

# Empower – Menopause and Cancer Survivorship Pathway

## Lifestyle Supports: Exercise

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Survivorship & Community Manager – Irish Cancer Society**



**CANCER  
DIAGNOSIS**



**HORMONE  
THERAPY**



**SURGERY**



**BONE MARROW  
TRANSPLANTATION**



**CHEMOTHERAPY**



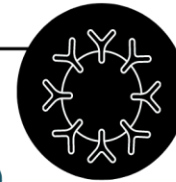
**CANCER  
TREATMENT  
OPTIONS**



**TARGETED  
THERAPY**



**RADIATION  
THERAPY**



**IMMUNOTHERAPY**

# Common side effects during cancer treatment\*



Dry mouth



Loss of appetite



Taste changes



Nausea and vomiting



Constipation or diarrhoea



Hair loss



Mouth sores



Skin and nail changes



Thinking and memory changes



Nerve and muscle effects



Sex and fertility



Blood impact e.g. anaemia, infections



Changes in hearing



Watery eyes

\*Source: Cancer Council Australia

# Menopausal Symptoms

- Hot flushes/night sweats
- Vaginal dryness
- Decreased sex drive
- Mood changes
- Poor concentration
- Aches and pains
- Insomnia (sleeplessness)/sleep disturbances/fatigue
- Low energy
- Weight gain
- Bone thinning (osteoporosis)
- Texture of hair and skin changes
- Headaches and aching joints



A CHEMOTHERAPY SCHEDULE MIGHT LOOK LIKE ONE OF THESE:

	Mon	Tues	Wed	Thu	Fri	Sat	Sun
Week 1	Chemotherapy →				No chemo →		
Week 2	No chemo →						
Week 3	No chemo →						
Week 4	No chemo →						
Week 5	Chemotherapy →				No chemo →		

	Mon	Tues	Wed	Thu	Fri	Sat	Sun
Week 1	Chemo	No chemo →					
Week 2	No chemo →						
Week 3	Chemo	No chemo →					
Week 4	No chemo →						
Week 5	Chemo	No chemo →					

	Mon	Tues	Wed	Thu	Fri	Sat	Sun
Week 1	Chemo	No chemo →					
Week 2	No chemo →						
Week 3	No chemo →						
Week 4	No chemo →						
Week 5	Chemo	No chemo →					





### Healthcare professionals along the patient journey



# Vs. pathway for a marathon runner....



➔

KIMELZUNDELSTEIN VEGASPORT

### FULL MARATHON TRAINING PLAN

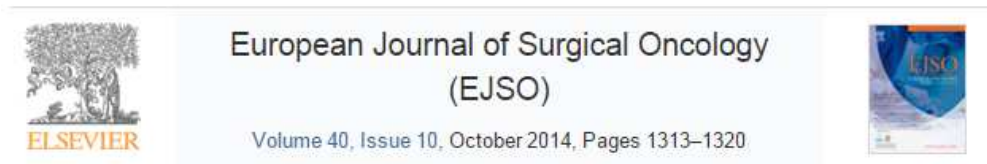
WEEK	PHASE	M	T	W	T	F	S	S
1	Build	Workout run 100 minutes	Tempo run 60 minutes	Rest / Interval Cross-Train	Speedwork 15 miles	Workout run 60 minutes	Rest day	1:02 miles 10 x 1 mile
2	Build	Workout run 100 minutes	Tempo run 60 minutes	Rest / Interval Cross-Train	Speedwork 15 miles	Workout run 60 minutes	Rest day	1:02 miles 10 x 1 mile
3	Build	Workout run 100 minutes	Tempo run 60 minutes	Rest / Interval Cross-Train	Speedwork 15 miles	Workout run 60 minutes	Rest day	1:02 miles 10 x 1 mile
4	Recover	Workout run 100 minutes	Tempo run 60 minutes	Rest day	Cross-Training	Workout run 60 minutes	Rest day	1:02 miles 10 x 1 mile
5	Build	Workout run 100 minutes	Tempo run 60 minutes	Rest / Interval Cross-Train	180 Repetitions 15 miles	Workout run 60 minutes	Rest day	1:02 miles 10 x 1 mile
6	Build	Workout run 100 minutes	Tempo run 60 minutes	Rest / Interval Cross-Train	Speedwork 15 miles	Workout run 60 minutes	Rest day	1:02 miles 10 x 1 mile
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14	Peak	Workout run 100 minutes	Tempo run 60 minutes	Rest / Interval Cross-Train	180 Repetitions 15 miles	Workout run 60 minutes	Rest day	1:02 miles 10 x 1 mile
15	Peak	Workout run 100 minutes	Rest Day Prep 100 to 120 min	Rest day	Rest Day Prep 100 to 120 min	Workout run 60 minutes	Rest day	1:02 miles 10 x 1 mile
16	Peak	Workout run 100 minutes	Rest Day Prep 100 to 120 min	Rest day	Rest Day Prep 100 to 120 min	Workout run 60 minutes	Rest day	RACE DAY

Get physically & psychologically prepared for the “event”

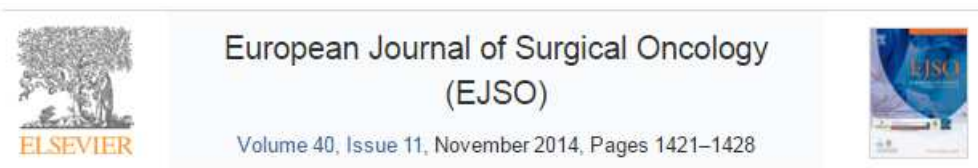




# Cancer treatment reduces fitness



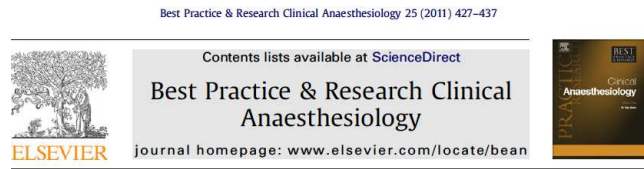
The effect of neoadjuvant chemotherapy on physical fitness and survival in patients undergoing oesophagogastric cancer surgery



The effects of neoadjuvant chemoradiotherapy on physical fitness and morbidity in rectal cancer surgery patients

M.A. West<sup>a, b, f</sup>, L. Loughney<sup>a, b, d</sup>, C.P. Barben<sup>a</sup>, R. Sripadam<sup>e</sup>, G.J. Kemp<sup>f</sup>, M.P.W. Grocott<sup>b, c, d</sup>, S. Jack<sup>b, d</sup>

(West et al 2014, Jack et al 2014)



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Perioperative cardiopulmonary exercise testing  
in the elderly

M. West, Clinical Research Fellow<sup>a,\*</sup>, S. Jack, Consultant Clinician Scientist<sup>a</sup>,  
M.P.W. Grocott, Professor of Anaesthesia and Critical Care Medicine<sup>b</sup>

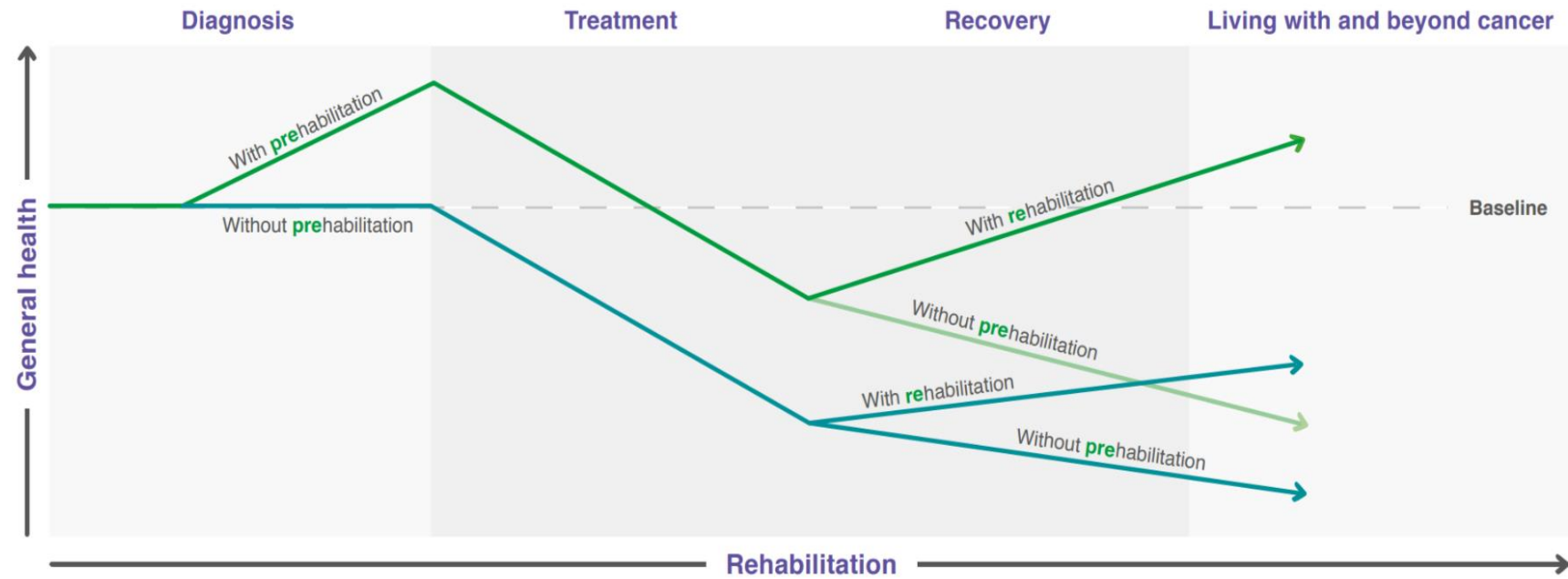
## Review

# Cardiopulmonary exercise testing for the evaluation of perioperative risk in non-cardiopulmonary surgery

Philip J Hennis,<sup>1</sup> Paula M Meale,<sup>2</sup> Michael P W Grocott<sup>1,3,4</sup>

**Appx. 6000 patients  
in all major  
specialties**

# IMPROVING CANCER CARE BEFORE TREATMENT EVEN STARTS



## Preventative

Prehabilitation includes screening, assessment and, where appropriate, the development of a Personalised Prehabilitation Care Plan (PPCP) as part of an overall care plan.

This includes exercise, nutrition and psychological support interventions based on need, with continual monitoring and evaluation. The patient may go through this stage several times in preparation for different treatments.

## Restorative

Prehabilitation can significantly improve the patient's ability to cope with effects of treatment of all kinds, including surgery, chemotherapy, radiotherapy, immunotherapy and treatment for palliative care.

People with treatable but not curable cancer may also benefit. It can help reduce the amount of time spent in hospital and lead to better quality of life.

Following treatment, the focus is restorative. Ideally, the patient will have an outcome assessment and will continue smoothly into rehabilitation and beyond.

By giving all patients, including people with treatable but not curable cancer a head-start, we can optimise their recovery from the effects of treatment.

## Supportive and/or palliative

At this stage, we continue to reinforce the core principles of the programme, with health and wellbeing activities and cancer care reviews.

The patient can enjoy lifelong benefits from behaviours learned earlier. If there is further treatment, the patient goes through the cycle again.

# Lifestyle

Eating a **healthy, balanced diet and exercising regularly** – maintaining a healthy weight and building more exercise into your daily routine can improve some menopausal symptoms



# Physical Activity

- Physical activity is defined as any movement that uses skeletal muscles and requires more energy than resting.
- Physical activity can include **walking, running, dancing, biking, swimming, performing household chores, exercising, and engaging in sports activities.**

# Sedentary Behaviour

- Sedentary behavior is any waking behaviour characterized by an energy expenditure while sitting, reclining, or lying down. Examples of sedentary behaviours include most office work, driving a vehicle, and **sitting while watching television**.
- A person can be physically active and yet spend a substantial amount of time being sedentary.

We should all aim to achieve the following:

**30** Minutes a Day  
which can be  
3 x 10 minute sessions

**5** Days a Week

Perform at a Moderate Intensity

- You should feel warmer
- Breathe faster
- Raise your heart rate

Try Physical Activities such as:

**Walking / Running / Cycling / Swimming / Gardening**





# Exercise Intensity

Light	Moderate	Vigorous
Walking slowly	Walking very brisk	Hiking
Sitting using computer	Cleaning heavy (washing windows, hoovering, mopping)	Jogging
Standing light work (cooking, washing dishes)	Cutting the lawn	Shovelling
Fishing sitting	Light cycling	Carrying heavy loads
Playing most instruments	Badminton	Fast cycling
	Tennis doubles	Basketball/soccer game
		Tennis singles









# Effects of Exercise on Health-Related Outcomes in Those with Cancer

## What can exercise do?

- **Prevention of 7 common cancers\***  
Dose: 2018 Physical Activity Guidelines for Americans: 150-300 min/week moderate or 75-150 min/week vigorous aerobic exercise.
- **Survival of 3 common cancers\*\***  
Dose: Exact dose of physical activity needed to reduce cancer-specific or all-cause mortality is not yet known; Overall more activity appears to lead to better risk reduction.

\*bladder, breast, colon, endometrial, esophageal, kidney and stomach cancers  
\*\*breast, colon and prostate cancers

Overall, avoid inactivity, and to improve general health, aim to achieve the current physical activity guidelines for health (150 min/week aerobic exercise and 2x/week strength training).

Outcome	Aerobic Only	Resistance Only	Combination (Aerobic + Resistance)
<b>Strong Evidence</b>	Dose	Dose	Dose
 <b>Cancer-related fatigue</b>	3x/week for 30 min per session of moderate intensity	2x/week of 2 sets of 12-15 reps for major muscle groups at moderate intensity	3x/week for 30 min per session of moderate aerobic exercise, plus 2x/week of resistance training 2 sets of 12-15 reps for major muscle groups at moderate intensity
 <b>Health-related quality of life</b>	2-3x/week for 30-60 min per session of moderate to vigorous	2x/week of 2 sets of 8-15 reps for major muscle groups at a moderate to vigorous intensity	2-3x/week for 20-30 min per session of moderate aerobic exercise plus 2x/week of resistance training 2 sets of 8-15 reps for major muscle groups at moderate to vigorous intensity
 <b>Physical Function</b>	3x/week for 30-60 min per session of moderate to vigorous	2-3x/week of 2 sets of 8-12 reps for major muscle groups at moderate to vigorous intensity	3x/week for 20-40 min per session of moderate to vigorous aerobic exercise, plus 2-3x/week of resistance training 2 sets of 8-12 reps for major muscle group at moderate to vigorous intensity
 <b>Anxiety</b>	3x/week for 30-60 min per session of moderate to vigorous	Insufficient evidence	2-3x/week for 20-40 min of moderate to vigorous aerobic exercise plus 2x/week of resistance training of 2 sets, 8-12 reps for major muscle groups at moderate to vigorous intensity
 <b>Depression</b>	3x/week for 30-60 min per session of moderate to vigorous	Insufficient evidence	2-3x/week for 20-40 min of moderate to vigorous aerobic exercise plus 2x/week of resistance training of 2 sets, 8-12 reps for major muscle groups at moderate to vigorous intensity
 <b>Lymphedema</b>	Insufficient evidence	2-3x/week of progressive, supervised, program for major muscle groups does not exacerbate lymphedema	Insufficient evidence
<b>Moderate Evidence</b>			
 <b>Bone health</b>	Insufficient evidence	2-3x/week of moderate to vigorous resistance training plus high impact training (sufficient to generate ground reaction force of 3-4 time body weight) for at least 12 months	Insufficient evidence
 <b>Sleep</b>	3-4x/week for 30-40 min per session of moderate intensity	Insufficient evidence	Insufficient evidence

Citation: [bit.ly/cancer\\_exercise\\_guidelines](https://bit.ly/cancer_exercise_guidelines)

Moderate intensity (40%-59% heart rate reserve or  $VO_2R$ ) to vigorous intensity (60%-89% heart rate reserve or  $VO_2R$ ) is recommended.

Exercise is Medicine | AMERICAN COLLEGE of SPORTS MEDICINE



- **Cancer Related Fatigue**

- Aerobic: **3x/week for 30 min** per session of moderate intensity
- Resistance: **2x/week** of **2 sets** of **12-15** reps for major muscle groups of moderate intensity



- **Health Related Quality of Life**

- Aerobic: **3x/week for 30-60** min per session of moderate intensity
- Resistance: **2x/week** of **2 sets** of **8-15** reps for major muscle groups of moderate to vigorous intensity



- **Physical Function**

- Aerobic: **3x/week for 30-60** min per session of moderate intensity
- Resistance: **2x/week** of **2 sets** of **8-15** reps for major muscle groups of moderate to vigorous intensity



- **Anxiety**
- Aerobic: **3x/week** for **30-60** min per session of moderate to vigorous intensity
- Resistance: Insufficient evidence



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### **Depression**

Aerobic: **3x/week** for **30-60** min per session of moderate to vigorous intensity  
Resistance: **2x/week** of **2** sets of **8-15** reps for major muscle groups of moderate intensity



### **Lymphedema**

Aerobic: Insufficient evidence  
Resistance: **2-3x/week** of progressive supervised programme for major muscle groups does not exacerbate lymphedema

## How to measure physical activity levels?

### Questionnaires vs. physical activity monitors

90% of people with cancer (150min/week of moderate PA) – self reported

Vs.

<50% using PA monitors

**Using physical activity monitors/FIBITS may be helpful**



**Ability to walk 150 min/week** and undertake resistance/strength exercise 2/week

**Needs support** based on disease/TX/side effects/co-morbidities

**Inactive/sedentary/co-morbidities/contemplative/low self-efficacy** or TX related indication (i.e. Major surgery)



**Universal**

- Exercise booklets
- Exercise webinars
- Healthy lifestyle websites
- Self-management webinars

**Self Management**

**Targeted**

- Group/1-to-1 support in community aiming to increase frequency, intensity and duration to get as near to 150 min/week by surgery/TX.
- Some supervision + structured exercise for those sufficiently active: 30-150 min/wk or low self-efficacy

**Community Referral**

**Specialised**

Fully supervised exercise intervention delivered by a qualified cancer exercise professional

**Supervised Support**

# UNIVERSAL PROGRAMME: Case study 1

**Gender:** Female

**Age:** 41

**Treatment:** Neoadjuvant chemoradiotherapy and surgery

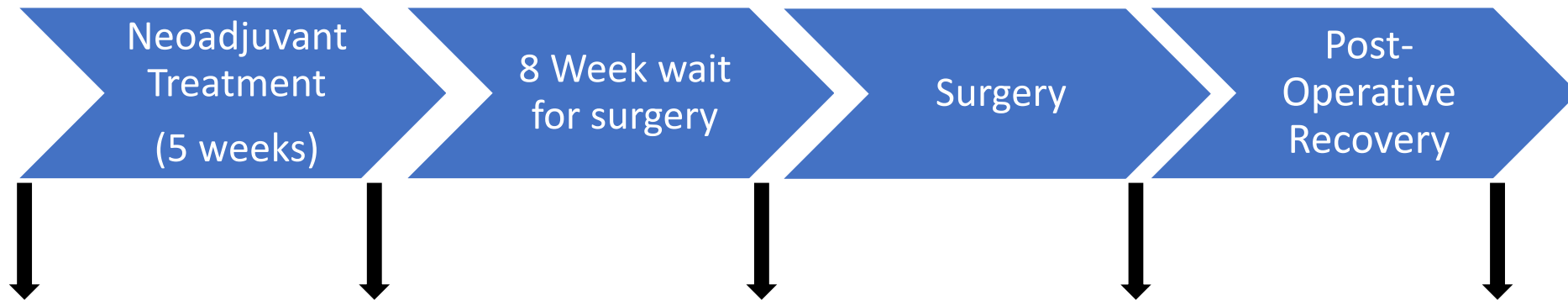
**Comments:** Healthy lady who continued to work during treatment.

*Enjoys running and cycling*



## Exercise plan to follow at home

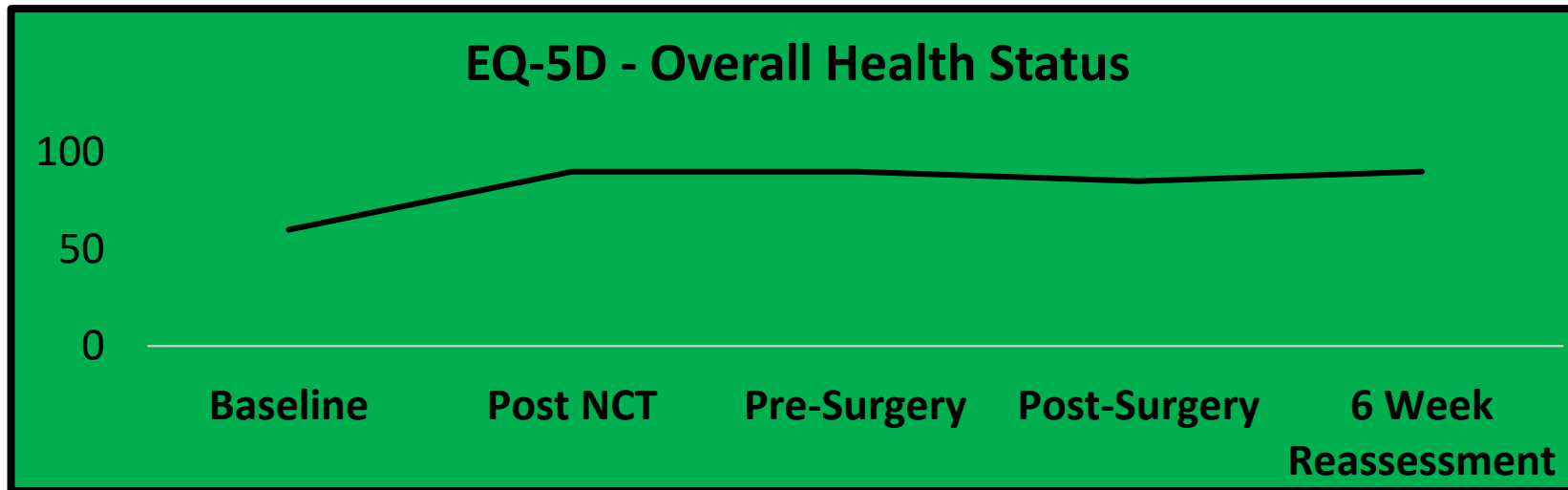
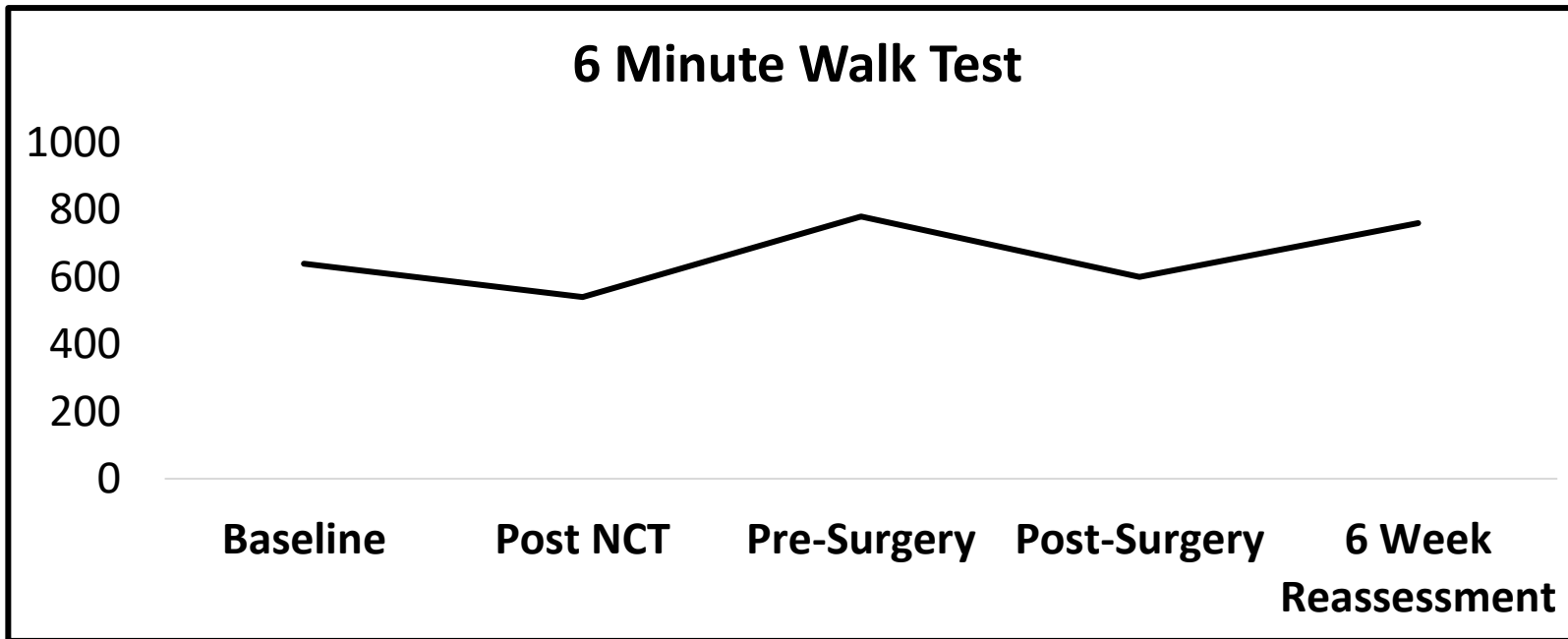
FITT	During Neoadjuvant Treatment	Time Window between treatment and surgery	Post-Surgery
<b>Frequency</b>	2/week	3/week	2-3/week
<b>Intensity</b>	Moderate-High	Moderate-High	Moderate (as far as week 8 post-surgery)
<b>Time</b>	Aerobic: 40 min Resistance: 20 min	Aerobic: 40 min Resistance: 20 min	Aerobic: start at 20 min and increase each week by 5 min (if possible) aiming to achieve same as pre-operatively
<b>Type</b>	Home based	Home based	Home based



**SELF-ASSESSMENTS**



# Results



# TARGETED PROGRAMME: Case study 2

**Gender:** Female

**Age:** 50

**Treatment:** Neoadjuvant chemotherapy and surgery

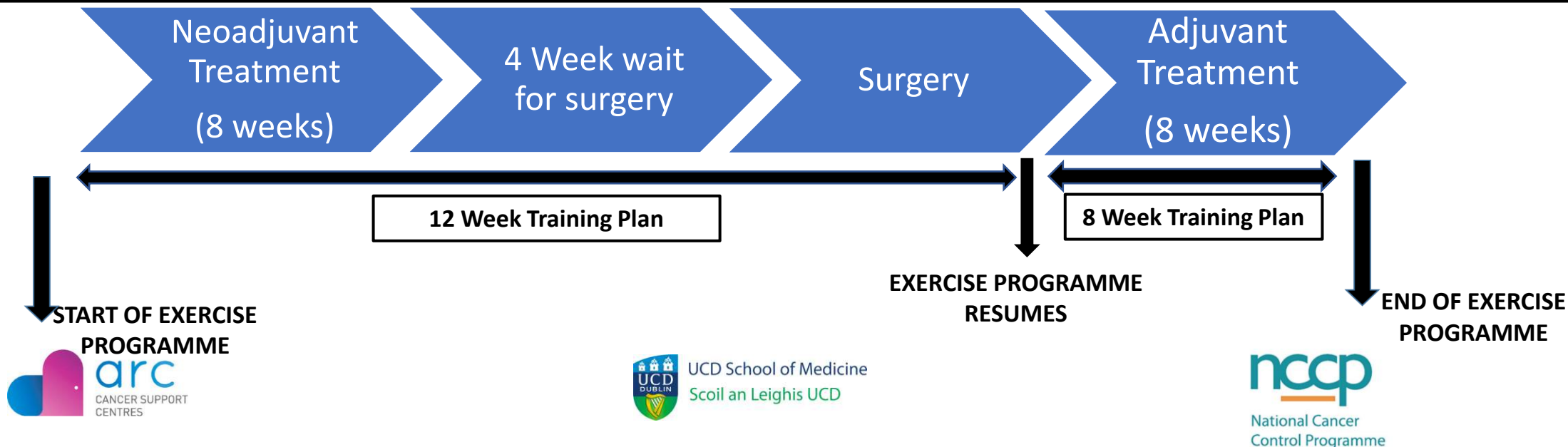
**Comments:** Hypertension, sedentary lifestyle, current smoker

Community Referral

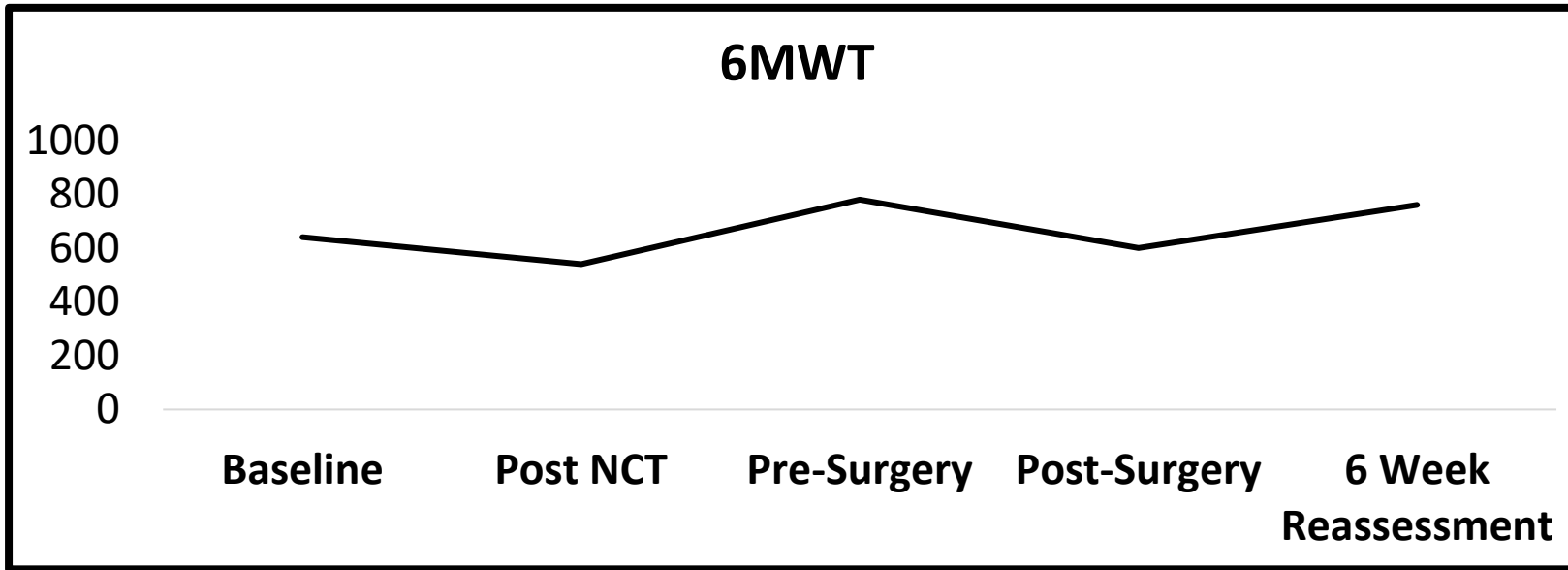


## Supervised exercise plan to follow in the community gym

FITT	During Neoadjuvant Treatment	Time Window between treatment and surgery	Post-Surgery
Frequency	2/week	3/week	2-3/week
Intensity	Moderate-High	Moderate-High	Moderate (until week 8 post-surgery)
Time	Aerobic: 40 min Resistance: 20 min	Aerobic: 40 min Resistance: 20 min	Aerobic: start at 20 min and increase each week by 5 min (if possible) aiming to achieve same as pre-operatively
Type	Gym based	Gym based	Gym based

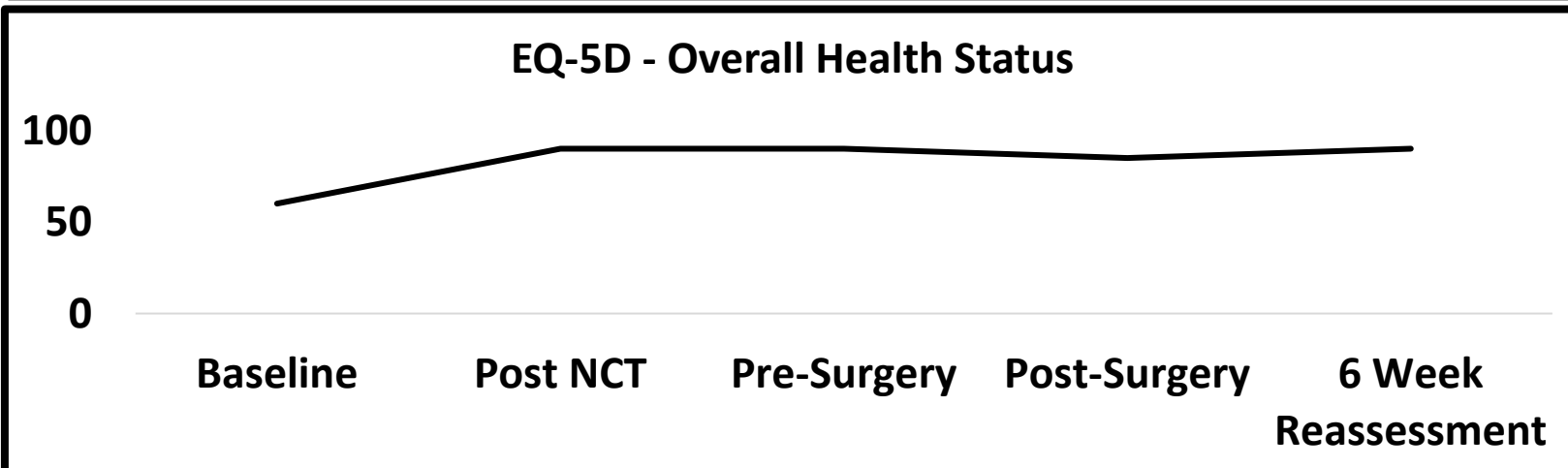


# Results:



*“Following my diagnosis, I joined a programme for about 10 weeks starting before my cancer treatment and ran right up to my surgery. The help and support I got was exceptional.*

*The physical and emotional benefits that I got from the programme were immense. It clearly set me up to be in the best condition possible for my op and beyond. Four weeks after my surgery, I have now started the post-op exercise programme..I am now fit and don't smoke.”*



# SPECIALISED PROGRAMME: Case study 3

**Gender:** Female

**Age:** 55

**Cancer:** Rectal

**Treatment:** Completed  
neoadjuvant and awaiting surgery

**Comments:** Experiencing negative  
side effects from treatment which  
are impacting day-to-day tasks.

*T2D, Hypertension, ex-smoker,  
sedentary lifestyle (spends the  
waking day watching TV), lacks  
confidence since diagnosis*

Supervised Support

# Partnership

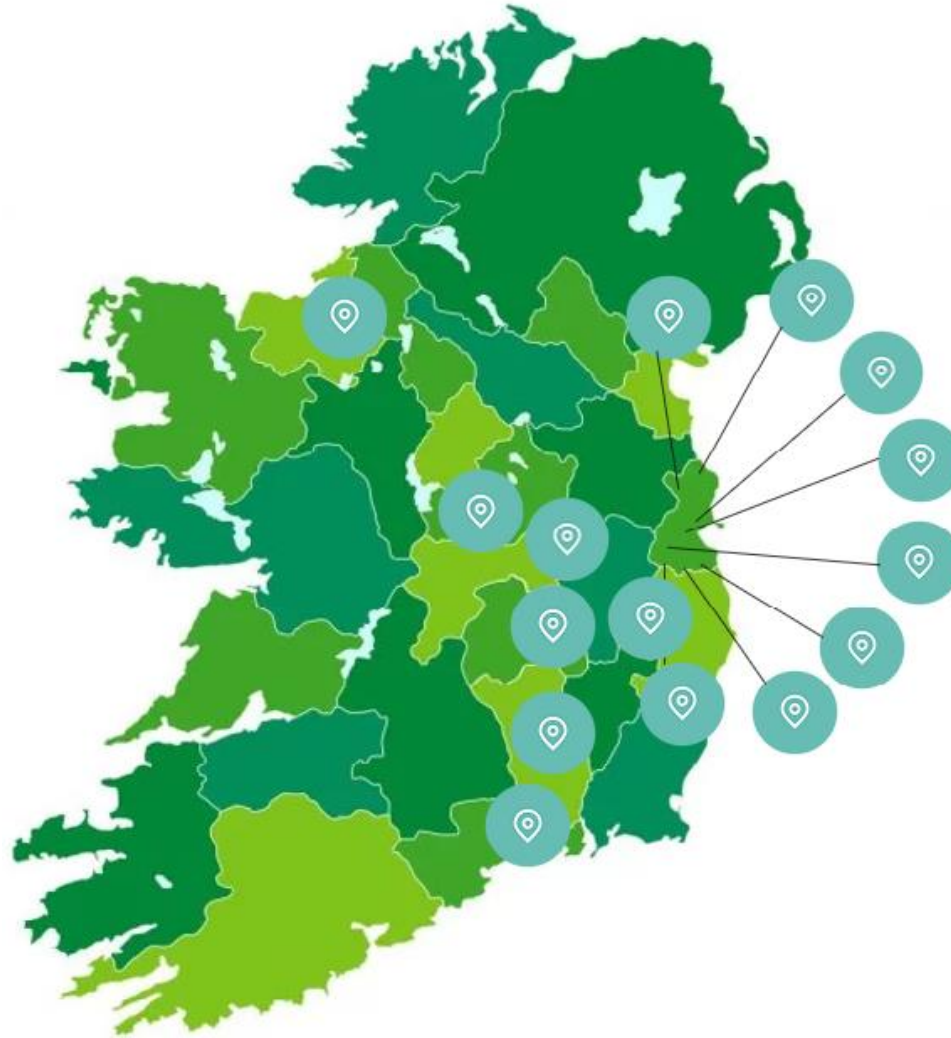




**Community-based Exercise rehabilitation**  
**Caters for individuals with a range of chronic diseases / abilities**



# Onsite Exercise







# Online Exercise



# ExWell@Home For Cancer

A home-based exercise programme  
to support people with cancer



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# PERCS Website

<https://cancerrehabilitation.ie/>

## 5K Your Way – Ballincollig Parkrun

📍 Address: The Regional Park  
Ballincollig Cork Ireland

## 5K Your Way – Marlay Parkrun

📍 Address: Marlay Park  
Rathfarnham Dublin Ireland

## 5K Your Way – Naas Parkrun

📍 Address: Naas Racecourse Naas  
Kildare Ireland

## 5K Your Way – Oranmore Parkrun

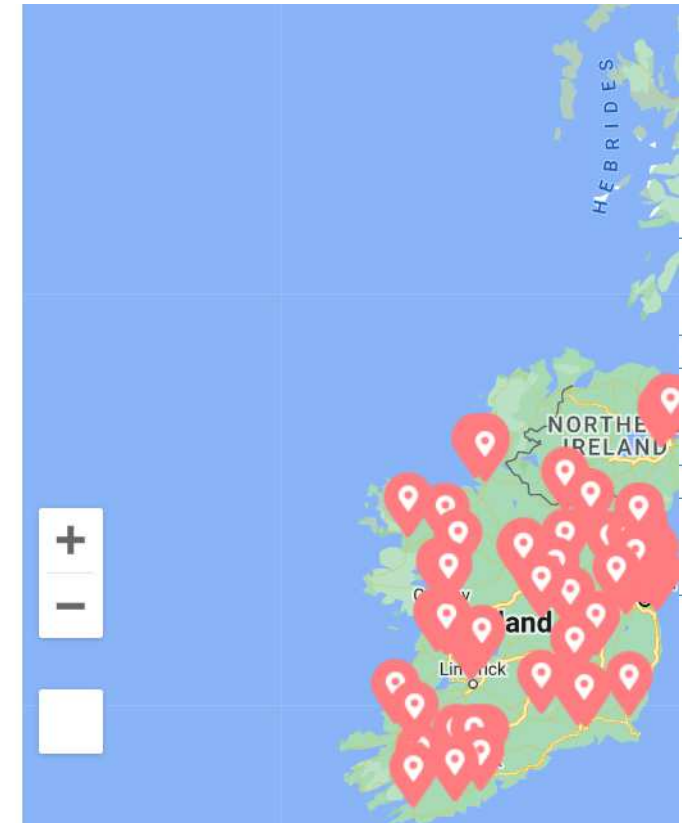
📍 Address: Renville Park Galway  
Oranmore Ireland

## 5K Your Way – Porterstown Parkrun

📍 Address: Porterstown Park

## 5K Your Way, Ormeau Parkrun

📍 Address: Ormeau Park, Ormeau



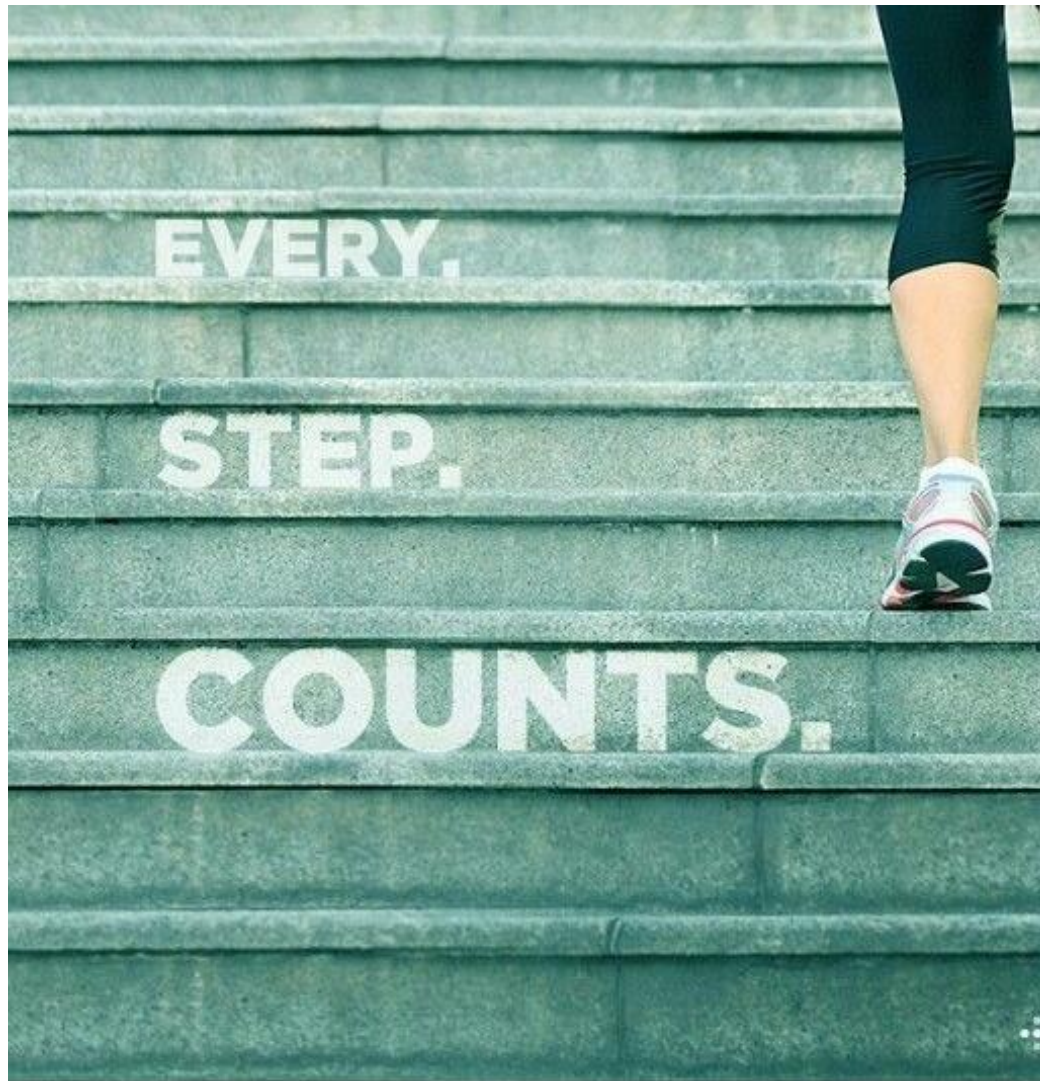
# Take home message

- *Exercise training throughout the cancer care journey and beyond is important*



SOMETHING  
IS **BETTER**  
THAN





MOVE  
MORE

MACMILLAN  
CANCER SUPPORT



# Thank you!

Email: [lloughney@irishcancer.ie](mailto:lloughney@irishcancer.ie)

