

Breast cancer – The Risks

By Dr J Thompson

Many women understandably worry about their chances of getting breast cancer, especially if they know someone in the family has had this disease.

There is no doubt that breast cancer has increased alarmingly over the last 25 years with a doubling of the risk compared to women in the 1970s (followed by a more recent reduction). Presently there is a 1 in 9 chance of any women getting breast cancer.

Let's look at the facts:-

Correlations with Food

In one study the food with the strongest positive correlation with breast cancer was **sugar** (+0.68) followed by beef (0.55). The food with the strongest negative correlations (ie protective) were nuts, seeds and pulses (-0.81) and vegetables (-0.41)

Simple Measures

The American institute of Cancer Research found three factors reduced the risk of breast cancer by 62%: maintaining a normal body weight, limiting alcohol intake and eating a mostly plant-based diet. (*Red wine was the only alcohol not associated with breast cancer as it suppressed an enzyme that fed breast cancer with oestrogen*).

Milk

Professor Jane Plant was dying from breast cancer which had spread throughout her body. She had been given three months to live. Then she had a revelation. She realised that in China (at that time) breast cancer was very rare and also that milk consumption was very low. She decided to put herself on a dairy free diet. Her cancer melted away on this diet and she went on to live for nearly three decades following this. She also describes many other breast cancer patients who have had had a similar success. **She discovered research going back over several decades that showed that substances in milk products including insulin-like growth factor (IGF1) and prolactin, promote cell growth and cancers.** A Harvard study has shown that women with higher levels of IGF-1) are more likely to develop breast cancer.

Clark Grosvener, an endocrinologist, found there were 7 pituitary (brain) hormones, 7 steroid hormones, 7 hypothalamic hormones, (another brain hormone) eight gastro-intestinal peptides, 6 thyroid and parathyroid hormones, 11 g growth factors and 9 other biologically active compounds in a typical glass of milk. This is important as breast cancer patients are known to have higher levels of some hormones such as oestrogens.

These hormones are increased by modern farming methods. Milk is a very different product to that produced in the past as cows are kept

pregnant much of the time and two-thirds of milk now comes from pregnant cows with resulting levels of hormones that are 5 to 30 times higher than milk from non-pregnant cows. **It is worth keeping milk consumption low, and perhaps avoiding it completely if you have a strong family history of breast cancer.** Her book "Your Life in Your hands" discusses this subject in detail.

Animal Protein

A remarkable study was done about 40 years ago. Two groups of rats were treated with powerful carcinogens. One was given a low protein diet and one a high protein diet. All the rats on the high protein diet died whilst none of those on the low protein diet died. This study was repeated with different species and different carcinogens but the result was always the same. Even when the amount of carcinogen was increased to high levels the animals on low protein diets did not get cancer. **The researchers then found they could turn cancer on and off just by altering the amount of protein in the diet.** Another important point was that only animal protein had this effect not plant protein. The high protein diet given to the animals was similar to the amount found in a typical Western diet.

This work led to the biggest epidemiological study ever done: the China Study. In China the amount of animal protein is low compared to the West. Even so the study documented that as animal protein increased so did cancer, heart disease and diabetes.

Another aspect of this is the link between diet, female hormones and cancer. Basically the higher your exposure to female hormones, the greater the breast cancer risk, and this is why early onset of periods (early menarche) and late menopause are risk factors. Animal protein lowers the age of menarche, increases the age of menopause and increases oestrogen levels so increasing the risk of cancer in three different ways.

Other Studies linking Food and Breast Cancer

The following studies show that diet makes a huge difference to your risk of breast cancer:-

The Shanghai breast cancer study showed women in China who has a western-style diet (meats, poultry, milk, fish, sweets, bread) had double the risk of breast cancer as compared with those on a traditional diet.

Women in America who ate more than one and a half portions of red meat daily (equivalent to a sausage and a burger) had double the risk of oestrogen positive breast cancer.

A review of breast cancer in 40 countries found that a positive correlation with consumption of meat, milk and cheese and a negative correlation with cereals and pulses (peas, beans, lentils).

Women past the menopause who had a high intake of barbequed, grilled or smoked meat had higher rates of breast cancer and this was particularly high in a group who also had few fruit and vegetables.

An American study of nurses found those who ate 5 fruit and vegetables had lower rates of breast cancer than those who ate 2 or less per day. An Italian study showed women who ate more raw vegetables and olive oil had lower rates of breast cancer.

A study in China found those who ate most cruciferous vegetables (cabbage, broccoli, brussels sprouts, kale, cauliflower) had half the rate of breast cancer and a Swedish study found those who ate 1 or 2 daily servings of these vegetables had 40% less breast cancer. In the laboratory the following vegetables inhibit the growth of breast cancer cells nearly 100%: garlic, leeks, spring onions, brussels sprouts, cauliflower and kale.

A study of Anglo-Australian women found those with high alcohol intake had higher rates of breast cancer but only if they had a low intake of folic acid (mainly from green vegetables).

Women who ate 10 grams of button mushrooms daily reduced their risk of breast cancer by a third.

An English study found those who ate the largest amounts of fibre before the menopause had half the breast cancer rate of those who ate the least.

Vitamin D

Few substances give as dramatic protection against breast cancer as Vitamin D. Vitamin D blood levels of 79 nmol/l give a 30% protection against breast cancer whereas a level of 124 nmol/l gives a massive 83% protection.

What is so surprising about this is both readings are within the normal range for Vitamin D which is between 75 and 150nmol/l and most people have levels lower than this: - between 25 and 55nmol/l; (outdoor workers have levels of 100 to 130 nmol/l). It means we need a lot of Vitamin D to stay healthy.

Another study by Sharon McDonnell published in PLOS One in 2018 gave even more striking results. Those with a blood level of 150 nmol/l (50mg/ml) had an 82% lower incidence of breast cancer compared to those with a blood level of 60 nmol/l (20ng/ml). However even higher levels gave greater benefits and **another way of showing the data from this study is that women with a blood level of less than 50nmol/l had an over five-fold increase in breast cancer compared with those with a blood level of 175 nmol/l.**

It also means having your Vitamin D in the lower part of the normal range (compared with the upper part) increases your risk of breast cancer nearly three-fold. Compare this with the risk of the BRAC1- and BRAC- 2 genes which increase the risk of breast cancer five-fold and four-fold respectively. Borderline levels of Vitamin D are similarly dangerous.

We evolved to live outdoors and be in the sun. However most people now live indoors and this itself increases our risk of a variety of diseases, including cancer. The answer is to supplement with Vitamin D.

I would suggest taking 4000 IU daily IU daily (this is what most Vitamin D experts take) and then ideally have your blood level checked.

Other Vitamins and Minerals

A study by Formelli in 2009 found post-menopausal women with lower levels of Vitamin A had a greater risk of breast cancer. Those with Vitamin A levels in the lowest third had over twice the risk of breast cancer compared to those in the highest third and for those over 55 years the risk was 3.5 times higher (again comparing the lowest with highest third). (Cancer Epidemiol Biomarkers Prev, 2009, 18(1): 42-48).

Iodine deficiency increases the risk of many cancers but particularly breast cancer. Iodine normalises the ratio of oestrogens, reducing the risk of cancer (see iodine leaflet). There has been at least one case of breast cancer completely cured by iodine (see the Iodine Crisis by Lynne Farrow).

Is it in your genes?

Human genes are thought to change by 0.2% every 20,000 years so the rapid increases in breast and other cancers in the last century cannot be due to changes in our genes. However chemicals can attach to genes and change gene function (DNA adducts). **Less than 3% of breast cancers are thought to be genetic.** Only one in 500 carry the mutated BRCA-1 and BRCA-2 genes which carry a 55-72% and 45 -69% lifetime risk of breast cancer respectively. However, if you have these genes but no family history of cancer then the risk is far lower (about 10% which is not much higher than average). Even in those women who have faulty genes the risk has almost doubled in the last 30 years suggesting that environmental factors are more important.

It is also known that immigrants from countries with low rates of breast cancer soon take on the breast cancer risk of the country they are living in. In other words most breast cancer is largely down to adopting the lifestyle of the new country.

Hormones

There is no doubt that HRT is associated with a higher risk of breast cancer (25-30% increase) and there has been a drop in breast cancer in the USA since HRT use has declined. This has not happened in the UK. Although the data is less clear with the pill, most studies do show a significantly increased risk (at least double). Remember these are the same hormones but at a higher dose. The hormone progesterone promotes cell growth and alters genes in such a way that cancer can be promoted. It is classified as a carcinogen. Avoid these where possible, especially if you have a family history of cancer.

Chemicals

Numerous studies have shown higher levels of chemicals in the breast and also in tumours of women with breast cancer. These chemicals include DDT, PCBs, lindane, heptachlor, dieldrin and parabens. Women with the highest levels of chemicals had 10 times the risk of breast cancer. In addition in Israel, when certain pesticides were banned, including lindane, there was a 30% decline in breast cancer. These

chemicals can attach to the DNA (called DNA adducts) putting not only the exposed woman at risk but her children. Anti-perspirants have also come under suspicion recently when chemicals from these sprays were found in tumours.

The basic problem here is that most chemicals are stored in fat and the breast is a fatty organ. Many other cancers of fatty tissues (brain, bone marrow) have also shown large increases in the last few decades, probably due to chemicals. **Another worrying fact is that the majority of chemicals are oestrogenic – in other words they act like a female hormone and stimulate the breast.** Interestingly plastic was developed by accident in the 1930s and resulted from a failed attempt to make a synthetic oestrogen. We also know that many of these chemicals remain inside us for decades. We know that the average person has at least 50 known carcinogens stored in their body fluids. Jane Plant's regime also involves reducing exposure to oestrogenic chemicals as much as possible.

The message here is to reduce your exposure to chemicals as much as possible. Eat organic food where possible and avoid buying unnecessary chemicals.

Bras

Tight or underwired bras can block the flow of lymph which can predispose to breast cancer

Cosmetics and Toiletries

Dr Darbre a scientist working at the Cellular Endocrinology Laboratory in Reading has done extensive studies on the link between breast cancer and oestrogenic chemicals. Breast cancer is now found in the upper outer quadrant in 60% of cases. In 1928 it was only 30% and has been gradually increasing since then. Dr Darbre wondered if chemicals found in anti-perspirants and deodorants could be responsible. Her tests showed that combinations of parabens in these products when combined could cause breast cancer growth in tissue samples. She also found a whole range of these cosmetic products could cause small increases in oestrogenic activity. However combinations of chemicals have much stronger activity – enough to cause growth in cancer cell cultures - than single chemicals. She noted women typically use 25 to 40 products daily. This gradual absorption through the skin means that there is a continual stimulation of oestrogen receptors by multiple chemicals. The risk appears not just from agents used under the arm but from the total combinations of cosmetics and toiletries used. It makes sense to reduce these substances to a minimum.

Mobile Phones

There have been 38 cases of breast cancer noted to occur in young women who kept their phones in their bras. Even on standby mobile phones give off powerful electromagnetic radiation which is carcinogenic and interferes with DNA repair.

Summary

It is absolutely possible to reduce your risk of breast cancer. There is now substantial evidence that a wholefood plant-based diet with low animal protein and especially low milk and milk products will substantially reduce your risk. This may be particularly important during breast growth in the teenage years. Avoiding oestrogenic chemicals (that is most chemicals but especially HRT and pesticides) will also be beneficial. These measures will also reduce your risk of other cancers and other diseases (such as heart disease).