Myth busting:

Eat nuts and manage your weight

Myth: Eating nuts rich in fat causes overweight

Fact: Eating nuts in a healthy diet helps manage weight

Almonds • Brazil nuts • Cashews
Chestnuts • Hazelnuts • Macadamias
Pecans • Pine nuts • Pistachios • Walnuts

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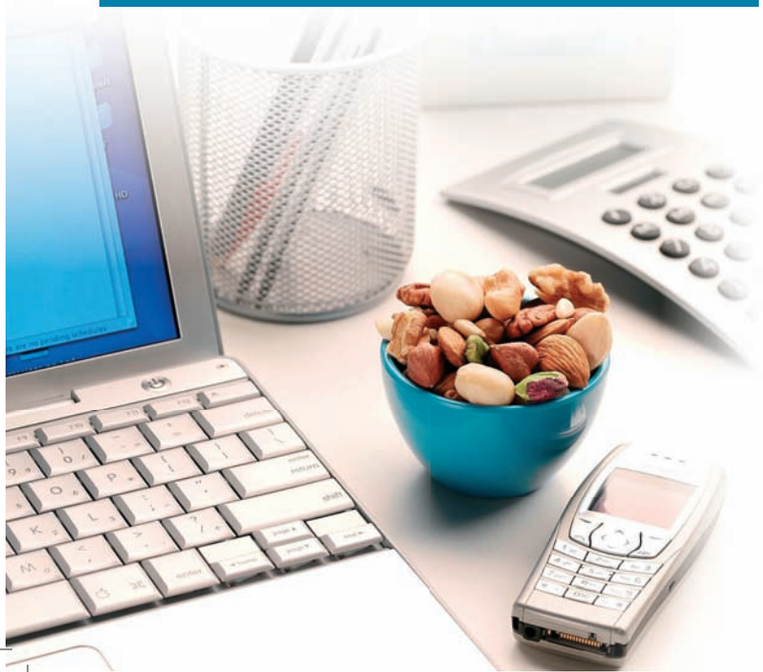
According to the latest statistics, 41% of males and 25% of females aged 18 and over are overweight, while a further 19% of males and 17% of females are obese.[1] Population studies over the last two decades show that dieting is common among Australians with around 30% of people attempting weight loss at any one time.[2] However in their attempts to lose weight, many people exclude certain foods to reduce their kilojoule intake at the expense of reducing nutrient intake in the belief that those foods contribute to weight gain.[2-4]

Similar attitudes regarding the role of foods in weight management have been demonstrated among medical professionals. Research conducted on behalf of Nuts for Life showed 19% of Australian GPs surveyed thought nuts had a negative effect on body weight.[5]

The available scientific evidence that examines the effects of tree nuts on body weight has been reviewed. This document provides an overview of the results of this literature review.

Key Messages

- Research suggests that including nuts as part of a kilojoule-controlled weight loss plan can contribute to weight loss.
- Eating nuts in place of other foods that are equivalent in kilojoules does not cause weight gain.
- From studies in hyperlipidemic subjects, nuts do not cause weight gain when included as part of a cholesterol-lowering diet.
- While the evidence is limited, current research indicates that people with type 2 diabetes may benefit from the addition of nuts to their diet without significant weight gain.
- Nut consumers seem to excrete more fat in their faeces.
- Advising patients to include a handful of nuts (serving size 30g–50g) as a snack is an easy way to incorporate nuts into a healthy diet.



Effects of nut consumption on body weight

Epidemiological studies

Six major epidemiological studies have assessed the impact of nut consumption on body weight or body mass index (BMI). Table 1 summarises the results of these studies.

Background: The studies included participants that were both of a healthy body weight and overweight. In most of these studies, a serve of nuts was classified as 28g, however the SUN study classified a serve as 50g.[6] The nut varieties consumed were not specified, except the Nurse's Health Study where peanuts were specified separately in the 1986 and 1990 food frequency questionnaires.[7] The SUN study did report, however, that in a Spanish population, walnuts were the most frequently consumed nut, followed by hazelnuts, almonds and peanuts, respectively.[6]

Results: Four of the six studies found a trend with higher nut consumption and a lower BMI,[7-10] however the results were statistically significant in only one of these studies.[10] Two studies found no association between nut consumption and BMI,[6, 11] however the second study found a lower risk of weight gain in those who with a higher frequency of nut consumption.[6] Those who ate nuts at least 2/week (50g portion) were 31% less likely to gain weight over the 28 month follow-up period.[6]

Conclusions: Epidemiological evidence suggests people who eat nuts at least five times a week do not weigh more than people who consume nuts less than once a week or never consume nuts. The evidence also indicates that there is a trend toward frequent nut consumers having a lower BMI than non-consumers and that eating nuts regularly may reduce the risk of weight gain.

Table 1 Effect of nut consumption on body weight

Study	Number of Subjects (sex)	Nut Consumption Frequency	BMI (kg/m^2)	Trends
Nurses' Health Study [7,8]	83,818 (F)	Almost never ≥ 5 serves/week	24.8 23.4	BMI decreased with increasing nut consumption
Iowa Women's Health Study [9]	34,111 (F)	< 1 serve/month >5 serves/week	27.1 26.2	BMI decreased with increasing nut consumption
California Seventh Day Adventist Health Study [10]	31,208 (M/F)	< 1 serve/month ≥5 serves/week	Figures not given	Statistically significant decrease in BMI with increasing nut consumption
Physicians' Health Study [11]	21,454 (M)	Rarely/never ≥ 2 serves/week	24.9 24.7	No association between nut consumption and BMI
The SUN Study [6]	8865 (M/F)	Rarely/never ≥ 2 serves/week	23.6 22.9	No association between nut consumption and BMI

Note: P values for changes in BMI were not reported therefore the results should be considered as trends only (except ref [10]

Clinical studies

Numerous clinical studies have observed the effects of nut consumption on body weight in the context of varying dietary prescriptions:

Nuts within kilojoule-controlled weight loss diets

Two clinical trials have shown successful, sustained weight loss when nuts are included as part of a kilojoule-controlled weight loss diet.

- A study of 65 overweight adults who included 84g of almonds a day as part of a low calorie formula diet showed those who ate almonds had a 62% greater weight loss than the control group who consumed the same amount of kilojoules with carbohydrate substituted for the almonds (P<0.0001).[12]
- As part of a 19-week clinical feeding trial of 15 healthy individuals, including 89g of peanuts as part of a kilojoule-controlled diet resulted in no change in body weight compared to the participants' baseline habitual diet.[13]

Nuts added to usual dietary intake

Two clinical studies have added nuts to the participants' usual dietary intake and assessed the effects on weight. This increase in kilojoules in excess of the participants' usual energy intake resulted in weight gain over the study period however the amount of weight gained was less than expected.

- A crossover trial of 90 healthy and overweight individuals showed that including 17–56g walnuts per day (equivalent to 493kJ – 1624kJ) in addition to foods eaten in the participants' usual diet increased body weight by 0.4kg (P=0.01) over 6 months.[14]
- A study of 81 healthy and overweight individuals showed that over six months, the addition of an average of 54g of almonds per day (equivalent to 1363kJ) on top of participants' usual food intake resulted in a non-significant 0.4kg weight gain (P=0.09).[15] Interestingly, participants with a lower BMI at baseline were more likely to gain weight, whereas those with a higher baseline BMI lost weight throughout the walnut intervention.

The weight gain seen in these studies was less than theoretical predictions based on the increase in kilojoule intake provided by the nuts. Researchers suggest this may be due to the satiating effect of nuts reducing overall food intake, or from decreased dietary fat absorption from nuts which lowers the theoretical kilojoule intake.

A third study in which a 1440kJ serving (55g) of almonds was added to the usual diet over a 10 week period did not find any evidence of weight gain.[16] The study involved 20 healthy subjects who were randomized to the almond diet or a control diet for 10 weeks followed by a 3-week washout period and then crossing over to the alternative diet. Although the participants were not instructed to reduce their food intake from other sources, the energy intake of subjects while on the almond diet was not significantly different from the control diet, indicating that they spontaneously reduced their energy intake while eating the almonds. As suggested above, they also found evidence of increased fecal fat excretion. The fat and energy content of nuts in the laboratory may not be a true reflection of how much fat and energy is actual absorption by the body.

Conclusions: Overall, clinical research in the area of nuts and body weight is limited. Based on the available data, including tree nuts daily as part of a kilojoule-controlled weight loss plan has been shown to prevent weight gain and may contribute to weight loss. However, adding nuts to the existing diet without adjusting kilojoule intake or energy expenditure may cause weight gain, although to a lesser extent than theoretical predictions – this may be partly explained by the satiating effect of nuts leading to a compensatory reduction in energy intake from other foods as well as an increase in the amount of fat being excreted in faeces. Further research is required in this area.

Nuts in cholesterol-lowering diets

19 studies have measured weight loss as an outcome in healthy and hypercholesterolemic subjects following cholesterol-lowering diets that included nuts.

- 17 of these studies showed nut intake had no significant impact on the weight status of study participants.[17-32] 14 of these showed no change in bodyweight in diets including up to 100g of nuts per day.[17, 19, 20, 22-25, 27-32] Three studies showed that when subjects consumed a nut-containing diet, weight decreased despite the study aiming to prevent changes in body weight.[18, 26, 30] Four of these studies indicated that including nuts as part of a kilojoule controlled diet can assist weight loss.[18, 21, 25, 27]
- One study showed a slight increase in body weight (0.9kg for men and 0.3kg for women) after including 100g of almonds (equivalent to 2525kJ) in addition to participants' regular daily food intake.[33]
- Another study found that the consumption of a hazelnut-enriched diet (40g/day; 11.3% of energy) for 4 weeks did not result in weight gain and led to a reduction in BMI and body fat despite a higher energy intake.[34]

Conclusions: These results indicate that incorporating less than 100g of nuts into a kilojoule-controlled cholesterol-lowering diet does not cause weight gain and may contribute to weight loss in the short term. If 100g of nuts are added to the habitual diet with no adjustment for the additional kilojoule intake, nuts may contribute to an increase in body weight, although the effect is small.

Nuts in cardio-protective eating patterns

Eating patterns that include cardio-protective monounsaturated fats from nuts and olive oil have been shown to successfully reduce body weight.

- The Portfolio diet showed that daily almond consumption was not associated with a significant increase or decrease in weight among 34 participants followed up over one month.[36]
- Two studies have compared a Mediterranean style diet including nuts with a low fat diet. The first found that increasing nut consumption by 14g per day led to significant weight loss compared to the low fat diet. This weight loss was maintained at 18 months.[35] While the other study found no difference in body weight or waist circumference between the diets despite the fact that the Mediterranean diet including nuts (30g/day of almonds, walnuts and hazelnuts) was significantly higher in fat and energy content.[37]

Effects of nut consumption on body weight in people with diabetes

Three studies have investigated the effects of nut consumption in people with Type 2 Diabetes[33, 38, 39] however only one of these reported body weight outcomes.[39]

- 30g of walnuts were included as part of a kilojoule-controlled diet in 17 Type 2 Diabetic participants over 6 months, with results showing no effects on body weight. Walnut consumption was also associated with improved lipid profiles of the participants compared to control groups.[39]

Summary

Including nuts as part of a kilojoule-controlled weight loss plan may assist weight loss. By adding tree nuts to the existing diet, without adjusting for energy intake or increasing physical activity levels, body weight may increase however to a lesser extent than theoretically predicted. However eating nuts in place of other foods that are equivalent in kilojoules should not cause weight gain.

Consumption of tree nuts as part of a cholesterol-lowering diet does not affect body weight, and may possibly assist with weight management. For people with Type 2 Diabetes, the limited available evidence indicates nuts as part of a healthy diet do not cause weight gain. Further research is needed to assess the role of nuts in weight loss diets and in people with diabetes.

Nutrient density of nuts

Tree nuts are nutrient dense, providing fibre, vitamins, minerals and antioxidants to the diet, including vitamin E, folate, niacin, magnesium, selenium and zinc. Nuts are also a source of the macronutrients protein and fat. The fat content of nuts is high (ranging from 49% to 76% fat, with the exception of chestnuts which contain around 0.6% fat) which therefore contributes to energy (kilojoule) intake. However the majority of fat comes from healthy fats – monounsaturated and polyunsaturated fats. Studies among healthy adults and people with Type 2 Diabetes show nut consumers have a nutrient intake that is more consistent with recommendations to prevent chronic disease compared to those that do not consume nuts.[38, 40]

Nuts are also a source of dietary fibre and protein, two factors that are known to increase the satiety of meals and prolong feelings of fullness after consumption.[41, 42] Interesting new research has also found that nut and nut oil consumption increases the excretion of satiety hormones in the intestine helping appetite control.[43–47] Foods that are nutrient dense and that can help manage hunger levels are particularly useful when trying to restrict food intake in order to reduce or control body weight.

NUTS IN A HEALTHY BALANCED DIET

Below is an example of how nuts can be incorporated into a healthy eating plan for weight loss (6000kJ plan):

Breakfast
30g of wholegrain breakfast cereal with 1 cup of skim milk and a piece of fruit

Lunch
50g of salmon with 1 cup of salad and 1 tsp of avocado or unsaturated margarine spread on a wholemeal bread roll

Dinner
100g of lean beef stir-fried with 2 cups of vegetables, served with ½ cup of cooked rice

Dessert
1 cup of fruit salad

Snacks
30g of unsalted mixed tree nuts
1 tub of low fat yoghurt

Nutritional Breakdown:
Energy: 6000kJ (1430 kcal)
Carbohydrate: 50% of energy
Protein: 20% of energy
Fat: 30% of energy
- Total fat: 43g
- Saturated fat: 9g
- Polyunsaturated fat: 10g
- Monounsaturated fat: 20g

For further information on the nutritional benefits of nuts visit **www.nutsforlife.com.au**

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