

## THE IMPORTANCE OF PHYSICAL ACTIVITY IN CANCER PREVENTION

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*“Lack of activity destroys the good condition of every human being, while movement and methodical physical exercise save it and preserve it” – Plato, Greek philosopher (427–347 BC).*

The majority of cancers arise from a combination of factors, including genetic, environmental and lifestyle factors, as well as their interactions (Cogliano et al.,2011). So, to prevent cancer there is a great need to enhance lifestyle changes. One important component of a healthy lifestyle is regular physical activity.

**Regular physical activity** for adults means that they should engage in 150-300 min of moderate-intensity physical activity per week, or 75-150 min of vigorous-intensity physical activity, or an equivalent combination. Achieving or exceeding the upper limit of 300 min is optimal. Ideally, adults should also limit sedentary behavior, such as sitting, lying down, and watching television, or other forms of screen-based entertainment. Regular physical activity is proven to help prevent and manage noncommunicable diseases such as heart disease, stroke, diabetes and several cancers. It also helps prevent hypertension, maintain healthy body weight and can improve mental health, quality of life and well-being (Rock et al.,2020).



The European cancer code that includes 12 ways to reduce one’s cancer risk, states in the recommendation number 4: “Be physically active in everyday life. Limit the time you spend sitting”. Research supports that there is a linear relationship between physical activity and cancer prevention, meaning that the more moderate-to-vigorous physical activity one does, the greater the cancer prevention benefits. “Move more and sit less” is the recommended task for adults (Clinton et al.,2020).

Physical activity has been traditionally linked with **lower risks** of colon and breast cancer (Rezende et al.,2017). Also, recent reports from international scientific societies state that there is sufficient and robust evidence that physical activity is linked to a lower risk of colon, breast, kidney, endometrial, bladder, oesophageal (adenocarcinoma), and stomach (cardia) cancers. The evidence of its impact for lung cancer prevention is moderate and for hematological, head and neck, pancreas, prostate, and ovarian cancers is limited (US Department of Health and Human Services, 2018). Specifically, when comparing the incidence among individuals in the highest category of physical activity with individuals in the lowest, strong evidence demonstrates reduced risks of bladder, breast, colon, endometrial, oesophageal adenocarcinoma, renal and gastric cancers, with relative risk reductions ranging from approximately 10% to 20% (McTiernan et al.,2019).

Physical activity can help regulate some hormones that contribute to the development of cancer and help keep the immune system healthy. The role of physical activity in cancer prevention is reinforced by accumulating **biological evidence**. Physical activity has effects on insulin/glucose metabolism, immune function, inflammation, sex hormones, oxidative stress, genomic instability, and myokines - functions that are associated with purportedly lower the risk of specific cancer types (Hojman et al.,2018; Koelwyn et al.,2017). For example, physical activity has been related to lower sex-hormone levels in postmenopausal women, which



may explain the association between physical activity and a lower risk of postmenopausal breast cancer (Neilson et al.,2014).

Moreover, physical activity contributes to the **prevention of weight gain** and has been associated with a lower risk of obesity. Regular exercise helps to maintain a healthy body weight, which helps regulate hormones and helps the immune system. So, the beneficial influence of physical activity on body weight also benefits cancer prevention (US Department of Health and Human Services, 2018), since obesity have been associated with many types of cancer.

Consequently, there is a recommendation for individuals to achieve and maintain a healthy body weight throughout their life (Rock et al.,2020).

Exercise plays a vital role in cancer prevention, recovery, and survival. In each of these settings, patients should be counselled to exercise as vigorously as is safe and tolerable, and to avoid prolonged sitting. A significant volume of research has been conducted in the field of physical activity and cancer prevention and survival. However, there is still so much to explore and learn about the role and benefits of physical activity on cancer.

#### **EONS PrEvCan Cancer Prevention Campaign**

Cancer nurses, who are in the frontline and always pioneering, have initiated the **#PrEvCan** campaign (The PrEvCan campaign was initiated by EONS and is run in association with key campaign partner, ESMO. More info: [www.cancernurse.eu/prevcan](http://www.cancernurse.eu/prevcan) ). The campaign is based on the European Cancer Code, which sets out 12 recommendations ranging from physical activity and dietary guidelines all the way to tobacco use and second-hand smoke. Over a period of 12 months starting from October 2022, each month is dedicated to promoting one of these recommendations and highlighting the scientific evidence supporting it. The dual objective is to increase awareness of how to prevent cancer among the general public and provide healthcare professionals with a more comprehensive toolkit for communicating the importance of cancer prevention effectively. January is the month dedicated to physical activity. Key messages include:

#### **For patients:**

- 150 minutes of moderate intensity physical activity per week will reduce your cancer risk
- Take the stairs, walk, run, cycle, swim, jump, dance, whenever you can!
- Get moving for health!
- Being physically active reduces the likelihood of some of the most common cancers as well as other diseases.

#### **For healthcare professionals:**

- Ask your patients about their physical activity!
- Recommend at least 150 minutes of moderate intensity physical activity of per week for patients that are able
- Any physical activity is better than none!
- Provide support and tailor recommendations for patients at risk for inactivity.



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