



Soyfoods and the impact on breast cancer: current knowledge

Key propositions

- Women in Europe and North America are significantly more likely to develop breast cancer than women growing up and living in the Far East and Asia.
- Genetics and lifestyle can increase an individual's risk of developing breast cancer.
- Plant-based foods have an important role in helping protect against cancers.
- Soyfoods, especially when eaten from an early age, may provide protection from breast cancer in later life.
- Today's mothers and daughters, who make appropriate dietary and lifestyle choices, may be able to reduce the risk of breast cancer in future generations.

Introduction

Scientific research is now suggesting a link between women's lifestyles and eating habits and their risk of developing breast cancer. Making positive dietary choices and adopting a **healthy lifestyle** could offer protection from this disease for future generations of women.ⁱ

Learning from the global imbalance

Statistics have found that women in Europe and North America are more likely to develop breast cancer than women growing up and living in Asia including China. Studies investigating these populations have provided possible clues as to why these differences might exist. In Asian countries, the incidence of breast cancer is much lower than in Western countries.ⁱⁱ However, Asian rates are rapidly increasing possibly due to the adoption of a more Westernised lifestyle.^{iii, iv} Studies looking at Asian migrants to the West provide the first solid evidence that diet and lifestyle – that is, environmental rather than genetic factors – are the main reasons for the large variations in cancer rates around the globe.^{v, vi}

Fact and reality

Worldwide, around 1.38 million women were diagnosed with breast cancer in 2008 and it's the leading cause of cancer-related deaths in women. In the UK, breast cancer is now the most common cancer and almost 45,700 women were diagnosed with breast cancer in 2007, that's around 125 women a day. Each year in the UK around 12,000 women die from breast cancer.ⁱⁱ

Several factors can increase the risk of developing breast cancer. Widely known among these is a history of the disease in the immediate family. Furthermore an early start to menstruation, late menopause, non child-bearing women, older first-time mothers and

a record of benign breast disease can each raise an individual's risk of breast cancer by between 50% and 200%.^{vii}

About 10% of breast cancer cases in developed countries is probably due to a genetic predisposition. Women carrying such a mutation have a 45-65% chance of developing the disease by the age of 70.^{viii}

Role of the diet in cancer

The World Cancer Research Fund (WCRF) report on diet and cancers has emphasised the important role that plant foods can have in reducing the risk of cancer.ⁱ The report recommends a minimum of five portions (400 grams) of different fruits and vegetables a day. Non-starchy, colourful vegetables are thought to be particularly beneficial. Unprocessed, wholegrain foods and legumes (such as beans and pulses) are recommended to be eaten at every meal. In practice this means that ideally two-thirds of each meal should consist of plant foods.

Post-menopausal obesity is associated with a higher risk of developing breast cancer.^{ix} Foods that keep you feeling fuller for longer avoid the need or temptation to fill up on unhealthy snacks. Wholegrain starchy foods such as brown rice and wholemeal pasta; beans including soya foods; pulses including lentils and chickpeas; as well as vegetables are a healthy replacement for larger servings of sugary and fatty foods. Eating in this way can help individuals achieve and maintain a healthy weight safely and naturally.



Effect of soya foods on breast cancer risk

The relationship between soya, as part of a normal daily diet, and breast cancer risk has received considerable interest over the last two decades. Numerous studies have found that soya intake is associated with a reduced risk of developing breast cancer.^{x, xi, xii, xiii, xiv}

Starting soya foods early in life and adolescence: does it matter?

It appears that the critical period during which soya seems to exert its protective effects is during the early years. In fact there is very impressive evidence from population studies suggesting that consuming very modest amounts of soya (such as one serving of soya milk per day) during the early years reduces breast cancer risk by 28 to 60 percent.^{xi, xii, xiii, xiv}

One study looked at the amounts of soya foods eaten over a lifetime among Chinese, Japanese and Filipino women, aged between 20-55 years and living in the USA. Soya intake during childhood, adolescence and adult life was associated with a decreased breast cancer risk. However the strongest effect was seen when soya was consumed during childhood.^{xiii}

The Shanghai Women's Health Study also found similar results. This study included more than 73,000 women from Shanghai, aged between 40 and 70 years. Soya products such as soya drinks, tofu, dried soya beans, etc during adolescence and in adult life

were recorded using a food frequency questionnaire. Women with higher intakes of soya during adolescence had a 43% lower risk of developing premenopausal breast cancer. When these women continued to include these soya foods in their adult diet the risk of breast cancer fell even further (59%).^{xiv}

Although the exact mechanisms are unclear, research suggests that one of the soya bean isoflavones - genistein - causes breast cells to change in a way that makes them permanently less likely to be transformed into a cancer cell later in life.^{xv, xvi}

Soya foods in breast cancer patients

Soya foods do not appear to pose a risk to breast cancer patients. Studies looking at the effects of soya products and isoflavones on breast tissue have not shown an increase in numbers of breast cells nor an increase in breast tissue density - a marker of breast cancer risk.^{xvii, xviii, xix, xx, xxi, xxii}

Even in those women who have breast cancer, emerging evidence is suggesting that soya in modest amounts is safe to consume. Data from the Shanghai Breast Cancer Survival Study included over 5000 breast cancer patients 6 months after cancer diagnosis. After a follow up of 3.9 years there were 444 deaths and 534 relapses or breast cancer deaths. Women consuming more soya protein (more than 15.31g a day) were approximately one third less likely to die or suffer a reoccurrence compared to women eating the least.^{xxiii}

Conclusions

- Diet and other lifestyle factors play a role in the development of breast cancer.
- Studies in Asian populations, who eat a lot of soya foods, suggest that soya is protective against breast cancer.
- Evidence suggests that to gain maximum protection against breast cancer, soya foods need to be part of a daily diet from early in life onwards – especially during childhood and adolescence.
- Emerging evidence is suggesting that soya, in modest amounts is safe to consume in women who have breast cancer.



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