

UNC HEALTH CARE WELLSUMM CENTERS

# The Benefits of Exercise for Cancer Patients

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Clinical Exercise Physiologist  
Cardiac Rehab  
UNC Wellness Center at Meadowmont



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## Objectives

- Explain the components of a cancer exercise program
- Describe the American College of Sports Medicine Guidelines for exercise in cancer patients
- Discuss the effect of exercise on cancer patients

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## Who is an exercise physiologist?

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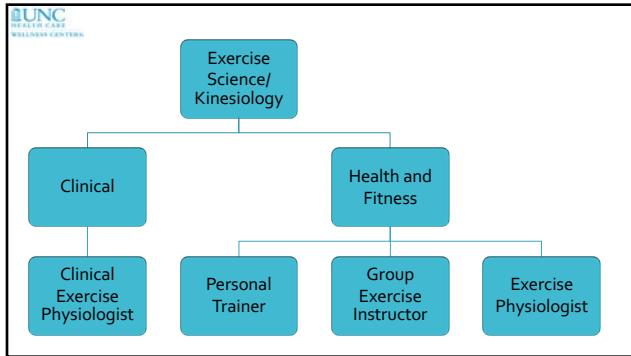
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**ACSM/ACS  
Cancer Exercise  
Trainer  
(CET)**

Must pass the CET exam covering topics including:

- Exercise Prescription/Programming
- Health Appraisal, Fitness, and Clinical Exercise Testing
- Exercise Physiology and Related Exercise Science
- Clinical and Medical Considerations
- Physiology, Diagnosis, and Treatment
- Safety, Injury Prevention, and Emergency Procedures
- Human Behavior and Counseling
- Nutrition and Weight Management
- Program Administration, Quality Assurance, and Outcomes Assessment

CET: <https://www.acsm.org/get-into-certification/certification/certification/cet> Accessed December 26, 2019.

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**What is Exercise-oncology?**

OXFORD  
ACADEMIC

Annals of Behavioral Medicine

**A Longitudinal Study of Exercise Barriers in Colorectal Cancer Survivors Participating in a Randomized Controlled Trial**

Kerry S. Courneya, Ph.D., Christine M. Friedenreich, Ph.D., H. Arthur Quinsey, Ph.D., Anthony L.A. Fieldis, M.D., Lee W. Jones, Ph.D., Jeffrey K. H. Vallance, M.A., Adrian S. Fainy, M.Sc.

Annals of Behavioral Medicine, Volume 29, Issue 2, April 2005, Pages 147-153.  
[https://doi.org/10.1207/s15327796abm2902\\_9](https://doi.org/10.1207/s15327796abm2902_9)  
Published: 01 April 2005

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**Exercise-oncology**

- A subspecialty within a multidisciplinary cancer care team concerned with understanding the effects of exercise as a primary form of prevention and complementary form of treatment throughout the cancer survivor continuum (prediagnosis through survivorship).

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**"EXERCISE SNACK!"**

**Brief Intense Stair Climbing Improves Cardiorespiratory Fitness**

**Do stair climbing exercise "snacks" improve cardiorespiratory fitness?**

- As little as 20 seconds of exercise done several times a day may be enough to improve fitness levels

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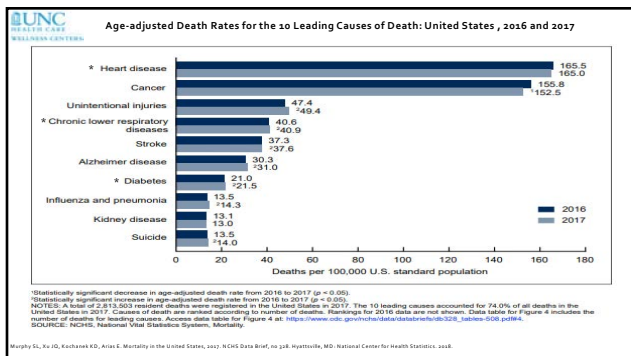
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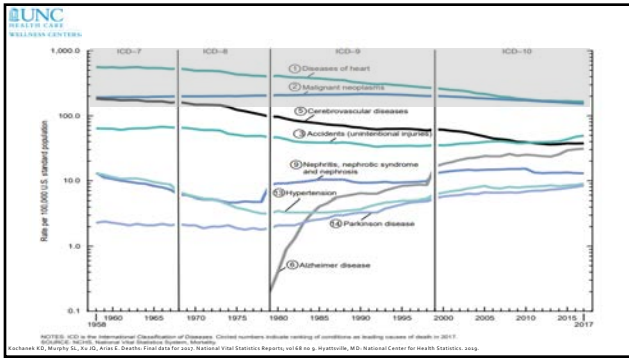
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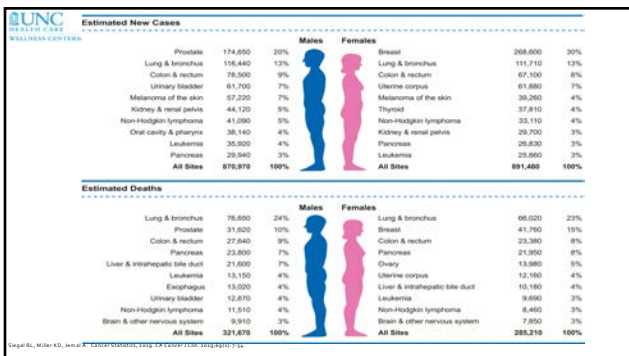
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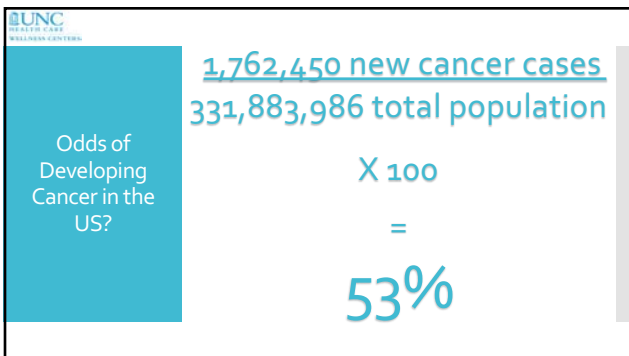
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EXERCISE SNACK #1

WALL PUSH UP



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Where Can I Exercise?

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ANYWHERE!



Here

There

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**UNC HEALTH CARE**  
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**LiveFit**  
CANCER EXERCISE PROGRAM

**LiveFit Cancer Exercise Program**

- Designed to help any type of cancer survivor ease their way back into physical activity with the help of trained fitness professionals
- 10-week individualized group exercise program
- Held at UNC Meadowmont Wellness Center
- Limited to 6-12 participants
- Cost: Members: \$100 Non-Members: \$120

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**LiveFit**  
CANCER EXERCISE PROGRAM

**LiveFit Cancer Exercise Program**

Progressive exercise will include, but is not limited to:

• Cardio Machines	• Strength Training
• Functional Training	• Core Training
• Flexibility/Range of Motion	• Aqua Aerobics
• Yoga	• Low-impact Aerobics
• Mindfulness/Meditation Training	• Nutritional Counseling

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**UNC HEALTH CARE**  
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**LiveFit**  
CANCER EXERCISE PROGRAM

**LiveFit Cancer Exercise Program**

**Prior to Participation**

- Completed Application:
  - Doctor's consent
  - Review of medical history
  - Health-related questionnaires
- Functional Testing:
  - Body Composition
  - Vitals
  - 6-minute Walk Test
  - 1-RM Strength Test

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**Get REAL & HEEL**

- Provided post-treatment support for women with a breast cancer diagnosis since 2006
- Designed to help cancer survivors regain strength, cardiovascular fitness, flexibility, balance, coping, and hopefulness
- 16-week individualized group exercise program
- Held at Outdoor Education Center on the UNC campus
- Cost: FREE of charge, offset by donations
- Eligibility Requirements:
  - Diagnosed with cancer
  - Completed treatment within the past year

Carly Bailey  
 UNC Lineberger Comprehensive Cancer Center Physical Activity and Wellness Coordinator  
 919-445-4255  
[carly\\_bailey@med.unc.edu](mailto:carly_bailey@med.unc.edu)

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**YMCA Livestrong Program**

**LIVESTRONG**

- Designed to get cancer survivors back on their feet
- 12-week exercise program
- Held at local YMCA  
<https://www.ymcatriangle.org/programs/fitness-and-wellness/livestrong-ymca>
- Cost: Survivors and family receive FREE membership to the YMCA, due to Annual Campaign

Louise Keefer  
 Health Coach  
 Chapel Hill-Carrboro YMCA/ Chatham YMCA  
 919-987-8837

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**Ulman Cancer to 5k**

- Provides a community of support
- Regardless of age, treatment status, or physical ability, survivor participants run/walk alongside coaches & volunteer "sherpas" with the ultimate goal of completing a 5K goal race
- 12-week program
- Training location: Raleigh, NC
- Cost: FREE

[cancerto5k@ulmanfoundation.org](mailto:cancerto5k@ulmanfoundation.org)

Jack Bowling  
Coach

Zac Turner  
Coach

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EXERCISE SNACK #2

SIT-TO-STANDS/  
CHAIR SQUATS



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Why Should I Exercise?

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American College of Sports Medicine  
Exercise Recommendations



- Aerobic training- 150 minutes/wk of moderate intensity activity, 75 minutes/wk of vigorous activity OR a combination of both



- Resistance training- 2-3 days/wk using all major muscle groups

American College of Sports Medicine, W. Baska, D., W. Ekman, J. K., W. Ligoni, G., & W. Mapp, M. (2018). ACEP's guidelines for exercise testing and prescription.

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**Aerobic Training**

**American College of Sports Medicine Exercise Recommendations for Cancer Patients**

**Overall goal:** Progress gradually to 150 min./wk of moderate-intensity exercise

- Frequency:** 3-5x/wk
- Intensity:**
  - Moderate: 40%-59% VO<sub>2</sub>R; 64%-75% HR<sub>max</sub>; 5-6 RPE (OMNI scale); 12-13 RPE (BORG scale)
  - Vigorous: 60%-89% VO<sub>2</sub>R; 76%-95% HR<sub>max</sub>; 7-8 RPE (OMNI scale); 14-17 RPE (BORG scale)
- Duration:** ≥150 min./wk of moderate intensity or ≥75 min./wk of vigorous intensity, or an equivalent combination
- Progression:** 30s-2min. longer per day
- Mode:** Prolonged rhythmic activities using large muscle groups (walking, cycling, swimming)
- Other goals:** Increase peak VO<sub>2</sub>, total work, endurance
- Special considerations:**
  - \* Intensity may need to be adjusted during treatment to <50% HRR or RPE 9-11
  - \* Exercise can be divided into 2-3 sessions/day and begin at 5-10 min.

American College of Sports Medicine, In Babik, D., In Ehrman, J. K., In Lipson, G., & In Magill, M. (2018). ACSM's guidelines for exercise testing and prescription.

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**Resistance Training**

**American College of Sports Medicine Exercise Recommendations for Cancer Patients**

- Frequency:** 2-3x/wk
- Intensity:** begin with < 30% 1RM and progress in small increments
- Duration:** ≥1 set 8-12 reps for each muscle group
- Progression:** Gradual increase in resistance (1.1-2.3kg) following 2 consecutive symptom-free sessions
- Mode:** Free weights, resistance machines, weight-bearing functional tasks
- Goals:** Increase muscle strength/endurance
- Special considerations:**
  - \* Patients with metastatic bone disease/hormonal treatments
    - avoid excessive weight-bearing activities

American College of Sports Medicine, In Babik, D., In Ehrman, J. K., In Lipson, G., & In Magill, M. (2018). ACSM's guidelines for exercise testing and prescription.

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### American College of Sports Medicine Exercise Recommendations for Cancer Patients

## Flexibility

- Frequency: ≥ 2-3 days/wk (daily and before and after exercising most effective)
- Intensity: Move through ROM as tolerated -all major muscle groups
- Duration: 10-30s per stretch (statically)
- Progression: As tolerated
- Mode: Stretching, yoga
- Goals: Increase flexibility and ROM
- Special considerations:
  - \* Following approval from surgeon, special attention should be given to shoulder mobility stretches in breast cancer survivors

American College of Sports Medicine, In Baba, D., In Chinman, J. K., In Lippitt, G., & In Magel, M. (2018). ACSM's guidelines for exercise testing and prescription.

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### EXERCISE SNACK #3

## SEATED PENGUINS



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## How is Exercise Beneficial for Cancer Patients?

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**Effects of Exercise on Health-Related Outcomes in Those with Cancer**

Outcome	Aerobic Only	Resistance Only	Combination (Aerobic + Resistance)
<b>Strong Evidence</b>	Dose	Dose	Dose
<b>Cancer-related fatigue</b>	2a/week for 30 min per session of moderate intensity	2a/week of 2 sets of 12-15 reps for major muscle groups at moderate intensity	3a/week for 30 min per session of moderate aerobic exercise, plus 2a/week of resistance training 2 sets of 12-15 reps for major muscle groups at moderate intensity
<b>Health-related quality of life</b>	2-3a/week for 30-60 min per session of moderate to vigorous	2a/week of 2 sets of 8-15 reps for major muscle groups at a moderate to vigorous intensity	2-3a/week for 20-30 min per session of moderate aerobic exercise plus 2a/week of resistance training 2 sets of 8-15 reps for major muscle groups at moderate to vigorous intensity
<b>Physical Function</b>	3a/week for 30-60 min per session of moderate to vigorous	2-3a/week of 2 sets of 8-15 reps for major muscle groups at moderate to vigorous intensity	3a/week for 30-60 min per session of moderate to vigorous aerobic exercise, plus 2-3a/week of resistance training 2 sets of 8-15 reps for major muscle groups at moderate to vigorous intensity
<b>Activity</b>	3a/week for 30-60 min per session of moderate to vigorous	Insufficient evidence	2-3a/week for 20-40 min of moderate to vigorous aerobic exercise plus 2a/week of resistance training of 2 sets, 8-12 reps for major muscle groups at moderate to vigorous intensity
<b>Depression</b>	3a/week for 30-60 min per session of moderate to vigorous	Insufficient evidence	2-3a/week for 20-40 min of moderate to vigorous aerobic exercise plus 2a/week of resistance training of 2 sets, 8-12 reps for major muscle groups at moderate to vigorous intensity
<b>Lymphedema</b>	Insufficient evidence	2-3a/week of progressive, supervised program for major muscle groups does not exacerbate lymphedema	Insufficient evidence

bit.ly/cancer\_exercise\_guidelines

Exercise is Medicine | AMERICAN COLLEGE OF SPORTS MEDICINE

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**Effects of Exercise on Health-Related Outcomes in Those with Cancer**

Outcome	Aerobic Only	Resistance Only	Combination (Aerobic + Resistance)
<b>Moderate Evidence</b>			
<b>Bone health</b>	Insufficient evidence	2-3a/week of moderate to vigorous resistance training plus high impact training sufficient to generate ground reaction force of 2.4x one body weight for at least 12 months	Insufficient evidence
<b>Sleep</b>	2-4a/week for 30-60 min per session of moderate intensity	Insufficient evidence	Insufficient evidence

bit.ly/cancer\_exercise\_guidelines

Exercise is Medicine | AMERICAN COLLEGE OF SPORTS MEDICINE

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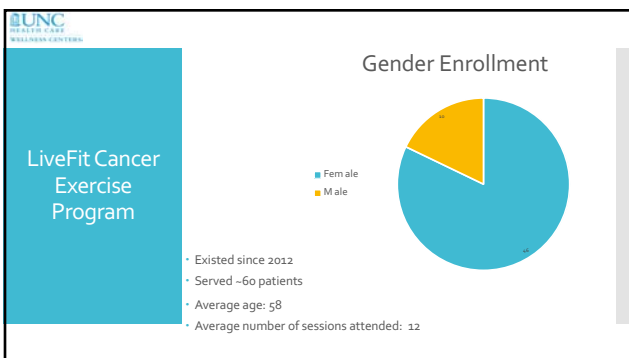
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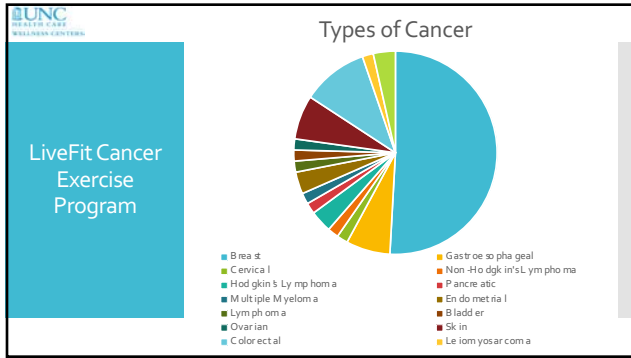
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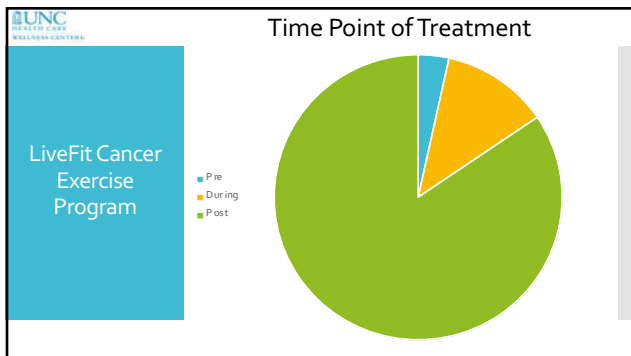
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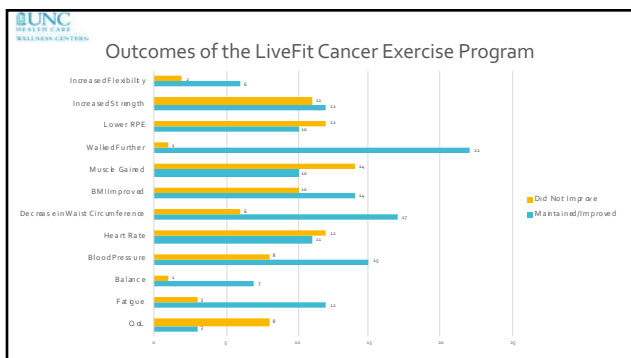
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## What Can You Do?

**Assess-** Are patients physically active?  
**Advise-** Patients to safely increase physical activity  
**Refer-** Patients to cancer exercise trainer or appropriate exercise programming, based on current activity levels, medical status, and preferences

Schmid KJ, Campbell AM, Stewart MM, et al. Exercise in medicine in oncology: Engaging clinicians to help patients move through cancer. *CA: A Cancer Journal for Clinicians*. 2019;69(5):448-454. doi:10.3322/caac.21376

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## Questions?



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[Gabrielle.Brennan2@unchealth.unc.edu](mailto:Gabrielle.Brennan2@unchealth.unc.edu)

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