

# Pistachios and sleep



Current knowledge suggests diet and nutrition play a role in influencing sleep quality<sup>[1]</sup>.

A healthy, balanced diet provides the range of nutrients needed to support sleep. Nuts, including pistachios, are nutritional powerhouses, rich in many essential vitamins, minerals, unsaturated fatty acids, plant protein and fibre.

Pistachios (Pista पिस्ता) are seeds of the fruits of the Pistachio vera tree which is in fact a drupe (edible flesh covered by a hard shell) though classified as a tree nut in culinary settings.

**Certain dietary components – including melatonin, magnesium and selenium, all of which are found in pistachios – have been linked with sleep.**

## The role of melatonin

Melatonin is produced by the pineal gland in the brain, mostly at night<sup>[2]</sup>. It has a regulator role in the internal timing of biological rhythms, including the promotion/regulation of sleep<sup>[3,4]</sup>. Melatonin has also been linked with improving sleeping disorders like insomnia<sup>[2,5]</sup>.

A daily 30g handful of nuts, including pistachios, as part of a healthy, balanced diet, can support health and sleep goals.

## Dietary sources of melatonin

The body's melatonin levels increase after eating foods that contain melatonin. Environmental factors, such as temperature and sunlight exposure, can impact the melatonin content of foods, so levels within dietary sources can vary markedly<sup>[6]</sup>.

A review paper, which looked at the melatonin content of a wide variety of foods, found nuts have the highest melatonin content of all plant foods<sup>[6]</sup>.

Specifically, pistachios (both raw and roasted) were found to be the richest nut source of melatonin, with around 660 nanograms (ng) of melatonin per gram<sup>[7]</sup>.



## Did you know?

Some healthy dietary patterns have been evaluated more closely than others for how they impact sleep. This research suggests people who follow the Mediterranean diet and the Dietary Approaches to Stop Hypertension (DASH) diet report better sleep quality<sup>[11,12]</sup>.

A handful of pistachios is equivalent to around 30 pistachio kernels.

## Minerals and sleep

Emerging evidence suggests a link between some minerals, including magnesium and selenium, and sleep<sup>[8-10]</sup>. Nuts are among the best dietary sources of these nutrients.

**Magnesium** – Found in a variety of foods, but among the best sources are nuts and seeds, and green leafy vegetables. Pistachios contain 100 milligrams/100 gram serve.

Magnesium has been shown to help improve insomnia in clinical trials, especially among older people<sup>[9,10]</sup>.

**Selenium** – Pistachios contain small amounts of the mineral selenium.

A large observational study found people who slept 5–6 hours a day (termed 'short sleepers') had lower intakes of selenium, compared with people who slept 7–8 hours a day (or 'normal sleepers')<sup>[8]</sup>.

## Tips for getting your patients or clients to include pistachios in their day

- Pistachios are a nutrient dense, ancient nut, popular with all ages.
- Pistachios can be incorporated as a versatile, nutritive, flavourful and colourful ingredient.
- According to Ayurveda pistachios provide 'Ushna virya' to dishes.
- Pistachios can be used to make various foods and drinks e.g. green coloured ice cream, pistachio milk.



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## References

1. Wilson K., et al. Diet composition and objectively assessed sleep quality: A narrative review. *AJCN*, 2022.
2. Sleep Health Foundation. Available at: <https://www.sleephealthfoundation.org.au/melatonin.html>
3. Costello RB., et al. The effectiveness of melatonin for promoting healthy sleep: A rapid evidence assessment of the literature. *Nutr J*, 2014. 13:106.
4. Wagner J, Wagner ML, Hening WA. Beyond benzodiazepines: alternative pharmacologic agents for the treatment of insomnia. *Ann Pharmacother*, 1998. 32:680-91.
5. Ferracioli-Oda E, Qawasmi A, Bloch MH. Meta-analysis: Melatonin for the treatment of primary sleep disorders. *PLoS ONE*, 2013. 8(5): e63773.
6. Meng X., et al. Dietary sources and bioactivities of melatonin. *Nutrients*, 2017. 9(4): 367.
7. Lasso J. and Yeboah-Awudzi M. Melatonin content of raw and roasted pistachios. Louisiana State University. <https://americanpistachios.org/about-us/pistachio-power-unshelled/press-releases/study-finds-american-grown-pistachios-contain>
8. Grandner MA., et al. Dietary nutrients associated with short and long sleep duration. Data from a nationally representative sample. *Appetite*, 2013. 64:71-80.
9. Djokic G., et al. The effects of magnesium - melatonin - Vit B complex supplementation in treatment of insomnia. *Open Access Maced J Med Sci*, 2019. 7(18):3101-05.
10. Abbasi B., et al. The effect of magnesium supplementation on primary insomnia in elderly: A double-blind placebo-controlled clinical trial. *J Res Med Sci*, 2012. 17(12):1161-69.
11. Muscogiuri G, et al. Sleep quality in obesity: Does adherence to the Mediterranean Diet matter? *Nutrients*, 2020. 12(5):1364.
12. Liang H., et al. (2020). Dietary Approaches to Stop Hypertension (DASH) score and its association with sleep quality in a national survey of middle-aged and older men and women. *Nutrients*, 2020. 12(5): 1510.