



CANCER SURVIVORS HANDBOOK

Exercise & Nutrition

Created By The Adams State
Kinesiology Graduate Students 2022.

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HEALTH MAINTENANCE

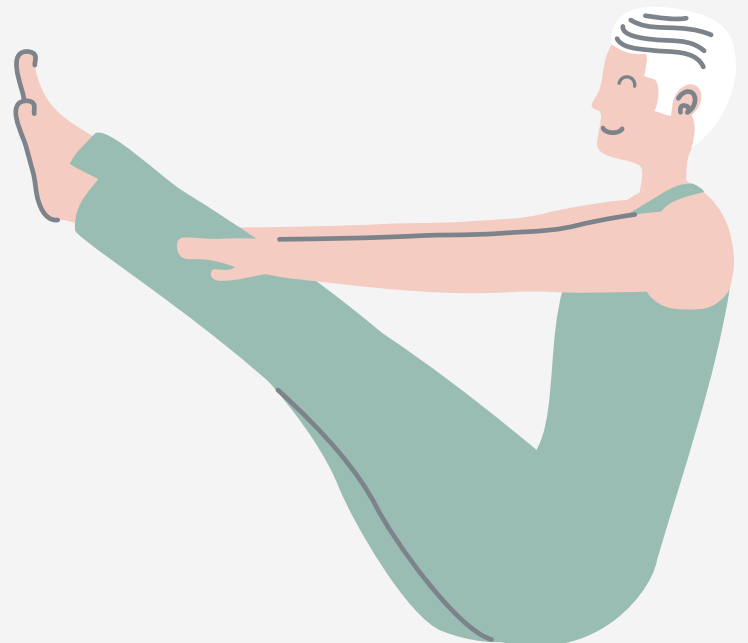
After your cancer treatment, as a cancer survivor you're eager to return to good health. But beyond your initial recovery, there are ways to improve your long-term health so that you can enjoy the years ahead as a cancer survivor.

The recommendations for cancer survivors are no different from the recommendations for anyone who wants to improve his or her health: Exercise, eat a balanced diet, maintain a healthy weight, get good sleep, reduce stress, avoid tobacco and limit the amount of alcohol you drink.

But for cancer survivors, the following strategies have added benefits. These simple steps can improve your quality of life, smoothing your transition into survivorship. Here's what you can do to take care of yourself after cancer treatment.

RECOMENDED TIPS

- **Exercise**
- **Eat a Balanced Diet**
- **Maintain a healthy weight**
- **Rest well**
- **Reduce Stress**
- **Stop using tobacco**
- **Drink alcohol in moderation- if at all.**





MINDFULNESS ACTIVITIES TO FIND CALM

Gratitude lists. Creating a gratitude list may help improve well-being and promote positivity by helping you focus on the things that you're grateful for.

Walking meditation.

Meditation Practices.

Breathing Exercises.

Mindful eating.

Mindful gardening.

EXERCISE BENEFITS

Regular physical activity can **reduce risk** of cancer. Ready to take your health in hand? Make a **plan**, set goals, get **social support** to keep you **accountable** and get to exercising!

Exercise has benefits both during and after cancer treatment. Moderate exercise during treatment improves tolerance to cancer treatment, decreases side effects, and improves quality of sleep.

Exercise programs followed by treatment can improve mobility, strength, and cardiovascular fitness. Exercise can have physiological, social and psychological benefits as follows:



PHYSIOLOGICAL	SOCIAL	PSYCHOLOGICAL
Reduces the risk of many diseases like diabetes type 2, obesity, cardiovascular diseases and some types of cancer (Breast cancer and cancer of the gastrointestinal tract among others)	Meeting new people with similar life experiences - bonding network.	Improves mood (exercises releases endorphins), with reduced feelings of depression and anxiety
Improves rest and sleep	Serves as a stress relief	Increases self-esteem and feelings of independence
Improves aerobic fitness	Increases energy levels	Increases sense of relaxation
Improves flexibility and range of motion & Improves muscle strength	Lowers risk of falls	Improve sleep quality
Reduces fatigue	Prevents or delays the Impact of a disease	Aids focus shift from illness to wellness
Improves circulation & Increases oxygen to brain and tissues	Working out with other people	Feeling more comfortable in one's own body
Increases metabolism & helps with weight management	Improves quality of life	Self-confident booster
Improves immune system	Helps you adapt to new environments	Improves memory

EXERCISE GUIDE

HEART RATES

To achieve your athletic goals and maintain a good level, you don't necessarily have to train harder but smarter. That's why it pays to listen to your heart and learn to understand the heart and heart rate zones.

Maximum heart rate (HRmax) is the number of heartbeats per minute that you can achieve with the greatest possible physical exertion.

This value is individual, but can be approximately determined by the calculation: 220 minus age. Once you have determined your own maximum heart rate, you can then calculate the different heart rate zones. These help you to determine at which heart rate you should train.

EXERCISE INTENSITY

150 minutes per week of moderate-intensity aerobic activity (walking, slow biking) or 75 minutes per week of vigorous aerobic activity (running, swimming, fast biking, uphill hiking) or a combination of both, preferably spread throughout the week

Moderate- to high-intensity muscle-strengthening activity (resistance or weights) on at least 2 days per week

(American Heart Association Recommendation)

FITNESS

Cardiovascular endurance: the ability to perform exercises at moderate-to-vigorous intensities for a prolonged period of time

Muscular strength: how much force your muscles can exert or how heavy weights they can lift

Muscular endurance: the ability of your muscles to sustain exercise for a period of time.

Flexibility: the ability to move muscles and joints through a full range of motion.

Body composition: your body's ratio of fat mass to fat-free mass like muscle and bone.

ZONE 1 (50% - 60% of HRmax)	Health Zone	This zone is the warm-up or beginner level of aerobic training. It involves rather light exercise. Breathing in this zone is rhythmic and light, the body warms up easily and feels a very light load. However, weight loss is hardly possible here. The health zone is usually used for warming up, i.e. to get the body warm for a workout.
ZONE 2 (60% - 70% of HRmax)	Fat burning zone	If you want to lose weight specifically, you should train in this phase. Exercising takes place at a comfortable pace. The breaths become deeper, but conversation is still possible.
ZONE 3 (70% - 80% of HRmax)	Aerobic Zone	In the aerobic zone it is possible to increase fitness and endurance. The speed and effort is increased compared to zone 2. Having a conversation is now more difficult. Exercising in this zone has a positive effect on cardiovascular values and increases aerobic capacity.
ZONE 4 (80% - 90% of HRmax)	Anaerobic Zone	The anaerobic zone is also called developmental training. Here, speed and effort are high to slightly uncomfortable. When training in this zone, the anaerobic threshold shifts upward, and power and speed are increased.
ZONE 5 (90% - 100% of HRmax)	Red Zone	This heart rate zone is suitable only for professional high-performance athletes, as training is done at the limit of maximum load and power. In this zone, sprinting is done as fast as possible, but the speed cannot be maintained in the long term. Muscular endurance and strength are increased in this zone.

EXERCISE PROGRAM

This page is dedicated to all of our participants who wish to keep up their strength & conditioning as well as aerobic fitness from home or the gym. Below you will find detailed explanations for each exercise.

You can find video examples on our program website:



Later Raises

Targets: Shoulders, especially the lateral and anterior heads of the deltoid

Equipment Needed: Dumbbells

The side lateral raise is an effective shoulder-strengthening movement designed to isolate the lateral head of the deltoid muscle. Performed regularly, this can help you develop stronger, broader shoulders. All you need is a pair of light dumbbells and enough shoulder flexibility to abduct your arms (lifting the weights out and away from your body) until they form a "T" shape at your shoulders.



Farmers Walk

Targets: A full body workout, targeting the quads, hamstrings, glutes, calves, erectors, upper back, traps, lats, abs, biceps, triceps, forearms, and hand muscles.

Equipment Needed: Dumbbells / make shift weights (ie. water bottles)

The farmer's walk is a movement in which a weighted implement is deadlifted from the floor and carried for a distance. The farmer's walk can be an excellent addition to a strength training program or performed on its own as cardio.



Calf Raises

Targets: Back of your lower legs, specifically the gastrocnemius muscle that runs down your leg and the soleus muscle near your Achilles tendon.

Equipment Needed: Dumbbells / make shift weights (ie. water bottles)

Training your calves is important because of the wide use of those muscles, including during walking, running, jumping, and moving your body during functional movements. Your calves are an extremely powerful and tough muscle group that propels you forward and raises your entire body many times a day when you walk.

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Deadlift

Targets: Increase core strength, core stability and improve your posture. Deadlifting trains most of the muscles in the legs, lower back and core. These are all muscles responsible for posture, which will help keep your shoulders, spine, and hips in alignment.

Equipment Needed: Dumbbells / weight/ bar

All deadlift exercises begin with the weight roughly in line with the middle of your foot before bending forward and picking up the object. Deadlifts are highly effective at increasing functional strength due to the activation of your largest lower body muscles. They also train you for the functional activity of safely lifting objects off of the floor, which is a key skill for day-to-day activities.



Dumbbell Flies

Targets: Shoulders, chest, and triceps

Equipment Needed: Dumbbells

This exercise can help open up your chest muscles. Chest openers may help reduce upper back pain, increase range of motion, and reduce tightness in the upper body.



Step Ups

Targets: Quadriceps & Hamstrings

Equipment Needed: No weights/ Dumbbells

A step-up is a simple body resistance exercise that works muscles in the legs and buttocks. A step-up targets the quadriceps, here, and hamstrings, here, as well as the gluteal muscles in the buttocks. This is a good general lower body conditioning exercise.

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Glute Bridge

Targets: Increase stability in your core, build strength in your glutes, and help you with form and function as you perform other exercises.

Equipment Needed: None

It strengthens your core muscles, which help you in everyday activities as well as improve your performance in other exercises and sports.

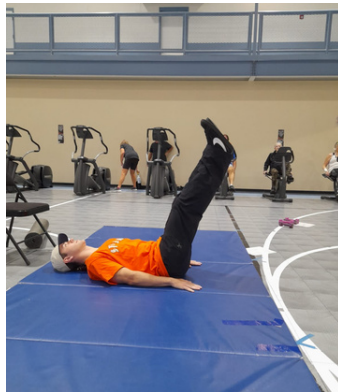


Sit to Stand

Targets: Thighs & Core Muscles

Equipment Needed: Chair/ Box

strengthens your lower body and helps you maintain or improve your mobility and independence. The end goal is to do the sit-to-stand exercise without using your hands. This will be easier as you become stronger



Leg Raises

Targets: Core, hips & lower back.

Equipment Needed: None

Leg raises benefits include strengthening your core muscles, which can help prevent low back pain. In turn, with additional core-building moves, you might see that pain dissipate. Choose from multiple types of leg raises to mix things up when you work out.

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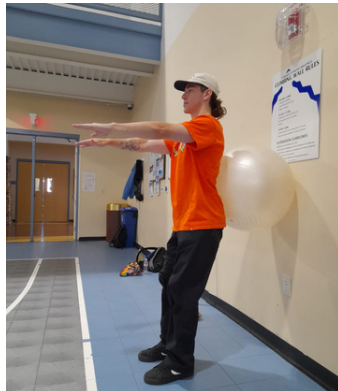
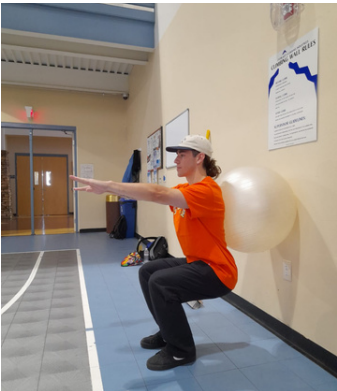


Front Raises

Targets: Shoulder muscles (deltoids) & the upper chest (pectorals).

Equipment Needed: Dumbbells

It is an isolation exercise for shoulder flexion and can help you build strength and definition in the front and sides of your shoulders. In daily life, you need strong shoulders to lift objects safely.



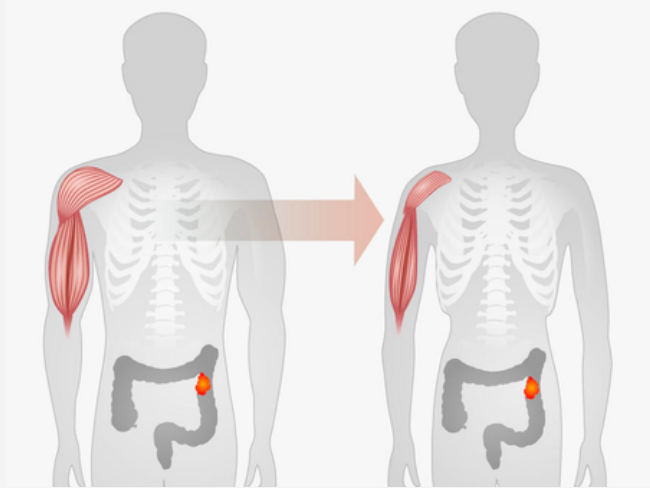
Ball Squats

Targets: Strengthen your lower body. Hamstring / Quads.

Equipment Needed: Ball

Ball Squats are very beneficial for your legs and back. Swiss ball used for the squats helps you develop balance, stability, and good posture.

CANCER CACHEXIA



Cachexia is common in cancer survivors with 50 % of the population suffering to some degree from it.

Cachexia can affect the heart, pulmonary system, kidneys but mostly skeletal muscles. Cachexia refers to the loss of both adipose tissue and skeletal muscle. The extent of cachexia is not dependent on tumor size or the spread of metastatic disease. Cachexia is associated with reduced response to chemotherapy, physical weakness, and increased mortality.

SYMPTOMS

- **Weakness**
- **Loss of balance**
- **Reduced responsiveness of cancer treatment**
- **Extreme change in body composition → lean mass**
- **Poor organ function especially in heart and lungs**

EXERCISE EFFECTS

Exercise is important to stimulate metabolism and appetite, and to alleviate and prevent cachexia. It prevents or reduces the muscle loss that can be caused by cachexia. Additionally, a proper diet is important. Recommended is a high-protein diet with sufficient amounts of vitamins, minerals and trace elements.

NUTRITION EFFECTS

Cancer therapies can cause loss of appetite and eating smaller amounts of food.

Cancer survivors diet has no effect on body composition, this continuing to lose body composition even with a hearty appetite.

Cancer can gain energy from fat mass, followed by skeletal muscles, thus depleting the body of muscle and affecting all its related functions.

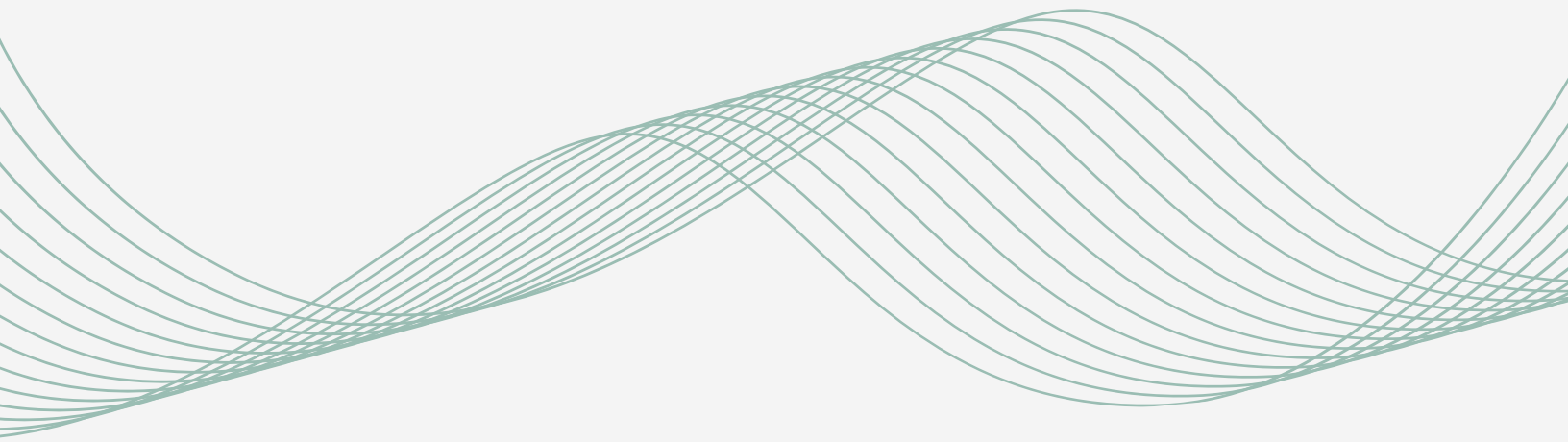


**It's okay to
ask for help**

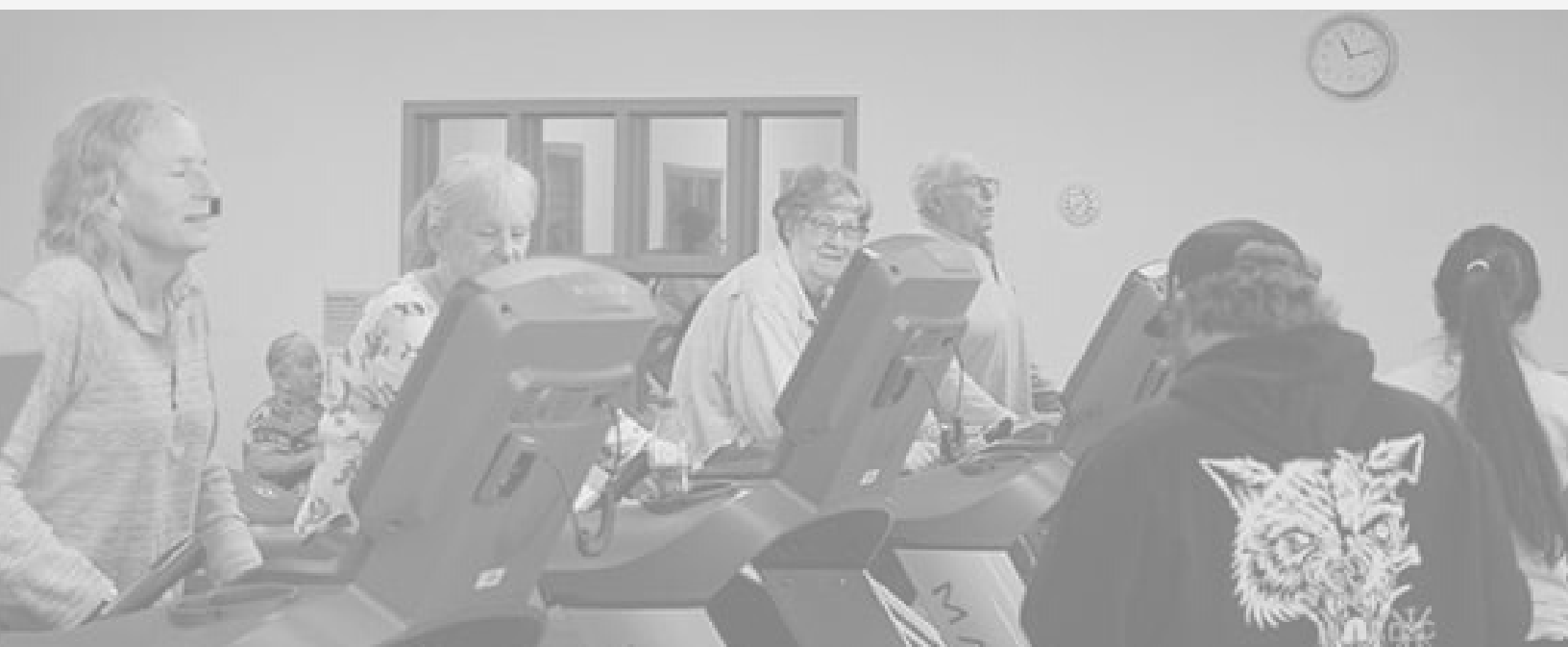
A man with a beard is sleeping peacefully in a bed with striped pillows. The image is overlaid with a semi-transparent teal filter. In the top left corner, there are several white, wavy, overlapping lines that create a sense of motion or energy. The text is positioned on the right side of the image, overlaid on the teal background.

IMPORTANCE OF SLEEP

Sleep is crucial for maintaining one's health. Without it, we increase our susceptibility to an astonishing array of health problems. A good night's sleep means waking up rested and rejuvenated. Not getting enough sleep can lead to problems in concentrating.



HEALTH IS WEALTH





YOU ARE A SURVIVOR!

www.cancerandexercise.com

