

POSITION STATEMENT

Salt and cancer risk



Key messages

- Salt is a compound of the elements sodium and chlorine, and is commonly used to flavour and preserve foods. Most of the salt we eat comes from processed and packaged foods such as sauces, processed meats, stock cubes and soups as well as breads and cereals.
- Both salt and salt preserved foods are *probably* associated with an increased risk of stomach cancer. Salt is also a leading cause of high blood pressure and cardiovascular disease.
- Cancer Council supports the recommendation made by the National Health and Medical Research Council's (NHMRC) Dietary Guidelines that people choose foods low in salt, and recommends that people avoid adding salt at the table or in cooking.
- Cancer Council supports efforts to reduce population salt intakes, particularly through reducing salt levels in processed and takeaway foods.
- For general health and wellbeing, people should aim to consume no more than 2300mg of sodium (6g of salt) per day.
- Ways to limit salt intake include purchasing “no added salt” or “low salt” foods in the supermarket, flavouring foods with herbs and spices instead of salt, eating more fresh fruit and vegetables and limiting processed and take-away foods.

Background

Salt contains both sodium and chlorine, and is chemically known as “sodium chloride”. Salt is commonly used to flavour and preserve foods. Before refrigeration was common, large amounts of salt were needed to prevent foods from spoiling. In recent times the need for salt in foods has decreased.

Salt is the main source of sodium in the diet, which is essential for the body to function normally. However, the requirement for sodium in the body is much less than the amount usually eaten. Most of the salt eaten comes from processed and packaged foods such as sauces, processed meats, stock cubes and soups as well as breads and cereals (table 1 and 2).¹

Salt in our diet also comes from the salt added at the table and in cooking. Table salts often include additives like anti-caking agents to stop the salt crystals from sticking together. Salt can also be flavoured with things like celery or garlic.

High amounts of salt in the diet have been linked with stomach cancer.² Salt is also a leading cause of high blood pressure and increases the risk of cardiovascular disease.³

Table 1. Sodium (Na) content per 100g of different foods.¹

Food	Na (mg)	Food	Na (mg)	Food	Na (mg)
Bread, white	451	Turkey, deli style	820	Salami, Danish	1495
Gravy	468	Devon	844	Spam	1539
Meat pie	500	Beef sausages	910	Leg ham	1650
Sponge cake	610	Chicken noodle soup	922	Pretzels	1980
Butter	610	Tomato sauce	938	Bacon, fried	2000
Pad Thai noodles	610	Biscuit, cheese	955	Vegemite	3000
Hamburger, plain	614	Dim sim, fried	1091	Oyster Sauce	3790
Cheese, cheddar	662	Cheese, feta	1107	Anchovy	5480
Chiko roll	694	Corned beef	1190	Soy sauce	6555
Mayonnaise	700	Cream cheese	1249	Fish sauce	7990
Margarine	780	Smoked salmon	1266	Taco seasoning	9350
Cornflakes	815	Italian dressing	1330	Stock cube	18400
Scone, plain	820	Olive, green or black	1472	Table salt	38178

Table 2. Main sources of salt in processed foods.⁴

Food category	% contribution to salt intake from processed foods
Cereal and cereal products	32
Cereal-based products and dishes	17
Meat, poultry and game products and dishes	21
Milk products and dishes	5
Savoury sauces and condiments	8
All other foods	17

Epidemiological evidence

The World Cancer Research Fund (WCRF) recently released a comprehensive report on food and the prevention of cancer.² This report found that both salt and salt preserved foods are *probably* associated with an increased risk of stomach cancer.² This finding is consistent with other recent review articles,^{5,6} and the World Health Organisation (WHO) report published in 2003, which classified salt preserved foods and salt as *probably* causing stomach cancer.⁷

Although it is difficult to measure salt intake, the effect of salt on stomach cancer is thought to be mainly due to a regular intake of salted and salt preserved foods rather than salt per se.² This is partly because these foods are eaten widely in Japan and other Asian countries, where the incidence of stomach cancer is high.² In addition, countries with traditional diets that include substantial amounts of salty (rather than salt preserved foods) also have high rates of stomach cancer.²

The WCRF recommends that people avoid salt preserved, salted or salty foods, and that foods be preserved using methods that don't involve salt (e.g. refrigeration, freezing, drying, bottling, canning or fermentation).²

Stomach cancer

There has been a decline in stomach cancer rates in Australia since the 1970s. Stomach cancer is the 11th most common cancer for men and 14th for women.⁸ The observed incidence of stomach cancer is higher in migrants to NSW, particularly in those from China.⁹

Potential mechanisms of action

Experimental studies suggest that salt may be linked to stomach cancer because a high intake of salt may directly damage the stomach lining or increase endogenous N-nitroso compound formation.¹⁰

There is also some research which suggests that salt intake may cause stomach cancer only in those who have both *Helicobacter pylori* infection and have been exposed to a chemical carcinogen.²

A lack of iodine in the diet can cause hypothyroidism,¹¹ and there is some concern it may increase the risk of thyroid cancer.¹² Cancer Council needs to maintain a watching brief on the Food Standards Australia and New Zealand (FSANZ) debate on iodine fortification in the food supply. It may be that the daily allowance of salt is best met with the use of iodised salt to reduce the risk of thyroid cancer. However, reasons for iodine fortification centre mainly on the need to prevent cretinism and goitre.¹¹

Current consumption levels in Australian adults

Recent data on salt intake is lacking. However, data from 1993 indicate that mean intakes of sodium in Australia were 3144mg/day for men and 2430mg/day for women,¹³ which is higher than the recommended maximum level. This includes sodium contained in foods as well as that added at the table.

The 2007 Survey of Australian Consumer Awareness and Practices Relating to Salt found the following among Australian adults:¹⁴

- Nearly three quarters of survey participants were concerned about salt in their diet.
- More than half thought that they were probably eating either less than or about the amount of salt recommended by the National Heart Foundation. However only a small minority actually knew the recommended maximum daily intake.
- Almost three quarters of people correctly identified the main source of salt in the Australian diet as processed foods. Knowledge of the salt content of other foods (for example white bread and breakfast cereals) was not good.
- One-third reported that they regularly tried to buy 'low salt' or 'no added salt' foods. A fifth reported regularly acting on the information they found about salt on food labels.
- One-fifth reported that they often added salt during cooking and one-fifth reported often adding salt at the table.

Recommendations

Cancer Council:

- Supports the recommendation made by the National Health and Medical Research Council's (NHMRC) Dietary Guidelines that people choose foods low in salt^{15,16}
- Recommends that people avoid adding salt at the table or in cooking*
- Supports the Australian Division of World Action on Salt and Health (AWASH) campaign to engage the food and catering industries to reduce salt in processed foods by an average of 25% over five years.

The Nutrient Reference Values (NRVs) for Australia and New Zealand recommend an upper limit of 2300mg of sodium a day for adults, with an adequate intake of 460-920mg per day of sodium.¹⁷

To reduce the current level of cardiovascular disease, the National Heart Foundation recommends that all Australians reduce their salt intake to less than 6g of salt per day (about 2300mg sodium), which is approximately 1½ teaspoons of salt.³ People with hypertension or those with or at risk of cardiovascular disease should reduce their salt intake to less than 4g a day.³

* This includes table salt, rock salt, sea salt, salt flakes, pink salt, chicken salt, onion salt, celery salt, garlic salt, MSG and stock cubes and powders

For general health and wellbeing, people should aim to consume no more than 2300mg of sodium (6g of salt) per day.

Reducing salt intake

People can limit their salt intake by purchasing “no added salt” or “low salt” foods in the supermarket. A “low salt” food contains less than 120mg of sodium per 100g.^{3,16} “Reduced salt” products can be purchased too if these are the lowest salt options available.

Products with the Heart Foundation Tick can be good options for consumers as they meet strict standards set by the National Heart Foundation for the amount of sodium/salt they contain.³

Other ways people can lower the amount of salt they eat include:

- Consuming more fresh fruit and vegetables.
- Flavouring foods with herbs and spices instead of salt.
- Limiting take-away foods.
- Reducing intake of dehydrated foods such as seasoning mixes and soups.
- Cutting back on the amount of pre-packaged sauces and condiments used.
- Swapping salty snacks like pretzels, salted nuts and potato chips for fruit, low fat yoghurt or low-salt crackers.
- Limiting consumption of processed meats, such as sausages and salami.
- Choosing fish canned in spring water rather than fish canned in brine.
- Buying bread that hasn't had salt added to it, or make bread at home in a bread machine.

It is important to keep in mind that some foods (such as wholegrain bread) do have salt in them, but still contribute important nutrients to the diet and may help to lower the risk of certain cancers.

As the evidence for salt and cancer risk is mainly related to stomach cancer, and the incidence of this cancer in Australia is not particularly high,¹⁸ reducing salt intake by limiting foods such as processed foods (e.g. meat pies, biscuits and processed meats) and take-away items confers the most benefits as nutritional intake is not compromised and the energy density of the diet is lowered, thereby helping to maintain a healthy body weight (which is associated with a lower risk of certain cancers).

Future research

In the future, there is a need for more studies that:

- Investigate further the mechanisms behind salt intake and stomach cancer risk.
- Determine the effect of low sodium salts / salt substitutes such as those that contain potassium chloride on cancer risk.

Further Information

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