

## Cancer and food

The foods we eat can affect our risk of developing certain types of cancer. High-energy and high-fat diets can lead to obesity and are generally thought to increase the risk of some cancers. Plant-based diets high in fresh fruits, vegetables, legumes and wholegrain foods may help to prevent cancer.

Diet is just one of the lifestyle factors that influence the risk of developing cancer. Smoking, obesity, alcohol, sun exposure and physical activity levels are also important. Although some foods can affect cancer risk, there is no evidence that specific foods can cause or cure cancer.

### Food and some common cancers

Some common cancers (and how they are affected by what we eat) include:

- **Lung cancer** – this is the leading cause of death from cancer in the world and smoking is mostly responsible. There is convincing evidence that diets high in vegetables and fruits are protective against lung cancer. It is thought that compounds called carotenoids (present in significant amounts in fruits and vegetables), as well as vitamin E, are probably responsible for some of this effect when sourced from whole foods. However, the use of antioxidant supplements, such as beta-carotene and vitamin E, has not been proven to be effective in either prevention or treatment of lung cancer. In fact, several studies have shown that beta-carotene supplements actually increase the risk of lung cancer in people who smoke. While fruits and vegetables may offer some degree of protection, not smoking in the first place is by far the best prevention.
- **Breast cancer** – this is the most common type of cancer among women in the world. There is an increased risk of breast cancer with factors such as rapid early growth, greater adult height and weight gain in adulthood. Much of the risk of developing breast cancer involves factors that influence oestrogen levels during a woman's reproductive life, such as age of menarche (first period), late menopause, number of pregnancies, having the first pregnancy late in life and breastfeeding practices. Postmenopausal women who are carrying too much weight, especially around their middle, have more than twice the average risk of breast cancer. Diets high in mono-unsaturated fat and high in vegetables and fruits may reduce the risk, while alcohol consumption increases the risk.
- **Prostate cancer** – this is the third most common cause of death of men in Australia. Vegetables (soy, in particular) may decrease the risk, while a high-fat diet that comprises mostly animal fat sources (such as dairy products, fatty meats and takeaway foods) may increase the risk. Lycopene is a potent antioxidant found in tomatoes, tomato-based products, watermelon and strawberries. It may also help lower the risk of prostate cancer.
- **Bowel cancer** – this is the second most common cancer in the developed world. Up to 70 per cent of cases can be prevented by following a healthy lifestyle. Keeping a healthy weight, being physically active and a diet high in vegetables and fibre are protective, while consuming a large amount of red meat (especially processed meat) and alcohol may increase the risk.

### Foods to 'eat less'

Foods to limit in your diet or eat less of include:

- Fatty processed red meats
- Highly processed foods that are low in fibre
- Heavily salted and pickled foods.

### Foods to 'eat more'

The strongest protective anti-cancer effect has been shown with:

- Vegetables, especially raw vegetables or salads
- Foods high in dietary fibre such as grains and cereals
- Leafy green vegetables
- Carrots
- Tomatoes
- Citrus fruits
- Cruciferous vegetables like broccoli, cabbage, brussel sprouts, bok choy and other Asian greens.

Include more of these vegetables and fruits in your diet along with other varieties.

## Seven grains a day

Eating seven or more serves daily of a variety of grains, grain products, legumes, roots and tubers will also provide protective benefits against cancer. The less processed the grains, the better. Oats, whole grains, brown rice, corn, rye, kidney beans and lentils are all good foods to consume. Diets high in refined starch and refined sugar may increase the risk of stomach cancer and bowel cancer.

## Meat and bowel cancer

There is now convincing scientific evidence that eating processed meat increases bowel cancer risk. The World Cancer Research Fund (WCRF) has recently recommended that people avoid eating processed meat. Processed meats include any meat that has been preserved by curing, salting or smoking, or by adding chemical preservatives. These include hot dogs, ham, bacon and some sausages and burgers.

It is recommended that children are not given processed meats at all. This is because many of the habits we develop as children last into adulthood. Substitutes for processed meats that are recommended for children include poultry or fish, low-fat cheese or small amounts of lean meat.

The WCRF also recommends limiting the amount of fresh red meat we eat to 500g of cooked (or 700g uncooked) red meat a week. This is because there is convincing evidence that red meat also increases a person's risk of bowel cancer. Some research suggests that eating burnt or charred meat may increase cancer risk, but the evidence is unclear.

## Fats and cancer

There has been a great deal of interest in a possible link between fat and cancer. Current evidence does not indicate a direct link between fat intake and particular types of cancer (with the possible exception of prostate cancer). However, a high-fat diet may lead to obesity, which is a risk factor for several cancers including cancer of the colon, breast, kidney, oesophagus, gallbladder and endometrium.

## Supplements are not the answer

Results of studies that show a protective effect of foods containing certain nutrients should not be taken to mean that these nutrients, when isolated and taken as supplements, will provide the same benefits for cancer prevention. In some cases, there has been an increased risk of cancer in those people who take nutrient supplements at doses higher than the amount of that nutrient normally eaten in foods.

## Foods that may increase cancer risk

While a high-energy, low-fibre diet may increase a person's risk of developing cancer, some individual foods have also been singled out as potentially causing cancer (carcinogenic). These include:

- **Artificial sweeteners** – such as aspartame, saccharin and cyclamate. Laboratory rats can develop bladder cancer if fed huge amounts of saccharin or cyclamate, although this is at levels thousands of times greater than a normal diet. International studies agree that humans aren't affected in the same way. Artificial sweeteners are considered safe to eat.

- **Cured, pickled or salty foods** – there is no conclusive evidence that red meat causes cancer. However, bacon and other cured or pickled meats contain a substance called nitrate, which has the potential to cause cancer in laboratory animals when eaten in huge doses. How this research relates to humans isn't clear. To be on the safe side, it is best to limit the amount of cured meats in the diet because they are generally high in fat and salt. Salt has also been associated with an increased risk of stomach cancer and should be consumed in limited amounts.
- **Burnt or barbecued foods** – a group of carcinogenic substances called polycyclic aromatic hydrocarbons (PAHs) can be produced if foods are overheated or burnt. Although charred or smoked foods could contain traces of PAHs, experts agree that the amount in the average Australian diet is too low to be considered a significant cancer risk. However, when cooking, it's best to use relatively low temperature methods wherever possible and limit your intake of char-grilled meats and foods. Low temperature cooking methods include steaming, boiling, poaching, stewing, casseroles, braising, baking, stir-frying, microwaving or roasting.
- **Peanuts** – some laboratory animals can develop cancer after eating peanuts that are contaminated with toxin-producing moulds. However, peanuts sold in Australia are generally uncontaminated and contamination is routinely screened for.
- **Alcohol** – consuming alcohol increases the risk of cancers of the mouth, pharynx, larynx, oesophagus, breast and liver. The risk is even greater in those people who smoke. Alcohol has also been associated with colon, breast and rectal cancers. To reduce their risk of disease, men should drink less than two standard drinks a day and women less than one standard drink a day.

## Treating cancer with food

While food plays an important role in preventing some cancers, the therapeutic value of food in treating existing cancer is less clear. It is true that a person with cancer needs excellent nutrition in order to better cope with the physical demands of the illness and the rigours of medical treatment. However, claims that particular foods, vitamins or micronutrients can kill cancer cells should be viewed with scepticism. To date, there is little scientific proof that a particular food or supplement can cure cancer or destroy cancer cells.

Some Japanese studies have found that green tea may delay the development and spread of certain cancers, though the evidence from several studies is not convincing. Other studies have suggested that soy may also have a similar effect, with the strongest link seen with prostate cancer. Although this work is preliminary, it may suggest a more important role for food in the treatment of cancer in the future.

Nutrition for the person with cancer is important for many reasons:

- The immune system needs bolstering to fight at full strength.
- The diet may be adjusted to cope with various symptoms, such as constipation, diarrhoea or nausea.
- Loss of appetite or an increased metabolism means that high-energy foods may need to be included in the daily diet.
- Extra protein may be needed to help prevent loss of muscle from weight loss.

## Where to get help

- Your doctor
- An Accredited Practising Dietitian, contact the Dietitians Association of Australia
- Nutrition Australia.

## Things to remember

- High-fat, low-fibre diets may increase the risk of many cancers including bowel, lung, prostate and uterine cancers.
- You can reduce your risk of developing cancer by eating more fresh fruits, leafy green vegetables and wholegrain foods.
- Even though diet can influence your risk of developing cancer, there is little evidence that special foods can be used to cure existing cancers.

**This page has been produced in consultation with, and approved by:**

Content on this website is provided for education and information purposes only. Information about a therapy, service, product or treatment does not imply endorsement and is not intended to replace advice from your doctor or other registered health professional. Content has been prepared for Victorian residents and wider Australian audiences, and was accurate at the time of publication. Readers should note that, over time, currency and completeness of the information may change. All users are urged to always seek advice from a registered health care professional for diagnosis and answers to their medical questions.

For the latest updates and more information, visit [www.betterhealth.vic.gov.au](http://www.betterhealth.vic.gov.au)

**Copyright** © 1999/2011 State of Victoria. Reproduced from the Better Health Channel ([www.betterhealth.vic.gov.au](http://www.betterhealth.vic.gov.au)) at no cost with permission of the Victorian Minister for Health. Unauthorised reproduction and other uses comprised in the copyright are prohibited without permission.