

NANOEMULSION



MELATONIN

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Nanoemulsified Melatonin is an advanced delivery form of the body's primary sleep-modulating hormone, melatonin. In supplemental form, melatonin supports a healthy circadian rhythm and sleep cycle. It also normalizes sleep during and after travel across time zones and in shift workers.*

EDUCATION

MODERN-DAY LIFESTYLE DIMINISHES MELATONIN

Melatonin is a hormone that is principally produced by the pineal gland in the brain, with smaller amounts produced in peripheral tissues. It is most well-known for its role in regulating the circadian rhythm and facilitating sleep.

A circadian rhythm is an internal set of biological processes in the body that follows an approximately 24-hour cycle and regulates many aspects of our behavior and physiology. Melatonin is the primary regulator of the circadian rhythm, in animals, including humans. Its release is triggered by darkness and inhibited by light, whether from the sun or a glowing computer screen.

A variety of factors in our modern-day world disrupt our circadian rhythms and diminish natural melatonin production, including jet lag, exposure to non-native EMFs (EMFs produced by man-made technologies), blue light exposure at night, exercise performed late in the day, and aberrant sleeping patterns.^{1,2,3,4,5,6} Melatonin production also naturally declines with age.⁷ Melatonin supplementation can help correct these deficits by realigning the circadian rhythm, restoring healthy sleep patterns and whole-body wellbeing.

Importantly, melatonin does not cause sleep; instead, by signaling to our circadian system that darkness has arrived, melatonin acts as the "starting gun" for the beginning of the "race" that is sleep.

SUPPORTS MOOD AND COGNITION AND DETOXIFIES THE BRAIN

Melatonin doesn't just ease the body into sleep – it is also a potent neuroprotective antioxidant. In fact, the antioxidant properties of melatonin have an array of beneficial effects on the brain. Melatonin protects the brain from oxidative stress resulting from traumatic brain injury.^{8,9,10} It may also alleviate depression and anxiety by quenching neuroinflammation.¹¹ Emerging research also suggests that supplementation with low-dose melatonin in the afternoon or evening alleviates seasonal affective disorder (SAD), a type of depression related to changes in seasons and the circadian system.¹² Not to be overlooked is melatonin's critical role in brain detoxification. Melatonin helps the brain eliminate harmful waste by facilitating



Supplement Facts

Serving Size: 0.2 mL (1 pump)
Servings Per Container: 150

	Amount Per Serving	% Daily Value
Melatonin	1mg	**

**Daily Value not established

Other Ingredients: Water, glycerin, ethanol, tocopherol, phospholipids (from purified sunflower seed lecithin), medium-chain triglycerides, natural mixed tocopherols

deep non-REM sleep, which, in turn, activates the glymphatic system.¹³ The glymphatic system is a waste clearance system in the central nervous system that removes metabolic wastes and toxic proteins, allowing the brain to function optimally. Insufficient glymphatic system activity caused by a lack of deep sleep permits the accumulation of misfolded, toxic proteins in the CNS, which play a role in neurodegenerative diseases such as Alzheimer's disease.¹⁴

SUPPORTS HEALTHY GI FUNCTION

Melatonin doesn't just impact the brain - melatonin receptors are widely distributed throughout the body. As a result, this hormone exerts biological effects on numerous body systems, including the gastrointestinal tract. Melatonin has been found to promote normal bowel patterns and elimination, reducing gastrointestinal discomfort.¹⁵ Optimal melatonin levels may also support an anti-inflammatory, metabolically-healthy gut microbiota, a foundational element of whole-body health.^{16,17}

REGULATES CARDIOVASCULAR AND METABOLIC HEALTH

Melatonin also promotes cardiovascular health, which research suggests is impacted by decreased melatonin secretion.¹⁸ It attenuates atherosclerosis by upregulating mitophagy, the selective degradation of defective mitochondria, and by inhibiting the NLRP3 inflammasome.¹⁹ Melatonin is also a key regulator of glucose metabolism and energy balance.²⁰ In animals, removal of the pineal gland (where melatonin is made) has been found to induce glucose intolerance and insulin resistance.^{21,22} Conversely, restoration of optimal melatonin levels abolishes these adverse effects, restoring insulin sensitivity and glucose tolerance.²³

Melatonin may support healthy blood glucose control and body weight by alleviating the inflammatory processes that promote metabolic dysfunction and by balancing hormones involved in food intake, such as leptin. The relationship between melatonin and metabolic health explain why sleep deprivation is so strongly linked to the development of insulin resistance and type 2 diabetes in humans.²⁴

OPTIMIZES IMMUNITY

Emerging research indicates that melatonin has profound effects on the immune system. It protects against aberrant cell proliferation. Emerging research indicates that melatonin has profound effects on the immune system. It protects against aberrant cell proliferation and balances the pro-inflammatory and anti-inflammatory branches of the immune system.^{25,26} These immunomodulatory properties may explain why artificial light exposure at night and sleep deprivation/disturbances are implicated in the development of breast malignancies and other neoplasms.²⁷

NANOEMULSIFIED DELIVERY SYSTEMS MAY IMPROVE MELATONIN BIOAVAILABILITY

Supplemental melatonin typically has low oral bioavailability.²⁸ However, nanoparticle delivery systems may enhance the absorption of supplemental melatonin by bypassing hepatic first-pass metabolism and permitting a direct absorption of melatonin into the bloodstream.^{29,30} Nanoparticle delivery systems may thus enhance the therapeutic properties of melatonin.

Quicksilver Delivery Systems® improve upon liposomal and emulsification technology with smaller, more stable particles made from the highest grade ingredients available. In addition to exceptional absorption rates, these tiny liposomal and nanoemulsified particles enhance the lymphatic circulation of nutrients and intracellular delivery, after ingestion.*

References available at quicksilverscientific.com/melatoninreferences

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WARNING: NOT FOR USE BY INDIVIDUALS UNDER THE AGE OF 18 YEARS. DO NOT USE IF PREGNANT, BREAST-FEEDING, OR PLANNING TO BECOME PREGNANT. KEEP OUT OF REACH OF CHILDREN. Consult a healthcare professional before use if you have any medical condition or are taking any other supplements or medications. Do not exceed recommended dosage. See www.quicksilverscientific.com for additional safety information.

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