

Jet Lag Recovery Guide

A circadian-science protocol for resetting your
body clock after crossing time zones

Why Jet Lag Happens

Jet lag is a mismatch between your internal circadian clock, set by your suprachiasmatic nucleus, and the local light-dark cycle at your destination. The clock does not reset instantly — research on circadian re-entrainment consistently shows the body adjusts at a rate of roughly one time zone per day for eastward travel, and slightly faster, about 1 to 1.5 zones per day, for westward travel.

This asymmetry exists because the human circadian period runs slightly longer than 24 hours on average, which makes it physiologically easier to delay the clock (stay up later, as with westward travel) than to advance it (go to sleep earlier, as with eastward travel).

Light: The Primary Reset Signal

Light exposure timed correctly is the single strongest lever for shifting circadian phase, working through melanopsin-containing retinal cells that signal directly to the suprachiasmatic nucleus. Light sought at the wrong time can actually push your clock in the wrong direction, which is why timing — not just quantity — of light exposure matters most.

- Traveling east: seek bright light in the morning at your destination; avoid bright light in the evening for the first 2-3 days.
- Traveling west: seek bright light in the evening at your destination; avoid bright light in the early morning.
- Crossing 8+ time zones: light timing becomes less intuitive; a short morning walk outdoors on arrival is a reasonable default for most eastward trips.

Melatonin Timing

Clinical trials on melatonin for jet lag, including a Cochrane systematic review, found consistent benefit for eastward travel across five or more time zones when taken at the target bedtime of the destination, at doses between 0.5mg and 5mg. Lower doses in the 0.5mg range produced similar benefit to higher doses with less next-day grogginess, consistent with dose-response findings from separate circadian phase-shifting research.

Melatonin is less consistently beneficial for westward travel, where light and activity timing generally do the heavier lifting.

Before You Fly

- Shift gradually: for trips crossing 3 or more time zones, shift your sleep and meal timing by 30-60 minutes per day for 2-3 days before departure, in the direction of your destination.
- Pre-adjust light exposure: get morning light if flying east, evening light if flying west, in the days leading up to travel.
- Avoid alcohol in flight: alcohol fragments sleep architecture and worsens dehydration, compounding jet lag on arrival.

On Arrival

- Adopt local meal times immediately: meal timing is a secondary circadian cue (a 'zeitgeber') that reinforces the light-driven reset.
- Get outside within the first hour: natural light is far more intense than indoor lighting and produces a stronger circadian signal.
- Avoid long naps: if a nap is necessary, cap it at 20-30 minutes and take it before mid-afternoon local time.