

Why Melatonin in Montmorency Tart Cherries is so beneficial for your health

The "Dean of Melatonin Research" Gives Tart Cherries High Marks

Dr. Russel Reiter never envisioned that he'd become a hero to U. S. tart cherry growers, but then again, he never imagined that melatonin, the simple, natural hormone he'd been studying for years would be found in such significant quantities in tart cherries.

"We were surprised at how much melatonin was in cherries, specifically the Montmorency variety," says Reiter. The only other fruits that have been examined to date are bananas and pineapples, and both have comparatively low melatonin levels. "Cherry juice concentrate, which involves greatly reducing the water content, has ten times the melatonin of the raw fruit." (1)

Produced in the pineal gland at the base of the brain, melatonin controls sleepiness at night, wakefulness in daytime and functions as an antioxidant to help the body destroy free radicals.(2) Recent research conducted by Dr. Reiter at the University of Texas Health Science Center in San Antonio, Texas, quantified the availability and activity of melatonin found in cherry products. The results were astonishing. Cherries contain an extremely significant quantity of melatonin, enough to produce positive results in the body.

Montmorency cherries, which account for the majority of tart cherries produced in the United States, contain up to 13.5 nanograms (ng) of melatonin per gram of cherries, more than is normally found in the blood.(3)

Dr. Russel Reiter began his distinguished career more than 30 years ago in neuroendocrinology, the study of the glands and hormones of the brain. A year earlier, in 1958, a dermatologist named Aaron Lerner at Yale University discovered the existence of melatonin. (4) Today, Dr. Reiter is the preeminent scientist on melatonin and the advantageous effects it has on human health and well-being. Dr. Reiter has authored or co-authored more than 700 papers in his field, trained over 130 doctorates, and is the author of the book *Melatonin*, published by Bantam Books. His peers consider him the "dean of melatonin research".

One of the main areas on which Dr. Reiter focused in his recent work addresses a common consumer concern, which is, "will the melatonin present in cherries actually increase melatonin levels in the body favorably?" Melatonin is by far the most potent of the antioxidants, much more so than vitamins C, E and A. **The reason: melatonin is soluble both in fat and water and can therefore enter some cells that vitamins cannot.** For example, vitamin E is soluble in the lipid part of the cell only and vitamin C in the aqueous part. Melatonin is soluble in both. For this reason, Dr. Reiter says, eating cherries with high melatonin concentrations will increase the antioxidant capacity in the body.

Although melatonin is available as a supplement and can be purchased without a prescription, Dr. Reiter and other health experts extol the benefits of consuming melatonin through food consumption. Not only do many foods provide beneficial antioxidants and similar compounds, they are often found in foods that provide a variety of health benefits. Cherries may,

one day, be classified as a functional food, but they also offer consumers great flavor, versatility and nutrition.

References:

- (1) Echlin, Bill. 2001 "Dr. Cherry" has growers on the mend. Traverse City Record-Eagle. July 15, p.2B
- (2) National Sleep foundation. 2001 Melatonin: The Facts. Washington, DC.
- (3) Burkhardt, Tan, et al, Detection and Quantification of Antioxidant Melatonin in Montmorency Tart Cherries. Journal of American Chemical Society 49, 4898-4902.
- (4) Redman, J., et al, Science, 1983, 219, 1089-91.

Research in the Spotlight: Questions & Answers about Melatonin

Montmorency tart cherries contain significant quantities of melatonin. That was the surprising discovery made recently at the University of Texas Health Science Center in San Antonio. Dr. Russel Reiter, who has been studying melatonin for more than 30 years, headed up the research team. "Tart cherries, specifically the Montmorency variety, contain an extremely significant quantity of melatonin, enough to produce positive results in the body," says Dr. Reiter. Here's more information.

What is Melatonin?

Melatonin is a natural hormone produced in the pineal gland at the base of the brain. Melatonin influences the sleep process and because it is an antioxidant, it can help the body destroy free radicals, which cause aging and cell death.

How does melatonin function?

The pineal gland, where melatonin is produced in the body, helps regulate hormones and circadian rhythms (daily metabolic balance). The pineal gland functions as a biological clock by secreting melatonin at night.

Melatonin levels are low during the day. At sunset, less available light signals the brain to release melatonin. This rise continues for hours, eventually peaking between 2 and 3 a.m. If the timing or intensity of the melatonin peak is disrupted due to aging, stress, or jet lag, many physiological and mental functions are adversely affected. The ability to think clearly, remember key facts, and make sound decisions can be profoundly hampered by these upsets in the biological clock (1).

What foods contain melatonin?

The highest quantities of melatonin are found in tart cherries, particularly the Montmorency variety. However, other foods such as milk, peanuts, turkey, chicken or almonds contain tryptophan, which raises brain serotonin that in turn can be converted to melatonin. Other foods, such as bananas, also contain melatonin but not in significant levels to be effective.

Does melatonin have any side effects?

Individuals who take melatonin supplements need to exercise caution, in that an overabundance of melatonin in the blood can cause insomnia and nightmares rather than peaceful sleep. Researchers point out that the maximal effective sleep-inducing dose to be 0.1 to 0.3 milligrams (mg). The amount found in tart cherries provides significant amount to positively effect sleep.

However, dosages sold in over-the-counter supplements are a minimum of 2-3 mg and sometimes much higher. These levels are at least ten times the maximal effective dosage.

References

(1) Maurizi C. P., The therapeutic potential for tryptophan and melatonin: Possible roles in depression, sleep, Alzheimer's disease and abnormal aging. *Med Hypotheses* 31 (3): 233-42, March 1990.