



## Physical Activity and Colorectal Cancer

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### Dear Editor-in-Chief

Colorectal cancer is one of the most common cancers in the world. In developed countries 60% of the populations are at risk of this cancer, and colorectal cancer is considered as 10% and 11% of newly diagnosed cancers among men and women, respectively (1). The Europe Society of Gastroenterology declared that colorectal cancer is the most common cancer in 2000. The incidence of colorectal cancer varies in different parts of the world, so that the highest incidence is visible in developed countries such as America, Australia, West Europe and New Zealand and lowest in countries such as South of America, Africa and Asia (2, 3).

Colorectal cancer is a multifactorial disease with a set of genetic and environmental factors. In this disease a series of factors such as lifestyle, nutrition and physical activity play a key role in susceptibility to cancer. The role of physical activity in susceptibility to colorectal cancer has received special attention; so that the findings resulted out of most of these studies indicate the effect of physical activity in reducing the risk of susceptibility to colorectal cancer (4, 5). In fact, there is a reverse relationship between physical activity and colorectal cancer, in such a way that the risk of colorectal cancer in people with physical activity

in their free time is 27% less than people without physical activity are (6).

Severe physical activity is associated with the reduced risk of colon cancer, so that the relative risk of proximal and distal colon cancer in severe physical activity group compared with no physical activity group was 0.73(95% CI, 0.66-0.81), and 0.74 (95% CI, 0.68-0.80), respectively (7). People who have a history of continuous physical activity during the past 20 yr have more benefits from the protective effects of exercise in reducing the risk of occurrence of colon cancer (4). In men and women with high physical activity, incidence of colorectal cancer compared to those with little or no physical activity reduced by 40%-50% (8).

In people that during their leisure time had at least 60 min of daily physical activity compared to those who had physically active for 10 min or less, the hazard ratio of colorectal cancer was 0.57 (95% CI, 0.41-0.79). Hazard ratio for colon cancer was 0.56 (95% CI, 0.37-0.83) and for rectal cancer was 0.59 (95% CI, 0.34-1.02) (9).

In recent years, mechanisms by which physical activity reduces the risk of colorectal cancer, were not entirely clear, albeit assumptions such as changes in the material in gastrointestinal trans-

mit time, changes in immune function as well as changes in prostaglandin levels, insulin, insulin-like growth factors, bile acid secretion, serum cholesterol as well as pancreatic and gastrointestinal hormone profiles are presented. There is currently limited empirical data in epidemiologic studies on humans and animals in order to approve each of these mechanisms in reducing the risk of colorectal cancer; therefore, it is probable that beneficial effect of physical activity in reducing colorectal cancer has been due to the combined effects of these factors and other unknown factors (10).

Doctors recommend physical activity for the general population with the aim of reducing the burden related to colorectal cancer. However, doctors do not need a full understanding of this mechanism. Therefore, in health education programs and medical advice for reducing the risk of colorectal cancer, physicians must pay particular attention to the protective effect of exercise and physical activity, and at the same time conduct scientific and biological surveys to achieve a clearer understanding of the beneficial mechanisms of physical activity in reducing risk of colorectal cancer.

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