

## Exercise: a powerful medicine against (breast) cancer

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These days you can hardly enter a mall without noticing pink ribbons presented for purchase in almost every store. You have most likely seen evidence of this, with many women donning a pink ribbon on their sweaters or purses. Well, this month is the official breast cancer awareness month, and magazines and TV shows are busy covering the topic by discussing treatment options, how to live with breast cancer, or generally raising awareness of this widespread disease.

Listening to discussions about breast cancer, women generally feel helpless. We feel that falling ill with breast cancer is something that is not under our control; and the occurrence of breast cancer is widely perceived as being genetic. However, the official homepage [www.breastcancer.org](http://www.breastcancer.org) states that only 5-10% of breast cancer cases can be traced back to genetic factors. Can these stats give us hope? Are there risk factors that we actually *can* minimize or avoid altogether? The Swedish National Institute of Public health proclaimed in 2010 that breast cancer actually develops in a complex interaction between genetics, environment and lifestyle. Shockingly, the same source acknowledged that a sedentary lifestyle and obesity are thought to be the causes of as many as a quarter of all new cancer cases in the world. But one may rightly ask; how is physical inactivity linked to the development of cancer?

Well, Pedersen attempted to make us understand the relationship between a sedentary lifestyle and being at higher risk of developing cancer: physical inactivity leads to the accumulation of fat in the abdominal area. We all know that lack of exercise as well as poor eating habits result in the little bulge forming around the stomach. But where is the link to cancer? According to Pedersen, visceral fat activates a cascade of inflammatory processes within the body that promote the development of several life-threatening diseases including type 2 diabetes, cardiovascular disease and breast cancer. But there is good news: these aforementioned chronic inflammatory processes that are caused by abdominal fat can be significantly decreased by exercising. Furthermore, studies show that moderate intensity exercise correlates with a decrease in insulin, leptin, and estradiol concentrations in the body; elevated levels of these hormones have been associated with a higher risk of breast cancer.

But even if you are at genetic risk of being more susceptible to breast cancer, there is still hope. A recent nationwide study in the Netherlands suggested that physical activity may even reduce the risk of breast cancer in carriers of the BRCA1/2 mutation, a mutation that otherwise implies a 30-80% higher risk of developing the illness.

The solution of simply exercising sounds so simple, nonetheless many people fear that physical activity needs to be strenuous and completely exhausting in order to be effective; luckily science shows that this is a common misconception. The Swedish National Institute of Public health ensures that sports activity with an intensity of 6 METs (standing for metabolic equivalent) is enough to ensure the previously mentioned health benefits; with 6 METs corresponding to a fast walk, a slow jog, cycling, or simply some gardening work. As these types of activities can reduce the risk of breast cancer by 30-50%, the recommended 4 hours per week are certainly a small price to pay.

Exercise is not limited to preventative measures only; it can also work as part of a rehabilitative treatment regime, and breast cancer patients can indeed benefit from physical

activity, as I was able to witness in the clinical setting. I met breast cancer survivors who were treated in a rehabilitative clinic that included exercise as a part of the therapy program. These patients reported a plethora of mental and physical health benefits of being active, including; “I feel in control over my body again”, or “I am not as tired”, and “I feel less anxious.”

Summing up, there *is* a modifiable factor in the prevention and rehabilitation of breast cancer: our level of physical activity. But men, don't think that you get off lightly here, exercise has equal benefits for you too. Moderate intensity exercise has been found to also reduce the risk of prostate, lung and other types of cancer up to 20-40%, as The Swedish National Institute of Public health acknowledged.

So, males and females of all ages: put on your sport shoes and take a nice power walk, a hike or a slow jog in the beautiful fall nature. With all these wonderful benefits of exercise, there's no excuse for being a sedentary coach potato anymore, is there?!