

Cancer Association of South Africa (CANSA)



CANSA Fact Sheet on Nutrition for Individuals Diagnosed with Breast Cancer

Introduction

Good nutrition is especially important for any person living with cancer. Eating a variety of foods and well-balanced meals can help one feel better and stay stronger. Eating well during treatment helps to maintain body weight, improve strength and energy, decrease the risk of infection and assist the body in healing and recovery from cancer treatments.

Picture Credit: Nutrition in Cancer

Nutrition In Cancer



Most cancer treatments work better when one is well nourished. People with cancer who are well nourished and able to maintain a healthy body weight often have a better prognosis.

A healthy diet includes eating and drinking foods and liquids with nutrients that the body needs – proteins, carbohydrates, fats, vitamins, minerals, antioxidants, flavonoids, carotenoids and potable water. One's healthcare team, should include a registered dietitian who can assist one maintain nutrition throughout the period of one's treatment, after completion of treatment, and during times of experiencing any side effects. A dietitian is a key member of the healthcare team who is qualified to provide counselling about proper nutrition.

Nutrition and Breast Cancer

While there is no one single food or diet that can prevent or cause breast cancer, diet is an area in which individual choices can make a real difference. Breast Cancer is a complex disease with many contributing factors. Some of these factors, such as age, family history, genetics, and gender, cannot be controlled. There are, however, factors that individuals can control, which include not smoking, avoiding alcohol, exercising, being overweight, and diet.

Breast Cancer is the second highest form of cancer among black South African women. In a study by **Jacobs, et al.**, (2019), the researchers found that the "Incidence rates of breast cancer (BC) among South African black women are increasing. The aim of the current study was to investigate the association between dietary intake and BC risk in black South African women. The study population included 396 BC cases and 396 population-based controls matched on age and residence, participating in the South African Breast Cancer study. Diet was assessed using a validated quantified FFQ from which twelve energy-adjusted food groups were formed and

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analysed. OR were estimated using conditional logistic regressions, adjusted for confounding factors, comparing highest v. lowest median intake. Fresh fruit consumption showed an inverse association with BC risk (OR=0.3, 95 % CI 0.12, 0.80) in premenopausal women, whilst red and organ meat consumption showed an overall inverse association with BC risk (OR=0.6, 95 % CI 0.49, 0.94 and OR=0.6, 95 % CI 0.47, 0.91). Savoury food consumption (sauces, soups and snacks) were positively associated with BC risk in postmenopausal women (OR=2.1, 95 % CI 1.15, 4.07). Oestrogen receptor-positive stratification showed an inverse association with BC risk and consumption of nuts and seeds (OR=0.2, 95 % CI 0.58, 0.86). Based on these results, it is recommended that black South African women follow a diet with more fruit and vegetables together with a decreased consumption of less energy-dense, micronutrient-poor foods such as savoury foods. More research is necessary to investigate the association between BC risk and red and organ meat consumption. Affordable and practical methods regarding these recommendations should be implemented within health intervention strategies.”

There are no food or dietary supplements that will act as “magic bullets” to reduce the risk of breast cancer or from breast cancer returning. The following broad dietary guidelines can, however, be used to decrease the risk of breast cancer. Apart from not smoking, and being as active as possible, the following nutritional guidelines can assist breast cancer survivors:

- Increase intake of fresh fruits (in season), vegetables and whole grains
- Limit fat intake to less than 30 percent of kilojoules – especially animal fats
- Reduce (minimise) intake of cured, pickled, smoked, and processed foods
- Achieve and maintain a healthy weight
- Avoid alcohol consumption

Melnic, I., Alvarado, A.E., Claros, M., Martinez, C.I., Gonzalez, J.& Gany, F. 2022.

Objective: Many breast cancer patients are vulnerable to poor nutritional status and may benefit from nutrition education, but existing materials are not generally tailored to the needs of low-literacy immigrant and minority patients.

Methods: With nutritionist guidance, we developed a nutrition presentation for breast cancer patients. English- (n = 29) and Spanish-speaking (n = 19) patients were recruited from 5 safety-net hospitals, an academic cancer center, and a Latina cancer support organization. Materials were tested using multiple rounds of cognitive interviewing (with an adapted USDA interview guide), followed by study team reviews and modifications, until saturation.

Results: Seven rounds of interviews per language were needed. Approximately 25% of interviewees had less than a high school education. Changes included adapting to regional lexicons and resolving vague/confusing phrasing. Specific food examples needed cultural tailoring. Text color coding (red/bad, green/good) was requested. Labeled images enhanced participants' understanding of concepts. Spanish speakers expressed a desire to understand nutrition labeling, and this was emphasized in the Spanish slides.

Conclusion: Cognitive interviews were an important tool for creating a nutrition curriculum tailored to the needs of low-literacy, mostly immigrant patients.

Practice implications: Cultural and linguistic factors should be considered for nutritional education materials in diverse patient populations.

Bandera, E.V., Alfano, C.M., Qin, B., Kang, D.W., Friel, C.P. & Dieli-Conwright, C.M. 2021.

“There are well-known racial/ethnic disparities in the prevalence of obesity and physical inactivity, as well as breast cancer risk and survival. However, most of the current scientific evidence that serves as a foundation for nutrition and physical activity guidelines is based on studies conducted in predominantly non-Hispanic White populations. Similarly, exercise, diet, or lifestyle intervention trials for breast cancer prevention and survivorship are scarce in racial/ethnic minority populations. We review the current evidence for racial/ethnic

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disparities in obesity and breast cancer risk and survival (we are focusing on obesity, because this is considered an ASCO priority, and studies conducted in the United States), discuss the evolution of nutrition/physical activity guidelines for cancer prevention and control, and provide an overview of lifestyle interventions, including barriers and facilitators in implementation and dissemination science among minority populations underrepresented in research. There is a critical need to include racially/ethnically diverse populations in cancer prevention and control research or to specifically target minority populations in which disparities are known to exist to achieve much needed health equity.”



Caution Expressed Around Consumption of Foods High in Phytoestrogens by Individuals Diagnosed with a Hormone-Sensitive Cancer

The Cancer Association of South Africa (CANSA) has noted:

- A statement by Memorial Sloan Kettering Cancer Center saying that “... because compounds isolated from rooibos leaves demonstrated estrogenic activity, patients with hormone-sensitive cancers should use caution before taking rooibos.” (Memorial Sloan Kettering Cancer Center).
- That phytoestrogens were successfully isolated from rooibos leaves by scientists from the School of Pharmaceutical Sciences, University of Shizuoka, Japan (Shimamura, *et al.*, 2006).
- That according to Deng, *et al.*, (2010), “... there are important safety concerns associated with dietary supplements and foods rich in phytoestrogens, especially for breast cancer patients with hormone-sensitive disease. Based on current evidence, we propose recommendations for advising breast cancer patients, ...”
- That, according to Nelles, Hu & Prins (2011), “Early work on the hormonal basis of prostate cancer focused on the role of androgens, but more recently estrogens have been implicated as potential agents in the development and progression of prostate cancer.”
- That, according to Reger, *et al.*, (2016), “Experimental studies suggest that phytoestrogen intake alters cancer and cardiovascular risk. Some urinary phytoestrogens were associated with cardiovascular and all-cause mortality in a representative sample of 5 179 participants. This is one of the first studies that used urinary phytoestrogens as biomarkers of their dietary intake to evaluate the effect of these bioactive compounds on the risk of death from cancer and cardiovascular disease.”

Position of the Cancer Association of South Africa (CANSA) Regarding Phytoestrogens and Individuals Diagnosed with a Hormone-Sensitive Cancer

CANSA, therefore, wishes to advise individuals diagnosed with the following hormone-sensitive cancers, namely: Breast Cancer, Ovarian Cancer, Endometrial Cancer, and Prostate Cancer, to:

- use caution before taking Rooibos tea and to discuss the issue around Rooibos tea consumption with their treating Oncologist prior to consuming Rooibos tea
- also use caution before taking the following high phytoestrogen-containing foods: all soy foods (including soybeans, tofu, miso, and tempeh); legumes (especially lentils, peanuts and chickpeas) and

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flaxseed-containing foods. Patients are advised to discuss consumption of the listed high phytoestrogen-containing foods with their treating Oncologist prior to consuming them.

Research on Foods High in Phytoestrogens and Breast Cancer

Chen, S.I., Tseng, H.T. & Hsieh, C.C. 2020.

“Accumulating evidence has shown that soy intake is associated with the promotion of health and prevention of cancers. However, the relationship between the intake of soy compounds and the risk of breast cancer is still debatable. In this study, we use mathematical models for assessing the impact of soy phytoestrogens and protein/peptide intervention on breast cancer development using the datasets acquired from a large number of published studies. We used data mining models, including the decision tree classification and association rule methods, to analyze 478 data collected from 201 research papers. The results indicated that the intervention of soy proteins and peptides, especially lunasin (LUN) and Bowman-Birk protease inhibitor (BBI), has a positive impact on different types of breast cancer, while the effects of soy phytoestrogens are inconsistent in breast cancer development. Among soy phytoestrogens, daidzein (DAI) exhibited the highest negative impact on breast cancer, followed by coumestrol (COU), soysapogenol (SAP), genistein (GEN), and equol (EQ). With regard to the type of cancer, phytoestrogens should be carefully considered in estrogen receptor (ER)+ or progesterone receptor (PR)+ breast cancer. In the case of ER-, PR- or triple negative type, both soy categories can be used as auxiliary interventions. In summary, this is the first study to use data mining to explore the relationship between the intake of soy phytoestrogens or proteins/peptides and breast cancer development. Our findings indicate that soy intervention might reduce breast cancer development. However, the specific soy compound and cancer type should be considered before allocating a precise nutrient intervention.”



Importance of Fruit and Vegetable Consumption by Breast Cancer Survivors

Women who eat a high amount of fruits and vegetables each day may have a lower risk of breast cancer, especially of aggressive tumours, than those who eat fewer fruits and vegetables, according to a new study led by researchers from Harvard T.H. Chan School of Public Health. In their findings, cruciferous vegetables such as broccoli, and yellow and orange vegetables, had a particularly significant association with lower breast cancer risk.

Research has found that women who ate more than 5.5 servings of fruits and vegetables each day had an 11% lower risk of breast cancer than those who ate 2.5 or fewer servings. (A serving is defined as one cup of raw leafy vegetables, half a cup of raw or cooked vegetables, or half a cup of chopped or cooked fruits.)



The Role of Vitamins in Breast Cancer

Vitamin and mineral supplement use after a breast cancer diagnosis is common and controversial. Dosages used and the timing of initiation and/or discontinuation of supplements have not been clearly described. The role of vitamin supplements in preventing breast cancer still remains unclear. Although biologic mechanisms exist to support the anticancer effects of vitamins, there is no clear evidence for an effect in cancer prevention for vitamin supplements.

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Some research studies suggest a protective effect of B-vitamins on breast cancer risk. Research also suggests that women with low levels of vitamin D have a higher risk of breast cancer. Vitamin D may play a role in controlling normal breast cell growth and may be able to stop breast cancer cells from growing.



Implications for Breast Cancer Survivors Who fail to Adhere to Nutritional Guidelines

Diet is thought to be partly responsible for about 30% to 40% of all cancers. No food or diet can prevent one from getting breast cancer. But some foods can make one's body the healthiest it can be, boost one's immune system, and help keep one's risk for breast cancer as low as possible. Research has shown that getting the nutrients one needs from a variety of foods, especially fruits, vegetables, legumes, and whole grains, can make one feel one's best and give one's body the energy it needs.

Eating food grown without pesticides may protect against unhealthy cell changes associated with pesticide use in animal studies. Breast cancer is less common in countries where the typical diet is plant-based and low in total fat (polyunsaturated fat and saturated fat).



Sugar Consumption and Breast Cancer

Scientific studies indicate that younger and older women (possibly pre- and post-menopausal women) differ with respect to correlation as far as sugar consumption is concerned. In older women a strong correlation was found between breast cancer mortality and sugar consumption (correlation coefficient = 0.9), and a weaker correlation, possibly of marginal interest, with fat consumption (correlation coefficient = 0.7). In younger women the correlation with diet seems weak. A possible connecting link between sugar consumption and breast cancer is insulin. This is an absolute requirement for the proliferation of normal mammary tissue and experimental mammary tumours may regress in its absence. Insulin secretion occurs in response to blood glucose level and could be excessive if the regulatory mechanism is overtaxed by large sugar intake. The same mechanism might account for the increased risk of mammary cancer in diabetics.



Obesity and Breast Cancer Risk

One's risk of developing breast cancer increases if one is overweight or obese after the menopause. The menopause is when one stops having periods and are not able to get pregnant naturally. Putting on weight throughout adulthood also increases one's risk of developing breast cancer after the menopause. The more weight one gains over the course of adult life, the higher the risk. Being obese when diagnosed with breast cancer can increase the risk that the cancer will recur (come back after treatment). It can also reduce one's chances of surviving the disease.



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Nutrition in Cancer

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