

EXERCISE & CANCER OUTCOMES



**KRISTIN CAMPBELL, BSC. PT, PHD
UNIVERSITY OF BRITISH COLUMBIA, VANCOUVER,
CANADA**

**KRISTIN.CAMPBELL@UBC.C
@CEPL_UBC
WWW.CEPL.REHAB.MED.UBC.CA**

CONFLICT OF INTEREST



I **DO NOT** have an affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

LEARNING OBJECTIVES

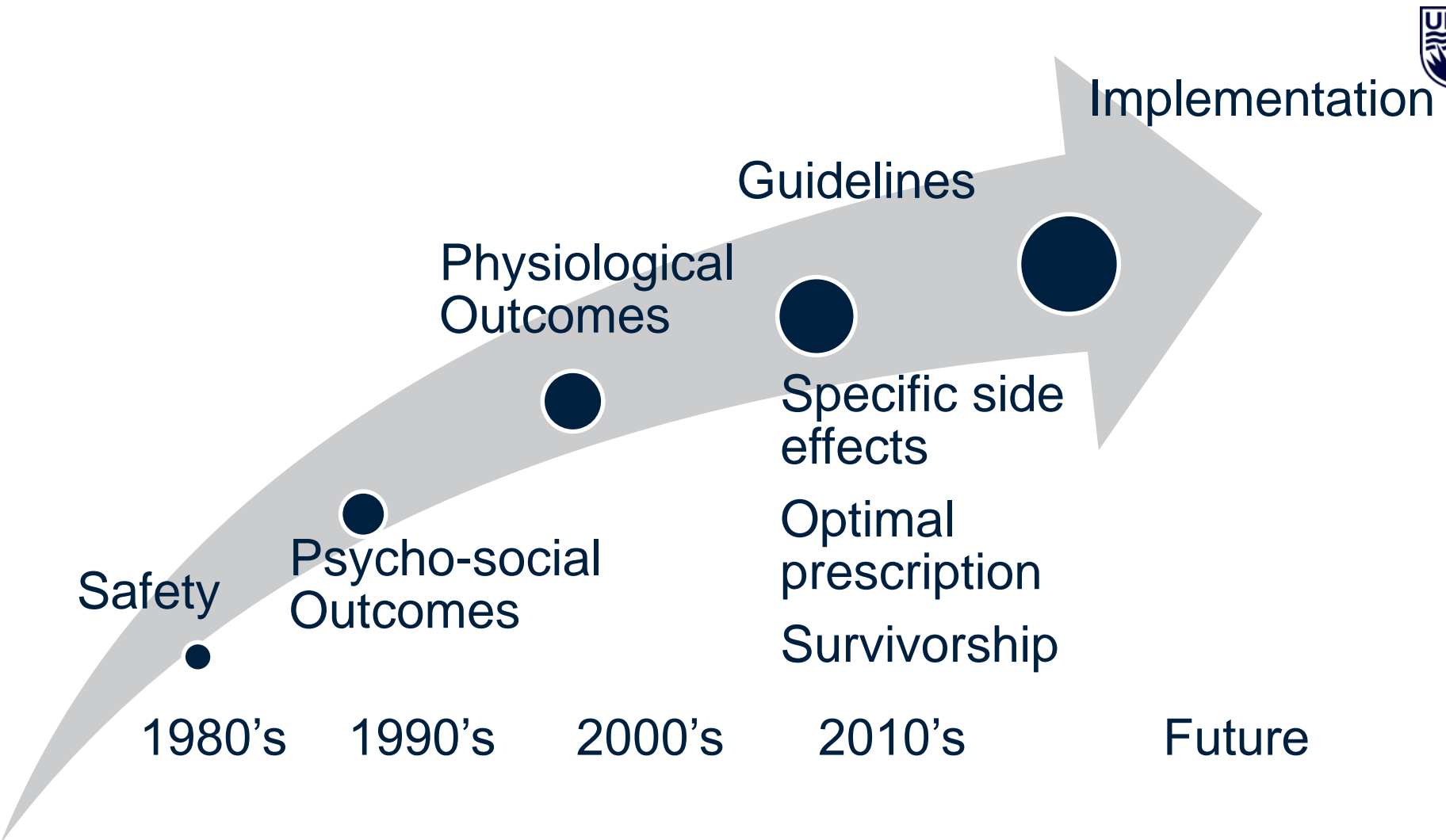
- 1) What are potential benefits of exercise, including exercise during systemic therapy
- 2) What are the current recommendations regarding types and amounts of exercise a GPO should recommend to patients
- 3) What are recommendations regarding existing programs that patients can access
- 4) Online resources that GPOs can recommend



1) WHAT ARE THE BENEFITS?



TRAJECTORY OF EXERCISE & SURVIVORSHIP RESEARCH



EVIDENCE: BREAST CANCER

	Safety	Fitness	Strength	Flexi- ability	Body comp	QoL	Fatigue	Psycho- social	Other
During	A	A	A	=	B	B	B	B (anxiety)	-
After	A	A	A	A	B	B	B	B (depression) B (anxiety) B (body image)	A (physical function) C (pain) A (safety for lymphedema onset or worsening)

Schmitz K et al. Med Sci Sport Ex 2010; 2(7):1409-26

EVIDENCE: OTHER CANCERS



	Safety	Fitness	Strength ^h	Flexibility	Body comp	QoL	Fatigue	Psychosocial	Other
Prostate	A	A	A	-	B	B	A	-	B (physical function)
Colon	-	-	-	-	-	-	-	-	-
Gynaecological	-	-	-	-	-	-	-	-	-
Hematol (no HSCT)	-	A	-	-	-	-	B	-	-
Hematol (HSCT)	A	C	C	-	-	C	C	-	-

Schmitz K et al. Med Sci Sport Ex 2010; 2(7):1409-26

AREAS WHERE ADDITIONAL RESEARCH IS NEEDED

- Majority of research in early stage breast cancer
- Little information with advanced cancer
- Other cancer sites/surgeries
- Variation in exercise prescription and associated
- Impact on clinical endpoints unknown

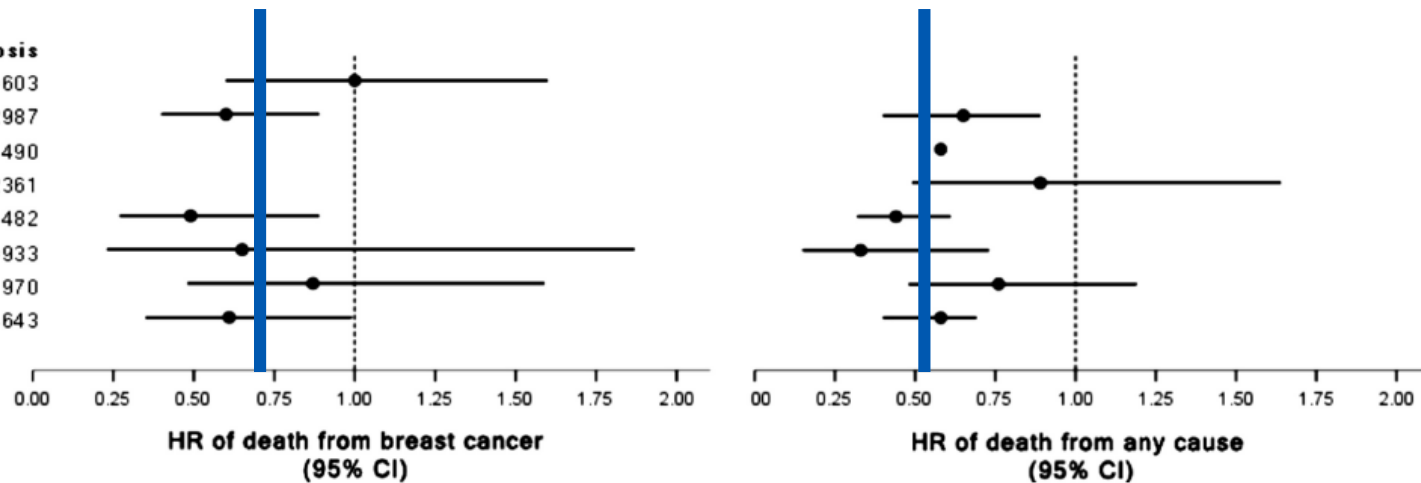


REDUCED RISK OF RECURRENCE OR DEATH: EPIDEMIOLOGY EVIDENCE



Physical activity undertaken after diagnosis

- Borugian, 2004 (25), Canada, n=603
- Holmes, 2005 (33), United States, n=2987
- Pierce, 2007 (21), United States, n=1490
- Bertram, 2011 (22), United States, n=2361
- Holick, 2008 (32), United States, n=4482
- Irwin, 2008 (34), United States, n=933
- Sternfeld, 2009 (37), United States, n=1970
- Irwin, 2011 (35), United States, n=4643



REDUCED RISK OF RECURRENCE OR DEATH: HUMAN INTERVENTION STUDIES

- Rationale
 - Ballard-Barbash et al. JNCI 2009; 101:630-643
- No published intervention trials (physical activity or weight loss) with primary outcome of cancer recurrence or survival
- CO.21 – NCIC-CTG
 - Stage II-III colon cancer
 - 3-year exercise intervention vs. usual lifestyle
 - Outcome: Recurrence/survival at 3 years
 - PI: Kerry Courneya
 - BCCA-Vancouver: Sharlene Gill & Howard Lim
 - Courneya et al. Cancer Epidemiol Biomarkers Prev. 2016;25(6):969-77



REDUCED RISK OF RECURRENCE OR DEATH: TREATMENT OUTCOMES

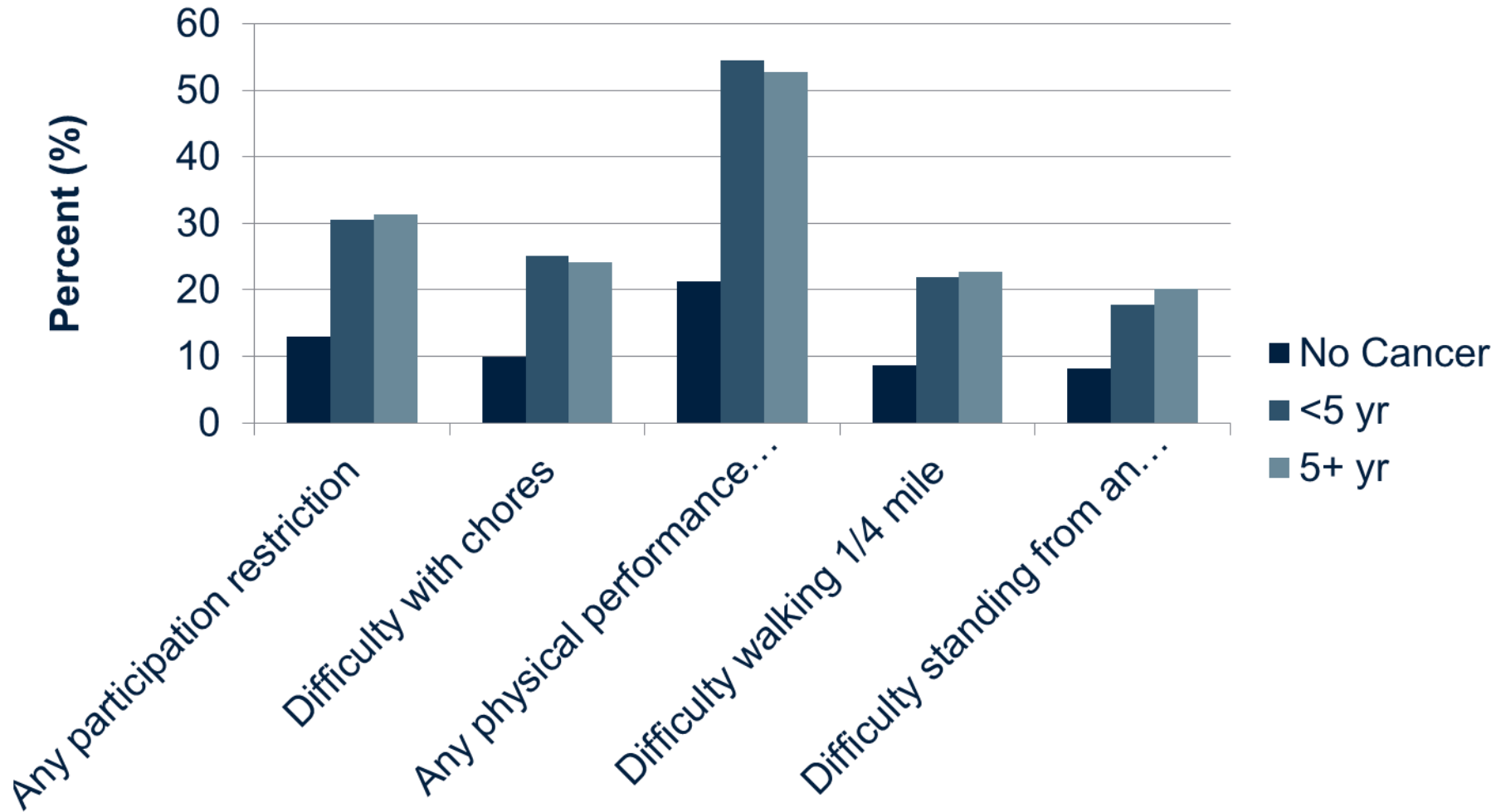


- Chemotherapy completion rate improved with resistance training (compared to aerobic exercise and standard care control)
 - Courneya et al. JCO 2007;25:4396-4404
- A smaller percentage of participants in OnTrack (Supervised, MVPA) required chemotherapy dose adjustments than those in the usual care or Onco-Move (Home-based, low intensity PA) groups
 - van Waart et al. JCO 2015; 10;33(17):1918-27

**2) WHAT ARE THE CURRENT
RECOMMENDATIONS & HOW CAN WE
TRANSLATE RESEARCH INTO
PRACTICE?**



DO WE NEED TO INTERVENE TO PROMOTE EXERCISE?





**American College of
Sports Medicine
Roundtable on Exercise
Guidelines for Cancer
Survivors**

Schmitz K et al. *Med Sci Sport Ex* 2010; 2(7):1409-26

ACSM EXERCISE GUIDELINES FOR CANCER SURVIVORS

“Avoid inactivity”

“Return to daily activities as soon as possible after surgery”

“Continue normal activities and exercise as much as possible during and after non-surgical treatment”

“Recommendations are the same as age-appropriate guidelines...” for Americans



Canadian Physical Activity Guidelines

FOR ADULTS - 18 – 64 YEARS

Guidelines



To achieve health benefits, adults aged 18-64 years should accumulate at least 150 minutes of moderate- to vigorous-intensity aerobic physical activity per week, in bouts of 10 minutes or more.



It is also beneficial to add muscle and bone strengthening activities using major muscle groups, at least 2 days per week.



More physical activity provides greater health benefits.

PATIENT PERSPECTIVES ON TREATMENT SIDE EFFECTS & MANAGEMENT

Women often report being **uninformed** regarding side effects



Surprised that they **do not disappear after treatment** but remain part of their lives, even years later

Breast cancer survivors express strong unmet needs for **education, information and interventions** for these side effects

No advice or conflicting information from providers

IDENTIFIED BARRIERS TO INTEGRATING EXERCISE INTO ONCOLOGY CARE



Impression that exercise **may increase the risk** of injury, fatigue and exacerbation of symptoms

Overwhelmed and financially **drained clinical programs**

Physical **space restrictions**

Lack of referral system to clinicians with relevant exercise experience in breast cancer population

Lack of time for discussion between patient and physician about exercise

IDENTIFIED FACILITATORS TO INTEGRATING EXERCISE INTO ONCOLOGY CARE

Recommendation **by an oncologist [or GPO?]**

Jones et al. Ann Behav Med 2004; 28:105-13



Greater benefits with **supervised** programs vs. home-based programs

McNeely et al. CMAJ 2006;175(1):34-41

Physicians **confident** in who is delivering program

EFFORTS TO TRANSLATE RESEARCH INTO PRACTICE

Nutrition and Exercise during Adjuvant Treatment (NExT) Study



- Newly diagnosed breast cancer, going onto receive adjuvant chemotherapy @ BCCA-Vancouver
 - **Primary Aim:** Feasibility
 - **Secondary Aims:** Efficacy
 - Clinical Outcomes (chemotherapy completion rate)
 - Behaviour change (physical activity levels at end of study and 1-year later).



Agency I.D.:

Patient name:



Your oncologist recommends:

- Supervised exercise + nutrition information sessions during chemotherapy

The NExT research study invites you to participate in a supervised exercise program and nutrition information

Exercise and healthy eating have important benefits as you undergo

Your oncologist notes that you have the following health considerations:

CVD:

- cardiac
- peripheral
- cerebrovascular

Pulmonary:

- COPD
- asthma
- interstitial

Metabolic:

- diabetes (type 1)
- diabetes (type 2)
- thyroid disorder
- renal/hepatic

Musculoskeletal:

- osteoporosis
- osteoarthritis
- hernia
- low back condition

Medications:

- antianginal
- antihypertensive
- beta-blocker
- diuretic
- antiarrhythmic
- anticonvulsant

Other / notes / details:

Physician / Oncologist:

Date:



MEETING AEROBIC EXERCISE PRESCRIPTION DURING CHEMOTHERAPY

Prescribed **frequency**: attended 70% of sessions

Prescribed **intensity**: met in 73% of sessions

Prescribed **duration**: met in 91% of sessions



Reasons collected for 86% of 337 missed prescriptions

- 28% due to prescription feeling too difficult
- 27% due to treatment symptoms
- 23% due to accidental miss due to HRM malfunction or not paying attention
- 7% due to leaving early for appointment

WHAT DID ONCOLOGISTS THINK ABOUT REFERRING PATIENTS TO AN EXERCISE PROGRAM?

- **Shifting the focus from disease** to health as a part of treatment discussions
- Integrating a lifestyle intervention with treatment **initially may be a challenge** & focus on safety
- **Power of using a “prescription”** served to encourage uptake, as it was felt that physician prescription is taken more seriously
- Recommendations for **improving access to and uptake** of the intervention



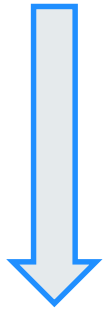
FUTURE DIRECTIONS/GOALS

- Sustainable, supervised exercise programming at the 6 BCCA Centres
- An exercise professional on staff or available by phone to help triage patients and connect patients with vetted community based resources
- Network of vetted community-based programs throughout BC



During systemic treatment

Specialized Supervised Physical Activity program



Following systemic treatment



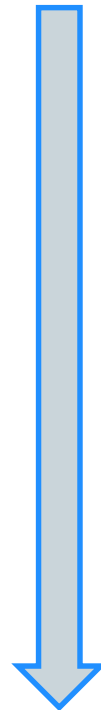
Step down program to assist with transition to community



Link to vetted Community Programs

Too busy/distance/not interested/Already very active

1-2 Consultations with Exercise Staff



Advanced disease/multiple co-morbidities

Monthly team meeting to discuss

Referral to PT or Exercise Professional

Transition to Supervise PA Program as able



PT or specialized program in community

**3) RECOMMENDATIONS REGARDING
EXISTING PROGRAMS THAT
PATIENTS CAN ACCESS**



WHO CAN HELP? WHAT CREDENTIALS TO LOOK FOR?

1. Who can “Find a Physio” link at www.bcphysio.org (“oncology”)
2. ACSM Certified Cancer Exercise Specialist OR ACSM Certified Exercise Specialist or Trainer (***American College of Sports Medicine***)
3. CSEP Certified Exercise Physiologist or CSEP Certified Personal Trainer (***Canadian Society for Exercise Physiology***)



Examples of community initiatives: Kamloops:



Canada's Tournament Capital



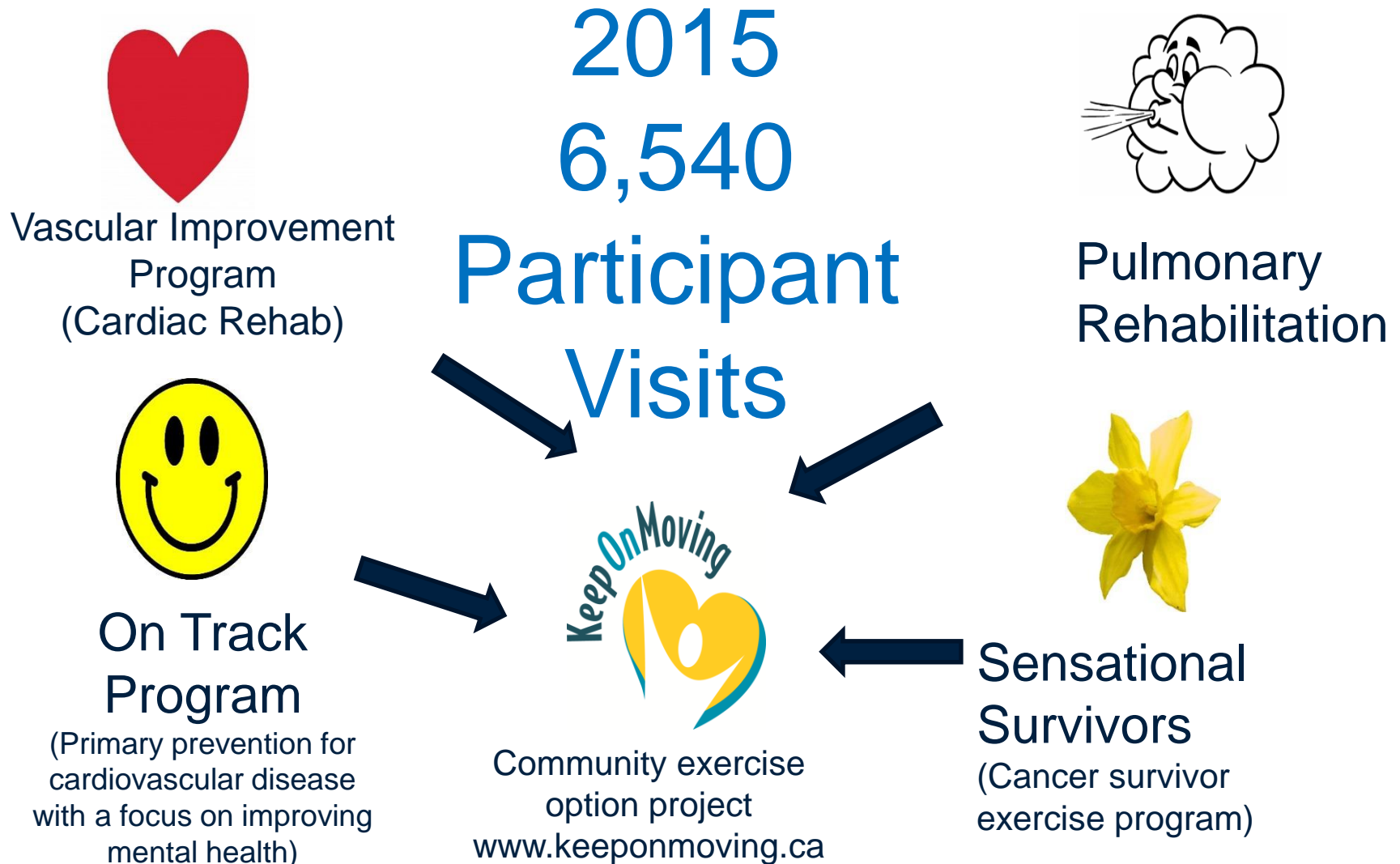
Interior Health



The Strategic Health Alliance

The Strategic Health Alliance

Slide courtesy of Jen Edgecomb, CEP, CET



TRUE^NTH

A MOVEMBER INITIATIVE



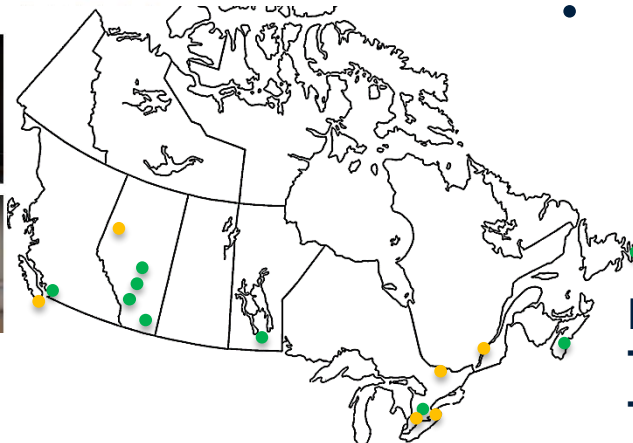
True^NTH

Lifestyle Management

Wellness Programs for Prostate Cancer Survivors



- Evidence-based community and online physical activity and yoga programs
- Website of wellness resources, including nutrition
- Improved and increased training of fitness professionals
- Geared towards needs of all prostate cancer survivors, regardless of treatment
 - Modifiable for various side effects and comorbidities
- Free initially and cost-recovery models for sustainable programs through community partners



From Jan 2015-May 2016

Total Past Participants: $n = 131$

Total 12-week programs: $n = 20$



MacWarriors Cancer Rehabilitation Services

Program Fees

Initial Physiotherapy Assessment^{*}: \$100 (\$110 including parking)

Physiotherapy Treatment^{*}: \$65 (\$75 including parking)

Monthly Physiotherapy Exercise Program (includes access to group exercise sessions)^{*}: \$65

Group Exercise Membership: \$55/month

Parking (optional): \$20/month and \$20 one-time fee for transponder

Methods of payment include: cash, cheque, debit, and credit card (Visa, MC)

^{*}All Physiotherapy services are reimbursable through extended health plans.

Wellspring – Ontario/Alberta



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LEARN MORE

SEE RESOURCES

LOCATIONS

Alberta

- [Wellspring Calgary](#)
- [Wellspring Edmonton](#)

Southern Ontario

- [Wellspring London and Region](#)
- [Wellspring Niagara](#)
- [Wellspring Stratford](#)

Toronto Central

- [Wellspring Downtown Toronto](#)
- [Wellspring Westerkirk House \(Sunnybrook\)](#)

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RESOURCES: FOR CLINICIANS



A Cancer Journal for Clinicians

ONLINE CONTINUING EDUCATION ACTIVITY

Take free quizzes online at acsjournals.com/ce

Practical Clinical Interventions for Diet, Physical Activity, and Weight Control in Cancer Survivors

Wendy Demark-Wahnefried, PhD, RD¹; Laura Q. Rogers, MD, MPH²; Catherine M. Alfano, PhD³; Cynthia A. Thomson, PhD, RD⁴;
Kerry S. Courneya, PhD⁵; Jeffrey A. Meyerhardt, MD, MPH⁶; Nicole L. Stout, DPT⁷; Elizabeth Kvale, MD⁸;
Heidi Ganzer, MS, RD⁹; Jennifer A. Ligibel, MD¹⁰

CA CANCER J CLIN 2015;65:167–189

RESOURCES FOR PATIENTS

Canadian Cancer Society (www.cancer.ca)



Check with your doctor

You will need to check with your doctor before starting any exercise program. This is true even if you exercised regularly before being diagnosed. After your doctor has said it's okay, you might also meet with a physical therapist or another healthcare professional with experience in this area. They can help you develop an exercise program that is safe, effective and fun for you. Although exercise is safe for many people, there are some exceptions. For example, if you're at risk for infection or anemia you may not be able to exercise. This is why you need to talk to your doctor before starting.

American Institute of Cancer Research

“Simple Steps for Physical Activity”



Keep Moving!

Maintaining and achieving good health takes time and effort, but the benefits are certainly worth it in the long run. Today we look at the positive role of physical activity in achieving good health.

[Read More >](#)

About The Physical Activity Line

Resources



Monday – Friday: 9 am-5 pm
Toll Free Number: 1-877-725-1149
Lower Mainland: 604-241-2266

<http://physicalactivityline.com/>

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Address bar: walkbc.ca/map

Page Header: Home | About Us | Contact Us | Login | Register

Navigation: Get Walking! | Walk Programs | Start Your Own Walking Program | Tools & Resources | Interactive Walks & Facilities Map | BCRPA Home

Search: Search

Filters: Walk, City, Name, Search

504 Results Found: Login or Register, View Results by List

Sort By: City

Results:

- test walk**
City: 100 MILE HOUSE
- Abbotsford Exhibition Park Trail**
City: ABBOTSFORD
Length (km): 2.3
- Discovery Trail**
City: ABBOTSFORD
Length (km): 10

Map: Map | Satellite

Map labels: Richmond, Delta, Surrey, Langley, Abbotsford, White Rock, Tsawwassen, Vancouver, North Vancouver, West Vancouver, Bowen Island, Gambier Island, Pinecone Burke Provincial Park, Mt Judge Howay, Mt Robie Reid, Pitt Lake, Stave Lake, Maple Ridge, Fort Langley, Langley, White Rock, Ladysmith, Gabriola Island, Strait of Georgia, Bowen Island, Richmond, Delta, Surrey, Langley, Abbotsford, White Rock, Tsawwassen, Vancouver, North Vancouver, West Vancouver, Bowen Island, Gambier Island, Pinecone Burke Provincial Park, Mt Judge Howay, Mt Robie Reid, Pitt Lake, Stave Lake, Maple Ridge, Fort Langley, Langley, White Rock, Ladysmith, Gabriola Island, Strait of Georgia, Bowen Island.

System tray: BCCA presentation 1:02

<http://walkbc.ca/>



It's [exercise] going to generally make me feel better so that you see that sense of, you know, being in control of your life and I definitely feel that way, and I also feel that other people [do] as well. I feel more confident. I used to get terribly weepy if somebody asked me about my breast cancer or whatever. I would want to cry. Now I can just tell people.

