

There are hundreds, if not thousands, of papers in peer-reviewed medical journals dating back to the mid 1980s relating to the causes and prevention of breast, cervical, ovarian, endometrial and corpus uterine cancers. Unfortunately, this information is generally not read by medical practitioners, specialists or health support organisations.

As Professor Michael Brown, one of the leading medical researchers of the 20th century, stated in a speech to students at an Academy of Achievement event in 2006:

The problem has switched from one of science to one of social policy and human behaviour – and it turns out that it is a lot easier to do the science than it is to change people’s behaviour.[1]

Whilst Professor Brown, winner of the Nobel Prize in Physiology or Medicine in 1985, was referring to heart disease, the same applies to most of the “diseases of affluence”.

Sex Hormones and Cancer

Estrogen directly participates in the cancer process.[2]

There are many papers linking sex hormones to breast, endometrium and ovarian cancers as well as prostate cancer. Below is a very small selection.

In the 1980s, the lifetime exposure to estrogen was “at least 2.5–3.0 times higher among Western women when compared with rural Chinese women”. [3] Despite the increase in western diets in China over the past decades, in 2017 China is still ranked 179 out of 183 countries for breast cancer. For ovarian cancer, it is ranked 175 and prostate cancer 171. Both the breast and ovarian cancer mortality rates for Australia and US are 3 times the mortality rate for China.[4]

The concept that hormones can cause, i.e., increase the incidence of human cancer, is most developed for the four hormone-related cancers which are numerically the most important, namely, breast, prostate, endometrium, and ovary.[5]

Estrogens along with progesterone/progestins, and other hormones, are important determinants of cancer in the breast, endometrium and ovary. Estrogens may increase the risk of breast cancer. [...] Estrogens cause endometrial cancer. [...] The role of sex hormones seems important for ovarian carcinogenesis. [6]

Levels of endogenous sex hormones are strongly associated with breast cancer risk in postmenopausal women. [7]

Diet and Sex Hormones

Given that sex hormones are implicated in a number of cancers, how do we reduce the amount of sex hormones? Caldwell Esselstyn writes that in Japan in 1958 there were 18 deaths from prostate cancer and 137 in the year 1978. As their diet becomes more western, then their incidence of prostate cancer rises.

One simple way is to stop consuming meat, milk and cheese. A 2005 paper[8] examined the link between breast, ovarian and corpus uteri cancers and diet. Food intake was obtained from the Food and Agriculture Organization for the years 1961-1997 for 40 countries. Cancer statistics were obtained from national registries for the years 1993-1997. It found significant and substantial correlations.

- Meat was most closely correlated with the breast cancer incidence ($r=0.827$), followed by milk ($r=0.817$) and cheese ($r=.0.751$)
- Milk was most closely correlated with the incidence of ovarian cancer ($r=0.779$), followed by animal fats ($r=0.717$) and cheese ($r=0.697$).

- Milk was most closely correlated with corpus uteri cancer ($r = 0.814$), followed by cheese (0.787).

r is the correlation coefficient which is a number between -1 and 1. A correlation coefficient of 0.7 or greater is often considered a strong correlation.

A 2001 paper[9], discusses a method of reducing sex hormones through a comprehensive change in diet. The study period was 4.5 months.

The suggested intervention diet was based on Mediterranean vegetarian and macrobiotic recipes. The dietary recommendations were:

- meat, eggs, and dairy products should not be eaten more than once a week
- consumption of refined carbohydrates (sucrose, white bread, refined flour), be substituted for whole-grain cereal products
- using fruit or fermented cereal
- at least one portion of a soy product (soy milk, miso soup, tofu, tempeh, or soy beans) every day
- 1-kg loaf of bread made from whole wheat flour and 8% flax seed (half whole seeds and half milled), occasionally mixed with oats or rye which was provided
- a free pack of other recommended products that are not a normal part of the northern Italian diet was provided
- consumption of soy products, other legumes, whole-grain cereals, flax and other seeds, seaweed, berries, cabbage family vegetables, and other vegetables

The control group were advised to increase their consumption of fruit and vegetables.

It is much more informative to compare the changes of the participants over the study period instead of comparing them to the control group.

Criteria	Units	Mean at Start	Mean at End	Change	% Change
Weight	kg	67.17	63.08	-4.11	-0.06
BMI	kg/(m•m)	26.88	25.26	-1.62	-0.06
Sex Hormone Binding Globulin (SHBG)	mmol/L	36.03	45.10	9.07	25.2
Testoserone	pmol/L	1.42	1.14	-0.28	-19.5
Estrodiol	nmol/L	31.64	25.95	-5.69	-18.0

A 1990 paper[10] stated, “a 17% reduction in plasma estradiol may explain a noteworthy component of the international variation in breast cancer incidence”. So the 18% reduction in estradiol is a significant reduction as is the reduction in weight and testosterone. Sex hormone binding globulin (SHBG) was increased 25%. SHBG inhibits the function of sex hormones so the bio-availability of these hormones is influenced by SHBG. All of these changes occurred over a period of 4.5 months.

A whole-food, plant-based diet shows even a greater impact.

The control group also improved their results to a lesser extent.

A short-term study[11] of 17-27 days examined the effects of a low-fat (less than 10%), high-fibre (35-45g) diet on estradiol levels. The average fat consumption of the US diet is 33% and the average fibre consumption is 10g.[12] The recommendation is 25-30g.

Serum estradiol fell from an average 66.4 pmol/L to 34.5 pmol/L – a reduction of 48% in a period of 3-4 weeks.

Insulin-like Growth Factor-1 (IGF-1) and Cancers

Insulin-like growth factor (IGF-1) plays a role in cell division (cell proliferation) and inhibits cell death. This applies to tumors as well as normal cells. As a result, IGF-1 is significantly implicated in the development of cancers.[13]

The EPIC study (European Prospective Investigation into Cancer and Nutrition) has more than 500,000 participants from 10 European countries. It commenced in 1993.

One research finding[14] showed that for each standard deviation increase in total protein, dairy protein and calcium intake was associated with an increase in IGF-I concentration of 2.5%, 2.4%, and 3.3%. The standard deviation is a measure of the variability of the data. A small standard deviation means that the data values are clustered around the mean whilst a large standard deviation means the data values are more widely dispersed.

A 2002 paper[15] compared IGF-1 concentrations in three populations of women: non-vegetarians, lacto-ovo-vegetarian (includes milk and eggs,) and vegans. Data was obtained from participants in the Oxford component of the EPIC study.

Vegans had a 13% lower IGF-1 concentrations than both the non-vegetarians and the lacto-ovo-vegetarian . Giving up meat, fish, eggs and dairy did not make an impact on the IGF-1 values.

A 2006 study[16] over a 2 week period women were placed on a low-fat (10-15% of energy), high-fibre diet and attended daily exercise classes for 2 weeks. Alcohol, cigarettes or caffeine were not permitted. Serum estradiol was reduced 37% and IGF-1 was reduced 19% - in just 2 weeks. The paper stated that other studies have shown alcohol intake of approximately one

drink per day was associated with an increase in breast cancer risk.

Tamoxifen is an estrogen antagonist (or anti-estrogen) drug. Some side effects include “excesses of endometrial cancer, pulmonary embolism, stroke, deep vein thrombosis, and cataracts”.[17] Another paper showed an 3.4 times increase in the risk of endometrial cancer and venous thromboembolic events were increased in all tamoxifen studies with a relative risk of 1.9.[18]

Yes – tamoxifen was associated with a 3.4 times increase in endometrial cancer rates and nearly a two times increase in thromboembolic events.

In comparison, one diet described above reduced serum estradiol by 48% over a period of 3-4 weeks. Another study showed a reduction in serum estradiol of 37% in 2 weeks. The only side effects are the reduction of many other “diseases of affluence”.

If diet is a deeply implicated in the cancer process as the above evidence suggests, then it makes no sense to hope that research, obtained through massive amounts of funding, will find an answer that is more attuned to society’s dietary preferences – and will not make any impact on corporate profits.

Walter Willet, the famed Harvard epidemiologist and former director of the Nurses’ Study stated in a New York Times interview:

If you step back and look at the data, the optimum amount of red meat you eat should be zero.[19]

Eric Rimm, another researcher from the Harvard School of Public Health, stated:

But avoiding it [trans-fats] if at all possible is ideal. We can't tell people to stop eating all meat and all dairy products. Well, we could tell people to become vegetarians. If we were truly basing this only on science, we would, but it is a bit extreme.[20]

Given what we do know about cancer and diet, why is Breast Cancer Australia promoting a recipe book, *Cook 4 A Cure*, that contains recipes consisting of ham, bacon, beef and lamb when the World Health Organization has stated that processed meat, including ham and bacon, is a class 1 carcinogen and red meat is a class 2A carcinogen.[21]

The recipes also includes Pulled Pork Burgers and Lamb Samosas for the BBQ. In addition to the problems with consuming processed meat, high-temperature cooking introduces additional dangers. Even the smoke from BBQs or living nearby a restaurant can cause health problems. If you are pregnant, it is advisable to stay clear of BBQ smoke. Airborne products from frying hamburgers, bacon and soybean burgers were tested for mutagenicity (the ability to change DNA).

The fumes generated by frying pork and beef were mutagenic but the soy burgers were not. Well-cooked bacon was 8 times more mutagenic than hamburgers and 350 times more mutagenic than the soy burgers.[22]

Footnotes

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