



# Integrating Exercise Into Cancer Treatment

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# Introduction:

- **About Me:**
  - **Exercise Physiologist**
  - **ACSM/ACS Cancer Exercise Trainer**
  - **Exercise is Medicine Level 2**
  - **St. Luke's Cancer Institute**
  - **Owner Cancer Exercise Rx**
- **What I hope to do today:**
  - **Exercise Guidelines**
  - **Exercise for Cancer Survivorship**
  - **CCAI Goals (highlight)**
  - **Call to Action**



**AMERICAN COLLEGE**  
**of SPORTS MEDICINE**  
[www.acsm.org](http://www.acsm.org)





**Table 1. American College of Sports Medicine (ACSM) Exercise Guidelines for Cancer Survivors**

- Engage in 150 minutes per week of moderate-intensity physical activity or 75 minutes per week of vigorous physical activity
- Strength (resistance) training should be performed  $\geq 2$  days per week and should involve the eight major muscle groups
- Exercise regimens should be adapted to individual abilities, with consideration given to:
  - Surgical effects (eg, lymphedema, decreased range of motion, pain)<sup>a</sup>
  - Side effects of chemotherapy, immunotherapy, or radiation therapy (eg, immune compromise, fatigue, peripheral neuropathy, weakness)<sup>a</sup>

<sup>a</sup>The ACSM guidelines emphasize the importance of recognizing that even small amounts of exercise are better than none at all, and the benefits of exercise outweigh the risks. Cancer survivors can be referred to physical therapy, occupational therapy, or community-based or home-based programs as appropriate.

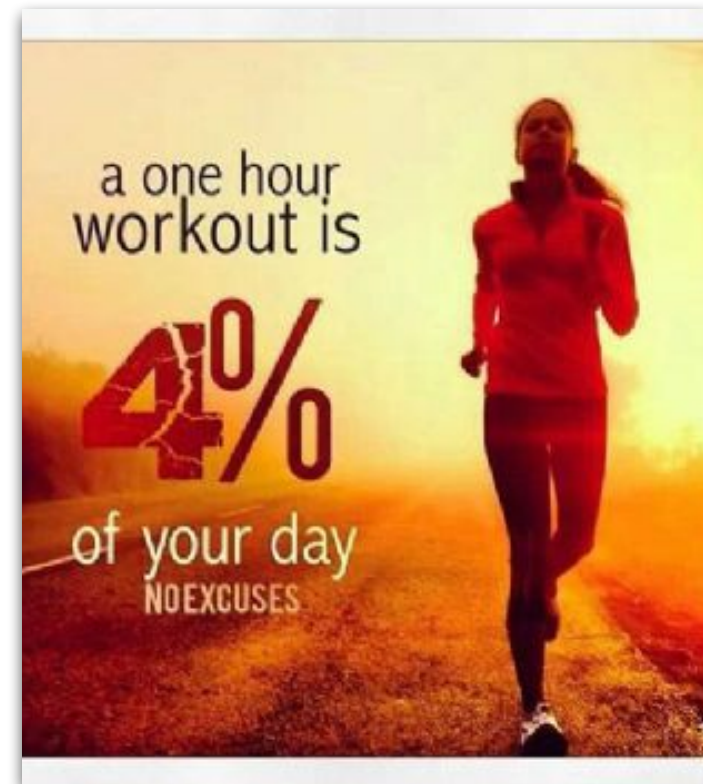


## ACS Guidelines

TABLE 2. American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Survivors

Achieve and maintain a healthy weight. <ul style="list-style-type: none"><li>• If overweight or obese, limit consumption of high-calorie foods and beverages and increase physical activity to promote weight loss.</li></ul>
Engage in regular physical activity. <ul style="list-style-type: none"><li>• Avoid inactivity and return to normal daily activities as soon as possible following diagnosis.</li><li>• Aim to exercise at least 150 minutes per week.</li><li>• Include strength training exercises at least 2 days per week.</li></ul>
Achieve a dietary pattern that is high in vegetables, fruits, and whole grains. <ul style="list-style-type: none"><li>• Follow the American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention.</li></ul>

**American Cancer Society Guideline for Diet and Physical Activity for Cancer Prevention.**





# Exercise for Cancer Survivors

## Why Physical Activity?

- Increases Overall Fitness
- Increases Energy
- Improved Mood
- Improves Mobility
- Improves Balance
- Improves Bone Health
- Addresses Muscle Imbalance
- Builds Muscle & Strength



Pescatello, L., Arena, R., Riebe, D., & Thompson, P. (1974). *ACSM's guidelines for exercise testing and prescription*. (9th ed., pp. 264-273).

## Exercise for Cancer Survivorship cont...

- **Inflammation**
- **Autophagy**
- **Boost immune system**
- **Decrease adipose tissue**



# Why Physical Activity for Cancer Survivors?

- Reduces Fatigue
- Prevent Weight Gain
- Reduces Body Fat
- Reduces Nausea
- Reduces Cancer Risk and Recurrence



May reduce risk of recurrence by **30%**

Comprehensive Cancer Information. (n.d.). Retrieved from <https://www.cancer.gov/>

# CCAI Goals

## Goals, Objectives, and Measures

### Prevention

- Goal #2

### Quality of Life

- Goal #15



\*I could argue up to 6 total goals can include exercise



# Goal 2

## Increase access to healthy food options and opportunities for physical activity

Measure	Baseline	Target
2.1 Percentage of adults aged 18+ who do enough aerobic physical activity for substantial health benefits (age adjusted to the year 2000 standard population)	<b>34.5%</b> (BRFSS 2019)	<b>59.2%</b> (HP2030)
2.2 Percentage of adults aged 20+ who are at a healthy weight (BMI $\geq 18.5$ and $\leq 25.0$ ; age adjusted to the year 2000 standard population)	<b>33.4%</b> (BRFSS 2019)	<b>40.1%</b> (CCAI 20%)
2.3 Proportion of students in grades 9 through 12 who were physically active for a total of at least 60 minutes per day on five or more of the past seven days	<b>47.6%</b> (YRBS 2019)	<b>57.1%</b> (CCAI 20%)

The Behavioral Risk Factor Surveillance System (BRFSS) [www.cdc.gov/brfss](http://www.cdc.gov/brfss)



# Goal 15

## Improve the physical and mental health of cancer survivors

Measure	Baseline	Target
15.1 Percentage of cancer survivors who report poor physical health 14+ of last 30 days (age adjusted to the year 2000 standard population)	<b>22.7%</b> (BRFSS 2018)	<b>20.4%</b> (CCAI 10%)
15.2 Percentage of cancer survivors who report poor mental health 14+ of last 30 days (age adjusted to the year 2000 standard population)	<b>19.1%</b> (BRFSS 2018)	<b>17.2%</b> (CCAI 10%)
15.3 Percentage of cancer survivors who are current smokers (age adjusted to the year 2000 standard population)	<b>26.2%</b> (BRFSS 2018)	<b>23.6%</b> (CCAI 10%)
15.4 Percentage of cancer survivors who report no physical activity outside of work (age adjusted to the year 2000 standard population)	<b>25.7%</b> (BRFSS 2018)	<b>23.1%</b> (CCAI 10%)
15.5 Percentage of cancer survivors who report consuming 5+ servings fruit and vegetables per day (age adjusted to the year 2000 standard population)	<b>13.4%</b> (BRFSS 2019)	<b>14.7%</b> (CCAI 10%)

The Behavioral Risk Factor Surveillance System (BRFSS) [www.cdc.gov/brfss](http://www.cdc.gov/brfss)



# Call to action:

## What can you do?

1. Start talking more about Physical Activity.
2. I need Physicians, Nurse Practitioners, Dietitians, Care Team to Rx.
  - “Prescribe Exercise”
3. Working closer with the community.
4. CCAI would like to create a community patient/ caregiver board focused on resources for patients and caregivers.





# Community Resources

[www.CancerExerciseRx.net](http://www.CancerExerciseRx.net)

Healthy Living Center at the  
YMCA

River Discovery

Hiking and Walking Groups

Cancer Exercise Specialists

Ask your Doctor or care  
team for “community  
resources”.



# Research for Fitness Apps

- Investigators from the University of Surrey in the United Kingdom and Spain's Universidad de Oviedo said that about 20% of fitness apps reviewed in a recent study were deemed appropriate for survivors of cancer, showing that they could be an effective tool in helping this population increase physical activity.
    - The apps most successful at inducing change in health-related behaviors focused on aerobic-based activities and tended to include goal setting, monitoring, and feedback.
1. Payo RM, Harris J, Armes J. Prescribing fitness apps for people with cancer: a preliminary assessment of content and quality of commercially available apps. *J Cancer Surviv.* 2019;13(3):397-405. doi: 10.1007/s11764-019-00760-2.
  2. Roberts AL, Potts HW, Koutoukidis DA, Smith L, Fisher A. Breast, Prostate, and Colorectal Cancer Survivors' Experiences of Using Publicly Available Physical Activity Mobile Apps: Qualitative Study. *JMIR Mhealth Uhealth.* 2019 Jan 4;7(1):e10918. doi: 10.2196/10918. PMID: 30609982; PMCID: PMC6329432.
  3. Puzkiewicz P, Roberts AL, Smith L, Wardle J, Fisher A. Assessment of Cancer Survivors' Experiences of Using a Publicly Available Physical Activity Mobile Application. *JMIR Cancer.* 2016 May 31;2(1):e7. doi: 10.2196/cancer.5380. PMID: 28410168; PMCID: PMC5369632.

# Fitness apps

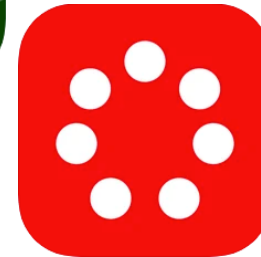
## 3) Assessment of Cancer Survivors' Experiences of Using a Publicly Available Physical Activity Mobile Application

Identified four physical activity apps suitable for breast, prostate, and colorectal [cancer survivors](#).

Each participant is randomly assigned to two of the four apps ([Human](#), [The Walk](#), [Johnson & Johnson's 7 Minute Workout](#), and [Gorilla Workout](#)), which they used during a two-week period, focusing on one each week.

The purpose of the study is to understand participant's experience of using the apps, how relevant they are, and how the apps can be adapted for cancer patients.

So far, the results are good for people who have completed their cancer treatment and have a higher level of motivation. People with a lower level of motivation, on the other hand, have found the apps do little to increase motivation.

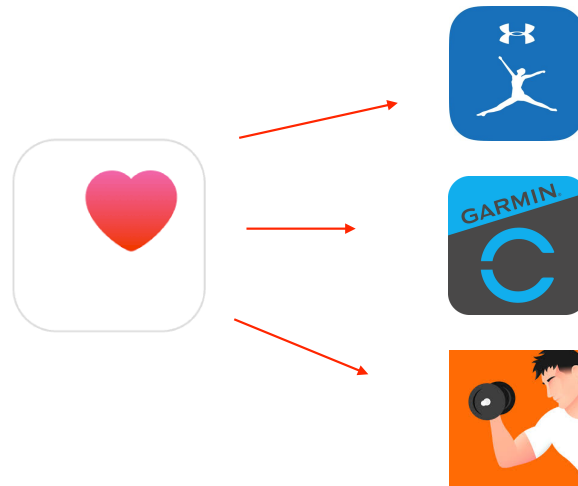


# Syncing apps together

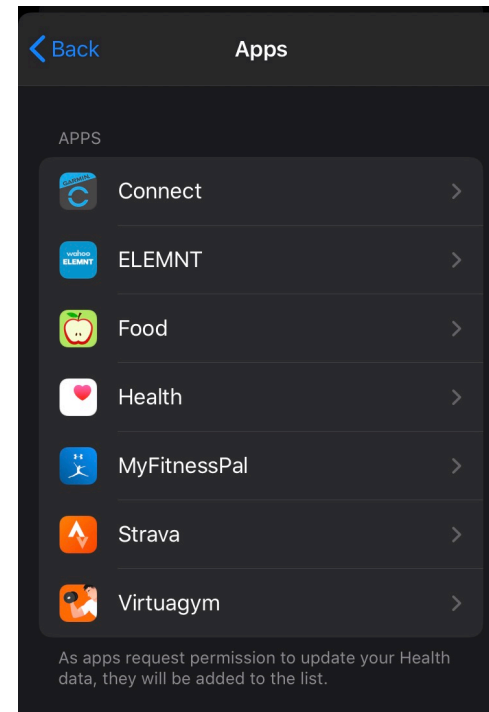
## Apple, Android, Fitbit, and more

- Apple Device
  - Apple Health
  - Garmin
  - MyFitPal
  - Virtuagym

- Other:
  - GoogleFit
  - Samsung Health



More Fitness related:  
Fitbit Coach  
Yoga Wake Up  
Peloton Digital



# Online Resources

[https://progressreport.cancer.gov/after/physical\\_activity](https://progressreport.cancer.gov/after/physical_activity)

[www.aicr.org/foods-that-fight-cancer/](http://www.aicr.org/foods-that-fight-cancer/)

[www.aicr.org/reduce-your-cancer-risk/diet/](http://www.aicr.org/reduce-your-cancer-risk/diet/)

[www.cookforyourlife.org/](http://www.cookforyourlife.org/)

[www.cancer.org/healthy/eathealthygetactive/index](http://www.cancer.org/healthy/eathealthygetactive/index)

[www.exrx.net](http://www.exrx.net)

[www.cancer.gov](http://www.cancer.gov)

[www.acsm.org](http://www.acsm.org)

[www.nccn.org/patients/resources/life\\_with\\_cancer/exercise.aspx](http://www.nccn.org/patients/resources/life_with_cancer/exercise.aspx)



Thank you!



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