

# Macadamias

**Macadamias** are the quintessential Australian nut and the only native Australian bush food to enter into commercial food production. Similar to fruits, vegetables and other nuts, **macadamias** are a nutrition powerhouse – beneficial to health and wellbeing. Enjoying a handful of nuts (30g) regularly as part of a healthy diet may reduce your risk of heart disease and type 2 diabetes, and can help with weight management.<sup>1-5</sup> So get cracking and eat two serves of fruit, five serves of veggies and a handful of nuts every day. A 30g serve of **macadamias** is equivalent to about 15 nuts. Have you had yours today?



## Nutrition and health benefits of macadamias

Here's why macadamias should be enjoyed as part of your healthy diet:

- **A rich source of healthy fats** – macadamias have the highest content of healthy monounsaturated fat (81% of total fat)<sup>6</sup> – the same fat as found in olive oil. Like other plant foods, they don't contain dietary cholesterol. Research has shown that diets high in monounsaturated fats have benefits for heart health and diabetes management.<sup>7</sup>
- **Improves blood cholesterol** – 40–90g of macadamias per day has been shown to reduce levels of 'bad' LDL

cholesterol and increase 'good' HDL cholesterol,<sup>8-12</sup> thereby reducing heart disease risk.

- **Reduces heart disease risk** – a study showed eating 40–90g of macadamias each day for 4 weeks improved markers of inflammation and blood clotting in men with high cholesterol.<sup>12</sup> Together with improvement in blood fats, these changes would be expected to reduce the risk of heart disease. Large population studies have already shown that those eating a handful of nuts, including macadamias, at least four to five times a week have a lower risk of heart disease than those who don't eat nuts.<sup>1-4, 17</sup>
- **Reduces oxidative stress** – a study of men with high cholesterol, found that eating 40–90g of macadamias per day for four weeks improved markers of oxidative stress.<sup>12</sup> Oxidation causes damage to the cells in our body and is believed to be an important factor in the development of chronic disease and ageing.
- **Rich in manganese** – a little known mineral which is an essential element involved in bone formation as well as the breakdown of carbohydrate, cholesterol and amino acids. Manganese is also required for several antioxidant enzyme systems. A 35g handful of macadamias provides 25% of RDI for manganese.<sup>6</sup>
- **Contains natural plant sterols**<sup>6</sup> – about 2–3g of plant sterols a day can help lower cholesterol levels by reducing cholesterol reabsorption in the intestines. Macadamias contain 116mg per 100g<sup>6</sup> and helps contribute to the total needed.

- **Very low in sodium and contains potassium**, similar to other nuts.<sup>6</sup> A low sodium, high potassium diet has benefits for blood pressure and heart health.<sup>13</sup>
- **Contains plant omega-3 fats** – while having only small amounts (99mg/100g),<sup>6</sup> macadamias are one of the few plant foods which contain this important short chain omega-3 fatty acids – alpha linolenic acid (ALA). ALA has important heart health benefits.<sup>14</sup>
- **Contains fibre** – macadamias contain around 2g fibre per 30g<sup>6</sup> which is a similar amount in a slice of wholegrain bread. A high fibre diet is necessary for improving blood cholesterol and a maintaining a healthy bowel function.<sup>15</sup>

All these heart protective nutrients: healthy fats, omega-3s, plant sterols, dietary fibre and a number of antioxidant minerals such as copper, manganese, magnesium and zinc work together to promote heart health.

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## Nutrient content of natural macadamias<sup>6</sup>

Nutrient	Per 100g
Energy (kJ)	3080
Protein (g)	9.2
Fat, total (g)	74.0
Fat, saturated (g)	10.0
Fat, monounsaturated (g)	59.8
Fat, polyunsaturated (g)	3.8
Fat, omega-3 (mg) as ALA	99
Carbohydrate, total (g)	7.9
Carbohydrate, sugars (g)	4.6
Dietary fibre (g)	6.4
Sodium (mg)	1.4
Potassium (mg)	410
Thiamin	1.2
Iron (mg)	3.7
Zinc (mg)	1.3
Copper (mg)	0.76
Magnesium (mg)	130
Manganese (mg)	4.1
Plant sterols (mg)	116
Total polyphenols <sup>16</sup> (mg GAE)	156

For further information on the nutritional benefits of nuts and for recipes visit [www.nutsforlife.com.au](http://www.nutsforlife.com.au) Follow us @nutsforlife or like us [www.facebook.com/nuts4life](https://www.facebook.com/nuts4life) or for specific information on macadamias go to [www.australian-macadamias.org](http://www.australian-macadamias.org)

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Go Nuts for Life.  
Go Nuts for Health.



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- **Helps with weight management** – although high in fat, research has found those eating macadamias (and other nuts) are more likely to have a healthy BMI – a measure of weight compared to height compared to those that don't eat nuts<sup>1-4</sup> and nut consumption does not lead to weight gain.<sup>17-18</sup> Nuts such as macadamias also add enjoyment to a weight management diet because of their great texture and taste.<sup>19</sup>

## Macadamias are also ...

- **An excellent source of thiamin** – also known as vitamin B1. This water soluble vitamin is particularly important for the production of energy from food. A handful of macadamias provides around 30% of daily requirements of thiamin.<sup>6</sup>
- **A source of plant iron**, particularly for vegetarians and those wanting to reduce their animal protein intake. A 30g serve of macadamias provides around 14% of the daily requirement of iron for men and 6% for women.<sup>6</sup> To boost the absorption of plant iron in the intestine combine macadamias with a vitamin C rich food or fluid such as tomato, capsicum, citrus fruit and juices, and the vitamin C will help absorb the plant iron in the nuts.

## Buying and storage tips

When choosing nuts, look for crisp, plump kernels (wholes or pieces). If buying them in the shell, select clean nuts free from cracks and holes. To keep nuts in the best condition, store them in an airtight container in the refrigerator or freezer. Nuts can be refrigerated for up to four months and frozen for up to six months. Return nuts to room temperature before eating to restore their flavour and aroma.



## 8 ways to include macadamias in your diet

- Give your breakfast a crunch by adding macadamia pieces to your morning muesli.
- Macadamias just love pumpkin soup.
- Home-made macadamia ice cream – take your favourite vanilla ice cream out of the freezer until soft, combine with roughly chopped macadamias and put into a loaf tin and re-freeze. Cut in slices to serve and top with fresh or frozen berries.
- Pumpkin, pea and macadamia nut risotto.
- Mix macadamias with dried fruit in a cous cous salad.
- Add chopped macadamias to a roasted vegetable salad.
- Crush macadamias with breadcrumbs to making a crunchy coating for fish or chicken.
- Macadamia nut butter makes a tasty alternative to peanut butter.

## References

1. Albert CM, et al. Nut consumption and decreased risk of sudden cardiac death in the Physicians Health Study. *Arch Intern Med.* 2002;162(12):1382-7.
2. Ellsworth JL, et al. Frequent nut intake and risk of death from coronary heart disease and all causes in postmenopausal women: the Iowa Women's Health Study. *Nutr Metab Card Dis.* 2001;11(6):372-7.
3. Hu FB, et al. Frequent nut consumption and risk of coronary heart disease in women: prospective cohort study. *British Medical Journal.* 1998;317(7169):1341-5.
4. Fraser GE, et al. A possible protective effect of nut consumption on risk of coronary heart disease. *Arch Intern Med.* 1991;152:1416-24.
5. Afshin A, et al. Consumption of nuts and legumes and risk of incident ischemic heart disease, stroke, and diabetes: a systematic review and meta-analysis. *Am J Clin Nutr.* 2014 Jul;100(1):278-88.
6. Nuts for Life. 2016 Nutrient Composition of Tree Nuts. Sydney: Nuts for Life; 2016.
7. Schwingshackl L, et al. Monounsaturated fatty acids and risk of cardiovascular disease: synopsis of the evidence available from systematic reviews and meta-analyses. *Nutrient* 2012;4(12):1989-2007.
8. Garg ML, et al. Macadamia nut consumption lowers plasma total and LDL cholesterol levels in hypercholesterolemic men. *J Nutr.* 2003;133(4):1060-1063.
9. Curb JD, et al. Serum lipid effects of a high-monounsaturated fat diet based on macadamia nuts. *Arch Intern Med.* 2000;160(8):1154-1158.
10. Griel AE, et al. A macadamia nut-rich diet reduces total and LDL-cholesterol in mildly hypercholesterolemic men and women. *J Nutr.* 2008;138(4):761-7.
11. Colquhoun DM, et al. Effects of a macadamia nut enriched diet on serum lipids and lipoproteins compared to a low fat diet. *Food Australia.* 1996;48(5):216-222.
12. Garg M, et al. Macadamia Nut Consumption Modulates Favourably Risk Factors for Coronary Artery Disease in Hypercholesterolemic Subjects. *Lipids.* 2007;42(6):583-7
13. Blumenthal JA, et al. Effects of the DASH diet alone and in combination with exercise and weight loss on blood pressure and cardiovascular biomarkers in men and women with high blood pressure: the ENCORE study. *Arch Intern Med.* 2010;170(2):126-35.
14. Pan A, et al.  $\alpha$ -Linolenic acid and risk of cardiovascular disease: a systematic review and meta-analysis. *Am J Clin Nutr.* 2012 Dec;96(6):1262-73.
15. Kumar V, et al. Dietary roles of non-starch polysaccharides in human nutrition: a review. *Crit Rev Food Sci Nutr.* 2012;52(10):899-935.
16. Wu X, et al. Lipophilic and hydrophilic antioxidant capacities of common foods in the United States. *J Agric Food Chem* 2004; 52 4026-4037
17. Tan SY, et al. A review of the effects of nuts on appetite, food intake, metabolism, and body weight. *Am J Clin Nutr.* 2014 Jul;100 Suppl 1:412S-22S.
18. Flores-Mateo G, et al. Nut intake and adiposity: meta-analysis of clinical trials. *Am J Clin Nutr.* 2013 Jun;97(6):1346-55.
19. Mattes RD. The energetics of nut consumption. *Asia Pac J Clin Nutr.* 2008;17 Suppl 1:337-9.