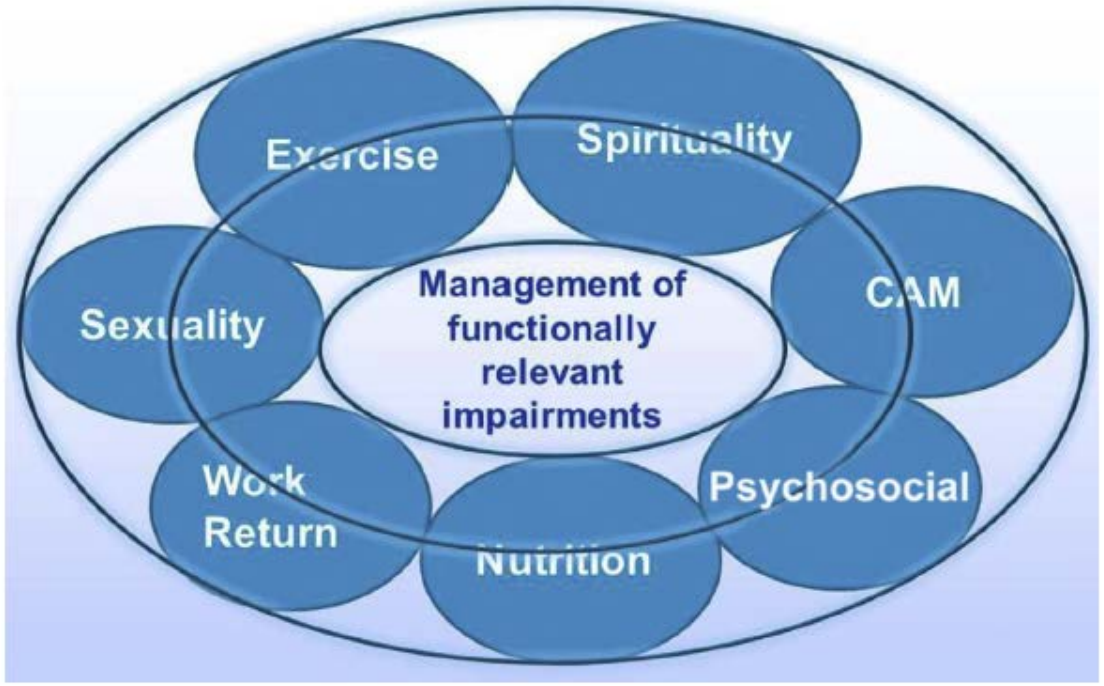
Intertwined



The Survivorship 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

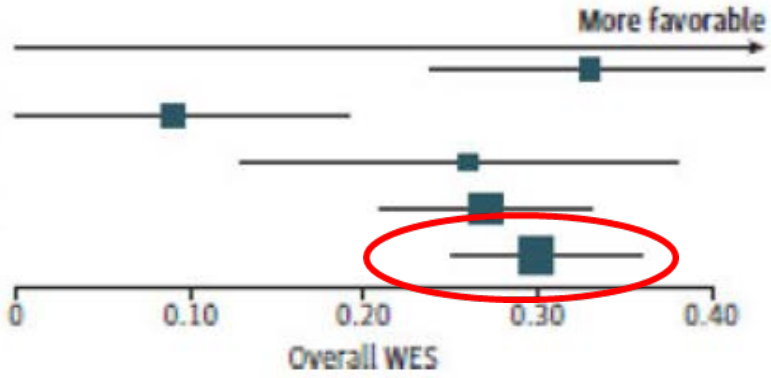
Latest Research….

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

JAMA Oncol. 2017 July 01; 3(7): 961–968. doi:10.1001/jamaoncol.2016.6914.

Analysis of over 11,000 participants, 113 studies

Intervention	No. of Effect Sizes	WES	SE	(95% CI)
All	127	0.33	0.05	(0.24-0.43)
Pharmaceutical	14	0.09	0.05	(0.00-0.19)
Exercise plus psychological	10	0.26	0.07	(0.13-0.38)
Psychological	34	0.27	0.05	(0.21-0.33)
Exercise	69	0.30	0.03	(0.25-0.36)



How Much/How Hard to Exercise?

GENERAL PRINCIPLES OF PHYSICAL ACTIVITY

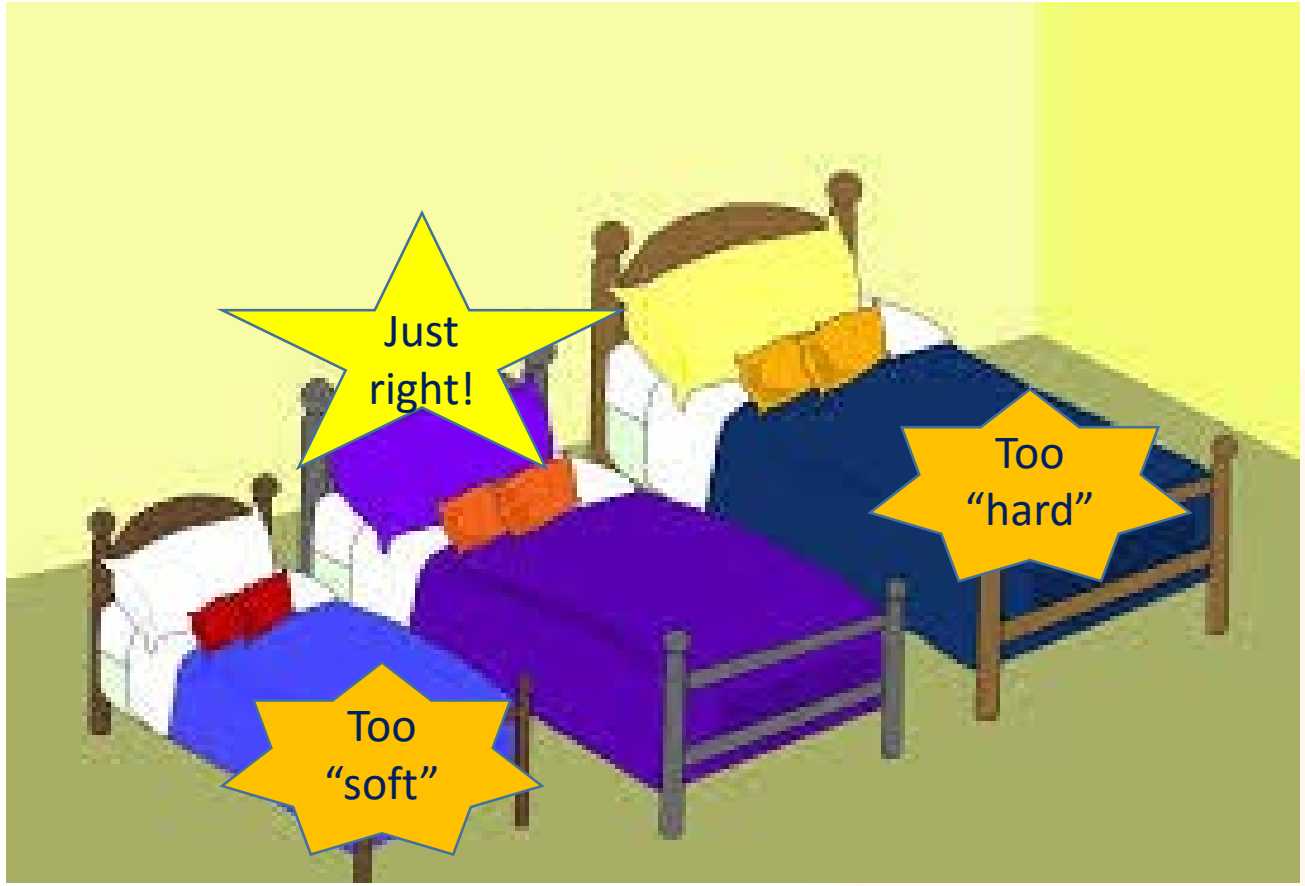
- All patients should be encouraged to be physically active and return to daily activities as soon as possible.
- Physical activity recommendations should be tailored to individual survivor's abilities and preferences
- General recommendations for cancer survivors:[a]
  - Overall volume of weekly activity 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

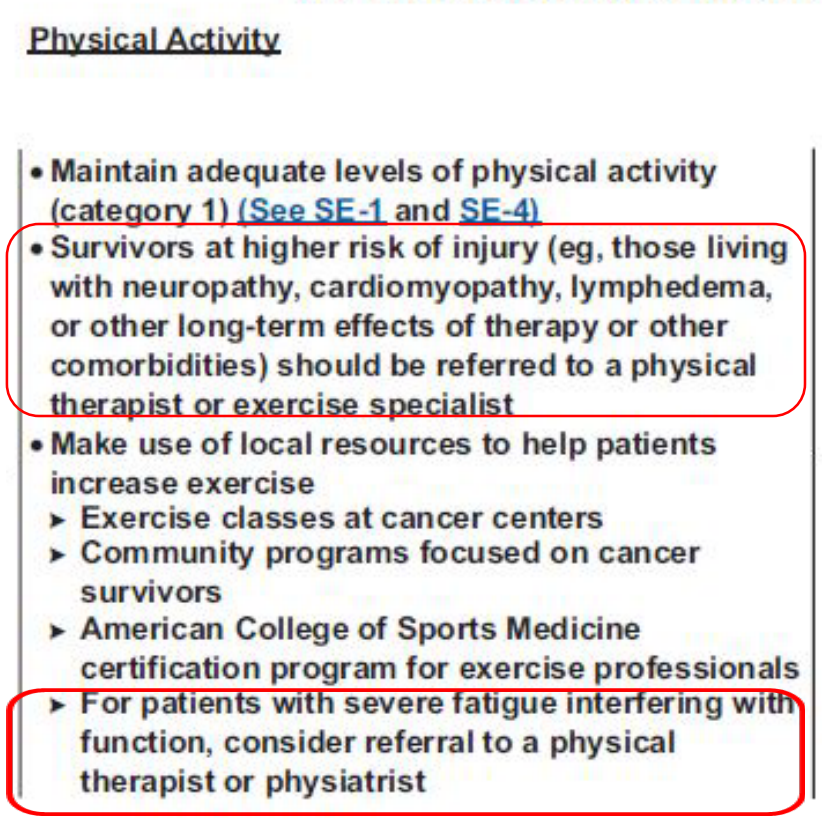
ACSM's Exercise Guidelines for Cancer Patients

Prevention	During Treatment	After Treatment
Aerobic activity 150 min/wk moderate intensity OR 75 min/wk vigorous intensity	Aerobic activity 10-30 min/day light intensity	Aerobic activity (same as prevention)
Resistance training 2-3x/wk 1 or more sets of 10-15 repetitions	Resistance training As tolerated (no specific recommendations)	Resistance training (same as prevention)
Avoid inactivity!	Avoid inactivity!	Avoid inactivity!
	Adapt for treatment-related effects (neutropenia, etc)	Rehabilitation of treatment-related issues (PT&OT)

Goldilocks and Movement



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 (eg, 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?

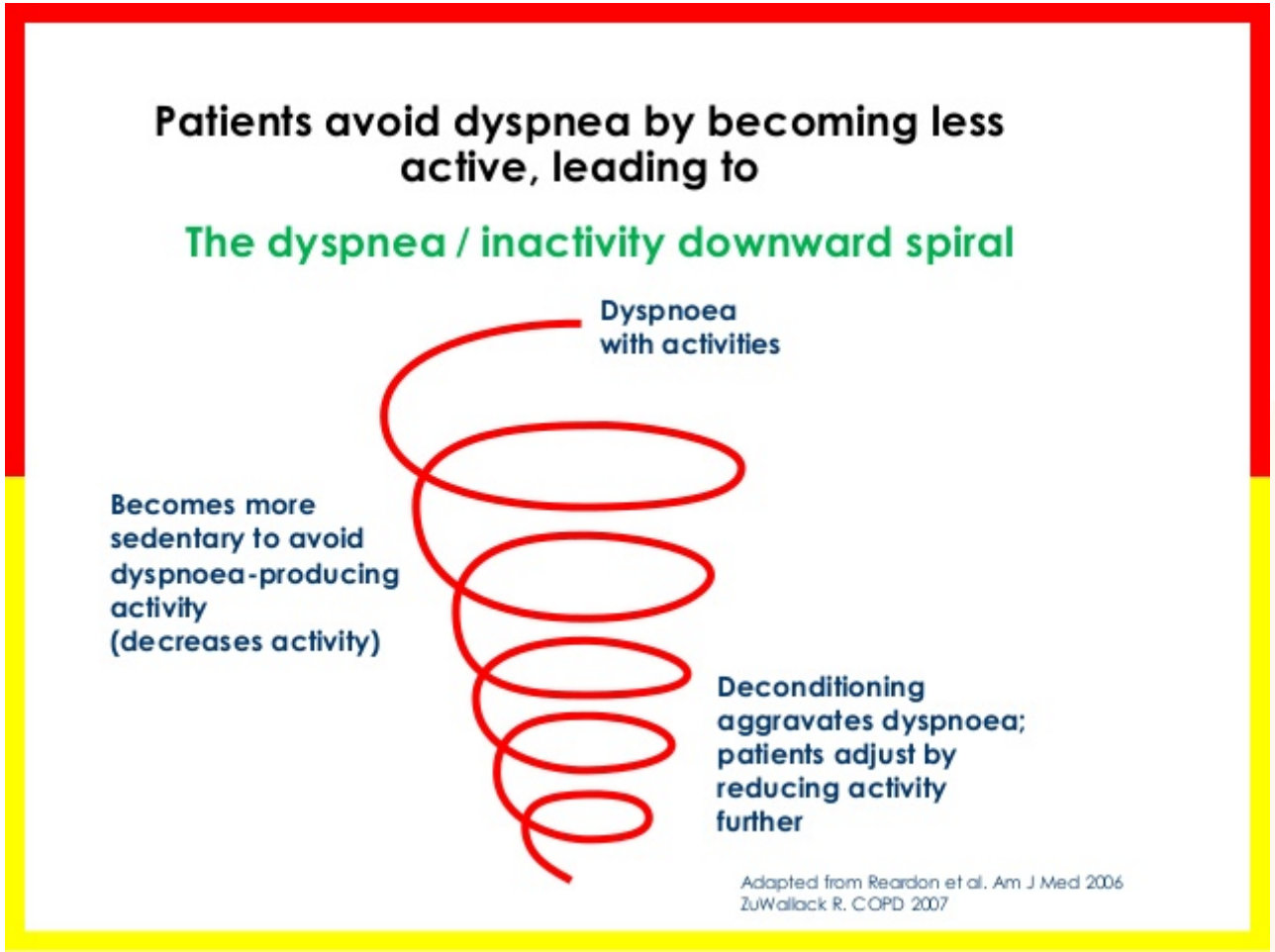
Physical Rehabilitation Challenges

- 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



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 & CO_2 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!!!