



## ANTI CANCER FOODS AND SUPPLEMENTS

The potential diagnosis of cancer can send shivers down anyone's spine. So when it comes to cancer prevention, apart from a healthy lifestyle, diet is considered extremely important. The way you live and eat will largely determine whether you develop cancer.

Some estimate that diet can be responsible for 60% of cancers and that a good diet can prevent 20-50% of cancers. Here's an example – the Japanese smoke more but have the world's lowest lung cancer rate. They also have longer life expectancy in general.

So what is a good anticancer diet? Generally, its one that is plentiful in a variety of plant based foods like fruit, vegetables, grains and legumes. Legumes include lentils, beans and chickpeas. Avoid mostly animal- based foods like meat and dairy products. Avoid convenience and fast foods.

Plants contain vitamins, minerals and phytochemicals (plant chemicals) that block, stop or suppress cancer. Animal based foods contain high amounts of chemicals that encourage cancer. Fast and convenience food can be high in fat, chemicals and low in nutrients.

There have been associations between the type of diet and which cancer it prevents or encourages. Researchers know that there seem to be associations with diet and which cancers are prevented or caused. Excessive red meat is associated with bowel cancer and New Zealand is a world leader in this area. Lack of one of the carotenoids (red pigmented plant chemicals) called lutein is also associated with bowel cancer.

Eating more vitamin C and beta-cryptoxanthin ( another carotenoid) protects against lung cancer.

Greeks eat a lot of tomato paste and olive oil and have much lower rates of cancer. The olive oil protects against breast cancer and the tomato paste contains lycopene and protects against prostate cancer.

Eating more green vegetables has been found to reduce ovarian cancer.

How do these phytochemicals (plant chemicals) like the ones already mentioned and other ones like quercetin, zeaxanthin, curcumin etc protect us against cancer? Cancer cells are normal cells where the DNA has been damaged thus causing uncontrolled division. Many of the plant chemicals have antioxidant qualities that protect the DNA against free radical damage. Free radical damage is caused by things like inflammation, oxidation ("going rancid"), radiation and chemical damage.

The antioxidant activity of the plant chemicals vary. Indole 3 carbinol or I3C is found in all the brassica vegetables (cauliflower, cabbage, kale, brussels sprouts) and protects against breast and prostate cancer by preventing the production of bad estrogens in the body.

I3C also protects against cancer by blocking the carcinogenic heterocyclic amines that are formed by cooking meat over high heat – beware barbecued meats. I3C also protects against aflatoxin that is made by a fungus in peanuts, grains and corn.

I3C stops dioxin getting into cells by competing with it, so is an important environmental protector. Dioxin is chlorine chemical found in meat, dairy products and popular fast foods. Dioxin is suspected

to cause breast, prostate, lymphoma and lung cancers. I3C also protects smokers, and can reverse abnormal cell changes on the cervix.

Beta-carotene protects against breast cancer. Vitamin C applied to the skin can inhibit skin cancer by 25-50%. The carotenoids seem to protect because their role in the plant is to protect it from oxidation. The different carotenoids prevent different cancers. There is lutein in spinach, and zeaxanthin in corn. And the different carotenoids act synergistically – taking several together is better than taking one alone.

We are getting the message here that we need to eat a large variety of different coloured vegetables to obtain the full health benefits.

Folic acid found in green leafy vegetables and legumes, has been shown to have an important role in cancer prevention. Its powerful cancer effects are related to its role in a reaction in the body called methylation. Methylation influences 100 different processes in the body and requires B vitamins to work properly. Methylation protects DNA which you recall is damaged by some processes in the body. Folic acid is one of the important B vitamins that helps methylation work well. Cancers prevented by good methylation include lung, colon, breast, prostate and pancreas.

Alcoholism worsens folic acid deficiency. Alcoholism, folic acid deficiency and breast cancer go together. The same is true for colon cancer.

Flavonoids are another group of phytochemicals that are powerful antioxidants. They include quercetin, apigenin, ellagic acid, and luteolin. Apigenin found in endives, cloves, fruit (apples, cherries, grapes), vegetables (beans, broccoli, celery, leeks, onions, parsley), tea and wine, helps estrogen break down safely and protects against breast and prostate cancers.

Luteolin found in green leafy vegetables prevents cancer causing estrogen from getting into cells. Some of these flavonoids work to suppress COX-2 cyclooxygenase which is an inflammatory messenger. COX-2 inhibitors like celecoxib (Celebrex®) are used for arthritis and pain relief.

Some of the flavonoids' antioxidant activity protects cell DNA too. Flavonoids that come from herbs like rosemary, mint, lavender and thyme prevent cancer spread. And the list goes on.....the message is to eat many and varies fruits and vegetables and some herbs. Avoid high amounts of red meat, animal fat and processed foods.

It is worth looking at soy as an eating strategy if you don't react to it. Soy contains genistein which blocks estrogen from getting into cells. It is also an antioxidant. It protects against breast cancer and possibly bladder cancer.

Most of the research on tea has been with green tea and has shown definite anticancer properties. It contains EGCG (epigallocatechin-3-gallate) as well as vitamins A, C, E. There is also an amino acid called theanine which has calming effects. It also contains carotene and zinc. Drinking 5 or more cups of green tea per day reduces breast cancer recurrence. Green tea reduces some types of leukemia.

Now that we have looked at diet, what supplements may be useful and why? As we age, even if the diet is excellent, for a variety of reasons, the body may become deficient in some vitamins.

One of the important ones is zinc which is important for 200 reactions in the body and helps many areas of health. When it comes to cancer, zinc helps increase natural killer cell production – this is

the first response by the body to cancer cells. Adequate zinc also may help prevent prostate, breast and other cancers. Zinc deficiency is more likely in older people, gastric problems, alcoholism, kidney disease and those with many infections.

Selenium is deficient in New Zealand soil, and can protect against prostate cancer. A simple strategy is to eat brazil nuts.

Anti inflammatory drugs like aspirin and non-steroidal anti-inflammatories like ibuprofen reduce cancer by reducing inflammation and conserving the body's antioxidants. Aspirin has been found to reduce breast and bowel cancer. In addition, there is a reduction of esophageal, stomach, rectal and kidney cancers.

However, there is the risk of gastric ulceration or heart and kidney problems in those who are vulnerable. So its best to weigh things up when considering taking these as a strategy and it's a good idea to discuss it with your family doctor.

Other things that can reduce inflammation include fish oil and curcumin (found in tumeric)

The message is to eat mainly plants and consider what supplements may be relevant and useful to your individual situation.