

## JET LAG

### JET LAG AND MELATONIN

Jet lag symptoms are associated with the misalignment of the body's normal day/night rhythm. The body normally has a cycle in which melatonin (a natural hormone that aligns sleep cycles and other physiological functions) reaches peak blood levels at around 2 a.m. When crossing time zones, this peak needs to be adjusted (shifted) so that it always peaks at this time of the night. Because of the changed time zones, misalignment of the cycle occurs, giving many but not all travelers symptoms of jet lag. The range of symptoms include sleep disturbances, daytime fatigue, weakness, headache, sleepiness, and irritability. Most symptoms disappear by the fifth day after traveling across a 6-hour time zone. It is difficult to compensate for jet lag for trips shorter than 3 days and some would advise against attempting to do so.

One way of shifting the melatonin peak to its physiological position is to take melatonin tablets and push or pull the peak blood levels by timing the tablets appropriately. To use melatonin, the following schedule can be followed:

#### Eastward Travel

- **Away for 4 or more days:** When traveling eastward, take a 5mg melatonin tablet at 1800 to 1900 hours local time (6 p.m. to 7 p.m.) on the day of departure (if necessary, take while on the flight). On arrival, take a tablet at local bed time, 2200 to 2300 hours (10 p.m. to 11 p.m.), for the next 4 days.
- **Away for less than 4 days:** The evening preceding departure, take a dose of melatonin at 1800 to 1900 hours (6 p.m. to 7 p.m.) local time. On arrival, take a daily dose at local bedtime, 2200 to 2300 hours (10 p.m. to 11 p.m.), until departure.

#### Westward Travel

- **Away for 4 or more days:** When traveling westward, take 1 tablet daily at local bedtime, 2300 hours (11 p.m.) or later, for 4 days at the destination (or at each stop-over). If the traveler awakes in the very early hours of the morning (before 4 a.m.), he/she can take another capsule. Do not take melatonin pre-flight when flying west.
- **Away for less than 4 days:** Take melatonin at bedtime the night before departure.

#### Cautions

Melatonin can produce sleepiness and reduced alertness. Persons taking melatonin should not drive, operate heavy machinery, or perform tasks requiring alertness for 4 to 5 hours after taking melatonin. The timing of the dose of melatonin needs to be precise, since mistiming the dose can worsen rather than improve the jet lag symptoms. Persons who suffer from psychiatric problems or migraine headaches or who may be or intend to become pregnant should use melatonin with caution, if at all.

#### Zolpidem (Ambien) and Other Hypnotics

Zolpidem (10 mg) has been shown as effective as melatonin alone or as melatonin/zolpidem in combination. Zolpidem should be used to induce sleep after arrival at the appropriate destination time-zone sleeping time, when the body is jet-lagged and cannot fall asleep. It can be used for up to 2 or 3 nights at each end of the trip. Zolpidem has a short half-life with no residual effect in the morning. Travelers should resist the temptation to sleep during the day the first few days at destination, since this will decrease the ability to sleep at night and prolong the adjustment cycle. Other short-active hypnotics have been recommended (zaleplon, temazepam, and triazolam)

but have not been studied formally in the way that zolpidem has. Sedatives are no longer recommended on airline flights due to the risk of blood clots in the legs during prolonged immobility.

### **Other Ways to Reduce Jet Lag**

Some ways of trying to reduce jet lag include the following:

- When possible, choose daytime flights to minimize loss of sleep and fatigue.
- Avoid large fatty meals, caffeine, and alcohol during the flight.
- Drink lots of water.
- Regular timed exposure to daytime outdoor light or high intensity artificial light (> 10,000 LUX) can be useful in improving jet lag.
- There is no current evidence to the usefulness of homeopathic remedies or diet in the treatment or prevention of jet lag.

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