Alertness - Sleep Nutrition

Jet Lag

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Jet lag

- Occurs **when the person's circadian rhythm is desynchronized with the time zone they are in**, by rapid travel across multiple time zones (at least 4 to 5 time zones).
- Upon landing, and for the first few days, the internal clock is out of sync with the new local time. In simple terms**, jet lag occurs because your body is still set to your original time zone**
- This misalignment **disrupts your sleep-wake cycle** and can make adaptation difficult for a few days until your biological clock adjusts to the new time zone.

Managing sleep while traveling

For a stay of 2 to 4 days, it is not worthwhile to modify the biological clock, as it will barely begin adapting to the local schedule before needing to resynchronize in the opposite direction upon returning.

Therefore, it is recommended, where possible, to **maintain your original rhythm**.

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Managing sleep while traveling and reduce the effects of jet lag

1. **Prepare in advance**:

Before leaving, **gradually adjust your bedtime and waking time to more closely align with your destination's time zone**. Move bedtime and mealtimes earlier (for eastward travel) or later (for westward travel) by one hour per day. Supplement with **Magnesium** (600 mg/day; fraction 2 (300 mg) or 3 times (200 mg) /day) min. 10 days before departure.

2. **Choose strategic flights**:

If possible, **opt for flights that arrive late in the day.** This gives you time to settle in and go to bed at an appropriate time.

3. **Set your watch**:

Adjust your watch to your destination's time as soon as you board the plane to start acclimating to the time zone.

Only eat meals if they are consistent with the destination's schedule.

4. **Avoid caffeine and alcohol**:

These substances can disrupt your sleep. Avoid them before and during the flight.

5. **Create a comfortable sleeping environment**:

Ensure that your room upon arrival is conducive to sleep by adjusting **the temperature, closing the curtains, and reducing noise**.

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6. Expose yourself to natural light:
Daylight helps regulate your biological clock. Expose yourself to light in the late afternoon to help delay bedtime (westward travel) and expose yourself to morning light as soon as you wake up; wear sunglasses in the afternoon (eastward travel).

7. Take short naps:
If very sleepy, take short naps (20 minutes) to avoid disrupting your nighttime sleep.

8. Maintain a routine: Try to follow a regular sleep and meal routine, even when traveling.

9. Be patient

10. Melatonin and Tyrosine supplements during travel:

- Melatonin can help regulate your sleep cycle. It is recommended especially for eastward flights of 5 time zones or more and for stays of more than 3 consecutive days. In case of jet lag syndrome, the recommendations are **3 mg at bedtime** for a short duration (5 days ± 2 days) to accelerate the resynchronization of the internal clock. However, it may be necessary to extend its use depending on the number of time zones crossed and any preexisting sleep disorders.

Taking melatonin before departure offers little benefit and may counteract its effects during travel.

- Association with L-Tyrosine (the first 8 to 10 days): mc2 150 to 300 mg, **to be taken 20 minutes before breakfast**. Always supplement with Magnesium prior to take Tyrosine (min 10 days before)

Talk to your doctor for the use of Melatonin and Tyrosine
Contra-indications of Tyrosine: pregnancy, breastfeeding, malignant melanoma, hyperthyroidism, pheochromocytoma, recent heart attack.
Precautions: cardiac arrhythmia, psychosis, manic-depressive psychosis or hypomania, mania, MAOIs (in which case increase magnesium at least a month before administering Tyrosine at a reduced dose: 100 to 150 mg).
Possible side effects: nervousness, hyperreactivity, aggressiveness, restlessness, insomnia, gastric acidity. To avoid side effects, almost always start with 10 days of magnesium before administering Tyrosine, as the side effects are linked to hyperreactivity, to norepinephrine, which is modulated by magnesium.

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The most common symptoms of jet lag are:

- Fatigue
- Disorientation
- Decreased concentration and performance
- Loss of appetite
- Muscle aches
- Sleepiness or insomnia

These symptoms gradually disappear, and the speed of adaptation will depend on:

Number of time zones crossed:
Generally, our biological clock adjusts gradually at a rate of **one time zone per day**.

Direction of the flight:
Traveling east can make adaptation more difficult especially if our internal biological clock runs slightly over 24 hours. For example, travelling from New York to London, *i.e*. from west to east). Crossing multiple time zones eastward is challenging because exposure to light occurs before our body temperature reaches its minimum late at night, enhancing phase delay.

Individual vulnerability:
As we **age**, we become more sensitive to jet lag. Older individuals have a weaker central biological clock and reduced sleep pressure, making adaptation more difficult. **Ethnic origin** can play a role: for example, Africans, whose internal clocks are shorter, adapt better to traveling east, while Caucasians adapt better when traveling west.

Chronotype:
Symptoms and their duration are more pronounced when travel goes against your chronotype. Night owls may handle westward travel better, while early birds may find eastward travel easier. A similar phenomenon is observed with daylight saving time changes (switching to daylight saving time, equivalent to crossing one time zone eastward, is more favorable for early birds).

Photoperiod at destination:
The length of light exposure at the destination also plays a role. **A short light period can slow adaptation to local time**, as our body receives fewer signals to adjust its internal clock.

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