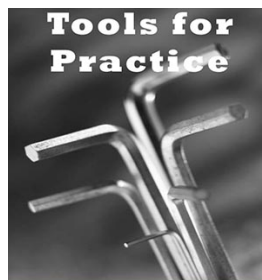


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Melatonin for sleep: Exhausted by other options?

Clinical Question: Is melatonin effective for sleep disorders?

Bottom Line: The quality of melatonin research is generally poor and at high risk of bias. If the results are believable, melatonin may help people fall asleep faster (~10 minutes) and spend more time asleep (~15 minutes); both of these amounts may be of limited clinical value.

Evidence:

- Six systematic reviews with seven meta-analyses,¹⁻⁶ included 9-19 randomized controlled trials (RCTs) with 279-1683 patients.¹⁻⁶ Another systematic review⁷ duplicated two others.^{3,4}
 - Falling asleep faster: four of six meta-analyses statistically significant.¹⁻⁵
 - Overall: 4-11.7 minutes sooner.^{1,3,5}
 - "Sleep onset disorder" patients: 23 minutes sooner.²
 - Increasing total sleep time: four of six meta-analyses statistically significant.¹⁻⁵
 - Overall: 8.2-18.2 minutes more.^{1,4}
 - Improving sleep quality:
 - Perceived sleep quality: standard mean difference=0.22 (0.12-0.32) improvement¹ (of marginal clinical significance).
 - Sleep efficiency (time asleep while in bed): two of four meta-analyses statistically significant.³⁻⁵
 - Improved 1.9%-2.2%.^{4,5}
 - Jet lag/shift workers: significantly improved total sleep time, 18.2 minutes (8.1 to 29.3), but other outcomes (sleep onset, quality) not improved.⁴
 - Short-term adverse events: no difference in any including headache, dizziness, nausea, or drowsiness.^{3,4,7} Long-term unknown.
 - Issues include small studies (averaging only 20-30 patients per RCT),²⁻⁵ short duration (many one day,⁵ most <4 weeks^{1-5,7}), inconsistent results in RCTs,^{1,3-5,7} low quality (example <25% have concealed randomization),^{3,4} subjective reporting of sleep (up to ~40% of RCTs use diaries),¹ use of rating scale without clinical meaning (subjective jet lag).⁶

Context:

- Melatonin has inconsistent dose-effect relationship between 0.3-5mg.^{1,3,5-7}
 - As a result, the “recommended dose” is 0.3-5mg.⁸
- Melatonin typically taken:
 - Before morning sleep in shift-workers.
 - Close to local bedtime in travelers.
 - ≤2 hours before bedtime in insomnia.^{6,7,9}
- Guidelines suggest melatonin: (1) may be effective for jet lag^{9,10} and delayed sleep phase disorder;¹¹ (2) has insufficient evidence for recommendations in insomnia;⁸ (3) recommendations in shift-workers variable.⁹⁻¹¹
- Benzodiazepines, non-benzodiazepines, and antidepressants reduce sleep onset latency by 10-20, 13-17, and 7-12 minutes, respectively.¹²
- Melatonin costs ~\$2.00-\$7.50/month.

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Disclosure:

Authors have no conflicts to disclose.

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