

The Benefits of Exercise Throughout the Cancer Journey

Chris Sellar, PhD

Department of Physical Therapy, University of Alberta



Exercise and Cancer

- Cancer Survivorship.
- The Benefits of Exercise for Survivors.
- How to Get Started Exercising.
- Current Exercise Program Opportunities.

Some Common Side Effects of Cancer & its Treatments

- **Cancer–Related Fatigue** – most commonly reported side effect.
- **Pain.**
- **Musculoskeletal issues** – surgical changes, reduced mobility and function, muscle aches and joint pain.
- **Lymphedema** – arms (breast cancer), legs, head & neck.
- **Body Composition** – weight/fat gain, muscle loss, osteoporosis.
- **Peripheral Neuropathy** – reduced sensation & balance; grip & gait affected.
- **Organ issues** – cardiovascular and pulmonary changes.
- **Cognitive issues** – memory and concentration challenges.

Supportive Care Role for Exercise

- The following can be negatively impacted by cancer and its treatments:
 - All aspects of fitness.
 - Physical functioning.
 - Physical activity participation.
 - Quality of Life.
- Improving survival combined with a high prevalence and growing & aging population = greater need for supportive care options for cancer survivors.
- Many side effects are amenable to exercise and rehabilitation interventions.

Physical Activity & Cancer Control

Being physically active is beneficial at any point!

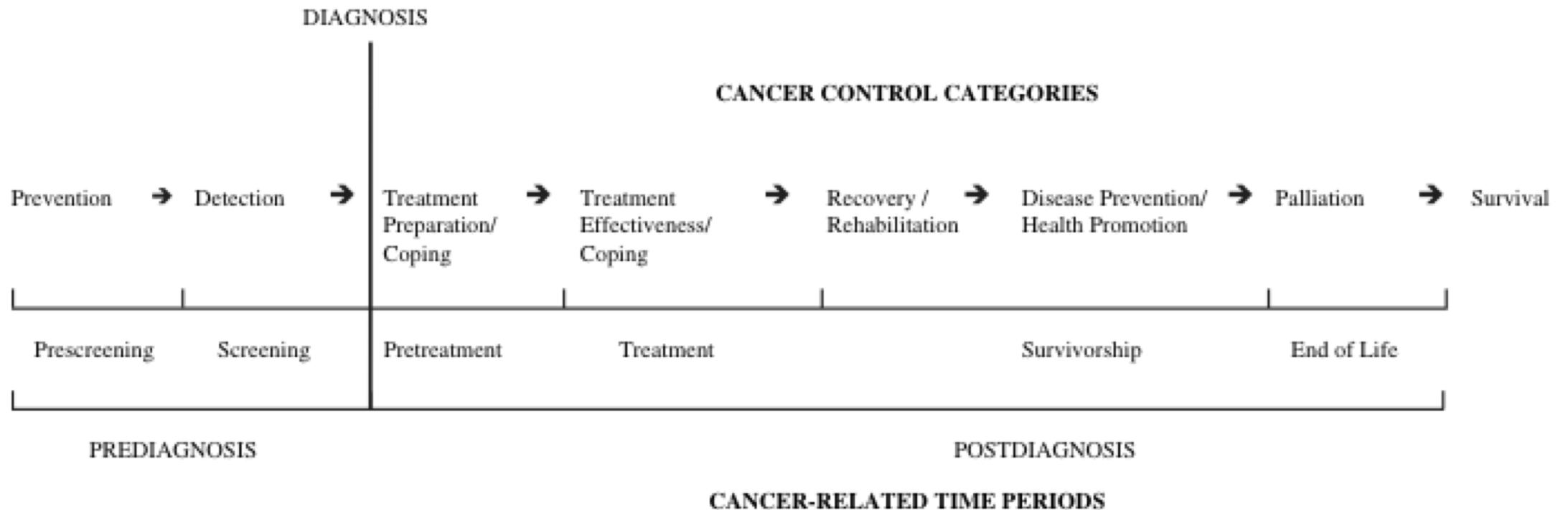


FIGURE 1. Physical activity and cancer control framework.

Physical Activity in Cancer Survivorship

- A growing body of evidence suggests that participating in regular physical activity may improve disease outcomes for cancer survivors.
- This includes a **reduced risk of cancer recurrence and both cancer-specific & all-cause mortality.**
- This benefit has been shown in **breast, colorectal, and prostate** cancer survivors.

Benefits of Exercise for Cancer Survivors

Exercise has been shown to have a positive impact on the following:

- **Health-related fitness** – Aerobic fitness, body composition, muscular strength & endurance, and flexibility.
 - Also overall physical activity participation.
- **Patient-reported outcomes** – Health-related quality of life, physical functioning, anxiety, depression, stress, emotional well-being, mental health, cognitive health, mood, sleep, body image, and self-esteem.
- **Disease and treatment related effects** – Cancer-related fatigue, lymphedema, overall symptom burden.

More Cancer-specific Reasons to Exercise

- To reduce, slow the progression of, or prevent long-term and late effects of cancer treatment.
- To improve your body's ability to withstand any current or future cancer treatments.
- Potentially reduce or delay recurrence or development of a second primary cancer.

Exercise Training for Cancer Survivors

- Exercise training has been shown to be **feasible, safe, and effective** for cancer survivors.
- The benefits of exercise training can be realized even during cancer treatments, but they appear to be greater following treatment completion.
- Despite the many potential benefits, many cancer survivors do not participate in regular physical activity.

MOVING THROUGH CANCER:

Exercise for people living with and beyond cancer

TO GET STARTED

Avoid inactivity; moving more and sitting less benefits nearly everyone

FOR OVERALL HEALTH

Aim to meet the current exercise guidelines for adults¹



Moderate Aerobic Exercise
At least 150–300 mins per week

OR

Vigorous Aerobic Exercise
At least 75–150 mins per week



(or a combination of moderate/vigorous aerobic exercise)

+



Resistance Exercise
2x per week

FOR PEOPLE DURING & FOLLOWING CANCER TREATMENT

Research shows lower amounts of exercise can still help

“Persons receiving treatment may need to modify exercise, but the principal goal should be to maintain activity as much as possible.”

“After treatment, a program of regular physical activity is essential to aid in the process of recovery and improve fitness.”

https://www.exerciseismedicine.org/support_page.php/moving-through-cancer/

Exercise for Cancer Survivors – Precautions

- Despite the benefits of exercise, particular issues may affect the ability to exercise, including:
 - Severe fatigue.
 - Compromised immune function.
 - Low blood counts.
 - Effects of cancer treatment – Surgery, Chemotherapy, Radiation,...
 - Indwelling catheters, feeding tubes, or ostomy.
 - Peripheral neuropathies.
 - Risk of fracture.
 - Other health conditions.

General Safety Guidelines for Exercise

Do not exercise if:

- Your pulse is racing.
- You have a fever.
- You have calf pain.
- You have chest pain.
- You are nauseated while you are exercising.
- You feel confused or disorientated.
- You feel dizzy or faint.
- You have blurred vision.
- You feel **suddenly** short of breath, very weak, or tired.

**If any symptoms
occur, stop
exercising and
see your doctor!**

**Listen to
your body!**

Exercise for Cancer Survivors – Precautions

- Generally, disease and treatment effects may increase the risk of injuries and the potential for adverse effects with exercise.
- If you feel unsure if you are safe to exercise...
 - Check with a health care provider.
 - Work with a certified exercise professional.
 - Canadian Society of Exercise Physiology.
 - Provincial Fitness Unit.
 - American College of Sports Medicine.

**Overall, the
potential benefits
of physical activity
outweigh the
risks!**

Tips to Get Started

- 1) Start right away = Low intensity walking (if you can).
- 2) If you want to do more or you have symptoms, speak with your health care providers.
- 3) If you have symptoms (pain, fatigue, etc.), see a physical therapist for advice on how best to start exercising.
- 4) If you have the resources, find a qualified exercise professional to help you with a training program.

Tips to Keep Going

- Be realistic - What are you able to do **now**?
- Pick activities that you enjoy.
- Set SMART goals.
 - **S**pecific, **M**easurable, **A**chievable, **R**ealistic, **T**imely.
 - **Example**: start walking 10 min/day this week.
- Find an exercise partner.
 - Group, family member, friend,...someone to keep you accountable!
- Habit changing helpers – tracking your activity.
 - Pedometers, accelerometers, GPS, HR monitor, smart watches, apps,...

Take Home Messages

- Check with your health care team on the safety of exercise for you.
- If needed, get some help from an exercise professional and/or physical therapist to determine what type and level of exercise is right for you.
- Exercise can improve many physiological, psychological, disease & treatment related outcomes for survivors...
...so if you aren't already exercising, **start as soon as possible!**



The ACE Hybrid Effectiveness- Implementation Study



What is the ACE exercise program?

- **12-week exercise program offered at no-cost to cancer survivors.**
 - Led by an exercise trainer with cancer-specific training.
 - 1-hour classes twice per week, with a full-body workout each class.
 - Starts at a low to moderate intensity, & progresses over the course of the program.
- Participants complete a **fitness assessment and questionnaires** at the **beginning and end** of the program.
- Partnering program locations in Edmonton, Calgary, Red Deer, Lethbridge, and Grande Prairie.
 - **Virtual options** are now available for those who cannot attend in-person programming.

What does the ACE exercise program look like?

Depending on location, the exercise programming includes:

Circuit training classes



Similar format
for **virtual**
classes



Group personal training





- A 5-year Canada-wide project, funded by the Canadian Institute of Health Research, the Canadian Cancer Society, and the Alberta Cancer Foundation.
- This project will **increase the accessibility of exercise programs for rural and remote cancer survivors** across Alberta & Canada.



For more on ACE:

albertacancerexercise@ualberta.ca

780-492-6007

www.albertacancerexercise.com



For more on EXCEL:

wellnesslab@ucalgary.ca

<https://kinesiology.ucalgary.ca/labs/health-and-wellness/research-projects/>

WHAT IS EXCEL?

EXCEL is the EXercise for Cancer to Enhance Living Well study. This study provides an exercise program to Canadian cancer survivors in rural and remote areas.

Alberta-based study
evaluating the benefits of
exercise for cancer survivors

Funding for this study provided by:

