

## WHAT IS IODINE?

Iodine is an essential nutrient for growth and development. Iodine occurs naturally in most foods, usually in small amounts. Iodine can't be made in the body so it is essential to consume foods containing iodine. In New Zealand the soils are low in iodine, meaning that New Zealand-grown vegetables, fruits and grains have very low levels of iodine compared with food produced in other parts of the world. Even with a balanced diet it is difficult for New Zealanders to get enough iodine. Iodine is important for the thyroid hormones, which support normal growth and development in children and help to maintain the body's metabolic rate. As iodine is essential for brain development, it is particularly important that unborn babies, infants and young children have enough iodine.

Foods that are important sources of iodine include reduced or low-fat milk and milk products, eggs and seafood. Foods that contain seaweed such as sushi and seameal custard are also good sources. Although it is recommended that New Zealanders reduce their salt intake, when salt is used the type of salt is important. Iodised salt will provide some iodine in cooking or when added to a meal, while most rock or sea salts contain very little iodine.

## HOW MUCH IODINE IS RECOMMENDED?

It is recommended that New Zealand adults consume 150 micrograms of iodine each day. Requirements are higher for pregnant and breastfeeding women, at 220 and 270 ug respectively, as iodine is important for brain development in unborn babies and infants and all the iodine they acquire is supplied from their mother. It is difficult to accurately assess how much iodine is being eaten in the diet, but results of the New Zealand Food Safety Authority's (NZFSA) Total Diet Survey (2003/04) estimated the amount of iodine being eaten by New Zealanders may be less than 60% of what is recommended.

Low iodine levels in the diet may lead to health issues often referred to as iodine deficiency disorders. These might include poor growth and development in infants and children, thyroid diseases and goitre, which is swelling of the thyroid gland in the neck. The current low iodine status of the New Zealand population has mostly likely been caused by the following three factors:

- People choosing to eat more commercially prepared foods, which are usually made with non-iodised salt.
- A reduction in the use of iodine-containing sanitisers by the dairy industry. Cows' milk and foods made from cows' milk had higher levels of iodine when the dairy industry used disinfectants containing iodine during milk processing.
- Less salt being used in home prepared food due to public health messages encouraging consumers to reduce their salt intake.

Some people react badly to large amounts of iodine – this is referred to as 'iodine sensitivity'. Often the symptoms are related to the non-iodine components of the substance causing the reaction, and not to iodine itself which is an essential nutrient. However, a reaction may only occur when iodine is consumed in very large amounts, i.e. greater than 300 milligrams each day (equal to 300,000 micrograms). These amounts are much higher than what would be consumed in a typical diet with or without iodine fortified foods. Internationally, the preferred option for increasing iodine levels in food is to ensure all salt, including that used in processed foods, is iodised.

This is a simple and low-cost way of increasing the iodine content of a range of foods. Food Standards Australia New Zealand is working on a proposal for mandatory fortification of iodine to redress the issue of low iodine intake. While iodine intakes are an area of concern, advice for adult New Zealanders needs to be mindful of the risks associated with a higher intake of salt. For these reasons, the Ministry of Health offers the following advice – salt intake should be limited but when salt is used for cooking and at the table it should be iodised salt. Kelp and iodine supplements are not recommended, unless under the supervision of a doctor or a dietitian, as these are usually highly concentrated sources of iodine.

## IODINE FORTIFICATION

Fortification is when extra nutrients (such as iodine) are added to food and drinks during the manufacturing process. Fortification can be voluntary or mandatory, when manufacturers are legally required to add extra nutrients to a particular food to meet a significant health need in the population.

In New Zealand, like many other countries, iodine deficiency has led to health problems. In the late 1800s and early 1900s goitre was very common, so in 1924 iodine was added to table salt to increase the amount of iodine in people's diets. The amount of iodine added to table salt was increased in 1938 and remains at a similar level today. This is believed to have contributed to a dramatic reduction in goitre in the middle of last century.

However, recent studies have indicated that the iodine status of New Zealanders is declining to the point where the New Zealand Government has decided to take action: as of September 2009, a new food standard came into effect that requires the replacement of non-iodised salt with iodised salt in most bread. The iodised salt to be used in bread will have an iodine content of 25–65 mg iodine per kilogram of salt. This is equivalent to the level seen in iodised table salt. Pizza bases, breadcrumbs, pastries, cakes, biscuits and crackers will not be required to contain iodised salt, and to retain consumer choice, organic and unleavened bread will also be exempt.

Bread was chosen as the appropriate food vehicle for fortification as it is eaten widely by New Zealanders and it is consumed regularly by a large proportion of women of child-bearing age across different socioeconomic sub-groups. It is also technically possible to add iodised salt to bread in a simple and low cost way. Bread will be labelled to identify that it has been fortified. This information will be

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included in the ingredients list and sometimes in the Nutrition Information Panel (NIP). Replacing non-iodised salt with iodised salt in most bread will help to increase the amount of iodine pregnant and breastfeeding women will get in their diet. However, it is likely that most of these women still won't get enough. Therefore, they are recommended to regularly choose foods that are natural good sources of iodine, as well as choosing iodised salt instead of non-iodised salt in cooking or at the table.

The Ministry of Health has been working to secure a subsidised iodine-only tablet to help pregnant and breastfeeding women meet their extra iodine requirements. A daily 150 microgram iodine-only tablet will be available to pregnant and breastfeeding women once it has been assessed and approved for supply.

The Ministry of Health and NZFSA have a joint role in monitoring the effectiveness of fortifying bread with iodine and to also check for any unexpected outcomes or consequences of mandatory fortification. NZFSA will monitor iodine levels in the food supply and use this information to estimate how much iodine New Zealanders are eating.

### REFERENCES

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