Nutrition Australia

Nutrition Fact Sheet

NUTS AND HEALTH

This information is brought to you by many of the Australian nutrition professionals who regularly contribute to the Nutritionists Network ('Nut-Net'), a nutrition email discussion group.

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What's the Latest on Nuts and Health?

For the vast majority of people, nuts are nutritious foods. When 30–50 grams (a small handful) of nuts are eaten daily as part of a varied, nutritious diet, they may assist in reducing the risk of heart disease and diabetes, help lower blood cholesterol, help manage blood glucose levels and assist with weight management. Peanuts, which are technically 'legumes' rather than nuts, have similar nutritional composition and health effects to those of the tree nuts (almonds, Brazil nuts, cashews, hazelnuts, macadamias, pecans, pine nuts, pistachios and walnuts). Coconuts do not have the same types of fats as the tree nuts, and very likely do not confer the health benefits provided by peanuts and tree nuts. People who are allergic to a particular nut (or group of nuts) should avoid all nuts and nut products until properly tested by an allergy specialist.

Nuts are generally rich in fat. You should therefore substitute nuts for less nutritious foods that are rich in saturated fat (such as muffins, cakes, biscuits and crackers, and savoury salty snacks) instead of simply adding nuts to your existing diet. Along with fruits and vegetables, nuts can play a substantial role in a health-promoting diet.

1. Okay, a peanut isn't a true nut; so what exactly are 'nuts'?

The Macquarie Dictionary defines 'nut' as 'a dry fruit consisting of an edible kernel or meat enclosed in a woody or leathery shell'. The Macquarie also states that botanically, a nut is a 'hard… one-seeded fruit, as in chestnut ...' However, the nutritional effects of different kinds of nuts vary considerably. The International Nut and Dried Fruit Foundation recognises the following nuts (which all grow on trees) as having similar nutritional characteristics: almonds, Brazil nuts, cashews, hazelnuts, macadamias, pecans, pine nuts, pistachios and walnuts.

The peanut, on the other hand, belongs to the same botanical family as peas and beans, and is therefore technically a legume rather than a nut. However, the International Nut and Dried Fruit Foundation recognises that the nutritional composition of the peanut is much closer to that of the tree nuts than to peas or beans, and thus includes peanuts in the list of nuts it represents. Therefore, most of the following discussion applies equally to peanuts as to the tree nuts.

While most tree nuts are high in health-promoting fats (49–74% total fat) and low in carbohydrates (2–17%) there is one exception, the chestnut. The chestnut is more nutritionally similar to a grain than a nut, as it contains 34% carbohydrate and less than 1% total fat. Consequently, the International Nut and Dried Fruit Foundation does not include the chestnut in its list of nuts with similar nutritional characteristics.

Finally, while the coconut is commonly referred to as a 'nut', it also has quite distinct characteristics compared to the other tree nuts. The International Nut and Dried Fruit Foundation therefore does not represent the coconut.

2. What nutrients do nuts provide?

Uncharacteristic of foods from plant origin, nuts contain moderate amounts of protein (9–20%) and, with the sole exception of chestnuts, also contain large quantities of fat (49–74% total fat). Currently, nuts are included in the protein food group along with meat, fish, poultry, eggs and legumes.

Although nuts are generally high in fat, this fat is mostly monounsaturated or polyunsaturated fat. (The fat in coconuts—commonly thought of as being nuts, but not accepted as such by the International Nut and Dried Fruit Foundation—is mostly saturated fat). The health significance of these types of fat is discussed in the answer to Q. 4 below.

It should also be noted that nuts are often sold with added salt. The vast majority of Australians already eat more salt than is recommended so this extra salt is inappropriate. However, it is now easy to find raw or dry roasted pre-packaged nuts that do not contain added salt or fats. Nuts are often available 'in the shell', i.e. without added salt. These nuts can also be purchased in bulk and represent good value for money. Nut shells provide a level of protection, delaying the staling process and onset of rancidity. Moreover, the effort required to crack nuts is thought to limit intake, and reduce the chance of overconsumption.

Since most nuts contain small amounts of polyunsaturated fats—which can go rancid, resulting in bitter flavours—nuts need to be stored well. Buy nuts in bulk, transfer them to smaller bags, and store in the refrigerator. Nuts can also be kept in the freezer for future use for up to 12 months.

Peanut butter is often sold with added salt and/or sugar. Careful reading of the labels in the supermarket (in the spreads and 'health food' sections) should allow you to identify peanut butter or other nut butters with no added salt or sugar. Some health food shops will make peanut (or other nut) butter while-you-wait, using fresh nuts with no added salt, sugar or oil (most commercial brands do add oil to peanut butter). This 'dry-ground' nut butter provides all the benefits of the nuts, without the extra ingredients of low nutritional value. A layer of natural oil floats on the surface of unadulterated nut butters due to the absence of additives that keep oil even distributed. Stirring is therefore required before each use.

Nuts are also a good source of dietary fibre and provide a wide range of essential nutrients, including several B group vitamins, vitamin E, minerals such as iron, zinc, potassium and magnesium, antioxidant minerals (selenium, manganese and copper), plus other antioxidant compounds (such as flavonoids and resveratrol). Because nuts

come from a variety of plant species, each type of nut has its own unique nutritional advantages. For example, Brazil nuts provide large quantities of thiamin (also known as vitamin B1) and an essential trace element called selenium—in fact just two Brazil nuts can provide your entire day's requirement for selenium; cashews are moderately rich in iron and zinc; peanuts are a good source of niacin (vitamin B3); almonds contain worthwhile quantities of calcium, riboflavin (vitamin B2) and vitamin E; pistachios provide plant sterols (which help to reduce blood cholesterol by preventing cholesterol re-absorption from the gut) and walnuts contain large amounts of plant omega-3 fatty acids, which are believed to confer substantial health benefits.

As with all foods, 'variety is the spice of life'. It is better to eat a variety of nuts – and therefore obtain a wide range of nutrients – than to eat just one or two preferred types. Since we also need vegetables and fruit every day, think 5+2 plus a handful – five serves of vegetables, two serves of fruit and a handful of nuts each day.

3. Is there a nutritional difference between raw and roasted nuts?

Preliminary results indicate little difference in the nutrient content of raw and roasted nuts. Roasting reduces the water content of nuts, making the nutrients a little more concentrated. However, roasting may potentially reduce the concentration of several B group vitamins (as they are not heat stable). Moreover, many roasted nut varieties are salted and therefore have a higher sodium content than raw nuts. If you like the taste of roasted nuts, but want to reduce your salt intake, choose only unsalted roasted nuts.

4. If nuts are high in fat, does that mean they are bad for heart health?

Based on both the composition of the fats (a high proportion of healthy monounsaturated and polyunsaturated fats, and a low proportion of saturated fats) and the results of studies comparing heart disease rates among people who eat nuts with those who do not, the answer seems to be a resounding no! Studies suggest that consuming about 30 grams (a small handful) of nuts per day provides protection against heart disease.

It has been known for many years that saturated fats are the major dietary 'culprit' in terms of increasing heart disease risk. Monounsaturated and polyunsaturated fats are generally regarded as heart-healthy. Because nuts and peanuts (but not coconuts) have a low proportion of saturated fats and are rich in monounsaturated and polyunsaturated fats, it is not surprising that they seem to be protective against heart disease. Some studies suggest that those who eat nuts at least fives times a week have a 30–50% reduced risk of developing heart disease compared with those who do not eat nuts. Although this heart-friendliness may not apply to coconuts, studies strongly suggest that almonds, cashews, hazelnuts, macadamias, peanuts, pecans, pistachios and walnuts are all good for the heart when eaten regularly in small amounts as part of a nutritious and varied diet. Few, if any studies have measured the effect of Brazil nuts or pine nuts on heart health. However because of their similar nutritional composition to other tree nuts, it is expected that including these nuts in the diet should at least cause no harm.

Nut consumption has also been shown to reduce total cholesterol and LDL cholesterol (the bad component of cholesterol) levels, both of which are risk factors for heart disease and stroke.

It seems a number of heart-healthy nutrients in nuts work together to achieve this heart protective effect. These include:

- Health-promoting fats that help regulate blood cholesterol
- Fibre and plant sterols that help reduce cholesterol re-absorption from the gut
- Arginine (an amino acid which is converted to nitric oxide in the body) which keeps blood vessels elastic, thereby reducing the risk of atherosclerosis (hardening of the arteries)
- Antioxidant vitamins and minerals, e.g. vitamin E, copper, manganese, selenium and zinc, and other antioxidant compounds such as flavonoids and resveratrol that reduce oxidation and inflammation
- Naturally low sodium and high potassium levels which assist in maintaining healthy blood pressure

5. What about diabetes—is there an effect of nuts on the risk of developing type 2 diabetes?

The situation seems to be similar for diabetes as for heart disease—nuts may be protective. For example, a large study found that women who ate about 30 grams of nuts per day on five or more days of the week had approximately 30% less risk of developing diabetes compared with those who ate few or no nuts. This effect was attributed at least partly to the high levels of monounsaturated and polyunsaturated fats found in nuts, which (in addition to their positive effects on blood cholesterol) are believed to enhance insulin sensitivity. Processed forms of nuts were also found to be beneficial – women who frequently ate peanut butter had 20% less risk of developing diabetes compared to those who ate little or no peanut butter.

However, these associations do not indicate a causal effect—it may be that consumption of nuts is a marker for some other component of diet or lifestyle that actually confers the protection. The positive association at least suggests that nut composition does not promote diabetes and may even be protective against the condition.

Nuts can still be of benefit to those already suffering from diabetes. Nuts reduce the overall glycaemic index of the diet. When added to meals rich in carbohydrate, nuts slow the passage of the meal through the gut and reduce blood glucose levels following the meal. Nuts can also extend the period during which you feel full after a meal (i.e. they have a high satiety value), and this may assist with weight control.

6. Should I avoid nuts if I don't want to put on any more weight?

It seems strange that a food very rich in fat might be suitable for people who may be carrying some excess body fat. Nevertheless, several studies have indicated that moderate intake of nuts (30–50 grams per day, a small handful) is not associated with a tendency to gain weight and may also help reduce the risk of obesity. A study of 51 000 women published in 2009 found that higher nut consumption was not associated with greater body weight gain during eight years of follow-up in healthy

middle-aged women compared to women who did not eat nuts. Instead, nut consumption was associated with a slightly lower risk of weight gain and obesity. The results of this study suggest that incorporating nuts into the diet does not lead to greater weight gain and may even help with weight control.

Recent research has also found that eating nuts increases release of satiety hormones in the gut, thereby helping to control appetite. Also, not all the fat in nuts appears to be absorbed by the body. Nut eaters tend to have more fat in their stools, indicating that some fat which may be trapped in the fibrous structure of the nut passes all the way through the gut. This, as well as the high satiety value associated with nuts may explain why their consumption could assist with weight control.

For those who decide to increase their nut consumption, it is important to ensure that overall kilojoule intake does not increase. Nuts should therefore be substituted for less nutritious foods rather than simply being added to the diet. For example, nuts could replace some processed meats, refined cereal foods such as white bread, fatty and/or sugary snack foods and so on.

7. Are there any special health problems associated with nuts?

Most nuts are not associated with any health problems in the vast majority of people. However, nut allergies are a major cause of concern for a small proportion of the population. Some people are allergic to one or more of the tree nuts (almonds, Brazil nuts, cashews, chestnuts, hazelnuts, macadamias, pecans, pine nuts, pistachios and walnuts), some are allergic to peanuts, and a few unfortunate people are allergic to both tree nuts and peanuts.

In terms of the number of deaths caused, nut allergy is probably the most serious food allergy. It has been reported that peanut allergy kills about 100 people a year in the United States alone, and incidence of peanut allergy appears to be increasing in the population—one study found that (self-reported) peanut allergy among American children doubled from 1997 to 2002. A New Zealand study reported that at least 0.6% of the general population is allergic to one or more tree nuts, and peanut allergy has been reported to affect 1.9% of Australian infants.

Although no more than approximately 1% of people are allergic to peanuts and/or tree nuts, because of the high risk of anaphylactic shock (collapse, with possibly fatal consequences) it is essential that people with allergies to nuts avoid all contact with nuts and nut products. It is also strongly recommended that people with nut allergies carry adrenaline (also known as epinephrine), the medication that will be prescribed by their doctor for managing a severe reaction. If you believe you may be allergic to nuts (or anything else) seek advice only from reputable health professionals who use evidence-based diagnostic methods.

If your child's school is nut-free and your child can eat nuts, you can include them in after-school snacks. You can also add nuts to evening meals and breakfasts, or to between-meal snacks on weekends. Children under five should avoid whole nuts, especially peanuts; instead they should eat nut butters, to avoid the risk of choking. Children who are five years of age or only slightly older should be supervised when eating nuts and should be encouraged to chew well before swallowing.

8. Are there any other health benefits to eating nuts?

Much research has been conducted on the health benefits of nuts in the last few years. Although more research is required, preliminary studies have indicated that nuts may play a role in:

- Reducing symptoms of metabolic syndrome
- Reducing the risk of gall stones
- Reducing age-related macular degeneration (which can lead to blindness)
- Maintaining bone health and
- Slowing brain aging

9. You've mentioned that a daily intake of 30–50 grams of nuts seems to be health promoting; how many nuts does this weight correspond to?

A health-promoting daily intake of 30–50 grams of nuts is about one small handful. 30 g of nuts corresponds to approximately:

- 20 almonds
- 15 cashews
- 20 hazelnuts
- 15 macadamias
- 15 pecans
- 2 tbsp pine nuts
- 60 pistachios in shells (30 g of kernels)
- 10 whole walnuts or 20 walnut halves
- a small handful of mixed nuts

Disclaimer: This material is provided on the basis that it constitutes advice of a general nature only. It is not intended to replace the advice of a physician or a dietitian.