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NEW EPIDEMIOLOGICAL DATA IN RELATION TO NUT CONSUMPTION AND CANCER RISK



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The healthy effects of nuts on the cardiovascular system are widely recognized. Studies conducted in the past two decades have shown that nuts can protect against the development of and mortality from coronary heart disease, fatal and non-fatal ischemic heart disease, and sudden cardiac death (Kris-Etherton et al, 2008). However, the relationship between nuts and cancer has not been sufficiently studied.

Cancer is a disease characterized by the loss of genetic control over cell growth and proliferation, mainly as a result of exposure to environmental factors. Giving up smoking and consuming plenty of fruit and vegetables are currently the most important recognized means of reducing the risk of cancer.

In the past decades a considerable number of epidemiological studies have suggested that prudent diets rich in vegetables and fibre are associated to a reduced risk of certain types of cancer. In contrast, Westernized diets rich in meat and processed foods, saturated fatty acids and trans-fatty acids have been related to an increased risk of cancer.

Nuts are very rich in components that have antioxidant, anti-inflammatory and anticarcinogenic properties: i.e. selenium, magnesium, arginine, folic acid, antioxidant vitamins and several phytochemicals.

In recent years, several epidemiological studies have explored the relationship between the frequency of nut consumption and some types of cancer. In 2006 we reviewed (Gonzalez et al, 2006) all the articles analysing these associations and concluded that although the results are not conclusive, a protective effect on colon and rectum cancer is possible. Likewise, some of the studies published before 2006 showed a possible protective effect on prostate cancer, but the data was insufficient to determine other tumour locations. We also concluded that new epidemiological studies are required so that the possible effects of nuts on cancer can be clarified.

Four important epidemiological studies have been published lately adding new data to the literature on colorectal cancer, endometrial cancer, and proliferative benign breast disease.

In the European Prospective Investigation into Cancer Prevention (EPIC) cohort, a significant inverse relationship between regular nut consumption and colorectal cancer was found only in women (Jenab et al, 2004). This gender discrepancy was also reported in the risk of colorectal cancer associated with peanut consumption in a different ethnic population group from Taiwan (24,000 individuals followed for 10 years). However, in both studies the protective effect of nut consumption was not observed in men.

The relationship between frequency of nut, seed and legume consumption and endometrial cancer was also explored in a case-control study conducted on a small sample of Mediterranean Greek women (Petridou et al, 2002). The results of this study support the role of nut-rich diets in reducing the risk of this type of cancer. However, the results need to be interpreted with caution since the sample of women was small and the risk of endometrial cancer low.

Recently, the association between adolescent fiber intake and proliferative benign breast disease, a marker of increased breast cancer risk, was examined in the Nurses' Health Study II (Su et al, 2010). In this prospective study conducted on 29,480 women consuming more than two servings of nuts per week had a 36% lower risk of proliferative benign breast disease than women consuming less than one serving per month. These findings support the hypothesis that the intake of fiber and nuts during adolescence influences subsequent risk of breast disease and may be a viable mean for preventing breast cancer.

In the future the mechanisms that explain the protection attributed to the bioactive nut constituents responsible for the anticarcinogenic effect need to be explored. We also need more information about the protective effect of nuts on other tumour sites such as prostate and breast.

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