



Fall asleep quickly – wake up refreshed!

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Various causes, including stress and increased media consumption, lead to a reduction or even total absence of the release of endogenous melatonin, followed by problems falling asleep. According to the European Food Safety Authority (EFSA), if 1 mg melatonin is taken shortly before going to bed „Melatonin helps reduce the time to fall asleep“. Higher doses in otherwise healthy subjects are not correlated with an improved effect on sleep onset latency.

Did you sleep well? A completely untroubled answer “Yes thanks, splendidly!” is rarely heard in times of crisis. Worry causes stress and stress can in turn, cause sleeping problems. Supplementation with melatonin can reduce the time taken to fall asleep. The European Food Safety Authority has published an extensive report on this.

The European Commission asked the European Food Safety Authority (EFSA) to compile this scientific expert report to assess the effectiveness of melatonin [1]. The report was essentially based on data from three meta-analyses that included 46 studies with a total of over 1000 participants. Some of the questions addressed by the report were as follows:

- Does taking melatonin have a positive effect on sleep onset latency in otherwise healthy subjects?
- What dose should be recommended in order to achieve the desired effect of a reduction in sleep onset latency?

Background

At any age, restful sleep is essential for well-being and performance the following day. The American Sleep Foundation recommends between 7 and 9 hours' sleep per night for a healthy adult [2]. A sleep duration of less than the recommended time is associated with an increased risk of obesity, diabetes, high blood pressure, coronary heart disease, stroke, frequent psychological stress and overall mortality.

It can be assumed that in times of crisis, including the current coronavirus pandemic, the number of patients seeking help in the pharmacy for sleeping problems increases. Many people are faced with profound changes – worry causes stress and stress can trigger sleep disorders. In addition, the worldwide crisis is bringing about changes in patterns of

work and leisure. Media consumption is increasing markedly and anyone now working from home often sits in front of a screen until late in the evening. This can lead to a significant reduction or complete lack of melatonin release.

But sleep disorders, for example poor quality of sleep or broken sleep, also occur independently of crises and especially in the elderly, because melatonin levels also progressively reduce with age. Furthermore, there are numerous other factors which can have a negative influence on melatonin release and thereby the quality of sleep, such as changing the clocks or a switch in day-night rhythm in shift workers.

Melatonin, which is also called the sleep hormone, is thus a significant factor in the complex event. A deficiency is associated with sleep changes that can impair the quality of life.

Is compensation for melatonin deficiency useful?

One meta-analysis showed a significant shortening of sleep onset latency in healthy subjects who reported they did not suffer from sleep disorders [3]. The time taken to fall asleep after the ingestion of melatonin fell by 3.9 min compared to placebo (95% CI: -5.3 to -2.6).

Another meta-analysis investigated the effects of giving melatonin to subjects with primary sleep disorders, i.e. sleep disorders in people who were otherwise healthy [4]. Here there was a significant reduction in sleep onset latency after administration of melatonin compared to placebo of 11.7 min (95% CI: -18.2 to -5.2).

A third meta-analysis included subjects with or without sleep disorders [5]. When 12 studies with 172 subjects were considered, the administration of melatonin significantly

reduced sleep onset latency compared to placebo by 3.9 min (95% CI: –5.4 to –2.5). If the two smallest studies with a total of 14 subjects were disregarded (due to outliers in the data set or heterogeneity of the data), then sleep onset latency was reduced by 7.4 min (95% CI: –9.8 to –5.1).

How much melatonin is needed to shorten sleep onset latency?

The doses of melatonin used in the investigated studies ranged from 0.1 to 100 mg. A meta-analysis showed a statistically significant reduction in sleep onset latency in healthy subjects after consumption of melatonin for all doses investigated in the range > 1 mg to 10 mg compared to placebo (< 1 mg, five studies; 1–3 mg, 10 studies; 4–5 mg, six studies; 6–10 mg, seven studies).

When the effect of supplementation with melatonin in subjects with primary sleep disorders was considered, the dose range of 1–3 mg (six studies) was superior to the dose ranges of < 1 mg (two studies) and of 4–5 mg (seven studies) [4].

Summary

The EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA) found a cause-effect relationship between the ingestion of melatonin and a reduction in sleep onset latency in otherwise healthy people. In the Panel's view, the following statement reflects scientific knowledge "Melatonin helps to reduce the time to fall asleep". In order to achieve this reduction, 1 mg melatonin should be taken shortly before going to bed. Higher doses bring no further improvement in the effect on sleep onset latency.

Literature

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