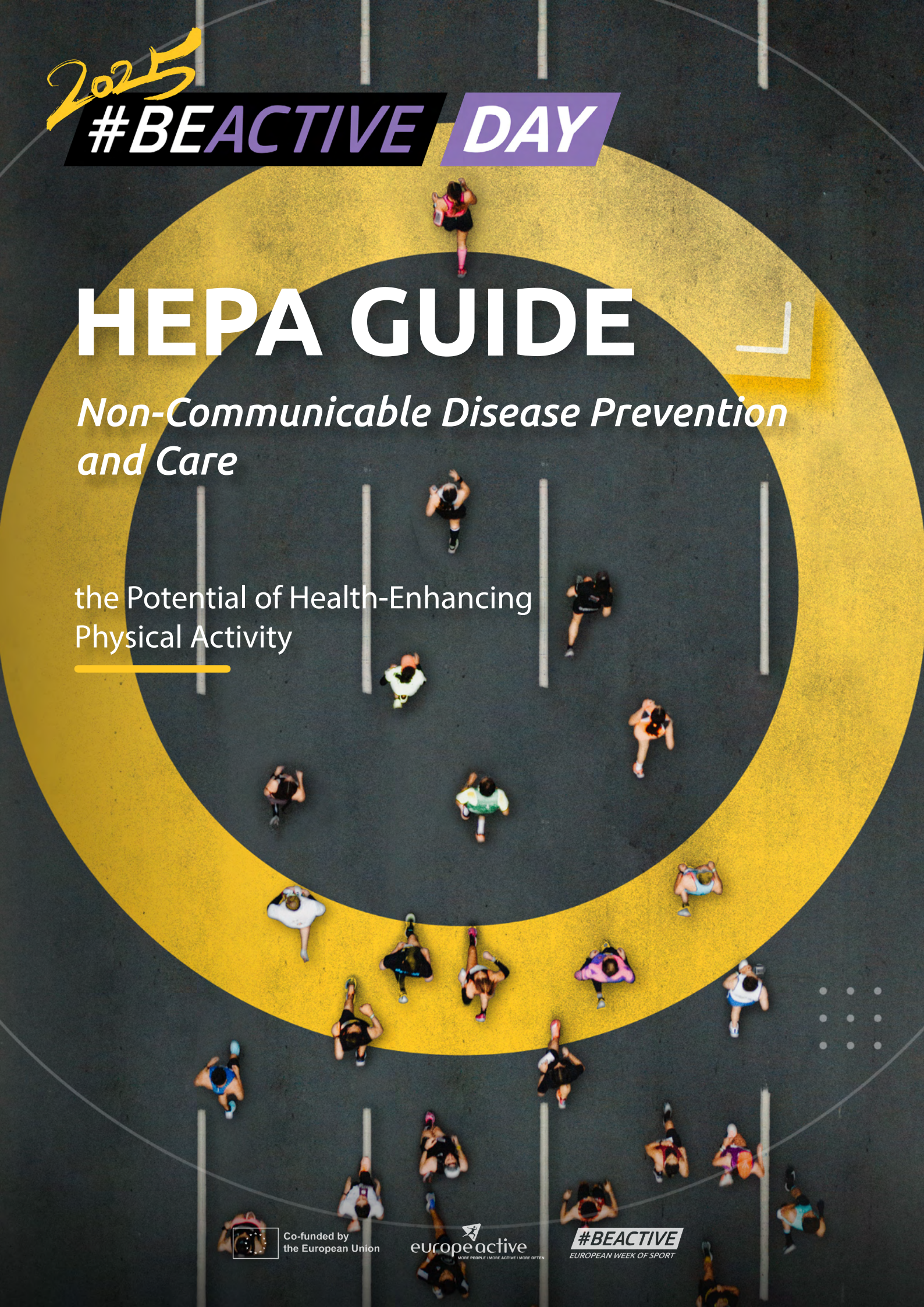
2025 #BEACTIVE DAY

HEPA GUIDE

Non-Communicable Disease Prevention and Care

the Potential of Health-Enhancing Physical Activity



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#BEACTIVE
EUROPEAN WEEK OF SPORT

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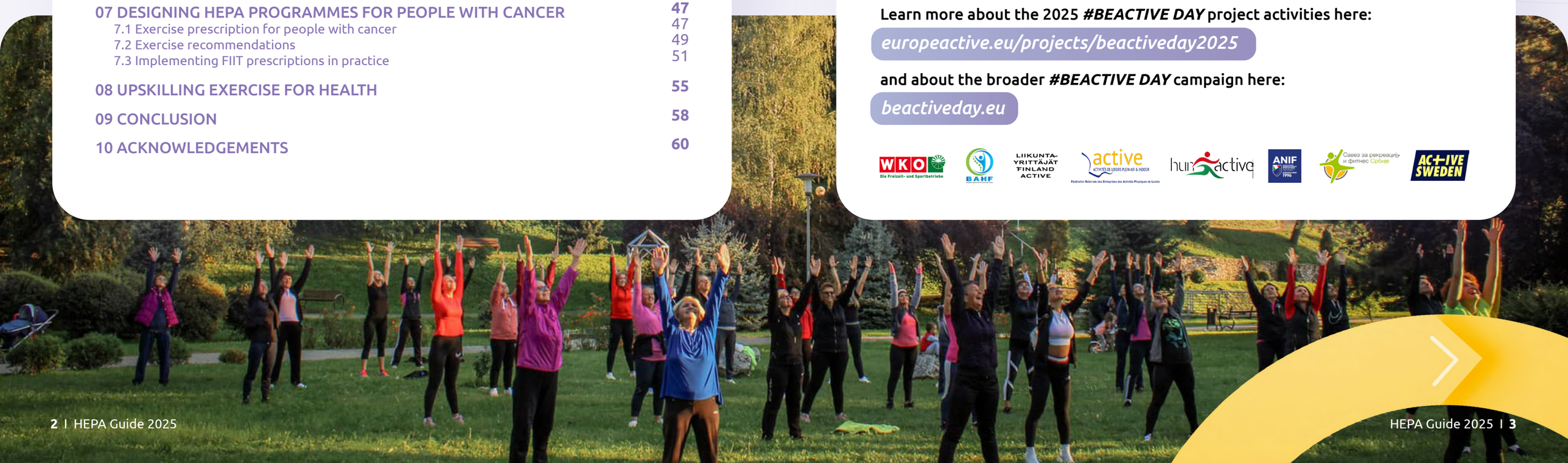


2025 #BEACTIVE DAY

01 ABOUT THE 2025 *#BEACTIVE DAY* PROJECT

The 2025 ***#BEACTIVE DAY*** project is a 12-month initiative coordinated by EuropeActive and funded by the European Union. The project includes 9 partners, which are the national fitness associations of Austria, Bulgaria, Finland, France, Hungary, Italy, Serbia, and Sweden.

The concept of ***#BEACTIVE DAY*** builds on EuropeActive's successful 'National Fitness Day' campaigns, which have been developed across 15 European countries since 2017. This proven and sustainable model continues to strengthen the fitness and physical activity sector's role in promoting healthier lifestyles across Europe. ***#BEACTIVE DAY*** 2025 supports the vision of getting more people more active, more often, and aims to address rising levels of physical inactivity and chronic diseases. This year, the campaign places a particular emphasis on the prevention and management of non-communicable diseases (NCDs) through Health-Enhancing Physical Activity (HEPA). By fostering greater participation in physical activity events during the last week of September, the campaign contributes directly to the European Commission's annual European Week of Sport (EWoS).

#BEACTIVE DAY continues to play a central role in mobilising the fitness and physical activity sector, inspiring people across Europe to embrace an active lifestyle. The campaign includes thousands of free events and activities taking place across fitness and sport centres, parks, schools, universities, and workplaces—inviting everyone to experience the joy and benefits of being physically active.

Learn more about the 2025 *#BEACTIVE DAY* project activities here:

europeactive.eu/projects/beactiveday2025

and about the broader *#BEACTIVE DAY* campaign here:

beactiveday.eu

02 INTRODUCTION

This Guide has been developed to highlight the essential role of inclusivity in promoting health-enhancing physical activity (HEPA), particularly for individuals living with or at risk of developing non-communicable diseases (NCDs).

Beyond being a fundamental aspect of health, well-being, and socialisation for all individuals, **physical activity is also a cornerstone in the prevention and management** of conditions such as cardiovascular diseases, diabetes, cancer, and chronic respiratory illnesses. Yet, many people face barriers - be they physical, social, economic, or cultural - that hinder their ability to engage in regular physical activity.

Our aim is to provide **practical guidance and strategies to make HEPA accessible,** equitable, and welcoming to all, regardless of age, ability, gender, ethnicity, or socioeconomic status. We recognise that people affected by NCDs often need **tailored, supportive environments** to initiate and sustain active lifestyles. By removing barriers and fostering inclusive practices, we can **empower individuals** to take control of their health and improve their quality of life.

EuropeActive envisions a future where every person has the opportunity and support to engage in physical activities that suit their needs and abilities. This Guide is part of our organisation's ongoing commitment to **advancing** preventative **public health,** reducing inequalities, and building **stronger, healthier and more active communities.**

WHO IS THIS GUIDE FOR:

Fitness and Physical Activity Providers:

Including gym owners, managers of fitness clubs, and physical activity event organisers. These providers have a unique opportunity- and responsibility, to create environments where people with or at risk of NCDs feel safe, supported, and encouraged to be active.

Policymakers and Sector Stakeholders:

Policymakers play a crucial role in shaping the environments, systems, and policies that enable or restrict access to health-enhancing physical activity (HEPA). This Guide serves as a strategic resource to support these efforts and drive policy-level change toward more inclusive and active communities. It also offers guidance for a range of stakeholders -including health insurers and professional associations- on how to promote and support inclusive physical activity initiatives that align with NCD prevention goals.

Personal Trainers and Instructors:

Working directly with individuals through physical activity programmes have a pivotal role to play by adapting activities, and offering motivation and reassurance. This Guide provides evidence-informed methods for safely engaging individuals affected by the four most prevalent NCDs - cardiovascular diseases, diabetes, cancer, and chronic respiratory diseases.

People Living With or at Risk of NCDs:

Equally important, this Guide is for the individuals it seeks to serve. For those managing or at risk of chronic health conditions, the Guide provides tools to understand their rights, engage in safe and appropriate physical activity, and advocate for inclusive opportunities. Empowering individuals with knowledge is key to building confidence and fostering self-determined participation in physical activity.

Unlocking the potential of inclusion in HEPA for people affected by or at risk of NCDs

Non-communicable diseases (NCDs) – including cardiovascular diseases, cancers, diabetes, chronic respiratory conditions, and mental or neurological disorders – are the leading cause of death and disability in the European Union (EU), accounting for over 90% of all deaths[1] and 80% of the total health burden[2].

Worldwide, NCDs are responsible for around 40 million of the 56 million deaths occurring each year, accounting for approximately **71% of all global mortality.** They are also responsible for almost **80% of all years lived with disability,** leading to a reduction of the health span – the number of disease-free years lived[3]. The vast majority of non-communicable disease-related deaths, approximately 80%, are attributed to the most prevalent conditions, including cancers, cardiovascular diseases, diabetes and chronic respiratory diseases[4].

Beyond these stark statistics lie profound social and economic impacts: premature mortality due to NCDs costs the EU economy an estimated **€115 billion annually,** with additional losses driven by decreased productivity, reduced employment, and long-term disability[5]. This burden extends beyond financial costs, affecting individuals' quality of life, the well-being of families and carers, and the sustainability of health systems across the continent.

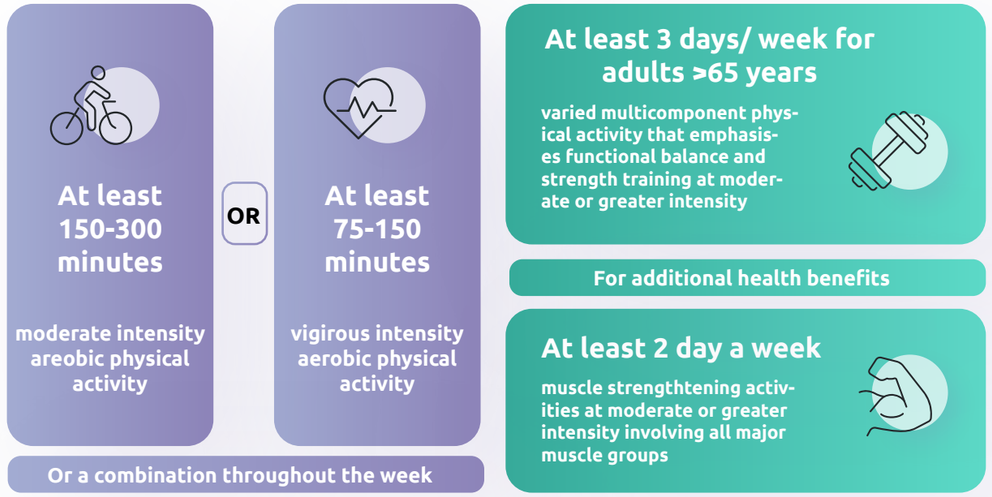
NCDs affect people of all ages, backgrounds, and socio-economic groups. People of all walks of life are vulnerable to the major risk factors contributing to NCDs- including physical inactivity, unhealthy diets, tobacco and alcohol use, all of which are further affected by environmental, cultural and socio-economic health determinants. Yet **NCDs are characterised by a high degree of preventability.**

Physical inactivity – now recognised as a critical risk factor in the onset and progression of many NCDs, is increasingly prevalent due to urbanisation, sedentary lifestyles, and unequal access to safe and inclusive physical activity opportunities. Alarmingly, global data indicate **that one in four adults and over 80% of adolescents fail to meet recommended activity levels**[6].

At the same time, physical activity has been consistently shown to be a **powerful, cost-effective intervention for the prevention and management of NCDs.** Regular movement can help reduce the risk of heart disease, stroke, type 2 diabetes, and some cancers, while also improving mental health, mobility, and overall quality of life. Individuals living with or at risk of NCDs tend to face **multiple and intersecting barriers** – physical, economic, psychological, and cultural – that limit their ability to engage in regular, health-enhancing physical activity (HEPA).

This is where **the fitness and physical activity sector can, and must, play a transformative role.** With its informal, flexible, and community-based nature, the sector is uniquely positioned to bridge gaps, breakdown access barriers, and offer personalised, inclusive opportunities for engagement. Europe's fitness sector already reaches over **71 million people**[7], and initiatives such as the ***#BEACTIVE DAY*** campaign highlight the potential to mobilise and inspire communities through grassroots action. Together, sector stakeholders are committed to become an increasingly solicited partner of public health, and are investing resources to build strong partnerships, as well as a strong evidence-base that empowers it to **create meaningful and long-lasting public health impacts.**

WORLD HEALTH ORGANISATION 2020 GUIDELINES ON PHYSICAL ACTIVITY



[1] WHO, *Monitoring noncommunicable disease commitments in Europe 2021,* 2021, https://shorturl.at/fA3uB
[2] European Commission, *Non-communicable diseases – overview*, 2025, https://shorturl.at/PnmAC
[3] Garmany et al., *Longevity leap: Mind the healthspan gap*, NPJ Regenerative Medicine, 2021.
[4] Bennet et al., *NCD Countdown 2030: worldwide trends in non-communicable disease mortality and progress towards Sustainable Development Goal target*, Lancet, 2018.
[5] Europe Commission, *Healthier Together – EU NCDs Initiative*, 2022, https://shorturl.at/djxD8
[6] WHO, *Physical activity factsheet*, https://shorturl.at/9DAFQ
[7] EuropeActive, *European Health and Fitness Report 2025,* 2025, https://shorturl.at/987RB

03 HEPA & DIABETES

Diabetes is a complex chronic condition affecting close to 600 million people worldwide **600 MILLION**

of whom **66** ***million*** *in Europe.*

This number is forecast to rise to more than ***72 million*** *by 2050* **72 MILLION**

Diabetes places a significant burden on individuals and healthcare systems – in 2024, healthcare expenditure in Europe stood at US$193bn (about €178 billion)[8].

US$ 193bn

3.1 Background

Diabetes occurs when the body cannot effectively use insulin or when our body does not produce enough (or any) insulin. Insulin is a hormone, produced by the pancreas which helps our body move glucose from the blood into the cells where it can be used for energy.

When there is not enough insulin or the insulin is not working effectively, glucose can start to build up in the blood vessels, causing high blood glucose levels (BGLs or hyperglycaemia). If glucose levels remain high in our blood for a long time, damage to the large and small blood vessels can occur which increases the risk of diabetes-related complications affecting the heart, eyes, kidneys, nerves, lower limb circulation, teeth and gums.[9]

There are more than 10 different types of diabetes, of which the most common are type 1 diabetes (T1D), type 2 diabetes (T2D), and gestational diabetes (GDM).

[8] International Diabetes Federation, *IDF diabetes atlas 11th edition 2025*, 2025
[9] WHO, *Classification of diabetes mellitus*, 2019, https://rb.gy/ia2bi7

Type 1 Diabetes

(T1D) is an autoimmune condition where the body's immune system attacks and destroys the insulin-producing cells in the pancreas. People living with T1D need to give themselves insulin every day to survive. Some 2.7 million people live with T1D in Europe and although it can occur at any age, it is most commonly diagnosed in children and young adults.[10] There is currently no cure or prevention for T1D, although it is now possible, for some people, to delay the onset of the condition by around two years.[11]

Type 2 Diabetes

(T2D) is caused by a complex interplay of modifiable and unmodifiable risk factors such as genetics, ethnicity, age and obesity. In many cases, T2D can be delayed or prevented with support to address behavioural risk factors. T2D is characterised by 'insulin resistance', which means the insulin the pancreas produces is not working very well. Because the insulin does not work as it should, the pancreas tries to make more and more to compensate. After a while, the pancreas gets tired and starts to produce less and less insulin, causing BGLs to rise. Approximately 90% of all Persons with Diabetes (PwD) live with T2D.[12]

Intermediate hyperglycaemia

(or pre-diabetes) is a precursor for T2D. It shares the same risk factors of T2D and occurs when BGLs are higher than usual but not high enough to be diagnosed with T2D. People with intermediate hyperglycaemia are at greater risk of developing T2D but can reduce their risk or delay the onset of T2D with lifestyle changes and/or the use of medication.[13]

Gestational diabetes

(GDM) is a type of diabetes resulting in high BGLs during a pregnancy. High glucose levels during pregnancy can place the mother and baby at risk of pregnancy-related complications including high blood pressure, large birth weight babies and obstructed labour. In Europe, one in seven live births are affected by high BGLs in pregnancy. Risk factors for GDM include living with overweight or obesity, being over the age of 45, family history of diabetes, GDM in previous pregnancies and polycystic ovarian syndrome. Women who have experienced GDM, and their offspring, are both at greater risk of developing T2D. [14]

[10] International Diabetes Federation, *IDF diabetes atlas 11th edition 2025*, 2025
[11] Herold KC, et al., *An anti-CD3 antibody, teplizumab, in relatives at risk for type 1 diabetes,* New England Journal of Medicine, 2019.
[12] WHO, *Classification of diabetes mellitus,* 2019, https://rb.gy/ia2bi7
[13-14] Ibid.

3.2 Physical activity in prevention and management

Physical activity (PA) is among one of the most effective prevention and management tools for diabetes, alongside healthy eating and weight.

PA can **reduce the incidence** of T2D by up to 10%[15],while some studies show it (along with dietary interventions) can decrease the progression of 'prediabetes' to T2D by 31% to 63% in adults living with prediabetes.[16]

Participation in **regular PA improves** glucose levels and heart health, contributes to weight loss, reduces insulin resistance and improves well-being for PwD. [17]

Adults living with diabetes are encouraged to do least 150 minutes of moderate intensity activity per week.

For some people, doing more than 150 minutes per week and/or including vigorous intensity activity can lead to **greater health benefits.**

Muscle-strengthening activity is recommended on 2-3 non-consecutive days per week, while balance exercises are recommended for older adults aged 65 years and over.

All PwD are encouraged to **limit sitting** time and generally move more.

Due to the positive effects of PA on insulin, it is also recommended that PwD **avoid going more than two consecutive days without doing any activity at all.** [18]

[15] OECD/WHO, *Step Up! Tackling the burden of insufficient physical activity in Europe,* 2023, https://rb.gy/vh7uo2
[16] Tuomilehto J et al., *Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance,* N Engl J Med, 2001.
[17] Colberg SR, et al., *Physical Activity/Exercise and Diabetes: A Position Statement of the American Diabetes Association,* Diabetes Care, 2016.
[18] Ibid.

3.3 Physical activity considerations for people with diabetes

Although clearly beneficial, some PwD can experience challenges when trying to meet the PA guidelines aforementioned.

PwD experience common barriers to PA, similar to those experienced by people not living with the condition. There are, however, some **diabetes-specific barriers** that should be considered in addition to these more general barriers.[19]

Fluctuations in glucose levels

For some living with diabetes, particularly those using insulin, PA can cause BGLs to fluctuate resulting in dangerous and unpleasant symptoms of high and low BGLs. The event and fear of these fluctuations can be a significant barrier to activity for some.

Effects of related health conditions

PwD often live with other health conditions that can present barriers to participation. Conditions such as cardiovascular disease, obesity, vision problems, circulation and nerve problems can present additional considerations before one can become active. Without considered, individualised support, the person living with diabetes may feel overwhelmed and fearful of activity.

[19] Kanaley JA, et al., *Exercise/Physical Activity in Individuals with Type 2 Diabetes: A Consensus Statement from the American College of Sports Medicine,* Medicine & science in sports & exercise, 2022.

Lack of support

Many PwD feel they do not receive the support they need from health professionals, their families or friends. Starting PA can be complicated due to the aforementioned glucose fluctuations, other diabetes-related health conditions and the general diabetes-burden experienced by many. Feeling unsupported or judged can add to these, leading to low self-confidence in participating in activity.

Ensuring safe physical activity participation

Generally speaking, the benefits of PA participation far outweigh potential risks. For most PwD, PA pre-screening tests are not required before starting low to moderate intensity PA. If the person living with diabetes wishes to participate in higher intensity activities, a referral to a physician for a check-up is recommended. PA can increase the risk of low BGLs (hypoglycaemia), high BGLs (hyperglycaemia) and cardiac events in some PwD.

Hypoglycaemia

For those using insulin or a type of medication called sulphonylureas, sustained aerobic activity can cause low BGLs. People are at greater risk of hypoglycaemia if they are physically active within two hours of having their mealtime insulin, if they have not eaten enough carbohydrates to support their activity and or if the activity lasts longer than 30 minutes. Symptoms of hypoglycaemia can vary between individuals but may include shakiness, dizziness, weakness, blurred vision, sweating, confusion and in severe cases, loss of consciousness.

For those at risk of hypoglycaemia, formulating a hypoglycaemia management plan with their health professionals, along with regular glucose monitoring is recommended. If hypoglycaemia is suspected, the PwD should be encouraged to stop the activity and follow their personal hypoglycaemia management plan.

Hyperglycaemia

A small rise in BGLs with some types of activity is normal. Light to moderate intensity activity can help bring BGLs down before, during and after activity. If BGLs are high or if the person experiences headache, 'sluggishness' during activity, nausea, vomiting or cramps, activity should be stopped. The PwD should keep hydrated and follow their personal hyperglycaemia management plan.

Cardiac events

Those living with coronary artery disease, a common diabetes-related condition, are at greater risk of **angina, heart attacks, or arrhythmias** during PA. Therefore, it is recommended that those with known coronary artery disease are referred to a physician for additional tests before starting activity. [20]

Other conditions

Further testing and medical advice may be required if the PwD also experiences diabetes-related eye conditions, autonomic neuropathy, recent chest pain, high blood pressure or high cholesterol which has not been investigated. [21]

[20] Colberg SR, et al., *Physical Activity/Exercise and Diabetes: A Position Statement of the American Diabetes Association,* Diabetes Care, 2016.
[21] Ibid.

3.4 Designing physical activity programmes for people with diabetes

PA programmes that target PwD should be:

co-created with individuals who have lived experience of diabetes

tailored to the person's individual PA goals and motivations

adapted to the person's capabilities

in an environment where the person feels physically and psychologically **safe**, free of judgement and stigma

structured to encourage **social support**

supportive of **glucose monitoring** before, during and after activity

Programme staff should also be:

aware of diabetes-specific barriers and individual considerations

trained in diabetes-specific first aid

3.5 Good practice examples

Football is Medicine is an adaptable model using structured football training sessions in a fun, safe and enjoyable environment to promote PA among those with chronic health conditions, including T2D. This model was first piloted in Denmark in 2003 and has now been used around the world.

Football Fans In Training (FFIT) is a health programme designed to tackle health inequalities in men and women experiencing overweight or obesity- well known risk factors of T2D. The programme is a mix of classroom-based activities and PA sessions within local football stadiums. Participants of the programme have increased their fitness, improved their well-being and reduced their risk of T2D.

Diabetes em Movimento is a community-based, multidisciplinary physical activity programme for PwD living in Portugal. The programme consists of three group activity sessions per week with the support of exercise and health professionals. The programme also includes health education sessions targeting diabetes-complication prevention.

The **Fédération Française d'Education Sportive et de Gymnastique Volontaire's** (FFEPGV) Diabetes and Overweight Programme was developed to support PwD, and those living with overweight and obesity, engage in PA and sport in a non-competitive environment, allowing participants to "rediscover the joy of movement".

04 HEPA & CARDIOVASCULAR DISEASES

4.1 Background

Prevalence, Inequalities and Mortality [22]

***Cardiovascular diseases (CVD) are the leading cause of death in Europe, responsible for* 3.9 MILLION DEATHS**

– or* 45% *of all fatalities – annually

***In the European Union (EU), CVD account for over 1.8 million deaths (37% of total deaths) every year.* 1.8 MILLION DEATHS**

***This translates to approximately 4,600 deaths per day across the EU.* 4,600 DEATHS**

[22] *This text has been based on the recently released *EHN Patient Advocacy Handbook – Volume I*, 2025, https://rb.gy/qhfi7k

The main forms of CVD are **Ischemic Heart Disease** and **Stroke,** with the former representing the leading single cause of premature mortality under 65 in both men (248,000 deaths, 16%) and women (76,121 deaths, 11%).

In 2019, CVD accounted for over 10.4 million Disability-Adjusted Life Years (DALYs) in the EU due to dietary risks alone. Additionally, **low physical activity contributed approximately 1.08 million DALYs to CVD,** while tobacco use was responsible for over 5.25 million DALYs. Alcohol consumption also played a significant role, contributing approximately 1.26 million DALYs to the CVD burden.

Each year, over 6 million new cases of CVD are diagnosed in the EU, with 62 million people living with CVD to date.[23]

Over three-quarters of CVD deaths take place in **low- and middle-income countries.** Inequalities in mortality from CVD account for almost half of the excess mortality in **lower socio-economic groups** in most European countries. [24]

Despite being the leading cause of death among women in the WHO Europe Region, **CVD in women has long been under-researched,** leading to gaps in diagnosis, treatment, and prevention. In Europe, **CVD accounts for 45% of fatalities in women and 39% in men**[25], yet much of the medical research and clinical guidelines have historically been based on male-centric data. This has resulted in misdiagnosis, delayed treatment, and a general underestimation of heart disease risk in women.

[23] European Commission, *Cardiovascular diseases*, https://shorturl.at/xxMaN
[24] European Society of Cardiology, *Fighting cardiovascular disease – a blueprint for EU action*, 2020, https://shorturl.at/DAAIp
[25] European Heart Network, *European Cardiovascular Disease Statistics 2017 edition*, 2017, https://rb.gy/iotdbr

Risk Factors

*Risk factors can be categorised into **biological, behavioural,** and **environmental** determinants.*

Biological determinants, such as high blood pressure, high cholesterol, and diabetes, are *modifiable or non-modifiable* physiological conditions that increase risk.

Behavioural determinants include diet, **physical activity,** smoking, and alcohol consumption. It is worth noting that, while behavioural determinants are often framed as personal choices, they are *significantly shaped by the broader environment,* including food availability, workplace conditions, urban planning, and social structures, which influence individual decision-making and health outcomes.

Environmental determinants encompass factors such as air pollution, socioeconomic conditions, and workplace exposures.

Data from 2019 [26] shows that:

***33,6%** of **CVD Deaths** were linked to unhealthy diets*

17,5%** to **high body mass index**, **11,6%** to **tobacco use

***5%** to **physical inactivity** and **3%** to **alcohol use**.*

[26] Global Burden of Disease Study 2019, https://shorturl.at/7LBu3

4.2 Physical activity in prevention and management

Large-scale studies show that physically active individuals have a significantly lower risk of developing CVD compared to inactive individuals.

Importantly, physical activity is beneficial even when started later in life - though long-term and consistent activity provides the most protection.

Improves cholesterol levels

PA increases high-density lipoprotein (HDL, or "good" cholesterol) and decreases low-density lipoprotein (LDL, or "bad" cholesterol).

Improves blood glucose control

Particularly important in preventing or managing diabetes, a major risk factor for CVD.

Lowers blood pressure

Regular exercise can reduce the need for blood pressure-lowering medication.

Prevents stroke

Through its effects on blood vessels, blood pressure, and metabolism.

Reduces body weight and body fat

This helps reduce the burden on the cardiovascular system.

How Physical Activity Helps

PA supports cardiovascular health through multiple proven biological mechanisms[27]

[27]European Society of Cardiology, *Physical activity for cardiovascular prevention*, 2024,https://rb.gy/qhfi7k

Recommendations

Any kind of physical activity is better than none – From walking to structured exercise, all forms help.

Systematic and regular PA bring the most benefit, especially when it follows the **WHO guidelines** in terms of frequency, intensity, and duration.

While it's not fully clear which specific types of activity are optimal, following these general recommendations is sufficient to gain most of the protective effects.

Healthcare providers should:

Encourage **PA as a core part of CVD prevention and management.**

Recognise PA as a **general treatment strategy** with broad health benefits.

Help individuals find **realistic and personalised** ways to increase activity levels safely and sustainably.

4.3 Physical activity considerations for secondary prevention and rehabilitation[28]

Physical activity is not just important for preventing cardiovascular disease.

It plays a vital role post-diagnosis, especially to reduce the risk of future heart attacks, strokes, or other serious complications. This is called **secondary prevention** and is a key part of **cardiac rehabilitation.**

Cardiovascular disease continues after the first event - Even after symptoms appear or an event like a heart attack occurs, cardiovascular disease often progresses silently. Being physically active helps lower the risk of another serious event and death - especially for people with ischaemic heart disease, diabetes, or those recovering from procedures like angioplasty (PCI).

Many people become less active after diagnosis - After a cardiovascular event, people often reduce activity due to fatigue, fear, or confusion about what's safe. Unfortunately, this can increase the risk of developing other problems, such as:

- **Obesity**
- **Type 2 diabetes**
- **Depression or anxiety**
- **Joint and mobility issues (e.g., osteoarthritis)**

This is why tailored guidance and support are so important.

How Cardiac Rehabilitation Supports Recovery

Cardiac rehabilitation is a structured programme combining exercise, education, and emotional support. It's usually offered in three phases:

- **Phase I – Hospital phase:** Begins during the hospital stay after an event like a heart attack.
- **Phase II – Supervised outpatient phase:** Starts shortly after discharge, focusing on monitored physical activity and recovery.
- **Phase III – Maintenance phase:** Ongoing support to maintain progress through lifestyle changes, including physical activity.

These programmes can reduce hospital admissions, improve quality of life, and support emotional recovery.

However, studies show that **while cardiac rehabilitation reduces the risk of cardiovascular death, it may not reduce overall mortality or repeat heart attacks.** This highlights the need for a combination of treatments - including medication, education, and healthy behaviours - alongside exercise.

Tailoring Exercise to the Individual

Every person with CVD can benefit from physical activity, but there is not one-size-fits-all. The safest and most effective exercise plan depends on the individual's medical history, risk level, and physical condition.

- A full medical check-up (including an ECG) is recommended before starting.
- Low-risk patients can usually exercise freely, with general guidance.
- High-risk patients need a personalised and possibly supervised plan, often guided by a healthcare team.
- The best results come from combining different strategies — not just exercise alone. Individual counselling helps people build routines that suit their abilities and needs, especially those who are sedentary or living with other health issues.

[28]Ibid.

Small Steps Make a Big Difference

Even moderate amounts of physical activity can improve:

- **Mental well-being**
- **Daily function and independence**
- **Energy and physical strength**
- **Recovery from surgery (prehabilitation)** – though more research is still needed to understand how long and how intense this should be

The key is to stay active consistently over time. That may mean walking more, joining a rehab class, or building activity into daily life.

Takeaway: Physical Activity is a Lifelong Tool

People living with cardiovascular disease should be supported and encouraged to move more, especially if they were previously inactive. **Physical activity doesn't replace medical treatment, but it amplifies its benefits,** helping people live longer, healthier, and more fulfilling lives.

To see real progress, it's important to combine physical activity with:

- **A healthy diet**
- **Medication when needed**
- **Emotional and psychological support**
- **Regular medical check-ups**

Positive results come when multiple measures are used in sufficient intensity and duration, and when activity becomes part of everyday life.

4.4 Designing physical activity programmes for CVD prevention[29]

Intensity of Activity

- **Moderate-intensity** activity is enough to give significant benefits.
- It's safe and manageable for most people, including those with CVD.
- Higher intensity exercise may bring more benefits but is not suitable for everyone and may even increase risk in people with undiagnosed heart problems.

Frequency

- The total amount per week matters more than how often it's done.
- For practicality and reduced injury risk, **2–3 sessions per week** are often ideal.

Duration

- 30–60 minutes per day is a good general target.
- It can be done in **one continuous session** or **multiple shorter sessions** throughout the day (e.g. 5–10 minutes at a time), which is especially helpful for beginners or older adults.

Total Volume

- Around **150 minutes of moderate activity per week** is recommended.
- For **vigorous activity** (like running), about **75 minutes per week** gives similar benefits.
- Even smaller amounts can help - especially for those who are inactive or have chronic conditions.

More Isn't Always Better

- The benefits of PA continue to increase beyond 150 minutes per week, even up to **7 times that amount,** with no clear harm.
- However, the extra benefit per additional minute decreases.
- Extremely high volumes of intense PA over many years (e.g. in competitive sports) may carry some risks to heart health.

[29]*this guidance is not exclusive but especially intended to CVD prevention, see: EHN, *Physical activity policies for cardiovascular health*, 2019, https://shorturl.at/Pav6b

Type of Activity

- **Aerobic activity** is more effective overall for CVD prevention. Aerobic physical activity practiced in any form within the recommended volume, frequency or intensity limits **does not cause cardiovascular risks** to healthy individuals.
- Resistance training should be limited to about **one hour per week,** based on current evidence.

Beware! Most research on how much and which kind of PA is needed to prevent CVD is based on **population-level data.** This means:

- The recommendations reflect average effects seen across large groups of people.
- These averages don't work equally well for everyone — due to differences in genetics, health status, and body composition.
- Some people may benefit from **less** than the recommended PA, while others may need **more** to achieve the same health effects.

People with a **higher risk of CVD** often need more PA to reduce their risk, while those at **low risk** may need less. Public health guidelines offer general recommendations for the whole population, which are sometimes incorrectly applied to individuals. PA can and should be **customised to the individual's needs.**

3.5 Good practice examples

Finnish Physical Activity Prescription (PAP): The UKK Institute's initiative to develop physical activity counselling practices in primary care aimed to enhance the integration of Physical Activity Prescription (PAP) within four municipal health centres in Finland's Pirkanmaa district. By forming multi-professional teams, providing comprehensive training, and facilitating regular tutor meetings, the project sought to increase healthcare providers' knowledge, improve counselling practices, and promote the documentation of physical activity counselling in electronic patient records.

Sport sur ordonnance: With 20 communes participating in Belgium, *Sport sur ordonnance* is a healthcare initiative in which doctors prescribe physical activity as a treatment for patients with chronic illnesses such as diabetes, cardiovascular disease, obesity, or depression. The prescribed activities are tailored to each patient's condition and are supervised by qualified professionals, often in collaboration with healthcare and fitness specialists. It aims to integrate physical activity into standard medical care as a non-pharmaceutical therapy. A similar initiative is also present in France.

Sweden exercise referral (EU-PAP): The Swedish method of prescribing physical activity was chosen by the European Commission as a best practice to be implemented in other EU Member States. The transfer and adoption is supported through the project EUPAP – A European Physical Activity on Prescription model – coordinated by The Public Health Agency of Sweden. What is unique about the Swedish physical activity on prescription (PaP) method is that:

- the counselling and prescription are individualised, based on the patient's circumstances
- all licensed health-care professionals with adequate expertise may prescribe
- the patients participate in exercise activities outside the direction of health-care services – a central component in PaP is to integrate physical activity into everyday life.

Viu actiu: The 'Live active' *(Viu actiu)* programme is a local service in Benicarló Castellón in the autonomous community of Valencia (Spain). It comprises assessment and prescription of customised physical activity programmes: after diagnosis by a general practitioner, a physical activity professional interviews the patient and offers either an individual programme comprising local walks or group activities for muscle strengthening or aerobic activities. Patients are monitored annually and individual reports issued.

05 HEPA & CHRONIC RESPIRATORY DISEASES

5.1 Background

Chronic respiratory diseases (CRD) impose a significant societal and economic burden, negatively impacting healthcare systems and affecting the lives of patients and their families.

COPD is the third leading cause of mortality globally and affects 36 million Europeans. It accounts for 6% of total healthcare expenditure in the European Union (EU).[34] Exacerbations caused by respiratory infections in COPD typically require hospitalisation twice a year. Repeated exacerbations lead to irreversible changes in lung function, reduce quality of life, and increase the risk of subsequent and more frequent exacerbations.

Asthma usually begins earlier in life than other chronic diseases, causing a high lifetime burden on carers and society. The direct cost of asthma in Europe is €20 billion annually. Poorly managed asthma reduces quality of life, worsens with age, and can permanently damage lung function.[35]

Obstructive sleep apnoea has numerous health consequences, including daytime sleepiness, reduced quality of life, diminished learning ability, and neurocognitive impairments such as reduced episodic memory, executive function, attention, and visuospatial skills. Untreated sleep apnoea can lead to serious medical conditions, including cardiovascular diseases, and increased use of healthcare resources - costs that decline significantly after appropriate treatment.[36]

In Europe, more than

36 million

people live with Chronic Obstructive Pulmonary Disease (COPD)[30]

30 million

with asthma,[31] and estimates of those with obstructive sleep apnoea range from

***24.5 million[32] to 175 million** people.[33]*

[30] Benjafield AV et al., *Estimation of the global prevalence and burden of obstructive sleep apnoea: a literature-based analysis,* Lancet Respir Med, 2019.
[31] Wecker H, et et., *Impact of asthma in Europe: A comparison of web search data in 21 European countries,* World Allergy Organ J, 2023.
[32] Senaratna CV et al., *Prevalence of obstructive sleep apnea in the general population: A systematic review,* Sleep Med Rev, 2017
[33] Benjafield AV et al., *Estimation of the global prevalence and burden of obstructive sleep apnoea: a literature-based analysis,* Lancet Respir Med, 2019.
[34] OECD, *Realising the Potential of Primary Health Care,* 2020, https://shorturl.at/BmyBX
[35] Wecker H, et et., *Impact of asthma in Europe: A comparison of web search data in 21 European countries,* World Allergy Organ J, 2023.
[36] Faria A et al., *The public health burden of obstructive sleep apnea,* Sleep Sci, 2021

5.2 Physical activity in prevention and management

The importance of exercise for health-related quality of life is undeniable for all individuals with respiratory diseases.

Although exercise does not cure or slow the progression of respiratory diseases, it remains a **vital component of self-care.**

Exercise **improves tolerance to physical stress and reduces the intensity** and **frequency of symptoms such as breathlessness,** excess mucus, wheezing, and coughing. Encouraging physical activity is also socially significant, as multiple studies indicate that exercise training reduces the use of healthcare services.[37]

It is essential for individuals with respiratory diseases to **differentiate between breathlessness and shortness of breath.** Breathlessness typically subsides when physical exertion stops. Exercise positively impacts the management of various symptoms - such as shortness of breath, mucus production, and coughing - and improves perceived health-related quality of life. Endurance-based physical activity also reduces daytime fatigue and enhances sleep quality. Strong physical fitness can improve resistance to respiratory infections.

Asthma

Physical activity **increases exercise tolerance** in people with asthma and reduces exercise-induced symptoms, such as bronchial hyperreactivity. Exercise can help manage asthma-related symptoms (shortness of breath, mucus production, coughing) and improve health-related quality of life.

Good physical fitness improves resistance to respiratory infections, which also benefits individuals with asthma. There is evidence that higher fitness levels reduce the occurrence of asthma exacerbations.

COPD

According to studies[38], exercise is particularly beneficial for individuals with COPD, as **exercise-based rehabilitation:**

- reduces shortness of breath by decreasing airway obstruction and sensitivity to inflammation and contraction
- enhances mucus clearance from the airways
- prevents exacerbations and supports faster recovery
- reduces the risk of rehospitalisation and decreases hospital stay duration and healthcare service use
- alleviates weakness, fatigue, anxiety, and depression
- improves physical capacity, walking distance, and health-related quality of life

[37] Puolanne Mervi, Hengityssairaalle liikunta on keskeinen osa omahoitoa, Fysioterapia-lehti, 2022.
[38] The Finnish Medical Society Duodecim, *Chronic obstructive pulmonary disease (COPD), Current Care Guideline,* 2020.

Walking approximately **6,400 steps per day** can reduce the risk of hospitalisation due to exacerbations, compared to fewer than 3,200 daily steps. An increase of around 1,845 steps per day also correlates with a reduced risk of mortality.

Sleep Apnoea

In obstructive sleep apnoea, the condition is often linked to excess body weight. Exercise can reduce the number of nightly breathing pauses by over 30%, even without significant weight loss. Endurance-type exercise reduces daytime fatigue, enhances sleep quality, and improves overall quality of life.

Exercise also positively influences glucose metabolism, fatigue, cardiovascular health, and low-grade inflammation - all common comorbidities associated with sleep apnoea. Studies show that weight loss of 5-10 kg, or 10% of body weight, can significantly alleviate symptoms.[39]

Specific considerations to be taken into consideration

Well-controlled asthma is not a barrier to physical activity or sport. Exercise-induced symptoms are often a sign of poor asthma control, but they may also result from post-exacerbation recovery following a respiratory infection. People with difficult-to-treat asthma are more prone to such symptoms, which affect around 10% of asthma patients.

When designing exercise programmes for individuals with COPD, it is crucial to consider the disease phenotype, symptom severity, airway obstruction, risk of exacerbations, and the presence of asthma or asthma-like symptoms. Comorbidities - such as metabolic syndrome, cardiovascular disease, atherosclerosis, and depression, may also influence the implementation and effectiveness of exercise training.

[39] Norman RM et al., *Exercise & Sport Science Australia (ESSA) position statement on exercise and chronic obstructive pulmonary disease,* Journal of Science and Medicine in Sport, 2021.

5.3 Physical activity considerations for people with CRD

People having respiratory diseases can still participate in almost **all forms of physical activity.** However, it is important to have **breaks** during exercise especially when getting use to new exercise programme or sport. Before starting or increasing exercise it's necessary for a physician to assess the **correct dosage of medication** especially if one is prone to respiratory symptoms during exercise. People who require supplementary oxygen during exertion should follow their physician's instructions for the administration of oxygen.

Individual exercise programmes and baseline testing of physical fitness are the foundation for exercise training in patients with respiratory diseases. The six-minute walking test works well that allows the patient to independently monitor their fitness development.

Warming up before exercise reduces respiratory symptoms- it **should not be overlooked.** It's also important to take into consideration that cold air intensifies asthma reactions and exercise in cold air can cause prolonged irritation and inflammation of the airways. The use of a respiratory air heater may be necessary in cold temperatures.

5.4 Designing physical activity programmes for people with CRD

In general, **interval training** is well suited to people with respiratory diseases. During the lower-intensity phases, the body recovers, which helps prevent symptoms from developing. The slower phases should ideally be three times longer than the high-intensity phases.

For individuals prone to developing symptoms during exercise, the high-intensity bursts should be shorter in relation to the recovery phase. For example, a **10-second high-intensity** effort followed by a 30-second recovery period can improve endurance if continued for **at least 20 minutes.** Cardiovascular exercise itself acts as an effective breathing exercise.

Water-based exercise is a well-tolerated and safe form of physical activity, even for individuals with severe asthma or COPD. The warm and humid air around the pool is easier to breathe, and the water's pressure on the chest helps with exhalation, improving lung ventilation. The inhalation muscles are also strengthened as they work against the resistance of the water. In addition, water immersion raises blood pressure, increases stroke volume, and reduces heart rate. There are no airborne impurities or pollen in the pool area, making it particularly suitable for individuals with allergies or asthma.

- Exercise in water improves **maximum oxygen uptake and exhalation efficiency** in individuals with asthma, and it causes less mucosal irritation compared to similar activity on land. Similarly, several studies show that aquatic exercise significantly improves physical endurance, muscle strength, and health-related quality of life in people with COPD, often more effectively than equivalent land-based training.[40]
- Water-based training is especially beneficial for respiratory patients with **musculoskeletal comorbidities**, and for those who are overweight, as it reduces joint stress and allows for more effective movement.

[40]McNamara RJ et al., *Alternative Exercise and Breathing Interventions in Chronic Obstructive Disease: A Critical Review,* European Medical Journal, 2018.

Walking is one of the most beneficial and accessible forms of exercise for individuals with COPD. The ability to walk longer distances is associated with the ability to maintain independence and remain at home. Walking is also feasible during home oxygen therapy and does not need to be avoided.

- To improve **endurance capacity,** downhill walking combined with interval training can be effective. It requires less energy than flat-surface walking at the same pace and involves eccentric muscle activity, particularly in the thigh muscles. This type of training can lead to increases in muscle mass and strength.
- Although **downhill walking** is well tolerated, implementing it may require creativity. In urban environments, individuals can use lifts or escalators to go up and walk down the stairs. Beginners can start with one floor at a time. An apartment block with a lift can serve as a practical home training location.

Breathing exercises are generally perceived as safe and well tolerated, although scientific evidence regarding their effectiveness is modest. These exercises should focus on breathing techniques, mucus clearance, and managing exhalation during effort (e.g., pursed-lip breathing). Mastery of **diaphragmatic breathing** has been associated with increased walking distance. Combining breathing and movement (such as through yoga or tai chi practised over 12–24 months) has been shown to increase walking distance, reduce breathlessness, and improve health-related quality of life.[41]

Muscle strength is essential for maintaining posture and functional ability in daily life. Strength training is particularly important for individuals with respiratory diseases, as it also supports bone health. It is crucial to focus on muscle strengthening, especially when respiratory disease causes **unintentional weight and muscle loss.** Ageing and certain medications, such as long-term corticosteroid use, may further reduce muscle strength.

- Many people tolerate **strength training** better than endurance activities, as it does not increase oxygen demand as much. Poor muscle strength can contribute to increased breathlessness during activity. Focus should be on both upper and lower limb exercises, as well as the core and upper back muscles, which support posture. Abdominal muscles also support respiratory function and are important during coughing.home training location.

[41] Ibid.

5.5 Good practice examples

Breath and be out of breath Guide: contains useful information and exercise ideas on the Organisation for Respiratory Health in Finland's Handbook: Breath and be out of breath.

BREATH Project: (A European Collaborative and Innovative Partnership to Promote Physical Activity for Patients with Chronic Respiratory Conditions): Funded by the Erasmus+ Programme, the BREATH project aims to promote physical activity and long-term rehabilitation for patients with chronic respiratory conditions. It focuses on upskilling university students and professionals in physiotherapy, physical activity, sports, and nursing to better support these patients. The project has developed an e-learning platform and compiled best practices to enhance the promotion of physical activity among individuals with respiratory impairments.

„PROactive Project": (Physical Activity as a Crucial Patient-Reported Outcome in COPD): developed innovative tools to measure both the amount of physical activity and the difficulties experienced during activity in COPD patients. By combining patient-reported outcomes with data from wearable activity monitors, the project provided a comprehensive assessment of physical activity levels. Additionally, PROactive introduced tele-coaching interventions that significantly increased physical activity among COPD patients.

06 HEPA & CANCER

A new case of cancer is diagnosed in the European Union (EU) every **9 SECONDS**

In 2020 alone, **2.7 million** *people in the EU were diagnosed with cancer.*

and **1.3 million** *lost their lives to the disease.*

Projections suggest that cancer mortality will increase by more than

24% by 2035

making it the leading cause of death in the EU.[42]

6.1 Background

The burden of cancer profoundly affects individuals and their families emotionally, physically, and financially, while also placing significant strain on healthcare systems and societies through increased demand for services, loss of productivity, and long-term care needs.

To address this growing crisis, the EU launched **Europe's Beating Cancer Plan (EBCP).** The plan focuses on four key areas: prevention, early detection, diagnosis and treatment, and quality of life for cancer patients and survivors. However, significant gaps remain in ensuring equal access to care and empowering healthier lifestyles across the board.

The **European Code Against Cancer (ECAC),** a European Commission initiative to inform citizens about their individual actions to reduce their risk of cancer, recommends explicitly to ***"Be physically active in everyday life. Limit the time you spend sitting".***

[42] European Commission, *Europe's Beating Cancer Plan*, 2021, https://shorturl.at/Z6lxi

Most Common Cancers in Europe

The most frequently diagnosed cancers include:

- Breast cancer (most common for women)
- Colorectal cancer
- Prostate cancer
- Lung cancer
- Melanoma and other skin cancers

Several of these - such as lung, colorectal, and prostate cancer, also belong to the leading causes of cancer-related deaths. Other cancers such as bladder, pancreatic, endometrial, and cervical also have high prevalence and mortality across the continent.[43]

Modifiable Risk Factors

While some risk factors (like genetics or age) are non-modifiable, 3**0 - 50% of cancer cases are preventable** through healthier lifestyle choices.[44] Major modifiable risk factors include:

- Tobacco use (the leading preventable cause)
- Alcohol consumption
- Poor diet and excess weight
- Exposure to carcinogens
- Physical inactivity

Physical inactivity contributes significantly to the risk of several cancers, particularly **breast, colorectal, and endometrial cancers,** by increasing inflammation, disrupting immune function, and promoting weight gain and hormonal imbalance.

A Call to Action

Reducing the cancer burden through physical activity requires action across all sectors - governments, healthcare providers, civil society, urban planners, and physical activity providers alike. This includes:

- Creating environments that support active living
- Promoting science-based health communication
- Making physical activity accessible and inclusive
- Increasing awareness around the relationship between physical inactivity and cancer.

[43] WHO, *Cancer Factsheet*, 2025, https://shorturl.at/tvOqx
[44] WHO, *Physical activity factsheets for the 27 EU Member States in the WHO European Region 2021*, 2021, https://shorturl.at/jqHv5

6.2 Physical activity in prevention and management

Physical activity plays an important role throughout the cancer journey - from prevention to treatment and recovery.

Staying active can help reduce the risk of developing certain types of cancer, especially breast, colon, and endometrial cancers. For cancer patients, physical activity can be a safe and effective way to support their treatment. For example, it can help manage side effects such as fatigue, anxiety, muscle loss, and reduced mobility. After treatment, physical activity continues to be valuable by supporting long-term recovery, improving quality of life, and reducing the risk of cancer coming back in some cases.

Physical activity and cancer prevention

Evidence of Protection

Regular physical activity helps prevent cancer by:

Balancing hormones like oestrogen and insulin that can drive tumour growth

Reducing inflammation linked to tumour development

Boosting immune function, improving the body's ability to detect and destroy abnormal cells

Regulating weight and preventing obesity, a known risk factor for at least 13 types of cancer

Strongest Evidence by Cancer Type

- **Colon cancer:** ***20-30%*** risk reduction
- **Breast cancer:** ***10-25%,*** and up to ***40%*** in women with high cardiorespiratory fitness
- **Endometrial cancer:** ***20-30%*** risk reduction
- **Emerging evidence** for preventive benefits is also growing for bladder, oesophageal, kidney, lung, and stomach cancers.

A large, pooled analysis of nine prospective cohorts involving over 750,000 participants found **that higher levels of leisure-time physical activity were associated with a 12–25% lower risk for at least seven different types of cancer.**[45] Despite this, nearly half of Europeans still do not meet WHO physical activity guidelines, especially older adults, women, and people in lower socioeconomic groups.

These disparities are critical to highlight. Physical activity is closely linked to socioeconomic status (SES), which profoundly influences both the risk of developing cancer and the ability to engage in health-promoting behaviours after diagnosis. Individuals from higher SES backgrounds often have more access to resources that support physical activity: financial stability, flexible schedules, informal caregivers, access to green spaces, and secure housing. In contrast, people from lower SES backgrounds may face significant barriers - including financial insecurity, caregiving burdens, unsafe or inaccessible environments for exercise, and limited time and support.

Framing physical activity simply as a personal choice can unintentionally reinforce stigma or guilt, especially for cancer patients, who are already navigating complex physical, emotional, and logistical challenges. For many, physical activity can be a source of strength and support but only when adapted to their unique circumstances and introduced with empathy. Importantly, cancer and its major risk factors (tobacco, alcohol, and unhealthy diets) are not just lifestyle issues but reflections of systemic inequities, often exacerbated by targeted industry practices and insufficient access to care. Recognising and addressing these social determinants is essential for equitable cancer prevention and survivorship support.

Physical activity during cancer treatment

Not Just Safe – Essential

For people undergoing treatment - such as chemotherapy, radiation, surgery, immunotherapy, or hormone therapy - exercise is both safe and recommended. Key benefits include:

Reducing cancer-related fatigue, one of the most common and burdensome symptoms

Preserving strength and function

Reducing anxiety and depression

Improving treatment tolerance and adherence

Preventing physical deconditioning

[45] Moore, S. C., et al., *Association of leisure-time physical activity with risk of 26 types of cancer in 1.44 million adults,* JAMA Internal Medicine, 2016.

Types of Exercise That Help

Evidence supports the use of:

- **Moderate-intensity aerobic exercise** such as brisk walking, cycling, or swimming, have been shown to improve cardiovascular fitness, reduce cancer-related fatigue, and enhance overall quality of life for cancer patients and survivors. Aerobic exercise helps improve endurance and energy levels, which can often be depleted during treatment.

- **Resistance training** to maintain muscle mass, or strength training, is crucial to counteract muscle wasting (cachexia) and loss of bone density, common issues in cancer patients, especially those undergoing chemotherapy or hormone therapy. Maintaining muscle mass helps preserve physical function and metabolic health. Resistance training includes exercises such as weightlifting, resistance band exercises, or bodyweight workouts.

- **Combined programmes,** supervised when possible that integrate both aerobic and resistance exercises are often recommended, as they provide comprehensive benefits by addressing cardiovascular fitness, strength, and overall well-being.

A 2017 meta-analysis found that exercise reduced fatigue by 30% on average, and the **American College of Sports Medicine** recommends exercise as part of standard cancer care.[46]

Common Barriers

Despite the benefits, many patients are told to "rest" or lack proper guidance. Barriers include:

- Fatigue
- Fear of harm
- Lack of access or time
- Low self-efficacy

These can be addressed through **structured exercise counselling, oncology-informed supervision,** and **supportive environments** that integrate activity into cancer care settings.

[46] Campbell, K. L., et al., *Exercise guidelines for cancer survivors: Consensus statement from international multidisciplinary roundtable,* Medicine & Science in Sports & Exercise, 2019.

Physical activity for cancer survivors

Why It Matters After Treatment

Physical activity supports survivors by:

- Reducing the risk of recurrence (especially for breast, colon, and prostate cancers)
- Lowering mortality rates
- Improving quality of life, mental health, and physical function
- Preventing comorbidities like cardiovascular disease and diabetes
- Enhancing physical functioning, mobility, and independence

Survivors who engage in regular physical activity tend to experience better health outcomes, including **lower cancer-specific and all-cause mortality rates.**[47]

Still, around **70% of cancer survivors remain inactive.**[48] This inactivity may be due to a range of barriers, including low motivation, fatigue, pain, or lack of self-discipline. Targeted interventions that address these challenges, particularly through motivational support and symptom management, could significantly increase adherence to physical activity recommendations.

Is It Safe?

Yes - but with important considerations. Multiple reviews have confirmed that exercise-related adverse events are rare, and when physical activity is adapted to an individual's condition, it is safe and beneficial.[49] Experts now conclude that **every survivor should avoid inactivity** and that aerobic, resistance, and combined training improve:

- Anxiety
- Depression
- Fatigue
- Mobility and daily functioning

These can be addressed through structured exercise counselling, oncology-informed supervision, and supportive environments that integrate activity into cancer care settings.

However, it is important to highlight that safety depends greatly on the person's type and stage of cancer, overall health, treatment phase, and how they are feeling on a given day. For example, if someone is experiencing dizziness, extreme fatigue, low blood counts, or nausea due to cancer treatment, then physical activity may not be safe in that moment. The type, intensity, and timing of physical activity should always be personalised, ideally in consultation with healthcare providers and trained exercise specialists.

[47] Schmitz, K. H., et al., *Exercise guidelines for cancer survivors: Consensus statement from international multidisciplinary roundtable,* CA: A Cancer Journal for Clinicians, 2021.
[48] D'Ascenzi, F., et al., *Exercise and cancer survivors: The role of rehabilitation and training.* European Journal of Preventive Cardiology, 2021.
[49] Ferioli, M., et al., *Safety of exercise interventions in patients with cancer: A systematic review and meta-analysis.* Critical Reviews in Oncology/Hematology, 2022.

6.3 Physical activity consideration: relevance across the care continuum

Cancer Type	Role in Prevention	Benefits During Treatment	Benefits for Survivors
Breast (postmenopausal)	✓ Strong evidence	✓ Reduces fatigue, maintains strength, improves quality of life	✓ Lowers recurrence risk and mortality
Colorectal	✓ Strong evidence	✓ Supports gut health, preserves mobility	✓ Lowers recurrence risk and mortality
Endometrial (Uterine)	✓ Strong link via weight and hormone regulation	✓ Supports treatment, often linked to weight-related side effects	✓ Helps with weight management and reduces recurrence risk
Kidney	○ Emerging evidence	⚠ Varies by individual; tailored programmes needed	○ Research ongoing; may support general health recovery
Bladder	○ Emerging evidence	⚠ Individualized approach recommended	○ Growing evidence for role in quality of life and fatigue reduction
Esophageal & Stomach	○ Limited evidence so far	⚠ Caution due to nutritional and surgical challenges	○ Physical activity may support digestion and functional recovery
Prostate	— Limited prevention evidence	✓ Helps manage hormone therapy side effects	✓ Improves quality of life and mental health
Lung	— Emerging evidence for prevention	⚠ Must be tailored due to respiratory limitations	✓ Enhances cardiopulmonary function and quality of life

6.4 Good practice examples

AMAti programme: implemented in 2022, the AMAti programme was developed and offered to cancer patients in four Italian Cancer Centres. The type of physical activity consists in one day of aerobic exercise and circuit training, and one day of toning workout with small equipment. Quality of life and physical fitness tests have been carried out at baseline and at the end of the programme, showing significant improvement.

BREX trial: the Finnish BREX multi-centre randomized controlled clinical trial (Breast Cancer and Exercise) demonstrated that long-term, supervised exercise after breast cancer treatment significantly improves physical fitness, reduces fatigue, and enhances quality of life in survivors.

BUMPER project: (Building UP digital health literacy to enhance cancer prevention across Europe): funded under the EU4Health Programme, seeks to enhance digital health literacy in cancer prevention. It focuses on developing educational materials and tools that empower individuals to make informed health decisions. While the project primarily addresses digital literacy, it encompasses aspects related to physical activity by providing resources that encourage healthy behaviours, including regular exercise.

Outdoor Against Cancer Connects Us (OACCUs) project: launched in June 2022 and coordinated by Umeå University (Sweden), the EU-funded project aimed at enhancing the quality of life for young cancer survivors by promoting a healthy, sustainable lifestyle. With outdoor physical activity as one of the cores pillars, the project seeks to build a supportive network by training young survivors, their families, and healthcare professionals as ambassadors and coaches. You can find useful resources here.

PACAP Project: (Nordic Walking for Cancer Patients): this Erasmus+ initiative aims to raise awareness and encourage people with cancer or those who have recovered to consider Nordic walking as an effective exercise method and to identify the benefits associated with this type of exercise. Nordic walking has proven to be an effective form of prevention and rehabilitation for cancer survivors.

07 DESIGNING HEPA PROGRAMMES FOR PEOPLE WITH CANCER

7.1 Exercise prescription for people with cancer

Exercise & Sports Science Australia (ESSA) has developed a framework to guide personalised, evidence-based assessment, exercise prescription, and follow-up for individuals diagnosed with cancer.[50]

This approach incorporates cancer-specific considerations at every stage, from assessment and planning to long-term monitoring. It applies core exercise principles - such as progressive overload and periodisation - alongside behavioural strategies to promote lasting engagement in physical activity.

[50]Hayes SC et. Al., *The Exercise and Sports Science Australia position statement: Exercise medicine in cancer management,* J Sci Med Sport, 2019.

1

Initial Assessment

The first step is a thorough evaluation of the patient's and family's medical history, including comorbidities, details of past, current, and planned cancer treatments, and any treatment-related side effects. The assessment should also consider the individual's physical activity history, functional capacity, and overall risk. Guidelines from bodies like the American College of Sports Medicine (ACSM)[51] can support this process.

2

Identifying Health Priorities

Following assessment, the next step is to help patients understand how exercise can support both physical and psychological health. The prescription should prioritise the most pressing health concerns - be they physical decline, fatigue, or mental wellbeing- and be tailored to the individual's values and goals, which may evolve over time.

3

Suitability and Barriers

Exercise plans must account for practical, psychosocial, and physiological barriers, such as treatment side effects (e.g. fatigue, anaemia, neuropathy), physical limitations, financial constraints, or access to facilities. Identifying facilitators - such as support networks, symptom control, and positive past experiences - can help improve adherence.

4

Tailored Prescription and Education

Patients should be supported to set realistic, meaningful goals, whether maintaining function, slowing decline, or improving strength. Education should emphasise the type, intensity, and frequency of activity needed to meet these goals, particularly if patient preferences don't align with clinical needs.

5

Ongoing Review and Referral

Regular reassessment is essential and should adapt to changes in treatment, side effects, or patient goals. This may include referring patients to other professionals such as dietitians, psychologists, physiotherapists, or oncology nurses. Accredited Exercise Physiologists (AEPs) play a vital role in adjusting plans and liaising with the wider healthcare team when new clinical concerns arise.

[51] American College of Sports Medicine, *ACSM's guidelines for exercise testing and prescription (12th ed.)*, Wolters Kluwer, 2025.

7.2 Exercise recommendations

The recommendation to prescribe exercise for patients with cancer is now well-supported by numerous national health authorities and professional organisations.

Cancer survivors should ideally get a **full fitness check** (i.e., cardiorespiratory fitness, muscle strength and endurance, body composition and flexibility), with some specific cancer-specific considerations, to tailor their exercise plan. Most people can **safely begin with light activities** like walking, gentle strength training, or flexibility programme.

Exercise testing recommendations according to ACSM:[52]

- **Check health history:** Review the cancer survivor's medical background and any health issues before starting fitness tests or planning exercise.
- **Know treatment risks:** Be aware of most common toxicities/side effects associated with cancer treatments, such as risk of fractures, cardiovascular events, nerve damage, or joint/muscle issues.
- **Use fitness tests wisely:** Assessments can help understand how fatigue or other symptoms have affected strength, endurance, or mobility.
- **Supervision levels:** Cancer patients don't usually need extra supervision for fitness testing compared to other groups.
- **Strength testing safety:** 1-repetition maximum (1-RM) tests are generally safe for breast and prostate cancer survivors without bone issues.
- **Be cautious with bone issues:** Avoid strength tests involving areas with bone metastases or osteoporosis. For example, don't test leg strength if hip or spine has lesions. But upper body testing may be okay if there are no lesions there, with medical clearance if needed.
- **Assess fall risk:** Older survivors and/or survivors treated with neurotoxic chemotherapy (typical for breast, colon, lung, ovarian cancers) may need standard assessment of balance and mobility to assess fall risk.
- **Check heart health:** Cancer survivors, especially those with a good long-term outlook, should be screened for heart problems using ACSM guidelines for exercise testing and prescription. If risks are found, a cardiopulmonary exercise test may be needed before starting exercise.

[52] Campbell et. Al., *Exercise Guidelines for Cancer Survivors: Consensus Statement from International Multidisciplinary Roundtable,* Med Sci Sports Exerc, 2019.

National health authorities and professional organisations recommend the following for people with cancer:

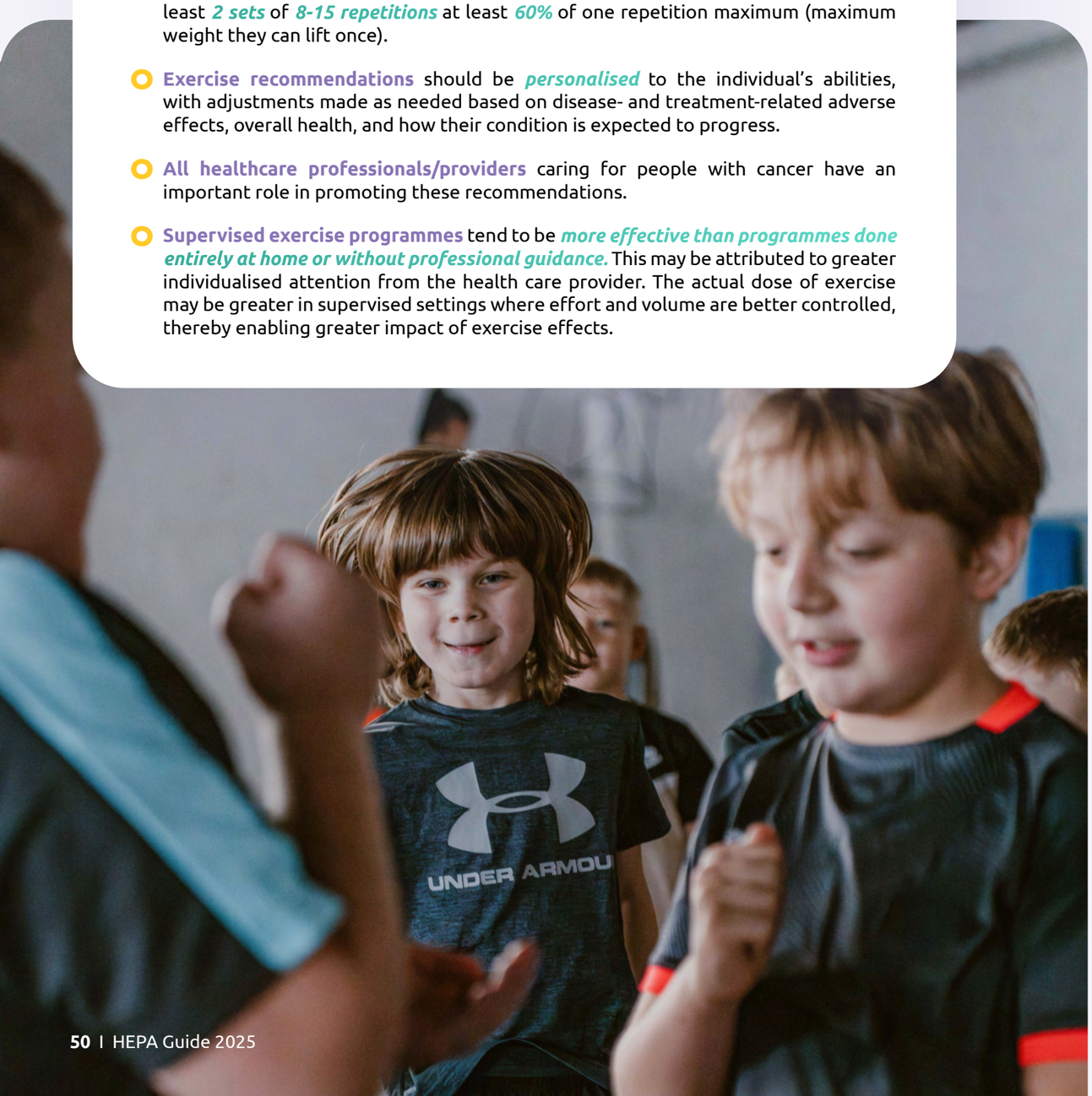
- **Stay active:** All people with cancer should ***avoid inactivity*** and return to normal daily activities as soon as possible following diagnosis – be as physically active as current abilities and conditions allow.

- **Aim for regular exercise:** All people with cancer should gradually work up to, and then maintain, either: at least ***150 minutes*** of moderate intensity, or ***75 minutes*** of vigorous intensity aerobic exercise (like walking, jogging, cycling, swimming) each week, done over at least ***3 times per week,*** for at least ***30 minutes,*** for ***8-12 weeks*** or more. In addition, they should include ***2-3*** resistance training sessions each week, with at least ***48H*** recovery before exercising the same muscle group again, doing moderate to vigorous intensity exercises targeting the major muscle groups, using at least ***2 sets*** of ***8-15 repetitions*** at least ***60%*** of one repetition maximum (maximum weight they can lift once).

- **Exercise recommendations** should be ***personalised*** to the individual's abilities, with adjustments made as needed based on disease- and treatment-related adverse effects, overall health, and how their condition is expected to progress.

- **All healthcare professionals/providers** caring for people with cancer have an important role in promoting these recommendations.

- **Supervised exercise programmes** tend to be ***more effective than programmes done entirely at home or without professional guidance.*** This may be attributed to greater individualised attention from the health care provider. The actual dose of exercise may be greater in supervised settings where effort and volume are better controlled, thereby enabling greater impact of exercise effects.



7.3 Implementing FIIT prescriptions in practice

To design effective and personalised exercise plans, it's important to understand the difference between physical activity and structured exercise:

Physical activity
includes any body movement that uses energy, such as walking, gardening, or household chores.

Exercise training
is a more structured and planned type of activity aimed at improving health and fitness.

To make exercise effective, professionals use key training principles, most commonly structured using the ***FITT formula:***

F *Frequency*
how often exercise is done

I *Intensity*
how hard the activity is

T *Time*
how long each session lasts

T *Type*
what kind of activity is performed

This method helps adapt exercise to meet individual needs. Studies[53] show that joining structured training programmes can increase people's overall physical activity over time.

[53] Amiri et al., *The effects of regular exercise on cognitive and cardiometabolic health in testicular cancer survivors subjected to platinum-based chemotherapy.* Andrology, 2025.

Exercise Types and Approaches

According to the Exercise and Sports Science Australia,[54] a balanced exercise programme for people living with cancer should include both:

- **Aerobic exercise** – like walking, swimming, or cycling, which improves heart and lung function.
- **Resistance training** – such as using weights, resistance bands, or bodyweight exercises to strengthen muscles.

As patients progress, it's important to move beyond just walking and include different types of activities to improve overall fitness.

Programmes should target:

- **Large and small muscle groups**
- **Muscles affected by cancer treatment**
- **Muscle balance and coordination**

For example:

- **A woman with endometrial cancer** trying to lose weight might focus more on resistance training to maintain muscle.
- **A lung cancer** patient aiming to improve breathing might prioritise aerobic exercise.

Flexibility, balance, and pelvic floor exercises should also be included when needed—for example, to prevent falls or manage incontinence after certain cancer treatments.

In cases of s**evere fatigue or at end-of-life,** light mobility or range-of-motion exercises may be the most appropriate, focusing on maintaining comfort and function.

[54] Hayes SC et. Al., *The Exercise and Sports Science Australia position statement: Exercise medicine in cancer management,* J Sci Med Sport, 2019.

Intensity: How Hard Should Exercise Be?

Moderate to vigorous exercise is generally safe and more effective than light activity for most people with cancer.

However, **low-intensity activity** may be more suitable when:

- **The person is very deconditioned**
- **They're feeling unwell (e.g. nausea during treatment)**
- **Right after surgery or if there's a blood clot**

How to measure intensity:

- **Rating of Perceived Exertion (RPE)**
- **Heart rate monitors**
- **Number of repetitions (repetition maximums)**

Cancer treatments may affect heart rate and energy levels, so self-monitoring and flexibility are key.

Frequency & Duration: How Often and How Long?

Start with **short sessions** (5–10 minutes), especially after surgery or if someone is very weak. The goal is to build up to at least **20 minutes per day**, and eventually to **most days of the week.**

This allows enough time to:

- **Warm up**
- **Exercise**
- **Cool down**

While **20 minutes is a good target,** it's flexible - especially for people in palliative care or feeling unwell.

Total Weekly Exercise: Setting Realistic Goals

Standard guidelines suggest:

- **150 minutes of moderate-intensity aerobic activity per week**
- **At least 2 resistance training sessions per week**

But this may not suit everyone, especially people with advanced cancers. Even smaller amounts of exercise can bring benefits.

Key tips:

- **Know your starting level**
- **Understand your weekly goals**
- **Adjust based on how you feel ("good days" vs. "bad days")**
- **Use both objective (heart rate) and subjective (how hard it feels) tools to adjust**

Progressing Safely

How exercise is progressed depends on the stage of treatment:

- **During treatment**, fatigue and side effects may require slower progression.
- **After treatment**, it's often possible to gradually increase time, intensity, and type of exercise.

People who were inactive before diagnosis may need extra guidance. The role of a trained exercise professional is vital to ensure that programmes are safe, suitable, and effective.

Behaviour Change: Helping People Stick with It

Behaviour change strategies can help improve motivation and consistency. These include:

- **Goal setting**
- **Monitoring progress**
- **Personalised advice**
- **Social support**
- **Education about safe practices**

Patients should also know how to recognise treatment-related side effects and understand what's normal and what's not.

Limitations

Most exercise guidelines are based on research in more common cancers like early-stage breast or prostate cancer. This means we still need better evidence for other types or advanced stages of cancer.

Not everyone can follow standard FITT guidelines - so plans must be **individualised, flexible, and regularly updated** based on patient tolerance and response.

08 UPSKILLING EXERCISE FOR HEALTH

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Advancing Standards for Fitness and Physical Activity Professionals Working with Clinical Populations

As the prevalence of non-communicable diseases (NCDs) continues to rise, the role of fitness and physical activity professionals in supporting prevention and long-term management is becoming ever more important.

Yet, effective integration of such professionals into the broader healthcare and prevention ecosystem requires more than passion—it demands robust, evidence-informed education and clearly defined professional boundaries.

Recognising this, EuropeActive has developed a series of progressive standards to support professionals at different stages of their careers in working safely and effectively with people affected by NCDs. These standards aim to strengthen credibility, competence, and cooperation across the sector, ensuring fitness professionals are well equipped to support individuals with a wide range of health needs.

The Need for Specialised Knowledge and Educational Standards

At the foundation lies the EuropeActive Level 4 Personal Trainer Standard, which provides the essential competencies to safely deliver exercise in general populations. Building on this, the **Level 5 Exercise for Health Specialist (EfHS)** standard introduces the knowledge and skills required to support individuals living with low- to moderate-risk chronic conditions. The Level 5 EfHS acts as a vocational route for personal trainers seeking to deepen their practice and specialise in exercise for health. This standard includes applied knowledge of chronic disease pathophysiology, client screening, risk management, exercise modification, and interprofessional collaboration. While EfHS professionals are not clinical practitioners, they play an essential role in prevention, recovery, and long-term self-management for clients whose conditions are stable and within a clearly defined scope of practice.

To complement this vocational route, EuropeActive has also developed academic role profiles at **EQF Level 6 (Graduate Exercise Professional – GEP)** and **EQF Level 7 (Clinical Exercise Professional – CEP).** These profiles reflect the increasing recognition of university-trained exercise professionals working with complex or high-risk populations.

The Role of the Clinical Exercise Professional (CEP)

The **Level 7 Clinical Exercise Professional (CEP)** profile outlines the competencies expected of exercise practitioners working in medical, rehabilitation, or integrated health settings. CEPs are qualified to design, deliver, and supervise exercise programmes for individuals with diagnosed clinical conditions—including those with high-risk profiles or multiple comorbidities.

The CEP standard aligns closely with the International Clinical Exercise Physiology Standards and Guidelines developed by the International Confederation of Sport and Exercise Science Practice (ICSESP). This international alignment ensures quality, consistency, and mobility of professionals across Europe and beyond.

CEPs are expected to work as part of multidisciplinary teams, often within or alongside primary, secondary or tertiary healthcare services. Their expertise bridges the gap between clinical recommendations and real-world implementation, ensuring that exercise prescriptions are safe, effective, and person-centred.

Complementarity of Vocational and Academic Routes

While the L5 and CEP roles differ in scope and context, they are highly complementary. The L5 EfHS provides a robust base for working with individuals at low to moderate risk, particularly in community or fitness settings. The CEP, in turn, provides oversight, leadership, and clinical depth—particularly where complex medical conditions or institutional contexts are involved.

Together, these standards form a structured pathway that supports lifelong professional development while safeguarding the wellbeing of individuals with NCDs. They also offer a clear framework for collaboration across sectors, allowing professionals to operate within their scope while referring to or working alongside colleagues when needed.

Building Trust, Raising Standards

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09 CONCLUSION

This Guide has emphasised that making **health-enhancing physical activity (HEPA)** inclusive and accessible is not simply a matter of good practice- it is a public health imperative. The evidence is clear: physical activity plays a vital role in preventing and managing non-communicable diseases. Yet despite strong recommendations from the WHO and the EU, physical activity remains underutilised in policy and practice and is often out of reach for those who would benefit most.

To change this, action must be taken across the entire system. Policymakers, healthcare providers, and the fitness and physical activity sector must **work together to remove barriers** and embed physical activity into everyday life - especially for those at greatest risk. Interventions must be designed through the lens of empathy and accessibility, recognising that factors such as socioeconomic status, gender, age, disability, and chronic illness shape people's opportunities to be active.

A more active Europe is a **healthier, more inclusive Europe.** By putting physical activity at the heart of prevention strategies and community life, we can reduce the burden of NCDs and improve quality of life for all. Let us not miss this opportunity to move inclusively - and collectively - towards better health.

2025 #BEACTIVE DAY

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This Guide is a testament to the potential of cross-sectoral collaboration in addressing the growing burden of NCDs. By supporting the inclusion of people affected by or at risk of NCDs in physical activity and fitness programmes, this work aims to reduce barriers and promote equitable access to healthier lifestyles across Europe. Our heartfelt thanks to all contributors for their dedication, collaboration, and shared vision of a healthier, more active Europe.

ECL Association of European Cancer Leagues

ehn European Heart Network Fighting heart disease and stroke

International Diabetes Federation Europe

The Organisation for Respiratory Health in Finland

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