

## AIMS

- To increase the overall fitness and health of breast and bowel cancer survivors using a trainer guided and self-administered fitness program
- To assess impact on quality of life of cancer survivors and their ability to sustain the program long term.
- To assess applicability of the program within the community.

## INTRODUCTION

It has been shown that physical activity helps improve cancer survival rate and recurrence if a minimum effective physical activity level is reached (>9-15 MET/hrs per week) and maintained over time.

Currently, physical activity programmes are not prescribed as part of usual care in cancer rehabilitation practice. The Irish Cancer Society has run 3 pilot studies to assess the efficacy and safety of a structured physical activity programme delivered in the community and at home.

## RESULTS

The programme was delivered to 129 cancer survivors (breast and colorectal) in 3 separate pilots.

Fitness improved significantly at 15 weeks, with all groups reaching at least 18 MET/hrs/week and lifting at least 1,000lbs in a session (p<0.001).

Body fat reduced from 34% to 32% (p<0.001) on average for all groups.

Overall volume lifted at programme end similar with all groups.

There was no exacerbation of lymphoedema among those at risk or those with it from the start. In fact bilateral limb measurements decreased over time.

In all groups the overall score for the WHO QOL brief questionnaire increased, showing increased health satisfaction.

Retention was high in all groups with at least 86% participating at 15 weeks.

There was evidence that fitness can be sustained after one year from the start of the programme.

### References:

Survival and recurrence rates found in: Holmes et al 2005; Irwin et al 2008; Holick et al 2008;

CSTAR reports 2 and 3: Segurado, R and Grant T, 2012; 2011

CSTAR report 1: Crispino, G and Grant T 2011.

### Acknowledgements:

The authors wish to thank the cancer survivors for their participation in the program and in the research.

## METHODS

The Murphy Programme is a 15 week training programme involving walking and resistance training followed by a further 15 week progression phase and a one-year follow up. Eligible participants are 12 months post diagnosis with medical clearance. Primary study endpoint are: markers of physical function (METs/hrs per week, VO<sub>2</sub>, Pace, Body Fat %), safety, change in quality of life and participant retention. Case studies were assessed for qualitative insight.

The walking programme is based around the concept of METs (metabolic equivalents of energy expenditure). Participants undertook a baseline fitness test (1 mile time trial) upon completion of which a personalised walking schedule was designed (Murphy's formula). Participants were monitored on a weekly basis and the intensity of their training assessed and increased every 3 weeks. Over the 15-weeks period participants increased the amount of time and pace at which they were walking to achieve the goal of 9 MET/hours per week.

In the resistance training programme, breast cancer survivors performed 10 upper body exercises twice a week (2 sets per session), colorectal cancer survivors performed 10 upper and 10 lower body exercises twice a week (1 set per session) using light weights to develop the major muscles. Participants attended a group-supervised class once a week and completed a second session in their own time. During progression phase both groups performed upper and lower body exercises.

The programme was evaluated using both quantitative and qualitative methods. The primary analysis of the study was to evaluate the effectiveness of the walking and resistance training programme. Primary indicators were Body fat%, MET/hours per week and volume of weight lifted. Secondary indicators included quality of life and health satisfaction measures measured using the WHO QOL Brief questionnaire.

## CONCLUSIONS

The programme proved safe and effective, manageable and sustainable overtime. One year follow up shows that survivors can adapt this programme into their everyday routine. Case studies revealed the positive impact on daily activities and on the management of lymphoedema.

Social groups and peer identity were indirect benefits of the programme. A web app has been developed to support the management of the programme and is currently under testing.

Retention was high in all groups with at least 86% participating at 15 weeks.

## Quotes

"My physical energy is fully restored and my psychological outlook is positive and upbeat"

"I can lift my children again, they are 5 and 6".  
 "Now I can carry my shopping in comfort and travel without assistance with luggage"

"I can put my t-shirt on without getting help, I can reach into presses and under beds"

"Now I do weights when the lymphoedema arm is tight and painful and it helps greatly".

"The programme has given me back what I believe cancer has rudely taken away".

## Breast results

