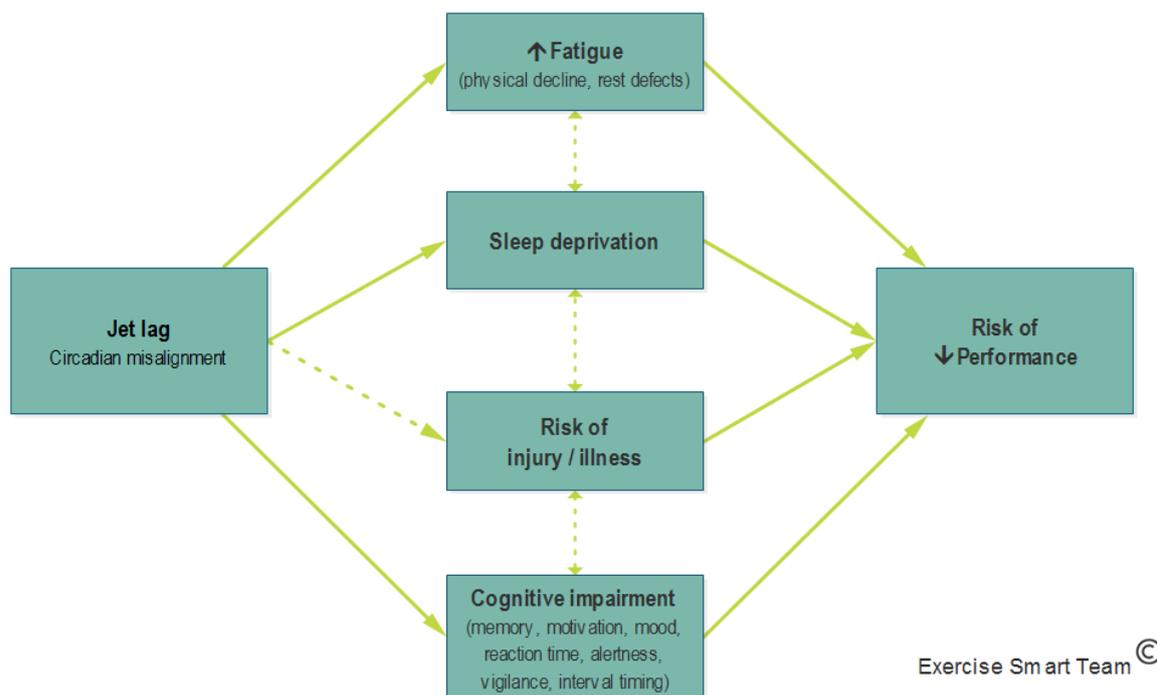


Coping with travel demands

by Dina C (Christa) Janse van Rensburg, MD (PhD), MMed, MSc, MBChB, FACSM, FFIMS, Exercise SMART Team

As an athlete you often need to travel to various different global locations to train and/or compete at international events. Your voyage may include high speed aircraft over vast distances and crossing numerous time-zones. The subsequent travel fatigue and/or jet lag you experience influences your bodily functions (sleep disruption, decreased concentration and alertness, change in regularity of stools, to name but a few) and physical performance.



In this short bulletin I intend to explain the difference between travel fatigue and jet lag and also try to give practical tips for you to better adapt to the challenges following travel.

Travel fatigue versus Jet lag:

Travel fatigue is a temporary exhaustion and follows any long journey including car-, bus- and train trips. It follows a period of prolonged inactivity, irregular sleep, restricted food choices, dehydration, and other factors associated with long-distance travel.

Jet lag on the other hand is also temporary, but follows rapid long distance travel crossing three or more time-zones. It is caused by the fact that your body clock is out of sync with the time-zone at your new destination.

Management of travel fatigue

The management of travel fatigue should start prior to your trip. Planning your trip and trying to avoid stressful situations as much as possible can go a long way in helping you to arrive less tired at your destination. Below are a few tips that can help to achieve that.

Before your trip:

- Plan carefully in advance to reduce stress and anxiety
 - ✓ Make sure your documents are in order e.g. passport and visa if required
 - ✓ Enquire if you need any vaccinations before entering the destination country
 - ✓ Take the shortest route with the least number of layovers
- Get enough sleep and rest before your journey
- Try to prevent illness

During your trip:

- Choose your seat to be as comfortable as possible
- Wear loose fitting clothing, but consider compression garments for your legs to help with blood flow
- Prevent motion sickness
- Drink enough fluids, specifically water and maintain a regular diet, eat enough roughage
- Sleep as much as possible
- Commit to regular movement

After your trip – at the new destination:

- Shower on arrival
- Take a nap when you feel tired, but not longer than 30 minutes and not too close to bedtime
- Take caffeine in the morning to improve daytime alertness
- Relax as often as possible
- Rehydrate at regular intervals with water and/or sports drinks that you are accustomed to
- Sleep enough, i.e. at least 6-8 hours

Management of jet lag

To recover from jet lag you need to shift your body clock (your biological rhythm of sleep/wake schedule) to be at the same time as the new destination time-zone. It is usually easier to recover after westward travel (when the body clock has to delay) than it is after eastward travel (when the body clock has to advance).

Interventions that can help you to achieve this, and recover quicker are listed below. If you time the intervention incorrectly, your body clock may shift in the wrong direction and cause you to suffer for

longer from jet lag. You also need to be careful about the use of pharmacologic interventions (tablets/medication) as it may cause side effects.

Interventions that can assist in your adaptation to the new destination:

Non-pharmacological

• Light

- ✓ Generally exposure in the early evening & the first part of the night (at your normal home time, not destination time) will delay your body clock following westward travel, but this will depend on how many time-zones you crossed
- ✓ Generally exposure in the second half of the night & the early morning (at your normal home time, not destination time) will advance your body clock following eastward travel, but this will depend on how many time-zones you crossed
- ✓ The above two points of light application are general advise, but the timing of application will be affected by the number of time-zones crossed
- ✓ Avoid exposure to blue light shortly before bedtime (i.e. laptops, tablets, TVs, LED, etc.)

• Sleep

- ✓ Optimize the amount and quality of your sleep
- ✓ Perform quiet activities before you go to sleep (e.g. reading)
- ✓ Sleep in a quiet and comfortable room

• Food & Hydration

- ✓ You need to keep a disciplined approach to food & hydration (avoid exotic/spicy meals)
- ✓ Shift your meal times to that of the new destination time
- ✓ Caffeinated drinks can increase daytime alertness, but you should avoid it after midday

• Exercise

- ✓ Your exercise sessions should be low intensity for the first few days after a long flight
- ✓ It has not been proven when, how much & what type of exercise is needed to effectively reset your body clock
- ✓ You can strategically plan timing of training as per the strategy for light exposure

Pharmacological

• Melatonin

- ✓ This is a hormone that plays a role in your natural sleep-wake cycle. It promotes sleep and can help reset your body clock
- ✓ Take note of the timing of consumption and the dose, its legal status in different countries and World Anti-Doping Agency (WADA) rules

• Sedatives

- ✓ Use sleeping tablets e.g. Zolpidem® to improve sleep, but only if you have tolerated it before

• Stimulants

- ✓ These can be used, e.g. slow-release caffeine early morning at new destination time.
- ✓ Avoid stimulants (caffeine, nicotine, alcohol) before bedtime

Some further general tips and advice that may help you to recover from jet lag are discussed below.

Before your trip across time-zones:

- Get enough sleep to avoid sleep deprivation (six to eight hours per night).
- Consider to practice your high intensity training sessions for 3 weeks before you travel at the time of competition when you are abroad.
- Reduce training volume & intensity seven days prior to departure.
- Consider travel schedules, to assist sleep-wake cycle.
- Shift bed- and mealtimes one to two hours earlier before travelling east & one to two hours later before travelling west to adapt to the local time at the new destination time-zone.

During your trip:

- Avoid alcohol and caffeine.
- Keep your watch set at your home time for the duration of the flight.
- Make sure you get maximum rest/sleep.
- Follow the sleep/wake pattern of your home time during the flight.
- Ensure minimal distractions (e.g. electronic devices including cell phones).

After your trip – at the new destination:

- Set your watch to your destination time, and start to follow the sleep/wake pattern of your destination
- Take a brief nap if you are feeling exhausted.
- During time-zone transitions of < 8 hours east, shift the body clock to advance
- During time-zone transitions of < 8 hours west, shift the body clock to delay
- For journeys of > 9 time-zone hours east, it is more convenient to adjust by delaying your body clock
- The direction of body clock adjustment may have implications for training and competition preparation
- The most important determining factors are timely light exposure, physical exercise and melatonin administration.

By being prepared for time-zone changes and the disturbances they cause to your body clock, the symptoms faced as a result of crossing multiple time-zones can be reduced. You need to allow time for the shift of your body clock. Until this process has completed, your sleep may be compromised, your performance may be worse and it may seem harder to succeed. Following the above advice will minimise the severity and duration of the bad effects of travel fatigue and jet lag.

Short biography of the author:

I am a sports physician with an interest in research and has completed my PhD on the effect of exercise in patients suffering from rheumatoid arthritis. I have accompanied single- (mainly netball) and multi-coded teams to international events, including the Olympics and the Commonwealth Games. I have given lectures on the topic of travel fatigue and jet lag at the Advanced Team Physician Course of the IOC since 2016. I am currently employed by the University of Pretoria as Professor and Head of Department of Sports Medicine.