

A Physical Activity Behaviour Change Intervention for Survivors of Cancer

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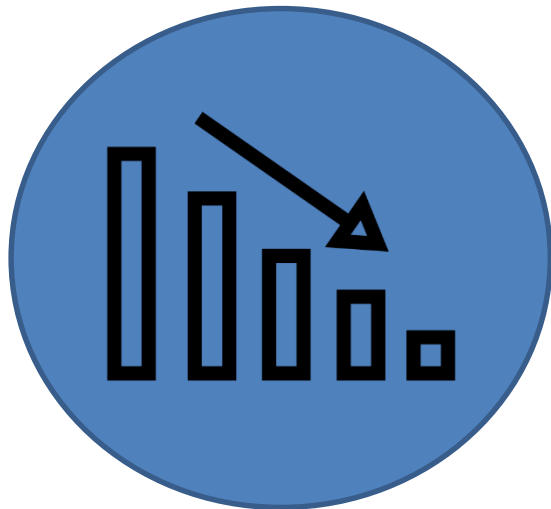


MedEx
Wellness



*Increased survival rates
and extended longevity^{1,2}*

*Estimated 32 million survivors
of cancer worldwide³*



*Negative Impact of Cancer
Treatment*

Negative Impact of Cancer Treatment



Pain & Fatigue⁴



↓ Physical Function &
Health-related Quality of Life⁵



↑ Risk for the Development of
Other Chronic Conditions –
Cardiovascular Disease &
Osteoporosis⁵



Relative to those without a cancer diagnosis, cancer survivors report

poorer health,

greater

psychological

distress *and*

more mental health needs

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

EXPERT PANEL

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 Kerry S. Courneya, PhD
 Charles Matthews, PhD, FACSM
 Wendy Demark-Wahnefried, PhD
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 Carole M. Schneider, PhD, FAHA
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to physical function
 dation of

Clinical Oncology Society of Australia position statement on exercise in cancer care

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The Clinical Oncology Society of Australia (COSA) is the peak national body representing multidisciplinary oncology professionals whose work encompasses cancer prevention, care. Its members are doctors, nurses, allied health professionals involved in the care of cancer patients. COSA is affiliated with the Australian Cancer Society. Published exercise as a means to reduce the adverse effects of cancer and its treatment. The Clinical Oncology Society of Australia (COSA) has developed exercise in cancer care guidelines that address the limitations of the current practice of health professionals without integrating exercise into standard practice in cancer and its treatment. The standard practice in cancer and its treatment is to provide physical activity that is safe and effective for cancer survivors.

Regular physical activity is beneficial throughout the cancer journey

The BASES Guidelines for Exercise and Physical Activity for Cancer Survivors

Produced on behalf of the British Association of Sport and Exercise Sciences by Dr Anna Campbell, Dr Clare Stevinson and Dr Helen Crank

This statement provides an overview of the evidence on the benefits of staying active after a cancer diagnosis and the current guidelines for exercise prescription in this population.



limitations of 279 short-term (<5 years) and 434 long-term (≥5 years) cancer survivors with 9,370 individuals without a history of cancer (Ness *et al.*, 2006). Over half of the cancer survivors (54% short-term and 53% long-term) reported performance limitations, versus 21% of the sample with no cancer history. The most common difficulties (crouching/kneeling, standing for 2 hours, lifting/carrying 10 pounds and walk quarter of a mile) were all ones essential for performing usual daily activities.

Evidence from intervention trials

Evidence on the effects of exercise during and after cancer treatment has been accumulating since the 1980s. In a 2010 systematic review

Nutrition and Physical Activity Guidelines for Cancer Survivors

Cheryl L. Rock, PhD, RD¹; Colleen Doyle, MS, RD²; Wendy Demark-Wahnefried, PhD, RD³; Jeffrey Meyerhardt, MD, MPH⁴; Kerry S. Courneya, PhD⁵; Anna L. Schwartz, FNP, PhD, FAAN⁶; Elisa V. Bandera, MD, PhD⁷; Kathryn K. Hamilton, MA, RD, CSO, CDN⁸; Barbara Grant, MS, RD, CSO, LD⁹; Marji McCullough, ScD, RD¹⁰; Tim Byers, MD, MPH¹¹; Ted Gansler, MD, MBA, MPH¹²

Cancer survivors are often highly motivated to seek information about food choices, physical activity, and dietary supplements to improve their treatment outcomes, quality of life, and overall survival. To address these concerns, the American Cancer Society (ACS) convened a group of experts in nutrition, physical activity, and cancer survivorship to evaluate the scientific evidence and best clinical practices related to optimal nutrition and physical activity after the diagnosis of cancer. This report summarizes their findings and is intended to present health care providers with the best possible information with which to help cancer survivors and their families make informed choices related to nutrition and physical activity. The report discusses nutrition and physical activity guidelines during the continuum of cancer care, briefly highlighting important issues during cancer treatment and for patients with advanced cancer, but focusing largely on the needs of the population of individuals who are disease free or who have stable disease following their recovery from treatment. It also discusses select nutrition and physical activity issues such as body weight, food choices, food safety, and dietary supplements; issues related to selected cancer sites; and common questions about diet, physical activity, and cancer survivorship. *CA Cancer J Clin* 2012;62:242-274. ©2012 American Cancer Society.



CME

CNE

To earn free CME credit or nursing contact hours for successfully completing the online quiz based on this article, go to acsjournals.com/ce.



↑ Cardiorespiratory Fitness



↑ Muscular Strength



↓ Fatigue



↑ HRQoL

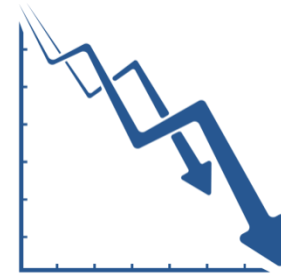


Improved Body Composition

Reduced Risk of Cancer Recurrence* (breast, colorectal, prostate, ovarian)

Reduced Risk of Cancer and All-Cause Mortality

Majority of cancer survivors are not sufficiently active to achieve health benefits⁷⁻⁹



20% of cancer survivors report ≥ 150 min of PA each week¹⁰



Almost 30% of patients report doing no activity¹⁰



To date, **few interventions have been effective** in maintaining improvements in cancer survivors' objectively assessed, long-term PA levels¹¹

How to support habitual PA participation in this population remains largely unanswered¹²

Top 10 Research Questions Related to Physical Activity and Cancer Survivorship

1. Does physical activity reduce the risk for cancer recurrence and/or improve survival?
 2. Does physical activity influence cancer treatment decisions, completion rates, and/or response?
 3. What is the optimal physical activity prescription for cancer survivors?
 4. What is the role of sedentary behavior in cancer survivorship?
 5. What are the most effective physical activity behavior change interventions for cancer survivors?
 6. Which cancer variables modify the response to physical activity?
 7. What are the safety issues concerning physical activity in cancer survivors?
 8. Which specific cancer symptoms can be managed by physical activity?
 9. Is there a role for physical activity in cancer survivors with advanced disease?
 10. How do we translate physical activity research into clinical and community oncology practice?
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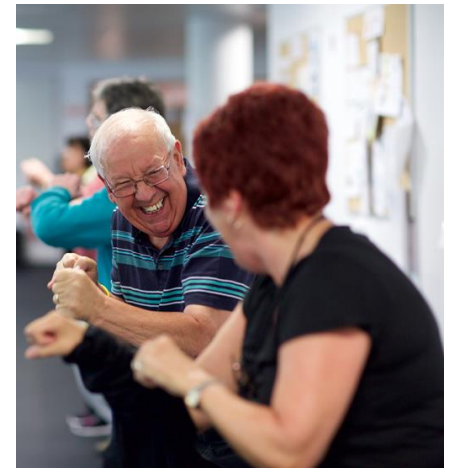
Aim

To investigate the effects of a PA behaviour change (BC) intervention for survivors of cancer delivered within a community-based exercise programme



MedEx IMPACT

MedEx
IMproved **P**hysical
Activity
after **C**ancer **T**reatment



MedEx IMPACT Intervention

Patient-Centred

Evidenced-Based

Theoretically-Informed

Home Exercise Programme



Physical Activity Information Sessions



1:1 Exercise Consultation



MedEx IMPACT Home Exercise Programme



Exercise Manual



Pedometer



PA Log

MedEx IMPACT Intervention

Home Exercise Programme



Physical Activity Information Sessions



1:1 Exercise Consultation



Two-Arm Non-Randomised Trial



Usual Care Control Group

Supervised Exercise Classes

VS



MedEx IMPACT Intervention

Supervised Exercise Classes

+

Home Exercise Programme

Physical Activity Info Sessions

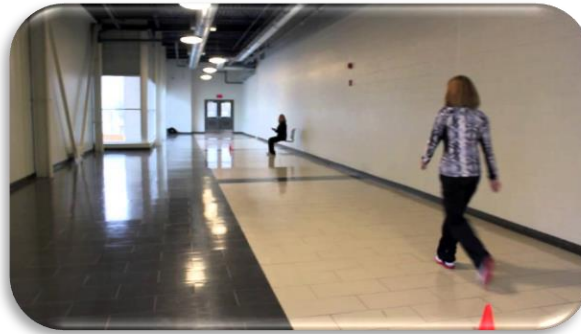
1:1 Exercise Consultation

Primary & Secondary Outcomes



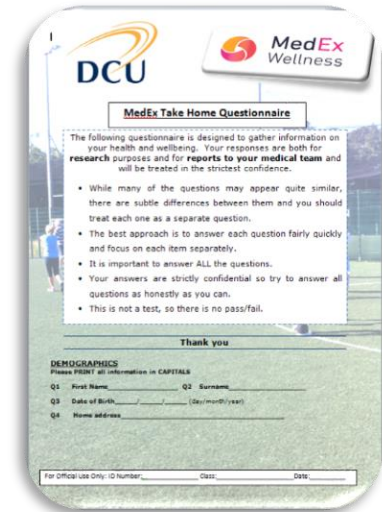
**Physical Activity
Levels**

ActivPal



**Cardiorespiratory
Fitness**

6 Minute Time Trial



**Health-related
Quality of Life**

FACT-G Questionnaire

T1: Baseline Assessment (n=191)

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graph TD; T1[T1: Baseline Assessment (n=191)] --> UCCG[Usual Care Control Group (n=87)]; T1 --> IG[Intervention Group (n=104) MedEx IMPACT Intervention]; UCCG --> T2[T2: Re-Assessment at 3 months (programme completion)]; IG --> T2; T2 --> T3[T3: Re-assessment at 6 months (3 months post-programme completion)];
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Usual Care Control Group
(n=87)

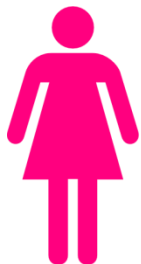
Intervention Group (n=104)
MedEx IMPACT Intervention

T2: Re-Assessment at 3 months (programme completion)

T3: Re-assessment at 6 months (3 months post-programme completion)

Results

191 survivors of cancer were recruited
Intervention Group (IG) – n = 104
Control Group (CG) – n = 87



72.8%
(n=139)

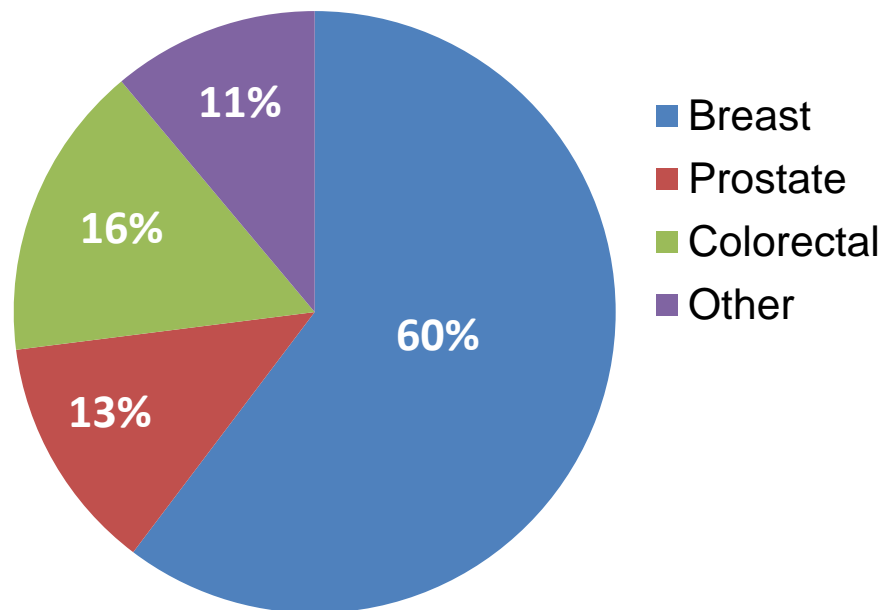


27.2%
(n=52)

Age Profile (Mean ± SD; Range)

56 ± 10.5 (29-82)

Cancer Diagnosis



Programme & Trial Participation Rates

Adherence to the Supervised
Exercise Classes = 66% ($\pm 25\%$)

6-Month Trial Participation Rates

51% Completed the Trial (n=98)	46% Dropped Out of the Trial (n=88)	3% Lost to Follow-Up (n=5)
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Barriers to Programme & Trial Participation

Barriers to Programme Participation	No. of Times Barrier was cited
Medical Appointments	17
Holidays	14
Sickness	12

Barriers to Trial Participation	No. of Times Barrier was cited
Physical limitations due to ill health/injury	16
No reason given	15
Work commitments	6

Statistical Analysis



Results



Physical Activity Levels

Mean Daily Steps

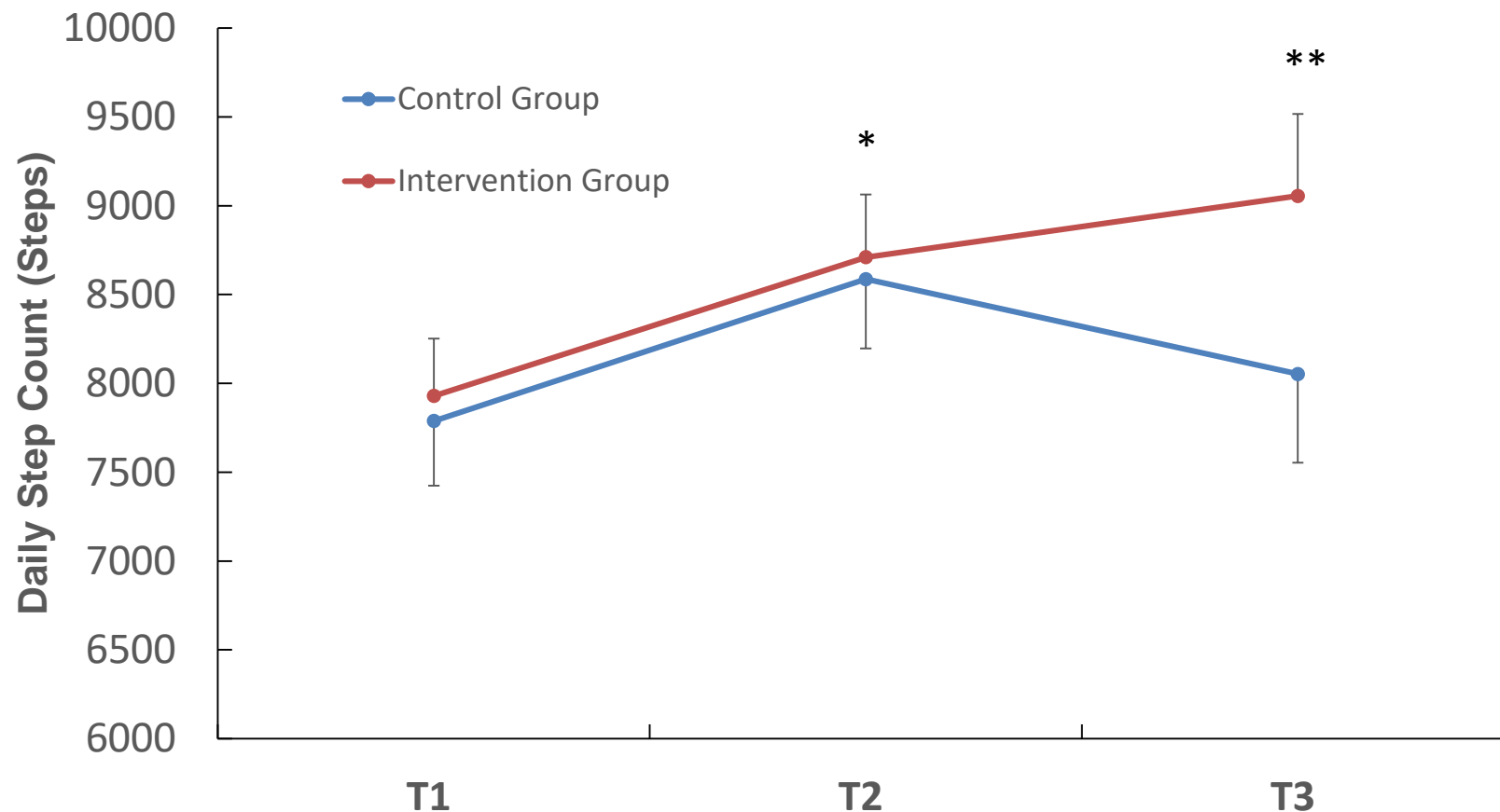


Figure 1. Daily step count for the control and intervention groups at baseline (T1) and 3 (T2) and 6 (T3) month follow-up (n=171). Data presented as estimated marginal means \pm standard error. *Denotes a statistically significant main effect for time for both groups from T1-T2 ($p < .01$); **Denotes a statistically significant main effect for time for the IG only from T1-T3 ($p < .01$)

Physical Activity Levels

Light-Intensity Physical Activity (LIPA)

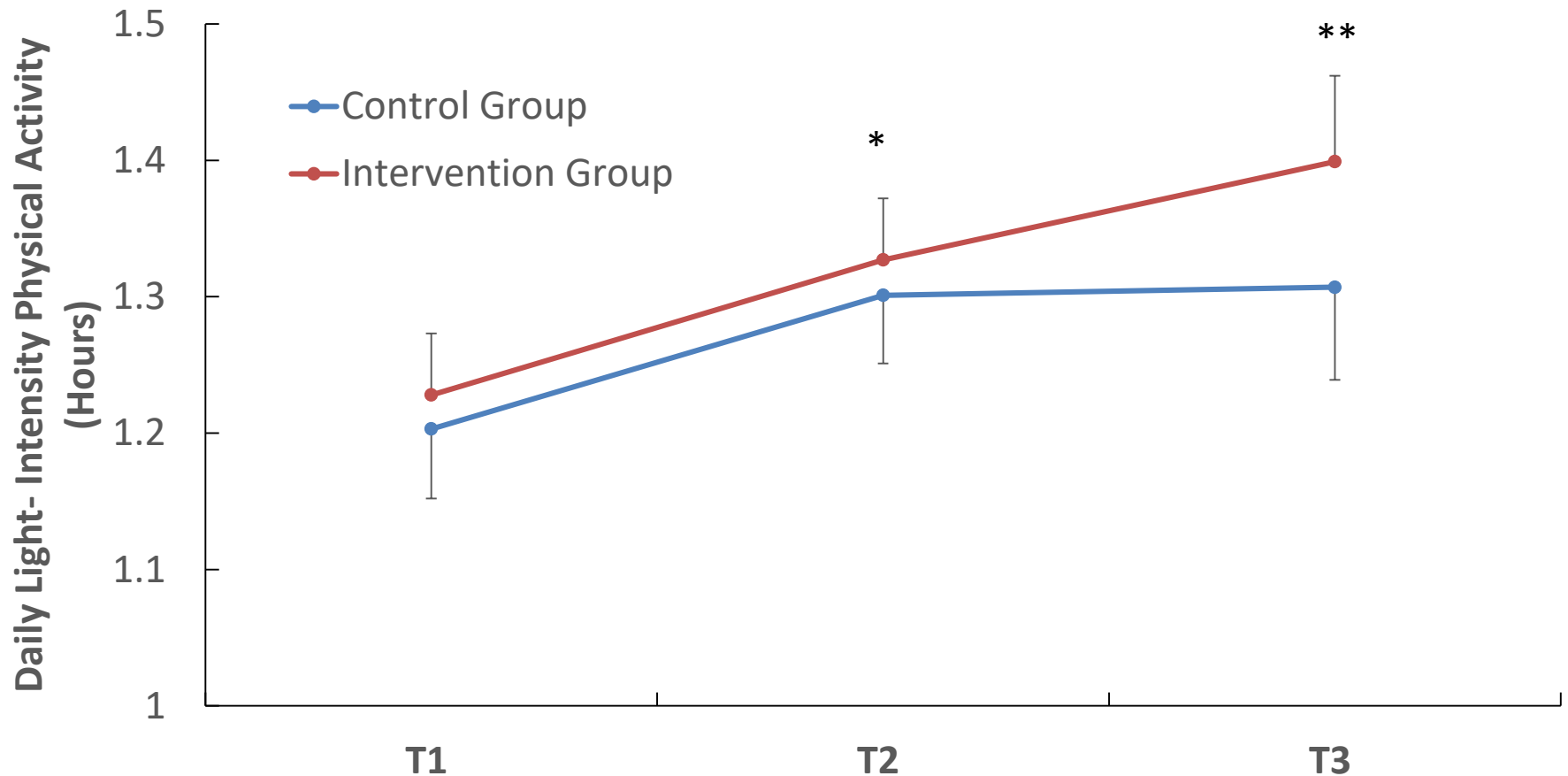


Figure 2. Daily hours of light-intensity physical activity for the control and intervention groups at baseline (T1), and 3 (T2) and 6 (T3) month follow-up (n=171). Data presented as estimated marginal means \pm standard error. ($p < .05$) *Denotes a statistically significant main effect for time for both groups from T1-T2; **Denotes a statistically significant main effect for time for the IG only from T1-T3 ($p < .01$)

Cardiorespiratory Fitness

6 Min Time Trial Score

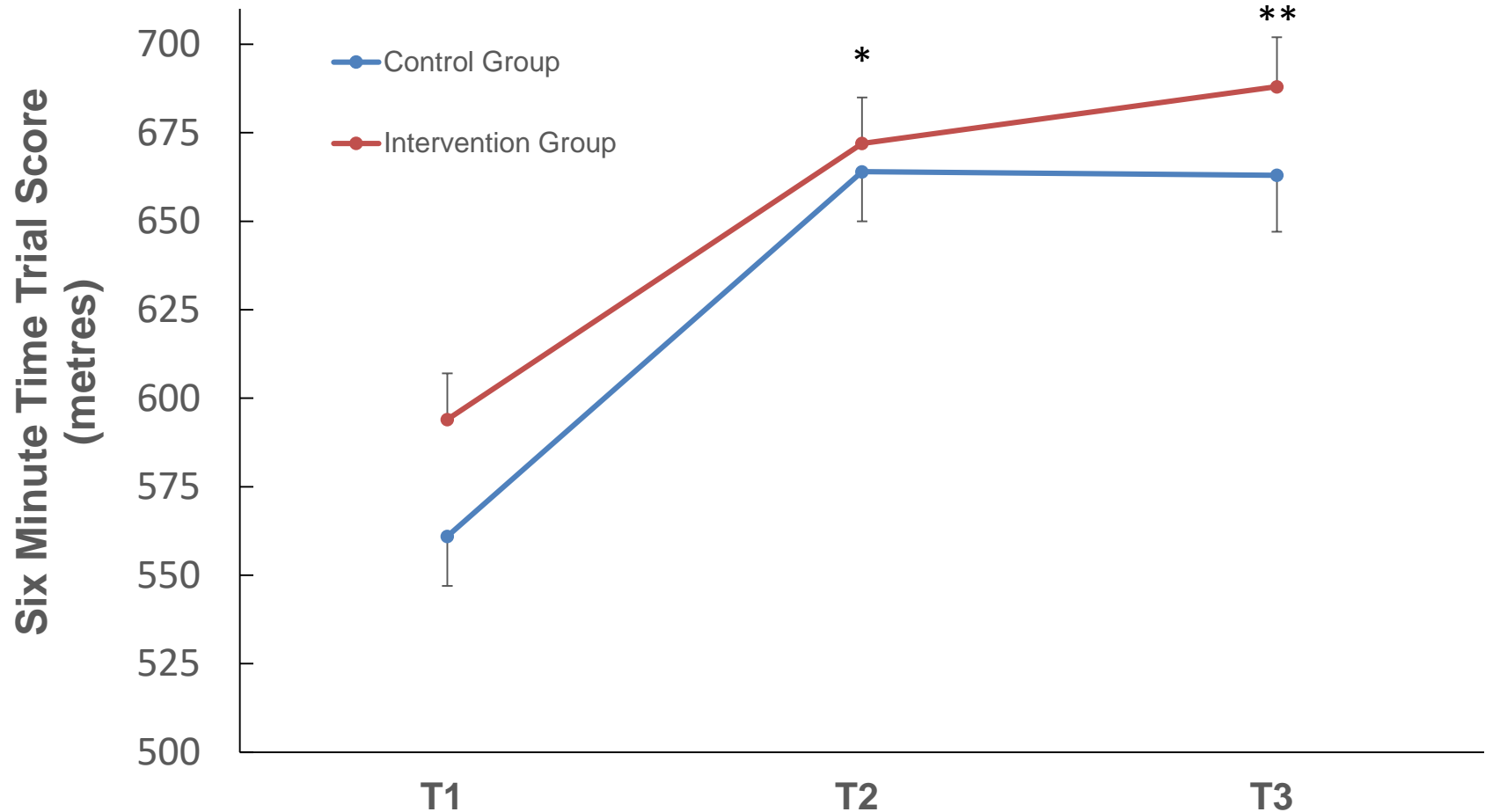


Figure. Six minute time trial score for the control and intervention groups at baseline (T1) and 3 (T2) and 6 (T3) month follow-up (n=182). Data presented as estimated marginal means \pm standard error. *Denotes a statistically significant main effect for time for both groups from T1-T2 ($p < .01$); **Denotes a statistically significant main effect for time for both groups from T1-T3 ($p < .01$)

HRQoL

FACT-G Score

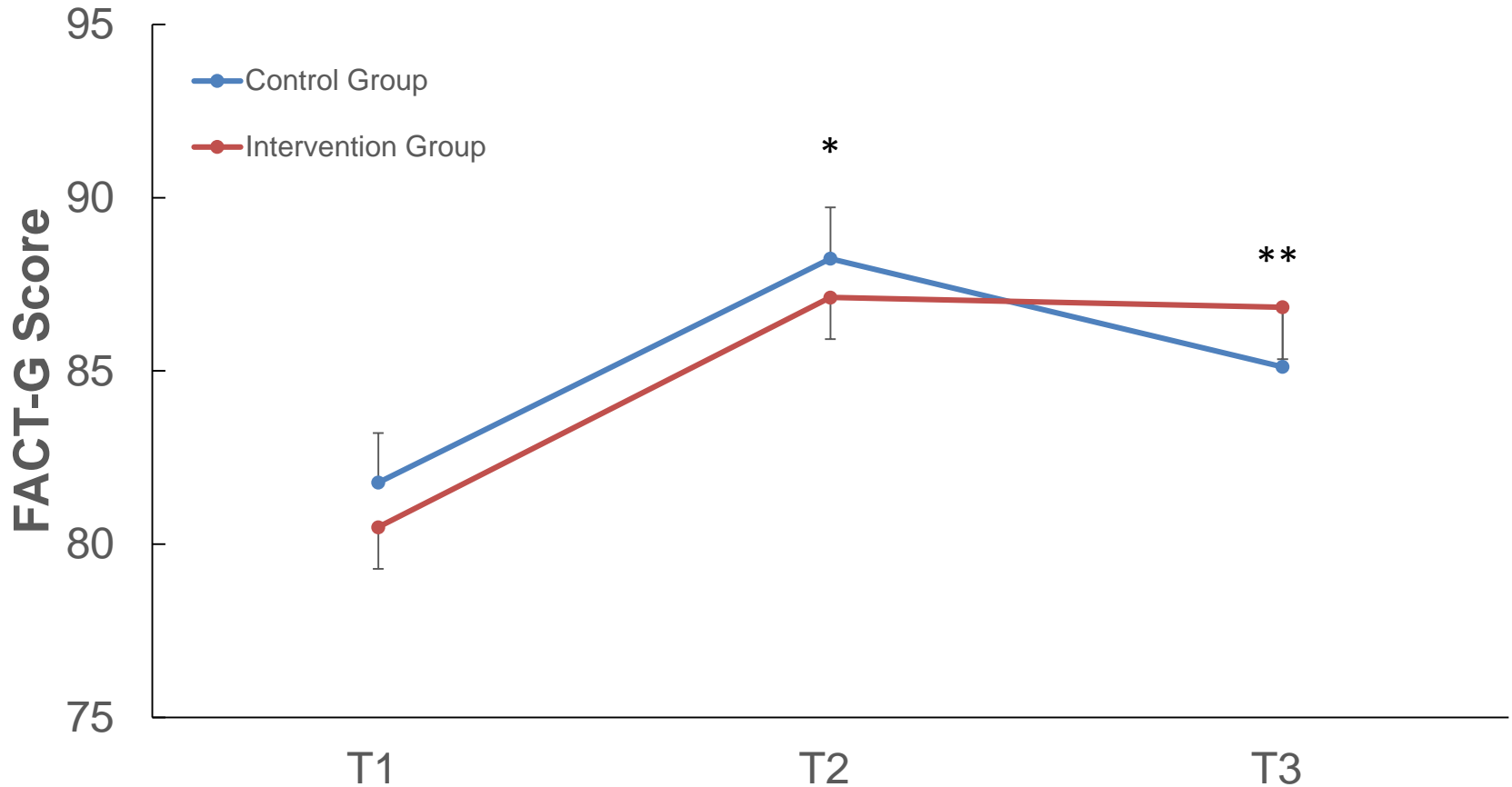


Figure 4. FACT-G score for the control and intervention groups at baseline (T1) and 3 (T2) and 6 (T3) month follow-up (n=158). Data presented as estimated marginal means \pm standard error. *Denotes a statistically significant main effect for time for both groups from T1-T2 ($p < .01$); **Denotes a statistically significant main effect for time for the intervention group from T1-T3 ($p < .01$)



This study demonstrates the feasibility of delivering a PA BC intervention within an existing community-based programme.

Participation in the 12-week community-based exercise rehabilitation programme significantly increased cancer survivors' objectively measured daily step count and LIPA, CRF and HRQoL.

Preliminary evidence for the effectiveness of MedEx IMPACT in maintaining improvements in objectively measured daily steps and LIPA, CRF and HRQoL at 6 months.

Limitations



- Lack of non-exercise control group
- Recruitment
- Heterogeneity within the recruited cohort

Implications of the Research

- **12 month follow-up data is currently being analysed** and will provide further information regarding the potential effectiveness of the MedEx IMPACT intervention.
- A process evaluation was also conducted within this study and provided valuable information regarding **how the intervention could be optimised**. Implementation of these recommendations is currently underway.
- As this study was conducted at the interface where research meets service delivery, it maximized **the potential for the translation of knowledge into immediate societal benefits**.

Implications of the Research

Community-based exercise programmes could provide a **scalable, sustainable** solution to address the negative side effects experienced during cancer treatment and support cancer survivors to **optimise their physical and psychosocial well-being.**





MedEx
Wellness



**Irish
Cancer
Society**



DCU

- Participants of the MedEx Move On programme
- PhD Supervisors: Prof. Niall Moyna, Dr. Bróna Furlong, Prof. Catherine Woods
- Data Collection: Dr. Lisa Loughney, Fiona Skelly; The MedEx Research Team
- Funding: Irish Cancer Society

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References

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Animated images are sourced from The Noun Project.

Thank You



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I am thankful for my struggle
because without it, I wouldn't
have stumbled across my
strength

ek daily walk

ute

