

## **Fruit and Vegetable Intake: Impact on the Risk of Some Common Cancers (2008).**

Most medical discoveries go through a three-stage process. Observation of an event or phenomenon is followed, often many years later, by a rational scientific explanation of how it happens and finally, in some instances, why.

Among North Americans, one out of every nine women will develop breast cancer and one out every seven men, prostate cancer. This makes these two hormonal cancers the most common by far with colorectal cancer being the third most common cancer diagnosed in both men (1 in 14) and women (1 in 16). We'll leave lung cancer aside because we all know its main cause is smoking.

It has been known for some time that consuming cruciferous vegetables such as broccoli, kale and cabbage can help reduce the risk of breast cancer but until recently we did not know how. Scientists at UC Santa Barbara have shown how the healing power of these vegetables operates at the cellular level<sup>1</sup>. According to principal author, Olga Azarenko, "Cruciferous vegetables contain compounds called isothiocyanates which are now believed to be responsible for the cancer-preventive and anti-carcinogenic activities in these vegetables. Broccoli and broccoli sprouts have the highest amount of the isothiocyanates." Their paper focussed on the anti-cancer activity of one of these called sulforaphane, a compound previously shown to reduce the incidence and rate of chemically induced mammary tumours in experimental animals. Furthermore, sulforaphane has been found to inhibit the growth of cultured human breast cancer cells leading to apoptosis or cell death.

The jury is still out on whether or not the consumption of cruciferous vegetables offers significant protection against the development of prostate and colorectal cancers although several epidemiological studies offer evidence that is quite convincing. Because not *all* studies do might be due to problems in collecting accurate dietary histories, differences in food preparation techniques or to genetic variations. It has even been suggested that cruciferous vegetables might reduce cancer risk in some populations more than in others.

Previous dietary studies have reported that an increased consumption of tomatoes and tomato-based products, such as juice, paste and ketchup, can significantly reduce the risk of several cancers including those of breast, colon and, most notably, prostate. But once again, results from some studies have been more promising than from others.

Working on the premise that it's better to be safe than sorry and that consuming more tomatoes and cruciferous vegetables has never hurt anyone, I would most strongly recommend that we all try to consume as many of these as we can. For those of us who

find this difficult then I'd like to remind you that Juice Plus+ vegetable capsules contain tomato and three cruciferous vegetables: kale, broccoli and cabbage.

## **References**

1. Azarenko O, Okouneva T, Singletary KW et al. Suppression of microtubule dynamic instability and turnover in MCF7 breast cancer cells by sulforaphane. *Carcinogenesis* 2008; 29(12): 2360-8.

### **Surviving Breast Cancer (2014)**

Lifestyles (diet, exercise, avoidance of harmful practices etc) aimed at preventing breast cancer have been extensively studied in recent years. However, factors that might influence survival of breast cancer patients are less well understood. In the most in-depth review of its kind, 85 studies involving more than 165,000 women from around the world were analysed. Experts concluded that a plant-based diet consisting primarily of fruits, vegetables and whole grains could boost the chances of surviving breast cancer. They also advised consuming soy-based foods after diagnosis. I would certainly recommend a combination of Juice Plus+ fruit, vegetable and berry concentrates along with Juice Plus+ Complete to anyone who has had breast cancer

A link to the full report published by the World Cancer Research Fund is given below.

<http://www.wcrf.org/sites/default/files/Breast-Cancer-Survivors-2014-Report.pdf>