

## Beneficial Effects of Melatonin for the Newborn

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Melatonin (N-acetyl-5-methoxytryptamine) is secreted by the pineal gland, retina, gut, bone marrow, cerebellum, skin, placenta(1).

It controls the circadian rhythm, inflammation, energy metabolism, reproductive physiology, and fetal development(2, 3).

The production of melatonin is activated after birth, but it lacks the rhythmic secretion until 3–5 months after birth(4).

Some evidence supports the idea that therapeutic use of melatonin during pregnancy and lactation period may reduce materno-fetal complications.

Free radicals and Oxidative stress play well known role in some newborn diseases and Beneficial effects of melatonin have been reported in cardiovascular and CNS disease, sleep disorders, prevent or treatment of neonatal diseases like sepsis, bronchopulmonary dysplasia (BPD), retinopathy of prematurity (ROP), necrotizing enterocolitis (NEC).(5-7)

some scientists have been used; melatonin as an adjuvant in the treatment of term and preterm newborns special when we know, preterm infants have melatonin deficiency.

Although side effects of oral melatonin supplements at low doses in the short term are minimal, Some study report; Drowsiness (drowsiness), headache, diarrhea, irritability, restlessness, insomnia, anxiety, lethargy, psychomotor hyperactivity, High blood pressure, abdominal pain, itching, glycosuria, proteinuria, abnormal liver function tests, weight gain, fatigue(8).

However, more studies are needed to confirm

the beneficial effects of preventive and therapeutic strategies of melatonin.

### References

1. Arnao MB, Hernández-Ruiz J. The Potential of Phytomelatonin as a Nutraceutical. *Molecules*. 2018;23(1):238.
2. Hardeland R, Tan DX, Reiter RJ. Kynuramines, metabolites of melatonin and other indoles: the resurrection of an almost forgotten class of biogenic amines. *J Pineal Res*. 2009;47(2):109-126.
3. Back K, Tan DX, Reiter RJ. Melatonin biosynthesis in plants: multiple pathways catalyze tryptophan to melatonin in the cytoplasm or chloroplasts. *J Pineal Res*. 2016;61(4):426-437.
4. Kennaway DJ, Stamp GE, Goble FC. Development of melatonin production in infants and the impact of prematurity. *J Clin Endocrinol Metab*. 1992; 75(2):367-369.
5. Chen YC, Sheen JM, Tiao MM, Tain YL, Huang LT. Roles of melatonin in fetal programming in compromised pregnancies. *Int J Mol Sci*. 2013;14(3):5380-401.
6. Gitto E, Marseglia L, Manti S, D'Angelo G, Barberi I, Salpietro C, et al. Protective role of melatonin in neonatal diseases. *Oxid Med Cell Longev*. 2013;2013:980374.
7. Nabavizadeh R, Sohoul MH, Santos HO, Roustaei M, Fatahi S, Ghodoosi N, et al. Higher dietary total antioxidant capacity is inversely associated with *Helicobacter pylori* infection among adults: A case-control study. *Indian J Gastroenterol*. 2022; 41(3):258-265.
8. Auld F, Maschauer EL, Morrison I, Skene DJ, Riha RL. Evidence for the efficacy of melatonin in the treatment of primary adult sleep disorders. *Sleep Med Rev*. 2017;34:10-22.

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