Dietary intakes of carbohydrates in relation to prostate cancer risk: A prospective study in the Malmo Diet and Cancer cohort

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KEY POINTS FROM THIS STUDY:

1) “Dietary carbohydrates have been implicated in relation to prostate cancer.”

2) This analysis included 8,128 men aged 45–73 y without a history of cancer, cardiovascular disease, or diabetes. After a median follow-up time of 15 y, prostate cancer was diagnosed in 817 men.

3) This study found that overall, total carbohydrates consumption did not increase the risk for prostate cancer. However there was an increase rate of prostate cancer as related to the consumption of low-fiber cereals, cake, biscuits, rice, and pasta.

4) “A high intake compared with zero consumption of sugar-sweetened beverages was associated with increased risk of symptomatic prostate cancer,” by 38%.

5) “Results from this large study with high-validity dietary data suggest that a high intake of refined carbohydrates may be associated with increased risk of prostate cancer.”

6) Lifestyle and environmental factors play an important role in prostate cancer.

7) “Both insulin and insulin-like growth factor I stimulate prostate cancer growth in vitro and have been associated with prostate cancer risk in epidemiologic studies.”

8) “Because one of the most potent stimulants for insulin production is carbohydrate consumption, it has been proposed that diets high in carbohydrates may affect prostate cancer risk.”

9) The nutrient and food variables investigated in this study were total carbohydrates, monosaccharides, sucrose, dietary fiber, whole grains, vegetables, fruit and berries, fruit juices, potatoes, low-fiber cereals, low-fiber bread, high-fiber bread, cakes and biscuits, rice and pasta, sweets and sugar, sugar-sweetened beverages, alcohol, calcium, selenium, vitamin E, total protein, red meat, processed meat, total fat, SFAs, PUFAs, fish and shellfish, and dairy products.
Other measured variables included BMI, waist circumference, smoking, educational level, and total physical activity.

10) “A high intake of cake and biscuits was associated with increased risk of low-risk prostate cancer.”

11) “A high intake of low-fiber cereals was associated with increased risk of total and low-risk prostate cancer.”

12) “A high intake of rice and pasta was associated with increased risk of low risk prostate cancer” by 33%.

13) “Significantly increased risk of symptomatic prostate cancer was seen for a high intake of sugar-sweetened beverages” by 41%.

14) “Refined carbohydrates (ie, cakes and biscuits, low-fiber cereals, rice and pasta, and sugar-sweetened beverages), may be associated with incident prostate cancer.”

15) “Although no association was seen with total carbohydrates or sucrose, high intake of sugar-sweetened beverages was shown to be associated with 40% increased risk of symptomatic prostate cancer in our study population.”

16) “Our findings suggest that high intake of foods typically high in refined carbohydrates (including cakes and biscuits, low-fiber cereals, rice and pasta, and sugar-sweetened beverages) may increase risk of this disease.”

COMMENTS FROM DAN MURPHY

**Article Review 52-12** indicates that the primary fuel for cancer cells is through the very inefficient anaerobic glycolysis pathway; because of this inefficiency, cancer cells require large amounts of carbohydrates to fuel their high energy requirements. Consequently the authors suggest that cancer cells “starve” when dietary carbohydrates are sharply restricted.

[Is There a Role for Carbohydrate Restriction in the Treatment and Prevention of Cancer? Nutrition and Metabolism; October 2011; 8(75)]

The bottom line is that this article adds to the evidence that consumption of refined carbohydrates is a cancer risk and should be avoided or minimized.
Accompanying Editorial

Soft Drinks, Aspartame, and the Risk of Cancer and Cardiovascular Disease

Dagfinn Aune

1) “The consumption of sugar-sweetened soft drinks has been associated with excess weight and an increased risk of type 2 diabetes in systematic reviews and meta-analyses of the evidence, and these conditions are by themselves related to an increased risk of mortality, cardiovascular disease, some cancers, and other chronic diseases.”

2) Sugar-sweetened soft drinks are the primary source of added sugars in the American diet.

3) Artificially sweetened diet soft drinks have been marketed as a healthier alternative due to their lack of calories, but studies have linked them to increased risk of type-2 diabetes and cardiovascular disease.

4) In animals, aspartame, is linked to an increased risk of lymphomas, leukemias, and transitional cell carcinomas of the pelvis, ureter, and bladder in a dose-dependent manner “within ranges that are considered to be safe for human consumption.”

5) In a 2012 study published in the American Journal of Clinical Nutrition, men consuming one or more diet sodas per day had a 31% increased risk of non-Hodgkin lymphoma (NHL) and a 102% increased risk of multiple myeloma compared with no intake. In the same study, intake of regular sugar-sweetened sodas was associated with a 66% increased risk of NHL in men. In the same study there was a 42% increased risk of leukemia with a high intake of diet soft drinks. [Apparently, both sugar sodas and diet sodas are bad for health] “Intake of aspartame was directly associated with risk of NHL and multiple myeloma and suggestively associated with leukemia in men.”

6A) “With regard to the mechanism that may explain the findings for diet soft drinks, it is known that aspartame breaks down to methanol, aspartic acid, and phenylalanine if stored near or above room temperature.” The cancer risk is greater in men apparently because men are enzymatically superior in converting methanol to carcinogenic formaldehyde.

6B) Ironically, alcohol consumption inhibits the enzymatic conversion of methanol to carcinogenic formaldehyde; consequently in men who consumed less than 6 oz. of alcohol/day, there was a 134% increased risk of NHL. [Translation: if one drinks diet sodas, one should also drink more than 6 oz. of alcohol daily].