Melatonin Timing
& Dosing Guide

What the research actually supports · calm-veritas.com

WHAT MELATONIN ACTUALLY DOES

Melatonin is not a sedative. It is a circadian signal produced by the pineal gland in response to darkness. It does not force sleep — it tells the body that night has arrived, shifting physiology toward sleep readiness. Levels typically rise 2 hours before natural sleep onset (DLMO) and peak around 2–3 AM.

OPTIMAL TIMING WINDOW

0.5 mg · 30–60 min before target bedtime
Most effective for circadian phase-shifting (jet lag, shift work)

1–3 mg · 30 min before target sleep
Standard sleep-onset dose. Common consumer dosing.

5–10 mg · at bedtime
Pharmacological dose. No stronger circadian signal. May cause next-day grogginess.

JET LAG PROTOCOL CHECKLIST

- [ ] Determine direction of travel (eastward = advance phase; westward = delay phase)
- [ ] Eastward travel: take 0.5mg melatonin at target destination bedtime starting 3 days before departure
- [ ] Westward travel: take 0.5mg melatonin on arrival at local bedtime for 3–5 nights
- [ ] Combine with morning bright light exposure (10–30 min) at destination
- [ ] Avoid bright light in the evening at destination for the first 3 days
- [ ] Limit alcohol — it fragments sleep architecture and disrupts circadian resetting

SLEEP ONSET INSOMNIA CHECKLIST

- [ ] Start with lowest effective dose: 0.3–0.5 mg (not 10 mg)
- [ ] Take 30 minutes before target sleep time — consistent timing matters more than dose
- [ ] Dim lights and avoid blue-spectrum screens 1 hour before taking melatonin
- [ ] Keep room temperature between 16–19°C (60–67°F)
- [ ] If no effect after 2 weeks at 0.5 mg, trial 1 mg — not 5 mg

FORMS & WHAT THE RESEARCH SUPPORTS

Most clinical trials demonstrating benefit used doses of 0.3–1 mg — far below the 5–10 mg found in most retail products. A 1997 study in Sleep (Zhdanova et al.) found 0.3 mg and 1 mg equally effective for sleep onset improvement; higher doses did not improve outcomes. Sustained-release formulations may help with sleep maintenance (staying asleep) rather than sleep onset, since they maintain serum levels through the night.

WHO BENEFITS MOST (EVIDENCE SUMMARY)

Jet lag
Strong — 0.5 mg at destination bedtime. Cochrane review (2002) confirmed benefit.

Delayed sleep phase disorder
Strong — 0.5–3 mg timed to advance DLMO. First-line intervention.

Insomnia in adults 55+
Moderate — melatonin production declines with age; supplementation helps.

Primary insomnia (younger adults)
Weak — modest effect on sleep onset latency; not a first-line treatment.

Anxiety before surgery
Moderate — shown effective as anxiolytic pre-med in multiple RCTs.

SAFETY & CAUTIONS

- [ ] Short-term use (1–13 weeks) is consistently safe in adults
- [ ] Long-term safety data beyond 6 months is limited — use intermittently when possible
- [ ] May interact with blood thinners (warfarin), immunosuppressants, and sedatives
- [ ] Avoid in autoimmune conditions unless supervised — melatonin modulates immune activity
- [ ] Pregnancy and breastfeeding: insufficient safety data — consult a physician
- [ ] Children: only use under medical supervision; may affect pubertal timing with chronic use

QUICK REFERENCE

Standard dose range: 0.3 – 1 mg (physiological) · 1 – 5 mg (pharmacological)
Timing: 30–60 min before target sleep onset
Jet lag (eastward): 0.5 mg at local bedtime, start 3 days before travel
Key interaction: bright light at wrong time negates melatonin's phase-shift effect