



Cancer links with nutrition and physical activity in New Zealand

Cancer causes more than a quarter of all deaths in New Zealand, and the number of new cases of some cancers is increasing.

In 2000, cancer registrations increased from 10,000 in 1986 to 17,700—an increase of nearly 80 percent. Some of the increase is due to changes in the Cancer Registry that took effect in 1994.

In 2000, cancers of the throat, lung, colorectum, and prostate caused most cancer deaths among men. For women, cancers of the breast, colorectum, throat, and lung were the most common causes of cancer deaths.¹

Nutritional factors are estimated to account for about a third of all cancers in industrialised countries.² The Ministry of Health has estimated that about 9 percent of all cancer deaths in New Zealand may be caused by inadequate fruit and vegetable consumption.³

Keen interest exists in the role of nutrition and activity in reducing the risk of cancer, and new research typically confirms age-old dietary and activity recommendations.

In this information sheet, we review the following types of cancer:

- breast
- prostate
- lung
- colon and rectum.

This information sheet summarises current evidence for recommendations that may reduce the risk of these cancers.

Breast cancer

Breast cancer is the most common cancer found in women over the age of 45, and incidence rates have increased significantly over the last 10 years.¹

In 2000, 622 women died because of breast cancer (an age-standardised rate of 21.1 deaths for every 100,000 people).¹ Age is one of the most

important risk factors for breast cancer with 70 percent of cases being in women over 50. Family history, early menarche (aged 12 or younger), and late age at menopause also play a part. Women with an early menarche have a four-fold increased risk compared with women who have menarche at 13 years or older.^{2, 4}

Breast cancer rates vary more than five-fold between countries, suggesting that environmental factors that could be changed are relevant. However, the evidence linking environmental risk factors such as diet and physical activity with risk of breast cancer is inconsistent.

Convincing evidence exists that carrying too much body fat increases the risk of developing breast cancer. There is also convincing evidence that drinking alcohol increases the risk of developing breast cancer.^{2, 6, 7} It is possible that being sedentary (not doing enough physical activity) increases the risk of breast cancer.^{2, 7}

It is possible that a diet high in fat, particularly saturated fat (usually animal-based), may increase the risk of breast cancer.^{2, 5, 6} It is probable that eating plenty of, and a wide variety of, fruit and vegetables lowers the risk of many cancers, including breast cancer.^{2, 6, 7, 8, 12} Despite a recent individual study contradicting this evidence,⁹ the overall evidence from over 4500 studies is sufficient to support wide-ranging public health and policy recommendations.¹⁰

Considerable debate exists about whether diets containing substantial amounts of red meat, or that are high in components of meat (animal fat/saturated fat), possibly increase the risk of breast cancer. We cannot make firm recommendations about these factors for breast cancer.^{2, 4, 5, 6, 7, 11}

Research has shown that higher intakes of beta-carotene, and vitamins A, C, and E, and dietary folate are associated with a decreased risk of several cancers.^{2, 4, 12} However, the same effect has not been observed with supplements of these vitamins.⁴ Supplements offer no added benefit to women whose dietary intakes of vitamin A are already adequate.⁴

Insufficient evidence exists about the effect of phytoestrogens (isoflavones and lignans) from soy products on breast cancer and, as yet, no recommendations can be made regarding their cancer-preventive properties.^{2, 4} However, as a food, phytoestrogens have many other benefits and can be incorporated into a healthy diet.

Reducing the risk of breast cancer: Current evidence

Based on current evidence, maintaining a healthy weight, being active, and not drinking alcohol will help reduce the risk of breast cancer. Eating plenty of fruit and vegetables may be helpful, as is the case for other cancers. It is possible that measures such as eating a reduced-fat diet (particularly less saturated fat) and eating only small amounts of red meat may also be helpful.

Prostate cancer

Prostate cancer affects only men. The causes of prostate cancer are not fully understood, but the risk increases with age. A family history of prostate cancer also appears to increase risk, and some races and countries have a higher rate, indicating a genetic or environmental component.

In 2000, there were 594 deaths from prostate cancer, making it the second most common cause of male cancer death and the most common site for cancer registrations, with 3045 registrations.¹

Significant debate exists about whether diets containing substantial amounts of red meat possibly increase the risk of prostate cancer.^{2, 4, 6, 11, 12} Also, it is debated whether having a diet high in fat, particularly saturated fat (usually animal-based fats), increases the risk of prostate cancer.^{2, 5, 6}

As yet we cannot make firm recommendations about prostate cancer, but we do know that high-fat diets are associated with other forms of cancer.

No strong evidence links prostate cancer with higher fruit and vegetable consumption; intakes of vitamins A, C, and E, and beta-carotene; breads and cereals; alcohol; body fat; or activity.

Reducing the risk of prostate cancer: Current evidence

Based on current evidence, we cannot recommend a particular diet that will help reduce the risk of

prostate cancer. Avoiding a diet with substantial amounts of red meat that is high in fat (particularly saturated fats) may be helpful in reducing the risk of prostate cancer, as well as other cancers and chronic diseases.

Lung cancer

Smoking is the most important cause of lung cancer. In 2000, 1599 registrations of lung cancer were made and 1406 New Zealanders died, showing the high death-to-case ratio of lung cancer.¹

It is probable that eating plenty of, and a wide variety of, fruit and vegetables lowers the risk of lung cancer.^{2, 6, 7, 8, 12} Despite a recent individual study contradicting this evidence,⁹ the overall evidence from over 4500 studies is sufficient to support wide-ranging public health and policy recommendations.¹⁰ Dark green vegetables, yellow and light green vegetables, carrots, and raw and salad vegetables are probably protective.

It is possible that having diets high in fat, particularly saturated fat (usually animal-based), may increase the risk of lung cancer, but this is still debated.^{2, 5, 6} It is also debated whether diets high in components of meat (animal fat/saturated fat) increase the risk of lung cancer. We cannot make firm recommendations regarding these practices for lung cancer,^{2, 4, 5, 6, 7, 11} but avoiding such diets may help reduce the risk of other cancers and chronic diseases.

It is possible that being sedentary and drinking alcohol may increase the risk of lung cancer.^{2, 6, 7}

Vitamin A and beta-carotene trials have shown that dietary supplements of these nutrients in smokers were linked with an increased risk of lung cancer. These trials reinforce the need for caution when using individual nutrients provided by dietary supplements.¹³ Nutrition recommendations for all cancers focus on the importance of obtaining micronutrients from healthy eating, rather than using supplements.

Reducing the risk of lung cancer: Current evidence

We recommend eating a diet containing a large variety of fruit and vegetables, as current research suggests these foods probably reduce the risk of developing lung cancer in both smokers and non-smokers.

Lifestyle choices that possibly help reduce the risk of lung cancer and other chronic diseases include:

- drinking little or no alcohol
- being active
- having a healthy, low-fat diet that does not contain substantial amounts of red meat.

Colon and rectal cancer

Colon and rectal cancer is a major cause of cancer death in New Zealand for both men and women.

In 2000, 1134 New Zealanders died from colon and rectal cancer.¹ About 2500 new cases of bowel cancer are diagnosed every year.

Convincing evidence exists that being sedentary increases the risk of developing cancers of the colon and rectum.^{2,7} The overall incidence of colorectal cancer could be reduced by 15 percent if people walked briskly for 30 minutes a day, according to a United States estimate.¹⁴ Exercising for 45 to 60 minutes on most days of the week is even better, and some of that activity must be vigorous—that is, make you breathe hard and sweat.¹⁵

It is probable that alcohol increases the risk of developing cancers of the colon and rectum.^{2,6,7}

It is also probable that diets containing substantial amounts of red meat increase the risk of cancers of the colon and rectum. Eating preserved meats probably also increase the risk of colon and rectum cancer.^{2,4,6,7,11,12}

It is probable that eating plenty of, and a wide variety of, fruit and vegetables lowers the risk of many cancers, including colorectal cancer.^{2,6,7,8,12} Despite a recent individual study contradicting this evidence,⁹ the overall evidence from over 4500 studies is sufficient to support wide-ranging public health and policy recommendations.¹⁰

Wholegrain breads, cereals, and grain products provide many health benefits, and the current evidence suggests that a diet high in fibre possibly reduces the risk of colorectal cancer.^{2,5,7,16} A significant recent study has shown that for each doubling of fibre intake there is a 40 percent reduction in colorectal cancer.⁵

It is possible that being obese increase the risk of colorectal cancer, especially when extra body fat is carried around the middle of the body.^{2,6,7,16}

Considerable debate exists about whether grilling, barbecuing, and frying meats possibly increases the risk of cancers of the colon and rectum.

Considerable debate also exists about whether diets containing substantial amounts of red meat, or that are high in components of meat (animal fat/saturated fat), increase the risk of these cancers. We cannot make firm recommendations about these factors for colorectal cancer.^{2,4,5,6,7,11}

Reducing the risk of cancers of the colon and rectum: Current evidence

On current evidence, a clear recommendation for reducing the risk of colon and rectal cancer is to be active for 45 to 60 minutes on most days of the week. Make sure that some of the activity is vigorous—that is, makes you breathe hard and sweat.

Other lifestyle choices that probably help reduce the risk of colorectal cancer include:

- drinking little or no alcohol
- eating small amounts of red meat
- choosing little or no preserved meats.

Other lifestyle factors that possibly help reduce the risk of colorectal cancer include:

- choosing cooking methods that do not char or overcook meat
- choosing foods not high in fat (particularly saturated fat)
- choosing foods high in fibre and wholegrain cereals.

Summary

With over 17 000 registrations of cancer each year in New Zealand, the toll on individuals, families, and communities is high. Nutritional factors are estimated to account for about a third of all cancers in industrialised countries.² This means that a third of cancer registrations might be preventable.

For all the types of cancer reviewed here, **convincing** evidence exists that the risk of developing cancer can be reduced by:

- choosing to drink little alcohol, if any
- maintaining a healthy body weight
- being active for 45 to 60 minutes on most days of the week (including some vigorous activity).

For all the types of cancer reviewed here, evidence exists that the risk of developing cancer can **probably** be reduced by:

- eating plenty of, and a wide variety of, fruits and vegetables
- eating a high proportion of plant foods (fruits, vegetables, grains, and beans)
- avoiding diets that contain substantial amounts of red meat
- avoiding preserved meats.

Some food choices are **possibly** linked to cancer risk. While we cannot make clear recommendations about these food choices, most are implicated in causing other chronic diseases. Therefore, we should seriously consider making the following choices, regardless of their known impact on cancer risk:

- eating a diet high in wholegrain breads, cereals, and grains
- avoiding a diet high in fat, particularly saturated fat
- avoiding a diet high in components of meat (animal fats and saturated fats)
- avoiding overcooked or charred meat.

Finally, the overall evidence weighs against the use of dietary supplements to reduce cancer risk. It is much more effective to obtain these vitamins from food sources. Supplements taken in high doses for prolonged periods may be unsafe, and some supplement trials have led to increased risk of cancers for some population groups.

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