

# Conquering jet lag syndrome

April 5 2011, By Sunao Uchida

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Jet lag poses a problem for athletes flying to international competitions. Sunao Uchida summarises the lessons learned in trying to reduce the negative impact of jet lag on athletes - lessons that are relevant to all air travellers.

With the internationalization of athletic endeavor in recent years, our faculty research unit has come up with a way of conquering jet lag. When sudden travel by aircraft to different [time](#) zones leaves [athletes](#) feeling drowsy and lethargic ahead of competition, it is hard to expect much from their performance. So, to be able to supplement athlete's fortitude and help them overcome this challenge is a great thrill for the field of sports science, and our methods have proved successful in conquering the jet lag of Olympic athletes. Yet, there is little doubt that in addition to athletes, this knowhow is also applicable to businessmen in the course of their hurried trips back and forth. Let's take a look at this approach to conquering jet lag.

## Westbound and Eastbound Flights

Let's consider three instances of air travel abroad: to Europe, the U.S. and Australia. Flights from Japan to Europe are westbound, while flights to America and Australia take eastbound and southbound routes, respectively. Although the amount of fatigue experienced inside the plane is similar for flights of roughly the same duration, the amount of jet lag varies considerably. Clearly, with only a slight time difference involved for travel to Australia there is little or no jet lag, and in many cases, the two-hour time difference is not felt at all.

Flights to Europe are westbound while travel to the United States takes an eastbound course, but which direction results in greater jet lag? The answer, as many of you will know from experience, is eastbound flights. This will become clear if we consider travel to zones which have an eight-hour time difference. Ignoring the international date line, this means that with noon as our starting point in Japan, it is eight o'clock in the evening (eight hours ahead) in the eastbound zone and four o'clock in the morning (eight hours behind) in the westbound zone. This leads to the scenario where passengers on a flight eastbound to a zone with an eight-hour time difference and a local time of eleven o'clock at night are faced with trying to sleep at three o'clock in the afternoon Japan time.

Clearly, with our body clocks locked onto the Japanese time of three in the afternoon, it is hard to sleep well, no matter how much we might want to. Then, at the end of six hours weary travelling in the dark, dawn breaks at around five in the morning local time and it is time to get up while our body clock, set to Japan time and still thinking that it is nine at night, makes us feel sleepy. This eastbound flight means that when it gets to eleven at night (Japan standard time) it is actually seven in the morning locally and we must get to work at a time when our bodies are ready for sleep. Westbound flights, on the other hand, are quite comfortable since a local time of eleven in the evening on westbound flights is seven in the morning in Japan, and with the usual tiredness of the journey, passengers fall asleep by around nine that evening. Since this equates to five in the morning in Japan, this is comparable to sleeping after staying up as late as possible into the night. This often results in waking up early, something socially desirable for those who have stayed up late and are used to getting up and going to bed early.

## **How to Conquer Eastbound Flights**

So, how can we overcome the jet lag of eastbound flights? The first thing to be done is adjust the body as much as possible to the local time

zone prior to the day of departure. While this may be hard for some businessmen, getting up and going to bed early is the key to this approach. Ideally, someone who usually rises at seven will get up an hour earlier each day until he or she gets up at three or four in the morning. Exposure to bright (high illumination) light is a way to make this more effective and the method involves exposure to strong light of over 2,000 lux for about an hour as soon as you get up. While some fluorescent lights may be used, since most lamps inside the home do not put out 2,000 lux of light, special phototherapy devices are recommended. You can learn more by searching on the internet with the key words "light therapy." As the time to rise every day is brought forward, so is the time to bathe in the light, and the early morning light acts to re-set your body's internal clock and bring that forward, too. So, there is a marked difference in the effect brought about by exposure to light after early rising compared with that obtained from just getting up early.

## **How to Spend Time on the Plane**

How you spend time on the plane is also a factor. Most planes to the West Coast are evening departures, which means that they arrive in the morning. So here are some tips on how to spend your time on board.

- Set your watch to the local time before you leave the airport  
Consciously adjusting our watches to the local time before leaving the airport can have an affect on our biorhythms. So let's set them to the local time when we are at the airport and make ourselves aware of the local time beforehand.

- Get as much sleep as possible  
Tiredness from your journey is one cause of jet lag. Rather than staying awake, drinking and watching movies, try and minimize fatigue by sleeping as much as you can.

- Drink water regularly

Airplanes are usually dry inside, and a long time spent without water may result in mild dehydration and lead to a condition where blood condenses and forms clots. Make sure you consume a lot of water.

- Avoid drinking alcohol

Alcohol has a bad influence on your sleep and bodily condition after arrival. It's OK to have a little but it's a good idea to avoid drinking it if you can.

- Stretch

Please be sure to stretch from time to time. It is good for the circulation and can help prevent blood clots. It also leaves you feeling refreshed and makes sleeping easier.

- Absorb light upon arrival

Exposure to light at your destination requires a certain amount of knowhow. Since Japanese time is brought over into the first day especially, it is a good idea to absorb the kind of strong light found in Japan early each morning. For flights from Japan to the West Coast of America, this is between 10:30 and 13:00, and you would be well advised to expose yourself to the bright sunshine available after your arrival. For more information on the amount of light, please refer to [www.litebook.com/apps/jetlag.asp](http://www.litebook.com/apps/jetlag.asp) —a site for some light therapy equipment I have worked on that contains a [jet lag](#) calculator too.

Provided by Waseda University

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