



# Active Survivorship Matters!

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## Presentation Topics

- Facts on Exercise & Cancer
- How can exercise help cancer survivors?
- What does the latest research tell us?
- How much and what should I do for exercise?
- Who can help me to be successful with an exercise program?
- What types of exercise programs are available for cancer survivors?

# Facts: Exercise & Cancer Survivorship

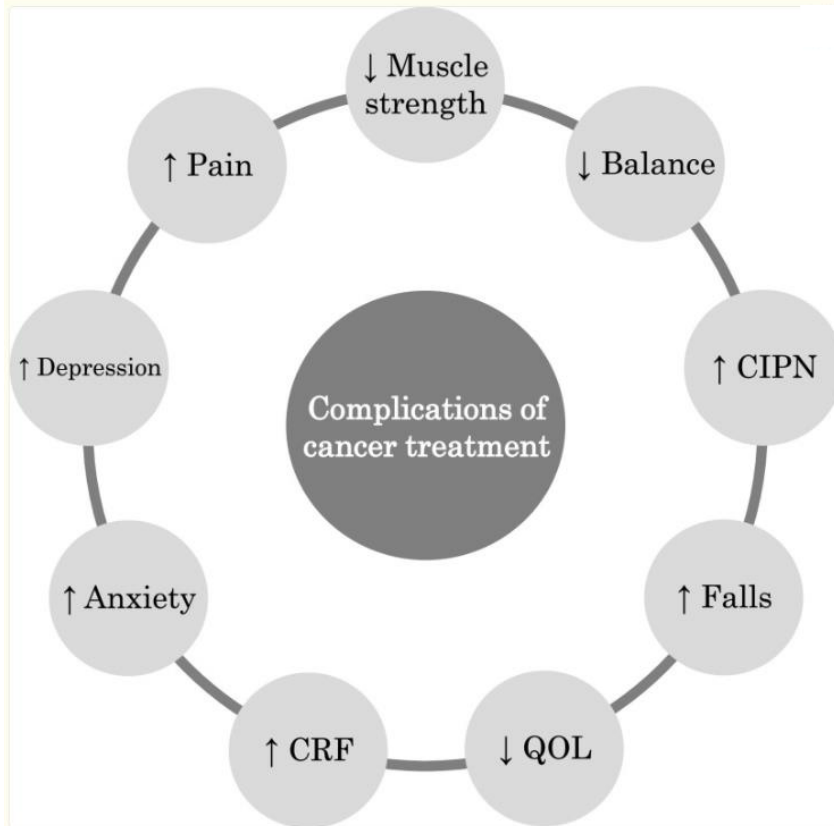


Photo Credit: cnn.com

- A meta-analysis revealed that physical exercise reduced cancer survivors' risk of recurrence by **about 48%** and the risk of mortality by **about 24%** (Morishita S, Hamaue Y, et al. 2020)
- Exercise is associated with a **40-50%** reduced disease-specific and overall mortality among patients diagnosed with **breast, colorectal, or prostate cancer**. (McTiernan et al, 2019)
- It is estimated that between **17-58%** of cancer survivors **adhere to national physical activity guidelines**. (Troeschel et al, 2018)
- Even when exercise programs are available to survivors, a low percentage **enroll and participate**, estimates around **10-14%**. (Ezenwankwo et al, 2022)
- Majority of cancer providers **support the idea of providing exercise advice to patients**
- Less than **1/3 of survivors** receive **recommendations for exercise** from oncology providers (Arem et al., 2021)

# What side effects can exercise help improve?

Fig. 1. Various complications of cancer treatment in cancer survivors.



CIPN, chemotherapy-induced peripheral neuropathy; QOL, quality of life; CRF, cancer-related fatigue

Morishita, et al. 2023

A recent meta-analysis (Morishita, et al. 2023) suggested that physical exercise may improve these complications in cancer survivors.

Additional studies have found exercise has positive effects on:

- ✓ Lymphedema
- ✓ Bone health
- ✓ Joint restrictions

## What Do Survivors Notice?

- “I don’t feel rested when I get up in the morning.”
- “I need someone to help me with housework.”
- “I catch my toe often when walking.”
- “I can’t lift what I used to be able to.”
- “I can’t get my shoes on anymore.”

WHAT DO YOU NOTICE?





My exercise routine  
consists of doing  
diddly squats!

Maxine Cartoon by John Wagner

My favorite exercise is a cross  
between a lunge and a crunch.



It's called lunch.

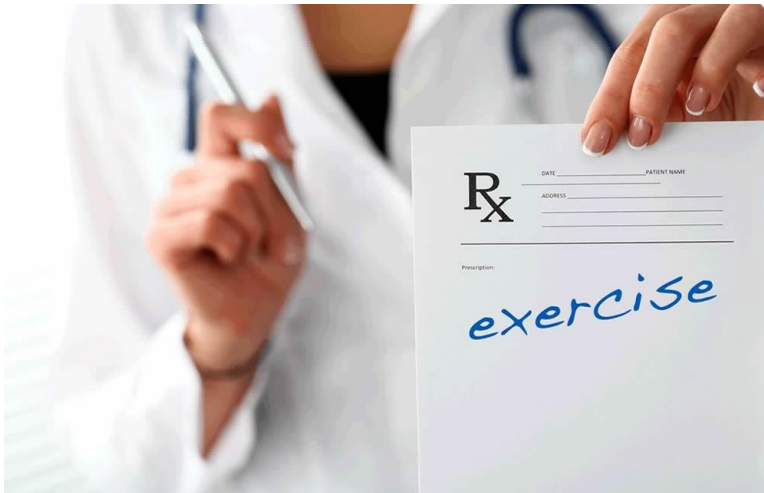


# ACSM 2019 Exercise for Cancer Patients Guidelines Development

- Expert panel convened in 2018 by the American College of Sports Medicine
- Reviewed randomized controlled trial data of trials involving exercise and cancer survivors
- Determined which symptoms had sufficient moderate to strong evidence to create a **detailed** exercise prescription
- Exercise prescription = frequency, intensity, time, and type
- Limitations of work
  - Majority of studies were in breast and prostate cancer
  - Little evidence on advanced cancer
  - Limited comparison of specific interventions
  - Limited research on other modes of exercise (i.e. yoga, Pilates, Tai Chi, etc.)



# Exercise RX for All Cancer Survivors



## TO REDUCE SYMPTOMS DURING AND SOON AFTER ANY TYPE OF CANCER TREATMENT:



- ☐ Build up to 30 minutes, 3x per week of aerobic activity like walking, cycling, water exercise, dancing or jogging at a level that increases your breathing rate and heart rate. AND/OR
- ☐ Do exercises that use and strengthen the muscles of your whole body at least two days per week.



# Fatigue

- Most common reported side effect of treatment (estimated at 80-90%)
- Symptoms for which the evidence of exercise benefit is strongest
  - Superior to pharmacologic or psychologic interventions

## TO IMPROVE CANCER RELATED FATIGUE:



- ☐ 3x weekly aerobic activity  
30-60 minutes
- ☐ Muscle-strengthening  
(resistance) exercise 2x per  
week, 2 sets/8-15 reps
- ☐ The combination of these.



# Anxiety and Depression

- Prevalence = 15% of patients in active cancer treatment
- Substantial improvement in symptoms from participating in a 6-12 week exercise program

## TO IMPROVE DEPRESSION:



- ☐ 3 times weekly aerobic activity 30-60 minutes
- ☐ The combination of 3x weekly aerobic activity 30-60 minutes plus twice weekly muscle-strengthening (resistance) exercise 2 sets/8-15 reps

## TO IMPROVE ANXIETY:



- ☐ 3x weekly aerobic activity 30-60 minutes
- ☐ The combination of 3x weekly aerobic activity 30-60 minutes plus twice weekly muscle-strengthening (resistance) exercise 2 sets/8-15 reps



# Quality of Life

- Definition = “a multidomain concept that represents the patient’s general perception of the effect of illness and treatment on physical, psychological, and social aspects of life”
- 12 weeks of supervised exercise training leads to improvement

## TO IMPROVE HEALTH-RELATED QUALITY OF LIFE



- ☐ 3x weekly aerobic activity  
30-60 minutes
- ☐ Muscle-strengthening  
(resistance) exercise 2x per  
week, 2 sets/8-15 reps
- ☐ The combination of these.



# Physical Function

- Definition = “ability to walk, reach, hear, see, and in all other ways use physical abilities to carry out daily activities”
  - Body systems required = musculoskeletal, cardiopulmonary, and neurologic
- Moderate intensity aerobic exercise in combination with resistance training at 8-12 weeks

## TO IMPROVE PHYSICAL FUNCTION:



- ☐ 3x weekly aerobic activity  
30-60 minutes
- ☐ Muscle-strengthening  
(resistance) exercise 2x per  
week, 2 sets/8-15 reps
- ☐ The combination of these.



# Sleep

- 30-50% of patients with cancer have severe sleep difficulties
- Small to moderate effect of aerobic exercise or resistance training on quality of sleep

## TO IMPROVE SLEEP:



- ☐ 3 times weekly aerobic activity 30-60 minutes



# Breast-Cancer Related Lymphedema

- Occurs in 0-4% (Byeon J et al 2022) to 2-17% of survivors with sentinel node dissection (Campbell et. al, 2019)
- Up to 50% of survivors with axillary node dissection
- Multiple studies have documented the safety of slowly progressive resistance exercise, reduction in flare-ups, or onset with resistance exercise.

**\*2-3x/week of progressive, supervised program for major muscle groups does not make lymphedema worse\***

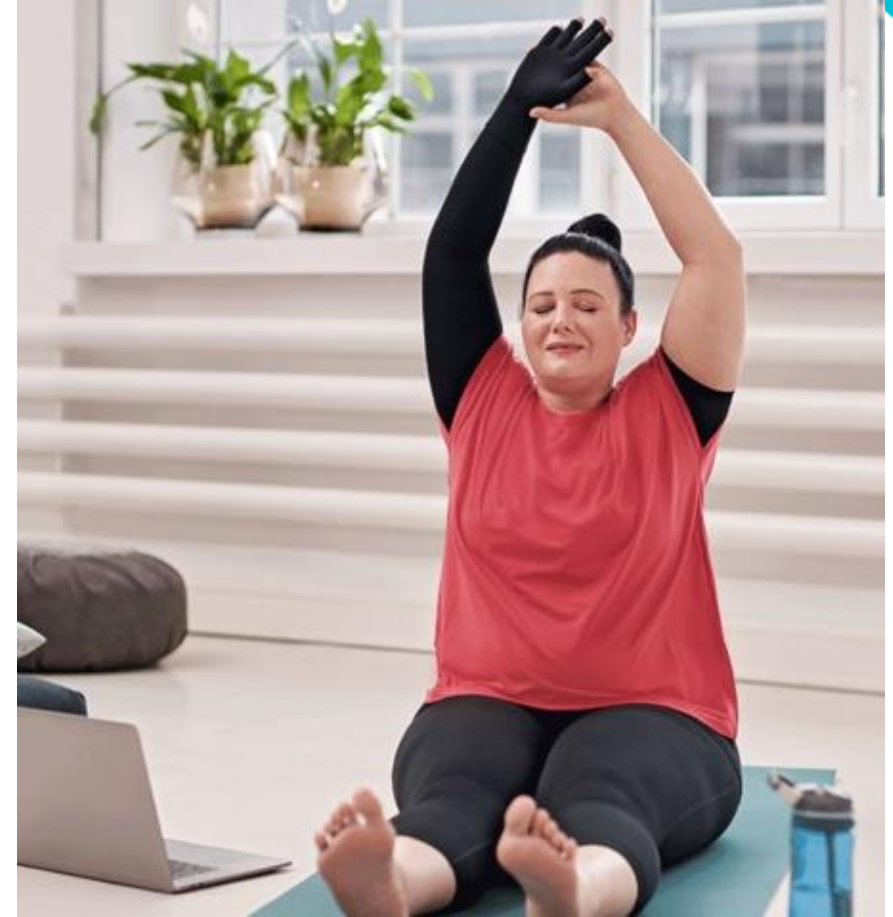


Photo Credit: [www.sigvaris.com](http://www.sigvaris.com)

# ACSM: Moving Through Cancer Summary

## TO REDUCE SYMPTOMS DURING AND SOON AFTER ANY TYPE OF CANCER TREATMENT:



- ☐ Build up to 30 minutes, 3x per week of aerobic activity like walking, cycling, water exercise, dancing or jogging at a level that increases your breathing rate and heart rate. AND/OR
- ☐ Do exercises that use and strengthen the muscles of your whole body at least two days per week.

## TO IMPROVE ANXIETY:



- ☐ 3x weekly aerobic activity 30-60 minutes
- ☐ The combination of 3x weekly aerobic activity 30-60 minutes plus twice weekly muscle-strengthening (resistance) exercise 2 sets/8-15 reps

## TO IMPROVE HEALTH-RELATED QUALITY OF LIFE



- ☐ 3x weekly aerobic activity 30-60 minutes
- ☐ Muscle-strengthening (resistance) exercise 2x per week, 2 sets/8-15 reps
- ☐ The combination of these.

## TO IMPROVE CANCER RELATED FATIGUE:



- ☐ 3x weekly aerobic activity 30-60 minutes
- ☐ Muscle-strengthening (resistance) exercise 2x per week, 2 sets/8-15 reps
- ☐ The combination of these.

## TO IMPROVE PHYSICAL FUNCTION:



- ☐ 3x weekly aerobic activity 30-60 minutes
- ☐ Muscle-strengthening (resistance) exercise 2x per week, 2 sets/8-15 reps
- ☐ The combination of these.



# ACSM: Moving Through Cancer Summary

The infographic is set against a dark blue background with a faint pattern of stars and a large, stylized figure of a person in a wheelchair. It features three main colored boxes at the top and a central white box with a blue border.

- TO IMPROVE SLEEP:** (Green box, icon of a crescent moon with 'zz')
  - ☐ 3 times weekly aerobic activity 30-60 minutes
- TO IMPROVE DEPRESSION:** (Purple box, icon of a smiley face)
  - ☐ 3 times weekly aerobic activity 30-60 minutes
  - ☐ The combination of 3x weekly aerobic activity 30-60 minutes plus twice weekly muscle-strengthening (resistance) exercise 2 sets/8-15 reps
- TO IMPROVE BONE HEALTH:** (Orange box, icon of a person with a plus sign)
  - ☐ Muscle-strengthening exercise 2x per week, 2 sets/8-15 reps

**AVOID INACTIVITY.**

Rest when you need to but get back to moving as soon as you can.  
Even a little bit of activity helps. If you are in a wheelchair or bedridden, just do what you can.



# American Cancer Society Recommendations

## Be physically active

- **Adults should get 150-300 minutes of moderate intensity or 75-150 minutes of vigorous intensity activity each week (or a combination of these). Getting to or exceeding the upper limit of 300 minutes is ideal.**
- **Children and teens should get at least 1 hour of moderate or vigorous intensity activity each day.**
- **Limit sedentary behavior such as sitting, lying down, watching TV, and other forms of screen-based entertainment.**



# NCCN Guidelines for Physical Activity

- Recommendations should be individualized (preference and abilities)
- Physical therapy should be consulted when independent, home exercise program is unsafe or not practical
- Perform at least 150 minutes of weekly activity with an ultimate goal of 300 minutes or more of moderate-intensity activity or 75 minutes of vigorous-intensity activity or equivalent combination spread out over the course of 1 week
- 2-3 sessions per week of strength/resistance training that include major muscle groups
- Stretch major muscle groups prior to aerobic/endurance exercises and at least 2 days per week on days that exercises on those muscle groups are not performed.
- Core exercises and balance training are recommended especially for older survivors and those at risk for falls.
- Engage in general physical activity daily (e.g., take the stairs, park in the back of parking lot). Physical activity includes exercise, daily routine activities, and recreational activities.
- Minimize sitting for long periods of time. Schedule movement/activity breaks regularly. Stand or move while talking on the phone, using the computer, or watching television.



National  
Comprehensive  
Cancer  
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# Exercise Precautions

- Always consult with your MD or other practitioner to clear you for exercise
- Seek advice from a trained professional (PT, Certified Trainer)



## Exercise Precautions

- Blood lab values (platelets, Hct, Hgb)
- Chronic orthopedic injuries
- Metastases
- Heart conditions
- Lymphedema
- Neuropathy



## Other Considerations

- Gradually increase time and intensity
- Proper hydration and rest
- Cross training
- Use of appropriate equipment
- Dressing properly

# ACSM Cancer and Exercise: Principles for Success!

1. Enhance enjoyment
2. Set realistic short and long term goals
3. Self-monitoring of activity
4. Social support



Photo Credit: [www.integrativecancer.org](http://www.integrativecancer.org)



# HELP!

- Join a team (accountability)
- Find a friend
  - Get your spouse, best friend, children, or animals to join in
- Exercise journal or log
- Local classes or support groups
- Join a gym
- Reward yourself!



[www.foreverfitwomen.com](http://www.foreverfitwomen.com)

# Who can help me with exercise challenges?



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- Rehabilitation Medicine Physician (Physiatrist)
- Physical Therapists
- Exercise physiologists
  - Based on medical history, instruct in best possible exercise and fitness regimen.

**ACSM/ACS Certified Cancer Exercise Trainer<sup>SM</sup>**



# Rehabilitation Physicians (Physiatrists)

- **Nerve, muscle, and bone experts who treat injuries or illnesses that affect how you move**
- Treat any disability resulting from disease or injury
- Pinpoint the source of an ailment and design appropriate rehabilitation treatment plan
- Visit with MD for:
  - Consultation and Follow-up
  - Injections (Botox, joint, trigger point, etc.)
  - EMG Testing
  - Prescribe assistive equipment
  - Medical guidance on physical activity/exercise programs



Dr. Hanna Hunter, Fred Hutch Cancer Center

# Physical Therapists

- Examine, diagnosis, and develop an individualized plan of care
- Treatments include:
  - Patient education
  - Cardiovascular conditioning
  - Strength training
  - Flexibility and balance training
  - Edema/lymphedema management
  - Maximize and facilitate independence
  - Pain and fatigue management
- Work with patients to achieve the following:
  - Reduce pain
  - Improve or restore mobility
  - Prevent or manage condition
  - Minimize disability



Photo Credit: [www.nytimes.com](http://www.nytimes.com)

# Exercise Program Options

1. Clinically supervised
2. Supervised, cancer-specific, community-based
3. Unsupervised, community-based

**MOVING THROUGH  
CANCER**

[www.movingthroughcancer.com](http://www.movingthroughcancer.com)

# Exercise Program Resources

- **Clinic Based**

- Fred Hutch
- Swedish
- ReVital ([www.revitalcancerrehab.com](http://www.revitalcancerrehab.com))
- Fred Hutch Resource: “Cancer Rehabilitation Centers in WA State”

- **Community Based**

- Team Survivor NW
- Cancer Lifeline
- Livestrong Program at YMCAs

- **Other**

- Survivor Focused Active Events: Obliteride, Casting for Recovery, Camp Koru, First Descents
- Fred Hutch Resource: “Why and How to Exercise with Prostate Cancer”
- Moving Through Cancer
  - <https://www.exerciseismedicine.org/eim-in-action/moving-through-cancer/>



# Active Survivorship Matters: Feel Better, Sleep Better, Move Better



- Reduce fatigue (most common side effect of cancer)
- Improve depression and anxiety
- Sleep better
- Help improve your ability to get things done in day to day life
- Improve strength, flexibility, and help your body work better
- Decrease risk of cancer coming back
  
- *What should I do? How often? How hard? How much?*
- *Remember: Get clearance for exercise from a provider first*

## EXERCISE!

“By exercising regularly, you are helping yourself to heal, potentially preventing new cancers from developing and preventing previous cancers from recurring, and at the same time lowering your risk of developing the most common life threatening medical condition – heart disease. **The benefits of exercise are enormous.**”

-Dr. Julie K. Silver

“Start where you are. Use what you have. Do what you can.”





# Thank you and Be Well!

## Questions???

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