

Melatonin: An Overview of Use in Children and Adolescents

By, Judith Aronson-Ramos, M.D.

Melatonin (N-acetyl-5-methoxytryptamine) is a natural hormone secreted by the human body. Melatonin is produced in the brain by a structure called the pineal gland. We do not produce the hormone until 9-12 weeks of age, which can partially explain why infants need time to establish a sleep cycle. Melatonin secretion decreases with age, one of the causes of reduced sleep in the elderly. In the human body melatonin is produced from the amino acid tryptophan which is its precursor, and hence the popular use of that product as a sleep aid. Melatonin sold as a supplement is derived from plants but has the same chemical structure as the hormone produced naturally. Levels of melatonin increase in darkness, and decrease with light exposure, which explains our natural circadian rhythm cycles.

For Melatonin supplementation to work properly it needs to be taken approximately 30 minutes before bed and with pre-sleep conditions: settling down, lights low, reduced stimulation, and readiness for bed. For many children and teens who take ADHD stimulant medication or with developmental or behavioral problems, sleep onset can be difficult. Melatonin can assist in the onset of sleep; however it is not intended to maintain sleep.

Typical dosages of melatonin range from 0.3 mg to 5 mg. Product safety needs to be researched by the consumer as melatonin is considered a “dietary supplement” and as such is not regulated by the FDA. You can research the safety of individual products through the following websites: www.consumerlabs.com or www.fda.gov . Provided the product you use has a track record for good quality and safety, melatonin can be used in children over two years of age; however, there has been only a small amount of research published. Most of the studies have been done in adults. There have been some concerns raised that melatonin may delay puberty, once again this remains a theoretical not a proven risk. Other studies have shown 93% of children given melatonin for sleep problems improve their sleep with its use. Before using melatonin check with your physician about combining it with other medications. Always start with the lowest dosage and increase to what seems to work best; however, do not exceed 5 mg in children and 9 mg in adolescents.

Melatonin is available in many different forms and with different additives. As with all supplements you must read labels carefully and insure the product you try is safe based on your own research using the references previously listed. It is important to note there are quick release forms, tablets, capsules, and special delayed or time released forms which may differ in their effectiveness. Though as mentioned previously melatonin helps with sleep onset not maintenance, the controlled release form may help with children or teens that have trouble staying asleep. Combined products which have different herbs and vitamins added to the melatonin may carry other risks based on the component additives. It may be best to trial a melatonin only product before considering any type of combination.

Finally remember product labeling should not be trusted. Do the research and look things up before purchasing. None of the product labels have been supported by serious scientific investigation. Additionally safety of melatonin has only been demonstrated in short term use.

For more information go visit the well respected online pharmacopeia www.naturalstandard.com or the government review of melatonin by the Agency for Health Research and Quality <http://www.ahrq.gov/downloads/pub/evidence/pdf/melatonin/melatonin.pdf> .