

Melatonin in foods

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Melatonin in the body

Oxidative stress is an imbalance between the production of reactive oxygen species and antioxidant defenses. It is involved in several pathological conditions including aging. Melatonin is a hormone produced by pineal gland in the brain, according to a circadian rhythm, with a maximal secretion at night. The melatonin level in the blood ranged from 10 to 60 pg/mL during day and night, respectively. Since melatonin is both hydrophilic and lipophilic, it is different from other antioxidants that it can cross physiological barriers in order to reduce oxidative damage in both lipid and aqueous cell environments.

Melatonin as a dietary supplement

Melatonin, as a dietary supplement, has been popularly used in jet lag; melatonin was reported to synchronize the sleep/wake cycle and alleviate the symptoms. Melatonin has also been used for insomnia in the elderly, etc. Other beneficial effects such as antioxidant, anti-inflammatory activities have been reported as well. The typical low oral dose range used is 1-5 mg. Higher doses, which have been reported in other clinical studies such as anticancer studies, are in the range of 10-40 mg.

Melatonin in foods

Melatonin could also be found in several foods and plants. Its variable presence has been reported in roots, leaves, fruits and seeds of plants. Increasing melatonin intake from foods might increase the melatonin level in blood plasma and could be of a therapeutic potential. Melatonin may exhibit the antioxidant activity synergistically with other antioxidants in plants. Clinical studies have shown that melatonin could be efficient in preventing cell damage, metabolic and

neurodegenerative diseases, cancer, inflammation and aging. Some of the dietary sources of melatonin are listed in the following table.

Source	Melatonin content (pg/g)	Source	Melatonin content (pg/g)
White mustard (seed)	189000	Poppy (seed)	6000
Black mustard (seed)	129000	Celery (seed)	7000
Turmeric	120000	Coriander (seed)	7000
Wolf berry (seed)	103000	Walnuts	3500
Fenugreek (seed)	43000	Oat	1796
Almond (seed)	39000	Sweet corn	1366
Sunflower (seed)	29000	Tomato	1067-1399
Fennel (seed)	28000	Rice	1006
Alfalfa (seed)	16000	Grape skin	5-965
Green Cardamom (seed)	15000	Japanese radish	657
Tart cherries	2060-13460	Ginger	584
Flax (seed)	12000	Banana	466
Anise (seed)	7000	Barley	378

pg = picogram; g = gram

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