World Physiotherapy
Europe region

# ROLE OF PHYSIOTHERAPY IN CANCER CARE

Prof Nele Adriaenssens, PT, PhD
Proud member of
Europe Region of World Physiotherapy
Nele.Adriaenssens@vub.be
https://www.erwcpt.eu/

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Europe Region
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# INTRODUCTION

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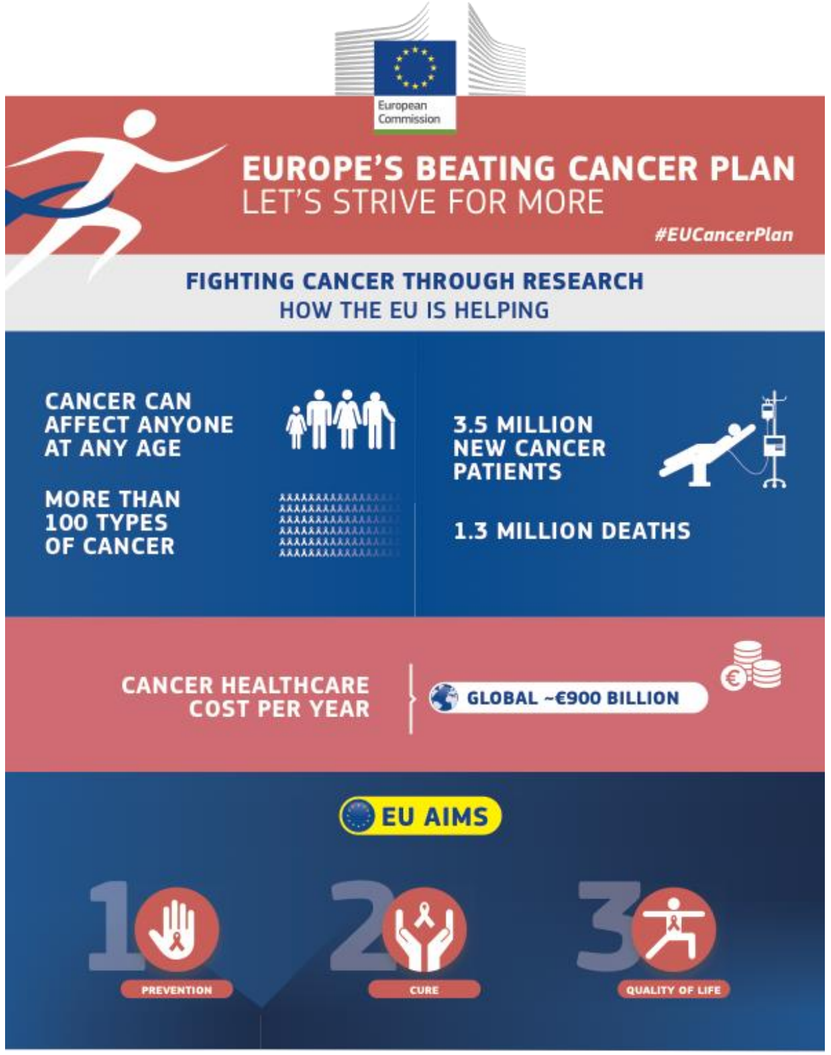


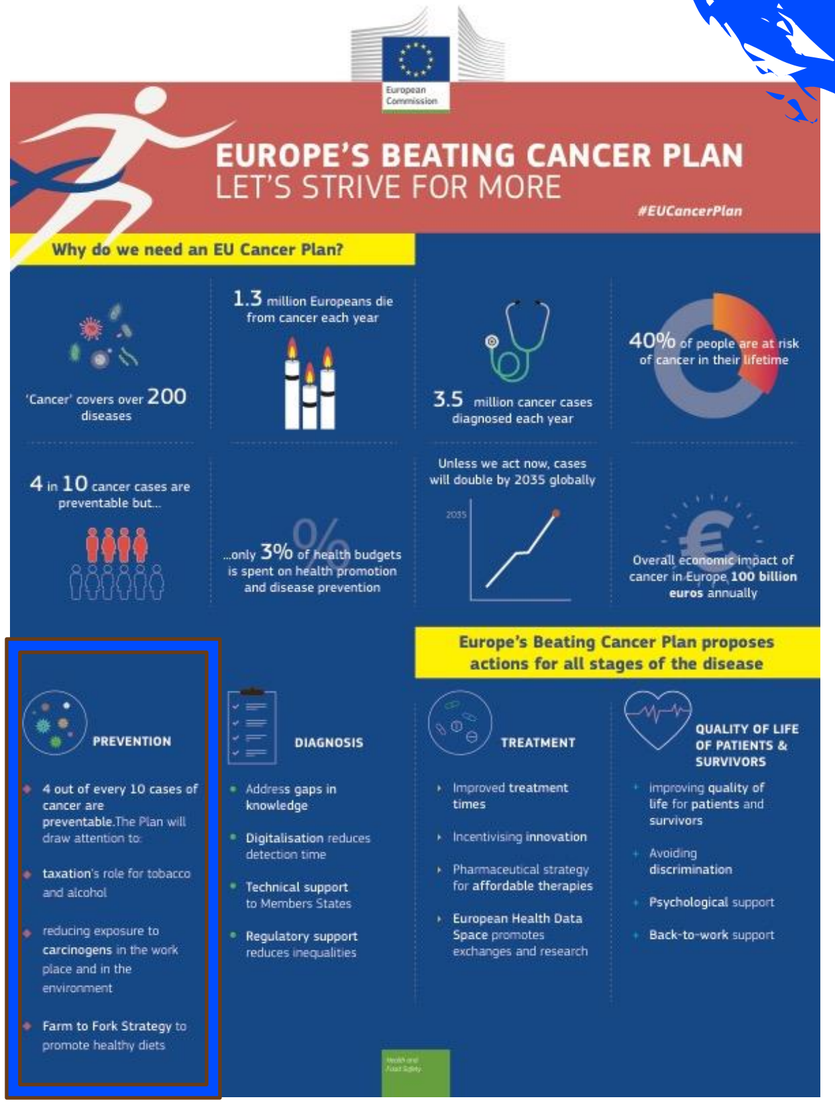

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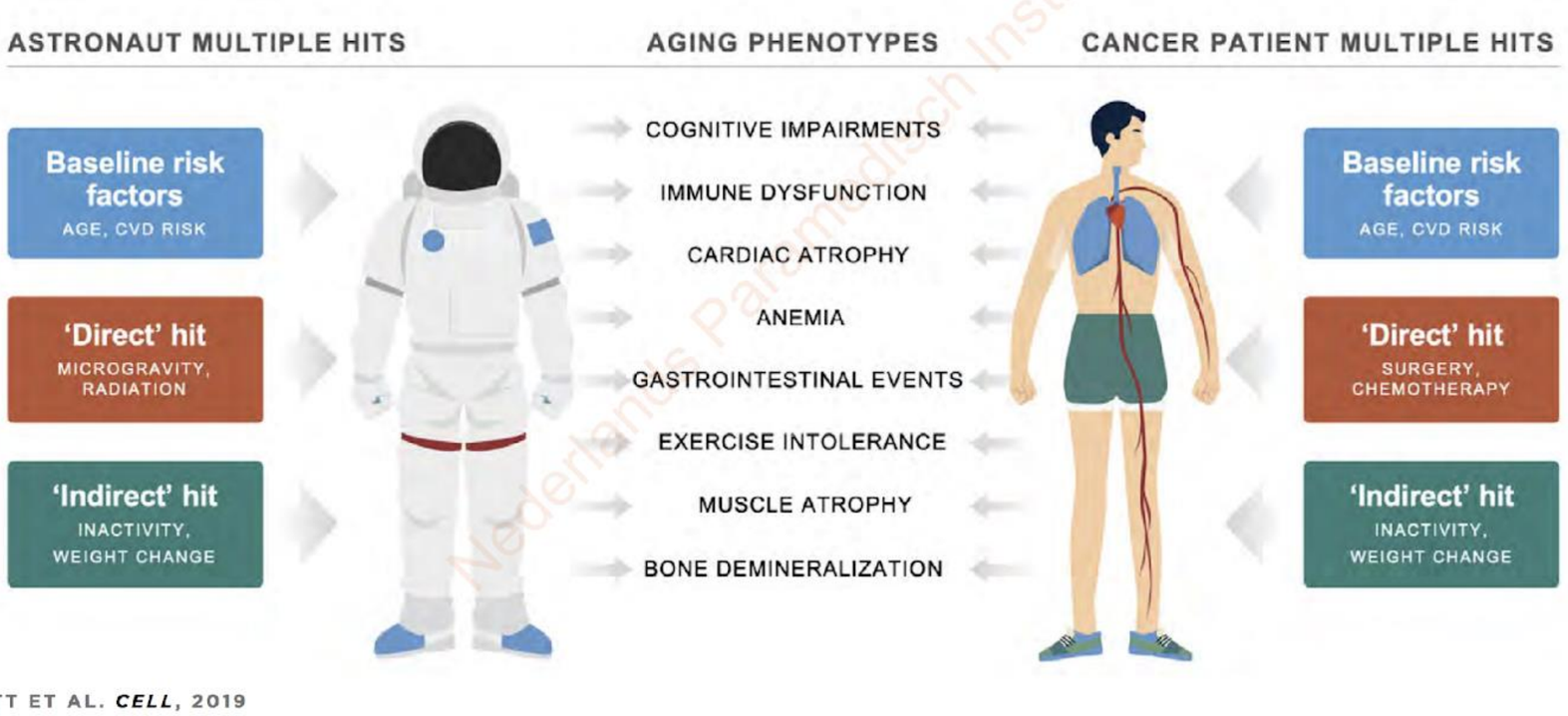
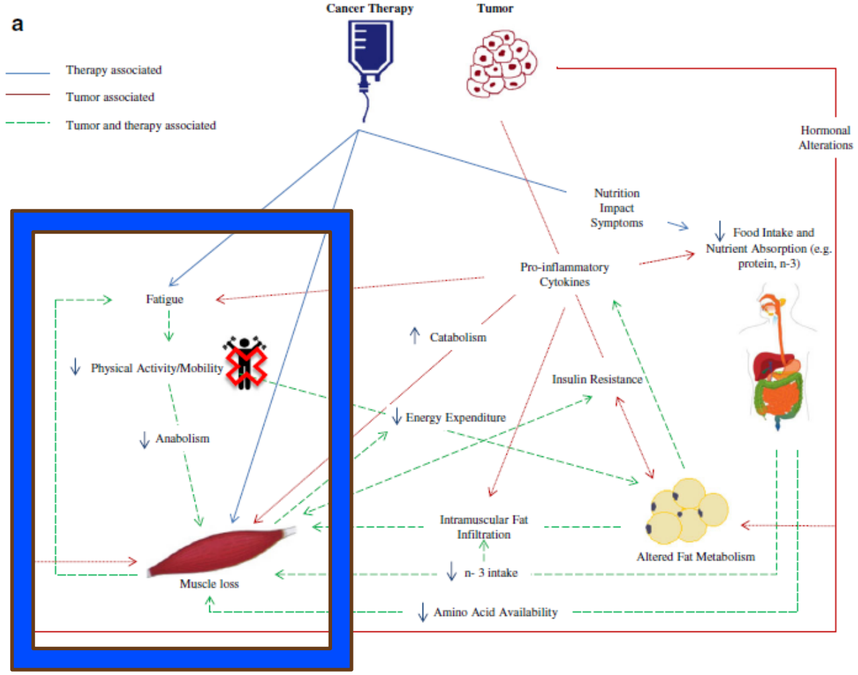



SCOTT ET AL. *CELL*, 2019




Carneiro et al., Curr Oncol Rep, 2016

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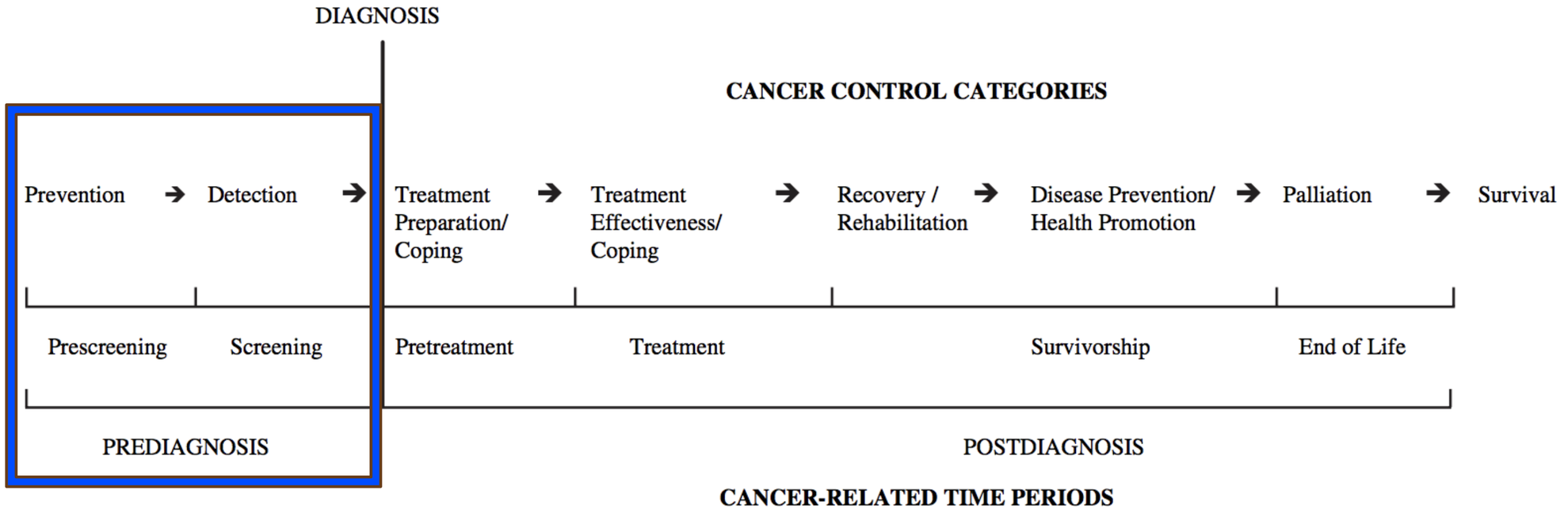


**FIGURE 1. Physical activity and cancer control framework.**

Courneya & Friedenreich, Semin Oncol Nurs, 2007

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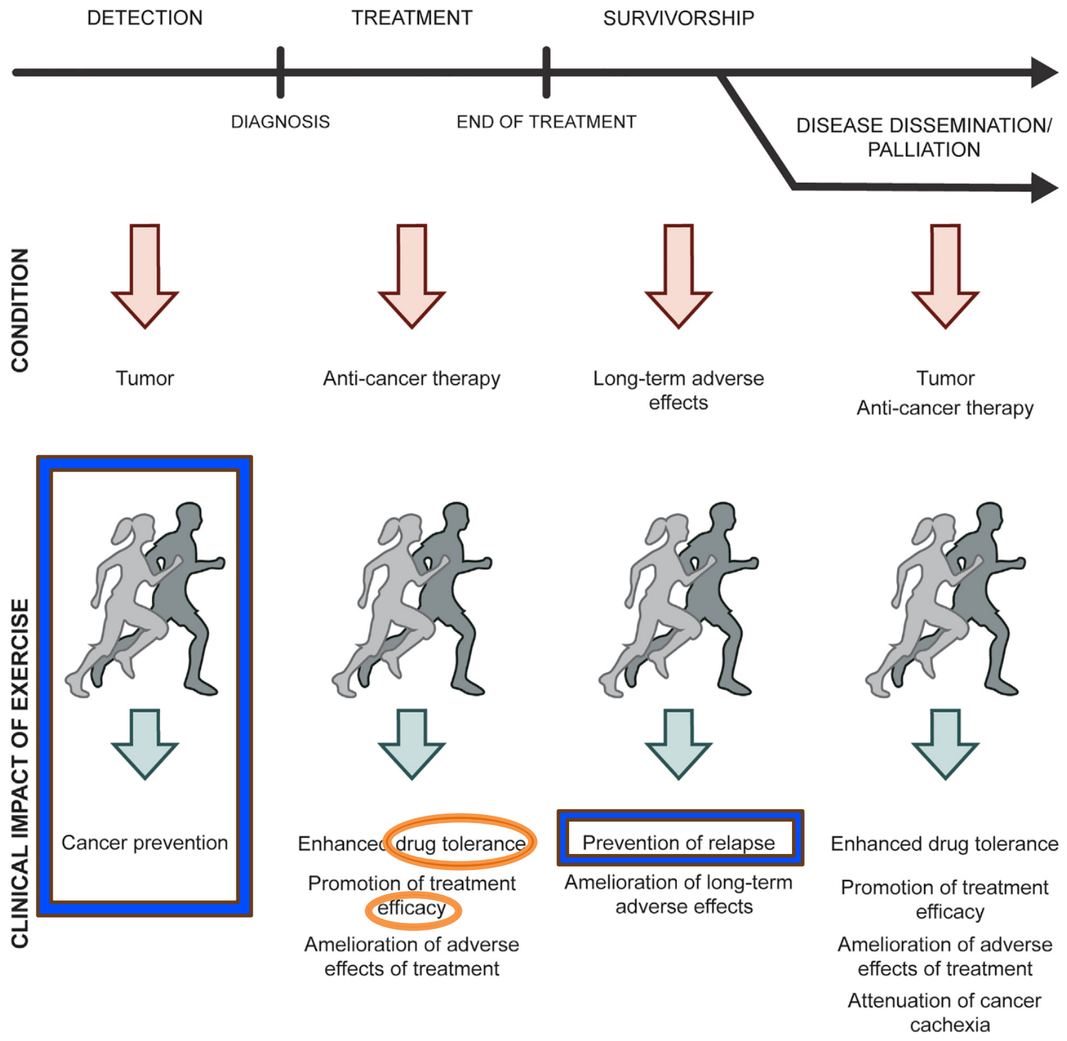


Hojmann et al., Cell Metabolism, 2018

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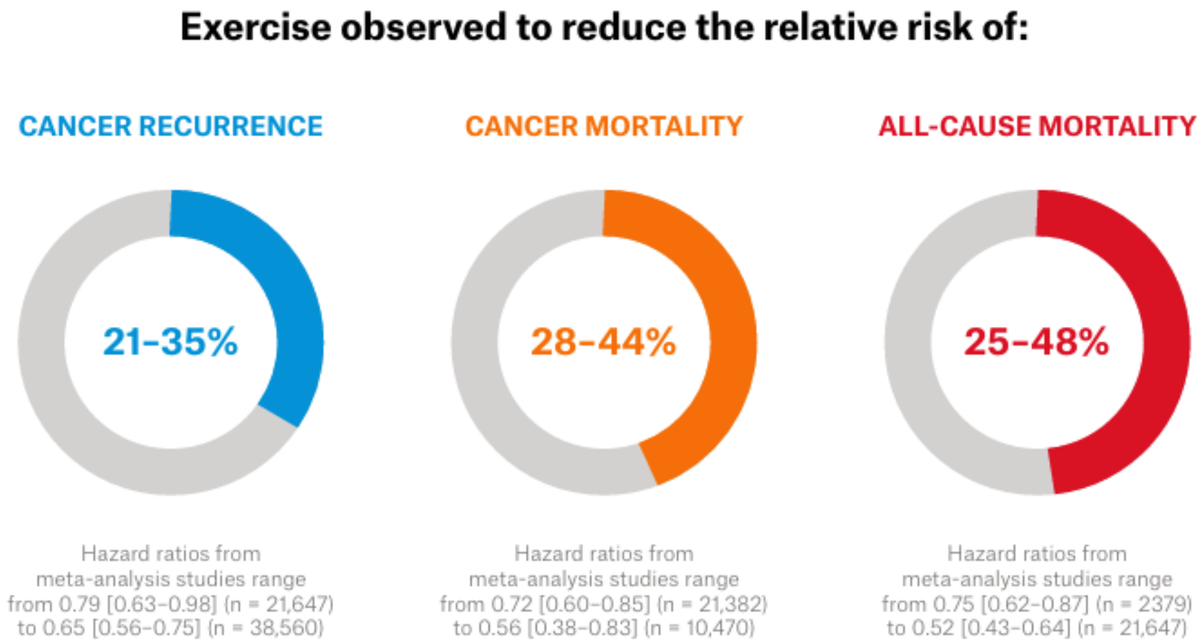



**Figure 2.** Exercise confers a protective effect against cancer recurrence, cancer-specific mortality and all-cause mortality in some cancers (data arises from studies involving predominately patients with breast, colorectal and prostate cancer).[3]

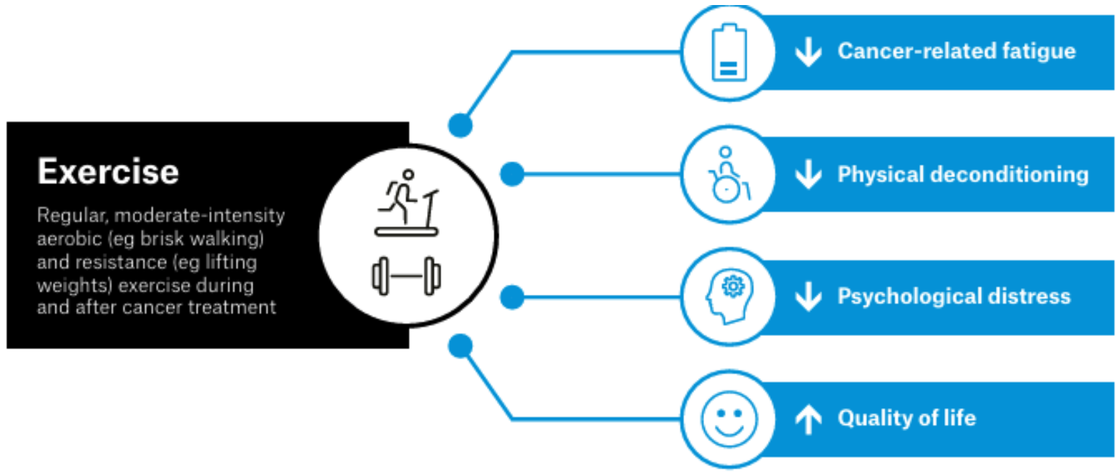
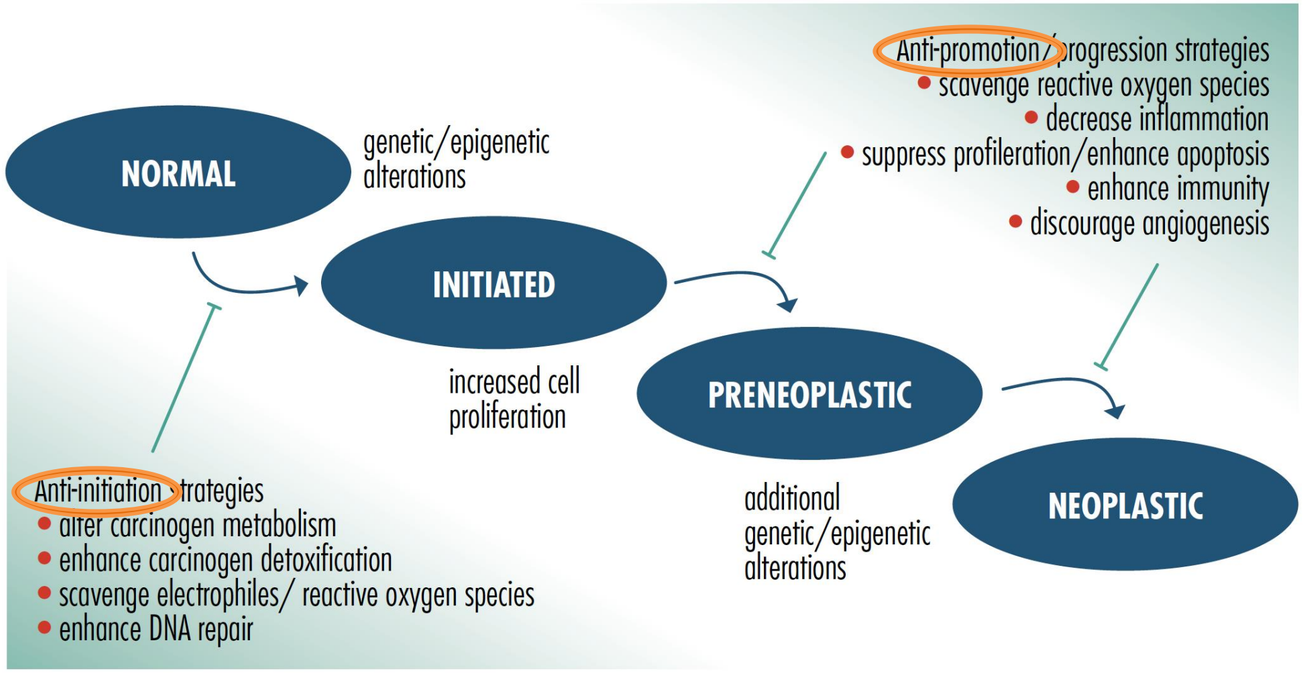


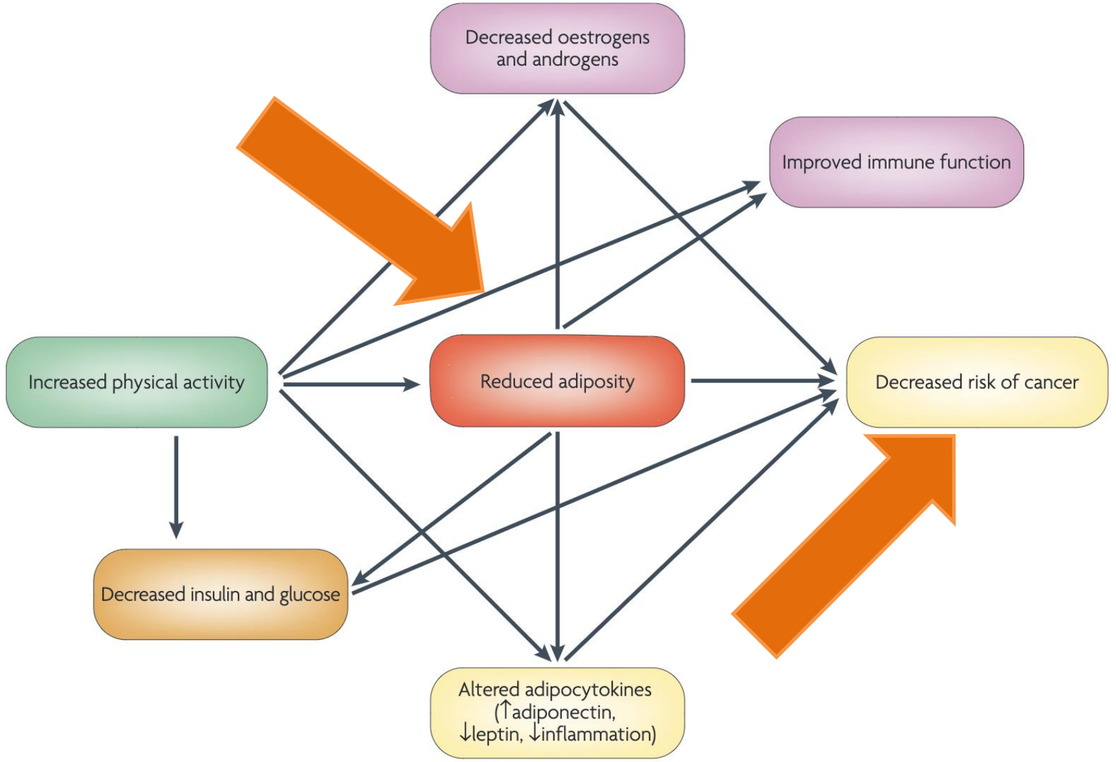

**Figure 1.** Exercise effectively counteracts the most common side effects of cancer and its treatment.[3–16]

Cormie et al., AJGP, 2020

# PREVENTION

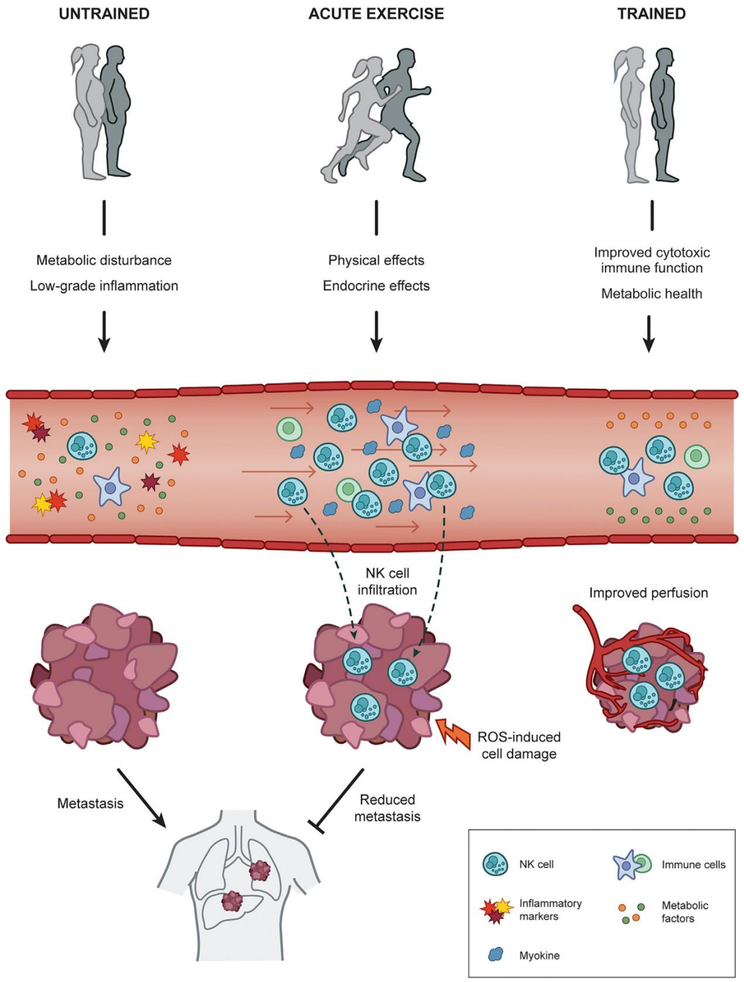



Rogers et al., Sports Med, 2008




Nature Reviews Cancer, 2008

# PREVENTION




Hojman et al., Cell Metabolism, 2018

molecular mechanisms:

- ACUTE effects
➔ signaling pathways prevent metastasis

- CHRONIC training adaptations
➔ systemic alterations
➔ intratumoral changes

# POSITION STATEMENT 2023

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## THE ROLE OF PHYSIOTHERAPY IN CANCER CARE IN THE EUROPE REGION: A POSITION PAPER OF THE CANCER WORKING GROUP OF EUROPE REGION WORLD PHYSIOTHERAPY

Nele Adriaenssens, PT, PhD, Prof
Cancer Working group, Europe region World Physiotherapy
Medical Oncology Department, Universitair Ziekenhuis Brussel, Brussels, Belgium
Rehabilitation Research group, Vrije Universiteit Brussel, Brussels, Belgium

Kristin Lyudmilova, PT, PhD
Cancer Working group, Europe region World Physiotherapy
Department of Physiotherapy and Rehabilitation, National Sports Academy, Bulgaria

Nikolaos Strimpakos, PT, PhD, Prof
Cancer Working group, Europe region World Physiotherapy
Department of Physiotherapy, University of Thessaly, Greece

Nirit Rotem, PT, MSc
Cancer Working group, Europe region World Physiotherapy
Department of Physiotherapy, Tel Aviv Sourasky medical center, Israel

Gráinne Sheill, PT, PhD
Cancer Working group, Europe region World Physiotherapy
Trinity St James's Cancer Institute, Dublin, Ireland

Michele Cannone, PT, MSc
Cancer Working group, Europe region World Physiotherapy
Fondazione Centri di Riabilitazione Padre Pio, Onlus, Italy

Loredana Gigli, PT, MSc
Cancer Working group, Europe region World Physiotherapy
Rehabilitation Service, Rome, Italy

Liva Tiesnese, PT, MSc
Cancer Working group, Europe region World Physiotherapy
Latvian Physiotherapy association, Latvia

Aline Descloux, PT, MSc
Cancer Working group, Europe region World Physiotherapy
Physioswiss, Bern, Switzerland

Alex MacKenzie, PT, MSc
Cancer Working group, Europe region World Physiotherapy
Physiotherapy Department, NHS Grampian Aberdeen, UK

Miguel Pérez Navarro, PT, BSc
Europe region World Physiotherapy, Brussels, Belgium

Aitor Carpio García, Undergraduate in Business Management and Law
Europe region World Physiotherapy, Brussels, Belgium

Carmen Suarez-Serrano, PT, PhD, Prof
Cancer Working group, Europe region World Physiotherapy
Department of Physiotherapy, University of Seville, Spain

**Corresponding Author:**
Nele Adriaenssens, PT, PhD, Prof
Universitair Ziekenhuis Brussel – Vrije Universiteit Brussel
Laarbeeklaan 101-103
1090 Brussels, Belgium
*Email:* Nele.Adriaenssens@vub.be

ABSTRACT

**Background**
*Physiotherapists have strong knowledge and skills to deal with many of the functional problems that result from cancer treatment. The role of physiotherapy spans from cancer prevention to palliative and end of life care. Physiotherapeutic interventions offer a solution for many of the impairments experienced by patients living with and beyond cancer such as declines in physical function and quality of life. Specialized physiotherapeutic interventions can manage complex cancer-related side effects. The aim of this position paper is to outline the role of physiotherapy in the cancer journey.*

**Material and methods**
*The research was performed by eleven physiotherapy experts in oncology between May and October 2021 by using PubMed, PeDro and clinical guidelines databases. The search was divided according to the phases of the cancer journey: primary and secondary prevention, prehabilitation, during cancer treatment, post-treatment cancer rehabilitation, long-term rehabilitation of people living after cancer and advanced cancer. The role of physiotherapy is described and statements for each phase are developed. The final text was reviewed by three external reviewers, who provided feedback to improve the final version.*

**Results**
*Ten statements were developed by the authors, including general statements and statements for the different phases of the cancer journey. An infographic compiles all the statements providing a general and graphic vision of the role of physiotherapy in cancer care, based on the evidence.*

**Conclusions**
*Physiotherapists play an increasingly important role in the multidisciplinary care of cancer survivors. Many oncology physiotherapists have skills that can help to manage cancer-related impairments such as lymphedema, functional decline and cancer-related fatigue. Physiotherapists have strong knowledge and skills to deal with many of the functional problems that result from cancer treatment.*
*Rehabilitation services, including physiotherapy, should be integrated at the point of diagnosis to assess an individual's baseline functional performance status and inform about the cancer care plan.*

KEY WORDS
CANCER, ONCOLOGY, PHYSIOTHERAPY, EXERCISE-ONCOLOGY, REHABILITATION, PREHABILITATION

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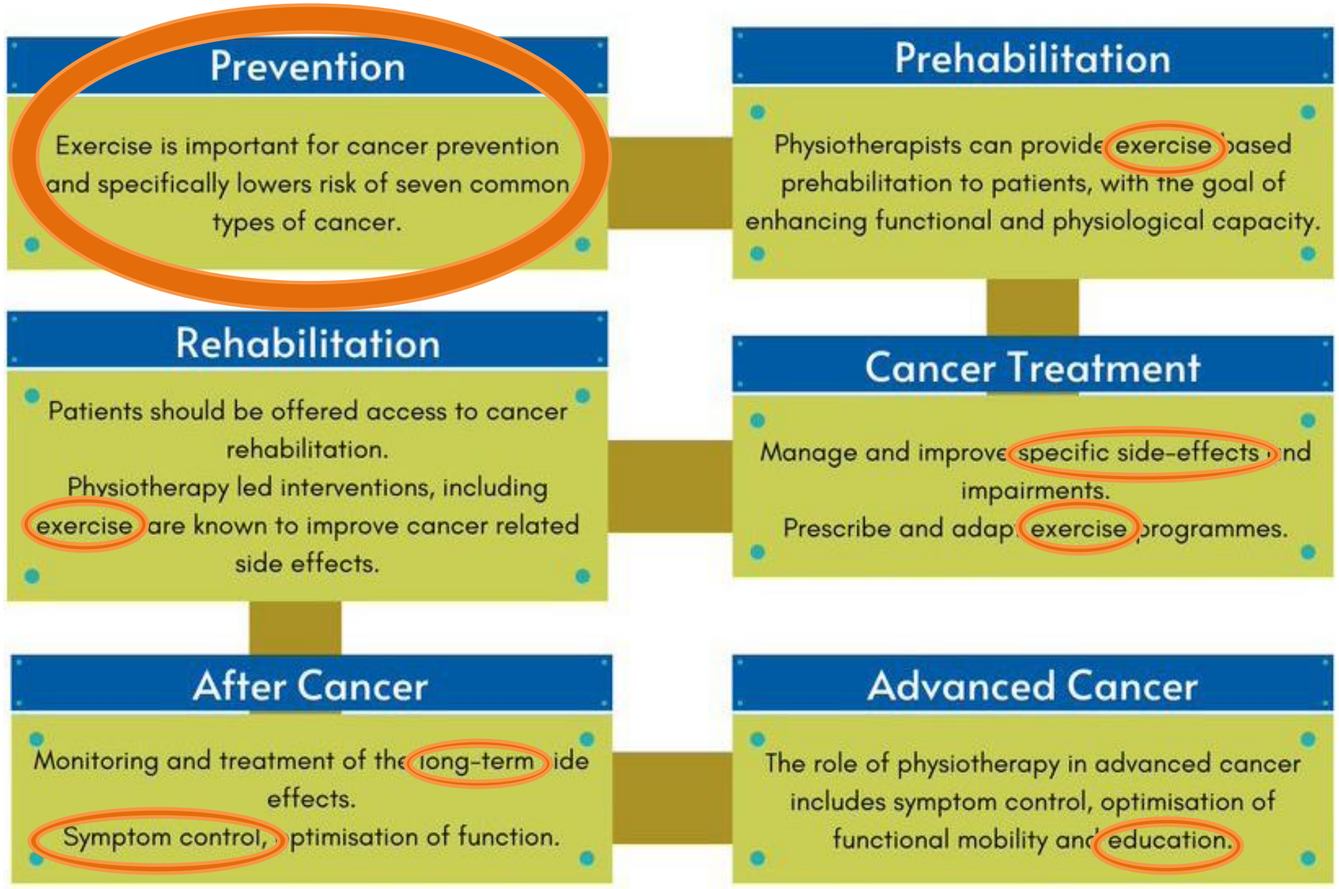

# FACT SHEETS 2023

World Physiotherapy Europe region

## Cancer Related Fatigue

PHYSIOTHERAPY Experts in human performance MOVES

### How do you assess fatigue?

Fatigue is a symptom that can coincide with other symptoms such as disturbed sleep, anxiety, depression, pain and cognitive issues. If your patient scores a high level of fatigue, they should have these issues mapped as outlined in the ESMO guidelines. Scan the QR code to access the ESMO guidelines.


### How can fatigue be treated?

**General activity**

Patients with cancer should be encouraged to be physically active as recommended for all adults.

**Physical exercise**

- **Phase of treatment:** during and after cancer treatments
- **Type:** supervised aerobic and resistance exercise and their combination.
- **Intensity:** moderate to vigorous
- **Frequency:** 2 to 3 times per week
- **Time or duration:** 30 minutes or more and with 12 weeks or more of program duration.

**Patient education**

It is important to provide information and advice to cancer patients and caregivers about cancer-related fatigue, its prevention and management. Evidence has shown that for patients with cancer, there is a positive effect on fatigue and QoL with self-management education.

### What is Cancer Related fatigue?

**Is a subjective multidimensional experience considered the most frequent symptom related with cancer, that may appear at diagnosis and usually increases during the course of treatment.**

**Symptoms**

Persistent or recurrent feeling of lack of energy and exhaustion on physical, emotional and/or cognitive domains not proportional to recent activity that interferes with functioning and overall quality of life.

**Etiology**

Its etiology is not clear but it has been described:

- **Predisposing factors:** comorbidities, biological sex, genetic, body composition, cancer treatments, depression history.
- **Precipitating factors:** metabolic dysregulation, systemic chronic inflammation, accelerated cells aging.
- **Perpetuating factors:** modifiable lifestyle behaviors such as dietary pattern, physical activity level.

(Re)Sources:

15/04/2023

World Physiotherapy Europe region

## Cancer-Associated Secondary Lymphedema

PHYSIOTHERAPY Experts in human performance MOVES

### What is Cancer-Associated Secondary Lymphedema?

It is a frequent side effect of cancer and its treatments, as a result of mechanical damage to the lymphatic system (e.g. surgery and radiotherapy), creating insufficiency and impaired lymph transport, or as a result of physiological changes (e.g. capillary leakage due to taxane-based chemotherapy), producing excess extracellular fluid and proteins in the interstitial space, which leads to swelling of the affected body part and chronic inflammation. The proteins are hydrophilic and when they do not get removed from the interstitial space, they attract more fluid to the interstitial space, worsening swelling.

### Risk Factors

- BMI > 25 kg/m2
- High number/ratio of lymph nodes dissected
- Infection
- Extent of surgery (iatrogenic damage)
- Combination of surgery with both chemotherapy and radiotherapy.

### How Physiotherapists Evaluate Lymphedema?

**VOLUMETRICS**

- Water displacement method
- Perimetrics
- Opto-electronic volumetrics



**SEGMENTAL BODY COMPOSITION**

- Bioimpedance analysis/spectroscopy
- Tissue dielectric constant
- Medical imaging

### How can Physiotherapy Prevent Lymphedema?


PATIENT EDUCATION


MANUAL LYMPHATIC DRAINAGE


PHYSICAL EXERCISE

### How to Manage Lymphedema through Physiotherapy?

**COMPREHENSIVE PHYSIOTHERAPY:**

- Manual lymphatic drainage
- Compression therapy
- Skin and wound care
- Physical exercise

Full info:

07/12/2023

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# ACSM & KNGF GUIDELINES IN ONCOLOGY

World Physiotherapy Europe region

## 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) |
|---|---|---|---|
| **Strong Evidence** | Dose | Dose | Dose |
| **Cancer-related fatigue** | **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 |
| **Health-related quality of life** | **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 |
| **Physical Function** | **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 |
| **Anxiety** | **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 |
| **Depression** | **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 |
| **Lymphedema** | Insufficient evidence | **2-3x**/week of progressive, supervised, program for major muscle groups does not exacerbate lymphedema | Insufficient evidence |
| **Moderate Evidence** | | | |
| **Bone health** | 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 |
| **Sleep** | **3-4x**/week for **30-40** min per session of moderate intensity | Insufficient evidence | Insufficient evidence |

Citation: 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

## KNGF Guideline on Oncology

Edited by:
Dr M.G. Sweegers; M.C.M. van Doormaal, MSc; D. Conijn, MSc; Dr M.M. Stuiver

Koninklijk Nederlands Genootschap voor Fysiotherapie
Royal Dutch Society for Physical Therapy

VvOCM
Vereniging van Oefentherapeuten

Amersfoort, March 2022

# IMPLEMENTATION: MOVING THROUGH CANCER

World Physiotherapy Europe region

Schmitz et al.

Timeline for Major Goals of the Moving Through Cancer Initiative

2020

- Development of a service-costing template for all programs to be made freely available on the Moving Through Cancer website (exerciseismedicine.org/movingthroughcancer)
- Develop marketing materials for an awareness campaign for exercise oncology directed toward patients, caregivers, and health care professionals
- Assess availability of cancer exercise and rehabilitation programming across the United States

2021

- Carry out awareness campaign for exercise oncology
- Assess current landscape of the available exercise oncology workforce in the United States
- Conduct a review of the policy landscape that affects exercise and rehabilitation within the setting of oncology
- Identify 2 national brand gyms to take on training of staff to work with individuals living with and beyond cancer

2022

- Approximately 25% of patients who are newly diagnosed with cancer will recall being advised to exercise by their oncologist
- Measure improvement in level of knowledge as well as level of engagement among patients and oncology providers

2023

- Develop a policy action plan for exercise oncology
- Host an influencer conference of researchers and oncology providers to align agendas and determine how to leverage the strengths of each organizational and individual partner toward the goal of coordinated, forward progress

2024

- Create and disseminate training for health professionals to teach the value of exercise, knowledge of where to refer, and use of pathways to make an appropriate (supervised/unsupervised) referral

2025

- Approximately 80% of exercise and rehabilitation professionals will have specialized training to work with individuals living with and beyond cancer
- Ensure that there is at least 1 cancer exercise or rehabilitation program in each city in the United States with a population of 50,000



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*Cancer*. 2021 February 01; 127(3): 476–484. doi:10.1002/cncr.33245.

## Moving Through Cancer: Setting the agenda to make exercise standard in oncology practice

**Kathryn H Schmitz**,
Department of Public Health Sciences, Penn State College of Medicine, Hershey, Pennsylvania

# CANCER PHYSIOTHERAPY: SURVEY 2023

World Physiotherapy
Europe region

## aim

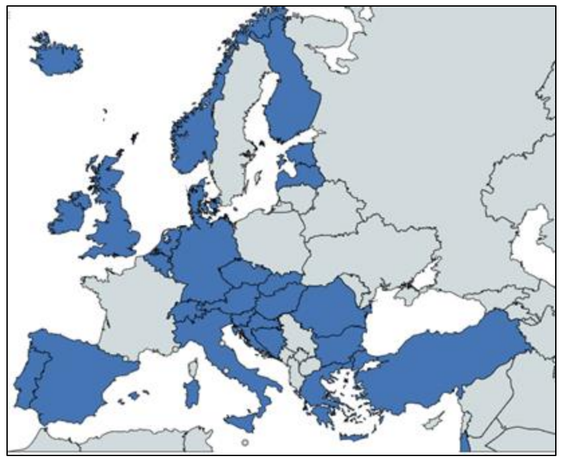
To collect information from physiotherapy Member Organisations (MOs) regarding **cancer physiotherapy services** and **education** in the **Europe region**.

## methods

- **Online survey** instrument, developed by the Cancer Working Group for this purpose.
- Email to all **37 MOs** in Europe.

## results

- Response rate = **89%** (n = 33/37)



# SURVEY PART I: SERVICE AVAILABILITY

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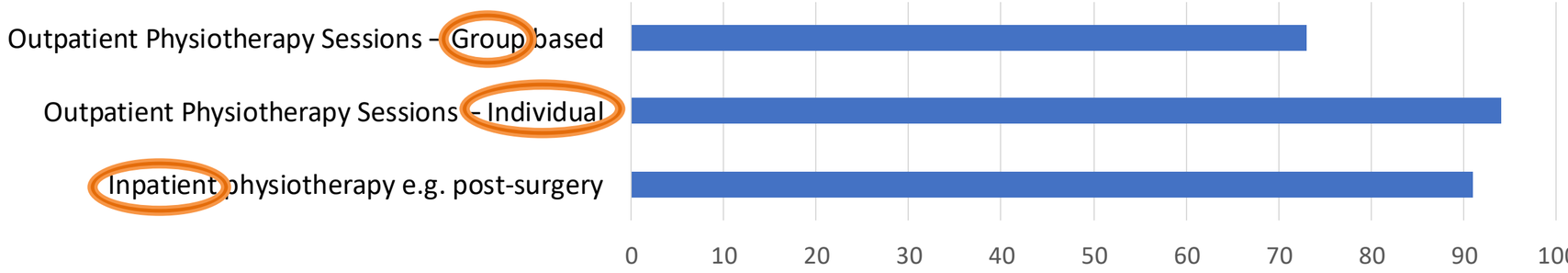
## 100% provide services to people with cancer

- as standard care in the **public health** system (**55%**, n=18)
- as **private** services (**36%**, n=12)
- through cancer **support centres** or **charities** (**64%**, n=21)
- as part of **research** programmes (**42%**, n=14)

## self-referral to physiotherapy

- Only 36% (n = 12) of respondents reported patients could **self-refer**

## how cancer care is delivered



# SURVEY PART I: SERVICE AVAILABILITY

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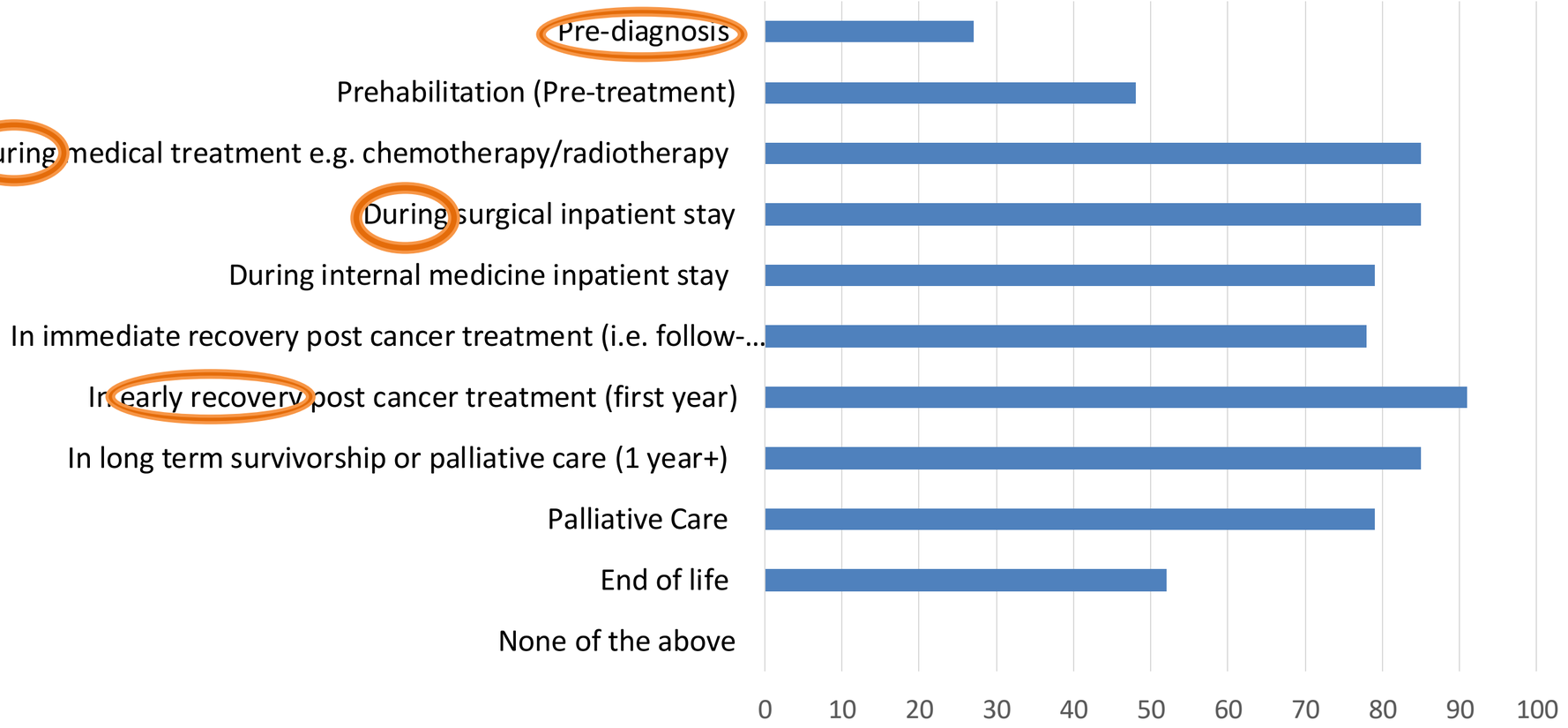
## timing of physiotherapy services within the cancer continuum



# SURVEY PART I: SERVICE AVAILABILITY

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## re-imbursement

- Patients can claim for re-imbursement of **all** costs spent on physiotherapy cancer care. (**36%**, n = 12)
- Patients can claim for **some** physiotherapy services. (**36%**, n = 12)

## barriers to developing services

- A lack of **knowledge/understanding** of the role of physiotherapy in the area of cancer care (**73%**, n = 24)
- A lack of **funding** for services (**70%**, n = 23).
- A lack of **resources** for services (**70%**, n = 23).
- A lack of **demand** for services from people with cancer (**24%**, n = 8).

**Additional barriers** included a lack of referrals, lack of clinical pathways, difficulty changing clinical practice, political barriers and lack of support from doctors.

# SURVEY PART II: CANCER PT SERVICES

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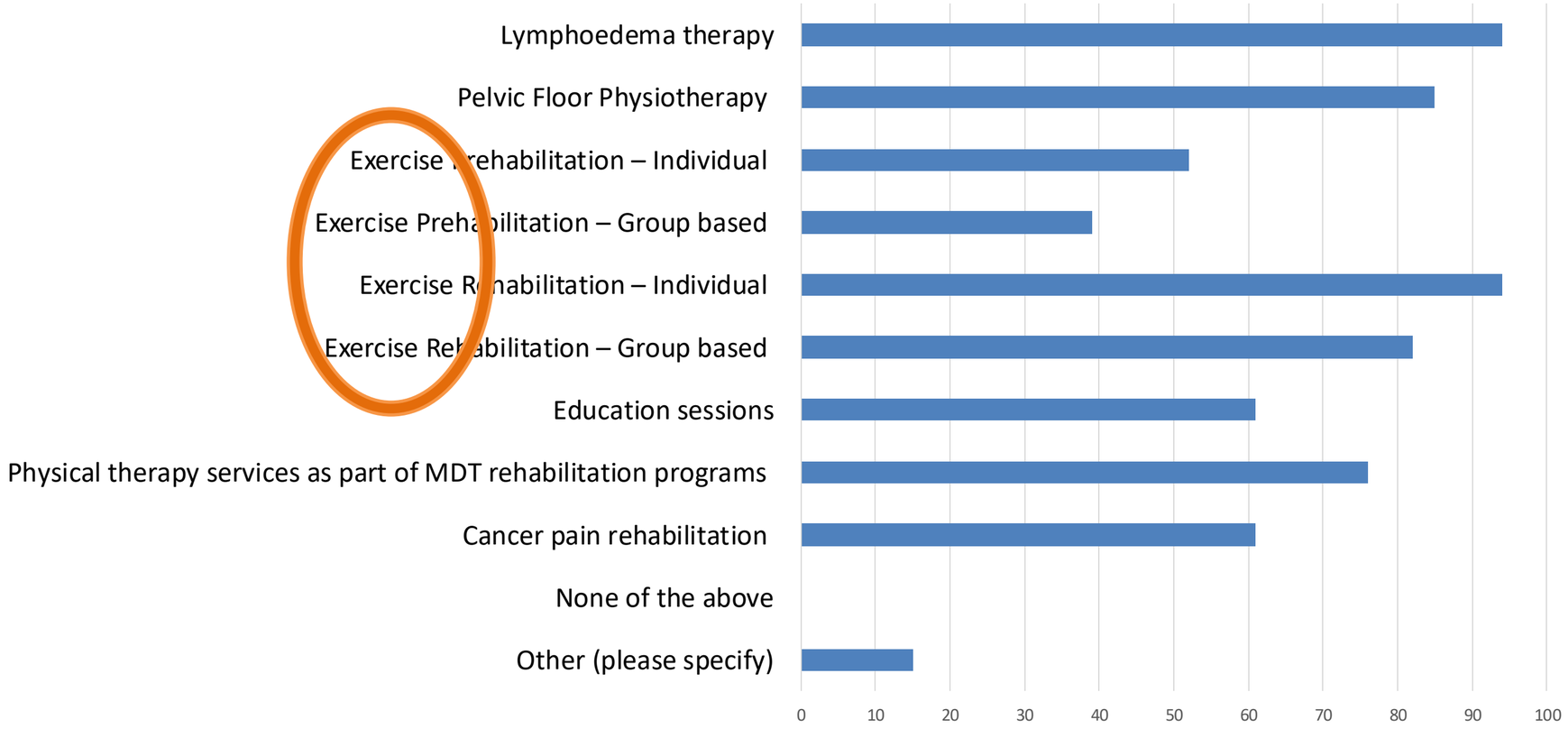
## description of cancer physiotherapy services



# SURVEY PART III: CANCER PT EDUCATION

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## oncology course/training included in PT education

- **45%** (n = 15) reported oncology is included in **undergraduate** training.
- **15%** (n = 5) reported oncology is included in **post-graduate** training.
- **15%** (n = 5) reported specific oncology training/courses are **not included** as part of physiotherapy education.
- **25%** (n = 8) other

***"PT have the required skills to treat patients across the cancer care continuum in my country."***

**6,3/10**

# SURVEY PART III: CANCER PT EDUCATION

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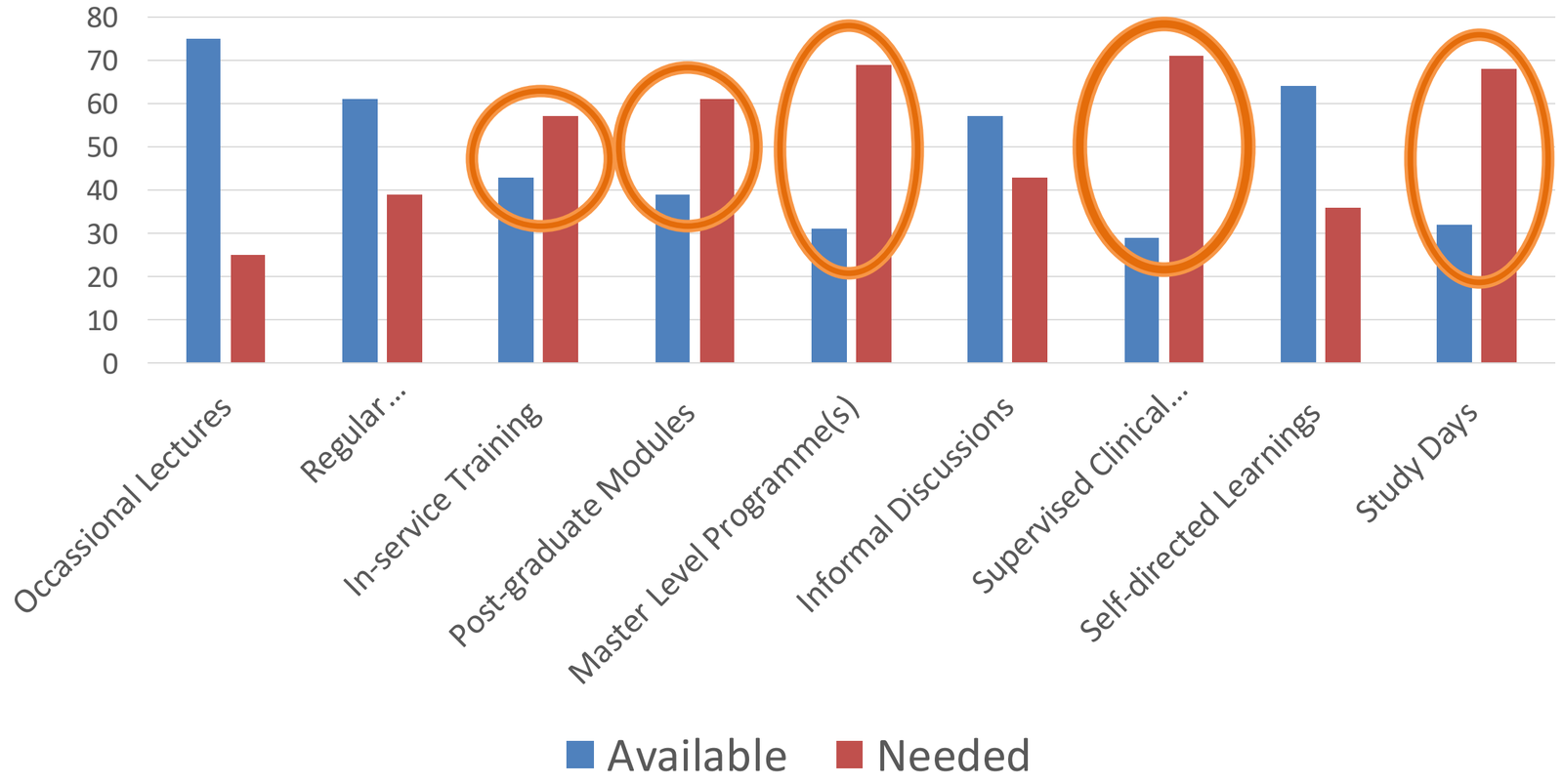
Europe region

## continuous professional development in oncology available/needed in MOs



# SURVEY PART III: CANCER PT EDUCATION

World Physiotherapy Europe region

## oncology specialist interest group

- ✓ **special interest group** in the area of oncology for PTs within the MOs: **62%** (n = 20)

## register of oncology physiotherapists

- ✓ a **register** of physiotherapists who have **recognised oncology** as their speciality = **27%** (n = 9)
  The requirements for recognition varied between MOs from a 3-year master's degree to general post-graduate CPD in oncology.

- ✓ One MO reported a register only for those practicing lymphoedema management.

# CANCER PHYSIOTHERAPY: SURVEY 2023

World Physiotherapy
Europe region

## CONCLUSION

- ✓ PT are **providing care to patients with cancer** throughout the Europe Region.
- ✓ There are **vast differences** within the region, and in some instances within countries, in the **level** of PT cancer care provided.
- ✓ There appears to be a **large reliance** on cancer **charities** and **research** to provide PT cancer care to patients.
- ✓ Respondents feel there is a **lack of understanding** of the **role of physiotherapy** in **cancer care**.
- ✓ PT **require professional development opportunities** in cancer care.

VUB RERE REHABILITATION RESEARCH GROUP

Oncologisch Centrum
Behandeling en Onderzoek van Kanker

World Physiotherapy
Europe region

# THANK YOU!

**Prof Nele Adriaenssens, PT, PhD**
**Proud member of**
**Europe Region of World Physiotherapy**
**Nele.Adriaenssens@vub.be**
**https://www.erwcpt.eu/**

**@ERWorldPhysio**

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