



JET LAG: Preparation for Beijing 2008



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As an Olympic athlete, you are required to travel internationally across several time zones to compete. International travel produces physiological stress on your body's internal clock. This physiological stress is more commonly called "jet lag". As you may have already experienced, jet lag can have a significant negative effect on your ability to train and compete.

This pamphlet is designed to help you as an athlete preparing for the Beijing 2008 Olympics to deal effectively with jet lag. Strategies are provided on how to readjust your body's internal clock to Beijing time:

- One week prior to traveling from the USA to Beijing
- In flight from the USA to Beijing
- One week after arriving in Beijing

Performing well at the Beijing 2008 Olympics is a challenge that requires educated and detailed planning, in addition to a tremendous amount of physical training. Part of that detailed preparation should include a strategy to reduce jet lag and its negative effects on training and performance.

JET LAG “FACTS AND FIGURES”

Jet lag affects each person differently, but in general the following facts are true:

1. Jet lag is more severe and lasts longer after a flight from the USA to Europe than after a flight from the USA to Asia over the same number of time zones.
2. Jet lag is more pronounced the more time zones that are crossed.
3. It takes on average one day for every time zone crossed to fully recover from jet lag.
4. Younger and healthier people tend to suffer less from jet lag than older persons.
5. Women may be affected more by jet lag than men due to menstrual cycle irregularities.
6. Jet lag is exacerbated by additional environmental stressors, such as heat, humidity, air pollution and altitude.

SYMPTOMS OF JET LAG

- Fatigue during the new daytime . . . yet difficulty or inability to sleep at night.
- Loss of appetite, in combination with indigestion, constipation and possible nausea.
- Potential menstrual irregularities during the luteal phase due to asynchrony of melatonin secretion.
- Increased irritability, headaches, mental confusion and disorientation.
- Decreased mental performance . . . particularly in sports that require high concentration.





- Decreased physical performance . . . particularly in endurance sports and sports that require precise movement.



PREPARATION FOR TRAVELING FROM THE USA TO BEIJING

In preparation for traveling to Beijing, altering your sleep pattern will help adjust your body's internal clock to *later in the day* closer to Beijing time. The following sleep-wakeup schedules are based on two scenarios. The first scenario is one where you live on the West coast of the USA, for example, San Francisco, Los Angeles or Seattle, a difference of 8 time zones from Beijing. Although there are 8 time zones between Beijing and the West coast of the USA, there is a 16-hour difference due to the crossing of the International Date Line in the Pacific Ocean.

Live on the West Coast of USA		
		
SUN	7:00 AM 11:00 PM	11:00 PM 3:00 PM (Sunday) (Monday)
M	8:00 AM *12:00 Midnight	
TU	8:00 AM *12:00 Midnight	
W	9:00 AM *1:00 AM	
TH	9:00 AM *1:00 AM	
F	9:30 AM *1:30 AM	
SAT	9:30 AM *1:30 AM	1:30 AM 5:30 PM (Sunday) (Sunday)

* At least 30 min bright light exposure (BLE) sometime in the 2 hrs before going to bed.

Let's say that today is Sunday and you are scheduled to leave for Beijing next Sunday. You normally get up at 7:00 AM PT and go to bed at 11:00 PM PT. When you got up today/Sunday at 7:00 AM, it was Sunday 11:00 PM in Beijing. When you go to bed tonight/Sunday at 11:00 PM, it will be Monday 3:00 PM in Beijing. During the week it will be beneficial for you to adjust your internal clock to *later in the day* so that it is closer to Beijing time. You can do this by gradually going to bed later and sleeping in later over the next six days.



As shown in the West coast schedule, on Monday you will get up an hour later at 8:00 AM and go to bed an hour later at 12:00 midnight. Repeat this wakeup-sleep pattern on Tuesday. On Wednesday, get up an hour later at 9:00 AM and go to bed an hour later at 1:00 AM. Repeat this wakeup-sleep pattern on Thursday. On Friday, get up 30 minutes later at 9:30 AM and go to bed 30 minutes later at 1:30 AM. Repeat this wakeup-sleep pattern on Saturday. When you wake up at 9:30 AM on Saturday, it will be Sunday 1:30 AM in Beijing. When you go to bed at 1:30 AM on Saturday night (actually early Sunday morning), it will be Sunday 5:30 PM in Beijing. So over the course of six days (Monday-Saturday) you will have adjusted your internal clock to *later in the day* by 2.5 hours and therefore it will be more in synchrony with Beijing time. It is less important but still helpful to shift your other daily activities – meals, training, etc. – to be in synchrony (i.e., later in the day) with Beijing time.

Don't try to reset your body's internal clock to the entire 16-hour time difference by going to bed at 7:00 AM! This will not help you significantly more than the 2.5-hour adjustment outlined in the West coast schedule. Attempting to make the full 16-hour adjustment will obviously have a negative impact in your training and recovery, thereby doing more harm than good.

It is also very important throughout the week to expose yourself to bright light for at least 30 minutes sometime in the two hours before going to bed. Bright light exposure (BLE) has been shown to be one of the best ways to help the body's internal clock adjust to a new time zone.

On Sunday you are scheduled to fly to Beijing. Most nonstop flights that go from the West coast of the USA to Beijing leave in the early afternoon (1:00-2:00 PM). Let's assume that your flight departs on Sunday at 1:30 PM PT from San Francisco. If you live in the San Francisco area, you will probably be able to stay right on, or very close to your 9:30 AM wakeup time on Sunday morning. If you have a connecting flight to San Francisco, the best option for you would be to fly into San Francisco the previous day (Saturday) so that you can stay on your 1:30 AM bedtime and 9:30 AM wakeup schedule. Flying into San Francisco the day before will also help you to conserve energy for the long Beijing flight. Try your best to avoid taking a connecting flight to San Francisco on the same day as your flight to Beijing. Doing so will force you to get up at a much earlier time than 9:30 AM, and it will produce additional travel stress and fatigue on the same day as the long Beijing flight.

The second scenario is one where you live on the East coast of the USA, for example, New York City, Washington DC, or Miami, a difference of 11 time zones from Beijing. Although there are 11 time zones between Beijing and the East coast of the USA, there is a 13-hour difference due to the crossing of the International Date Line in the Pacific Ocean.

Live on the East Coast of USA		
		
SUN	7:00 AM 11:00 PM	8:00 PM 12:00 Noon (Sunday) (Monday)
M	8:00 AM *12:00 Midnight	
TU	8:00 AM *12:00 Midnight	
W	9:00 AM *1:00 AM	
TH	9:00 AM *1:00 AM	
F	10:00 AM *2:00 AM	
SAT	10:00 AM *2:00 AM	11:00 PM 3:00 PM (Saturday) (Sunday)
* At least 30 min bright light exposure (BLE) sometime in the 2 hrs before going to bed.		

As in the West coast scenario, let's assume that today is Sunday and you are scheduled to leave for Beijing next Sunday. You normally get up at 7:00 AM ET and go to bed at 11:00 PM ET. When you got up today/Sunday at 7:00 AM, it was Sunday 8:00 PM in Beijing. When you go to bed tonight/Sunday at 11:00 PM, it will be Monday 12:00 noon in Beijing.

As shown in the East coast schedule, on Monday you will get up an hour later at 8:00 AM and go to bed an hour later at 12:00 midnight. Repeat this wakeup-sleep pattern on Tuesday. On Wednesday, get up an hour later at 9:00 AM and go to bed an hour later at 1:00 AM. Repeat this wakeup-sleep pattern on Thursday. On Friday, get up an hour later at 10:00 AM and go to bed an

hour later at 2:00 AM. Repeat this wakeup-sleep pattern on Saturday. When you wake up at 10:00 AM on Saturday, it will be Saturday 11:00 PM in Beijing. When you go to bed at 2:00 AM on Saturday night (actually early Sunday morning), it will be Sunday 3:00 PM in Beijing. So over the course of six days (Monday-Saturday) you will have adjusted your internal clock to *later in the day* by 3.0 hours and therefore it will be more in synchrony with Beijing time. As with the West coast scenario, don't try to reset your body's internal clock to the entire 13-hour time difference because it will have a negative impact on your training and recovery. Also, be sure to get at least 30 minutes of BLE sometime in the two hours before going to bed to help your body's internal clock adjust to the later time zone.

On Sunday you are scheduled to fly to Beijing. Most nonstop flights that go from the East coast of the USA to Beijing leave in the late afternoon (4:00-5:00 PM). Let's assume that your flight departs on Sunday at 4:30 PM ET from New York. If you live in the New York City area, you will be able to stay on your 10:00 AM wakeup time on Sunday morning. If you have a connecting flight to New York, a better option for you might be to fly into New York the previous day (Saturday) so that you can stay on your 2:00 AM bedtime and 10:00 AM wakeup schedule. Flying into New York the day before will also help you to conserve energy for the long Beijing flight. Try your best to avoid taking a connecting flight to New York on the same day as your flight to Beijing. Doing so will probably force you to get up at a much earlier time than 10:00 AM, and it will produce additional travel stress and fatigue on the same day as the long Beijing flight.

Perhaps the *best* travel scenario from the East coast is to fly to San Francisco on the day prior to your flight to Beijing. A nonstop flight from New York to Beijing is approximately 1.5 hours longer than a nonstop flight from San Francisco to Beijing. By flying out of San Francisco instead of New York, you will significantly reduce the amount of time spent on an already long, tough flight to Beijing. In addition, by flying out of San Francisco, you will have a better chance of staying awake on the trip, which is the best in-flight strategy for reducing jet lag on the trip to Beijing (as described in detail in a later section). The same suggestion holds true if you live in the Midwest section of the USA. Although it is possible to fly nonstop from Chicago to Beijing, the flight time is the same as New York, approximately 1.5 hours longer than a nonstop flight from San Francisco. So it is highly recommended that, regardless of where you live in the USA, you schedule the USA-to-Beijing leg of your trip on a nonstop flight that departs from an airport on the West coast, typically San Francisco International. This will require you to travel to San Francisco on the day prior to your Beijing flight. This has the advantage of breaking up your trip,

thereby helping you conserve energy for the long flight to Beijing. In addition, flying into San Francisco the day before will enable you to maintain your 2:00 AM bedtime and 10:00 AM wakeup schedule because your flight to Beijing will most likely not depart until approximately 1:00 PM to 2:00 PM. Flying into San Francisco the day before is also the most practical departure plan for team sports such as soccer, where athletes will be traveling from all parts of the USA and assembling as a team before making the final leg of the journey to Beijing. A final note for athletes who live in the Midwest USA. In the week prior to departure, you can follow either the West coast or East coast sleep-wakeup schedules outlined in this section. Both of them will be equally effective in reducing jet lag resulting from the flight to Beijing.

IN FLIGHT FROM THE USA TO BEIJING

A nonstop flight from San Francisco to Beijing is approximately 12.0 to 12.5 hours (“wheels up to wheels down”). A nonstop flight from New York City or Chicago to Beijing is approximately 13.5 to 14.0 hours (“wheels up to wheels down”). Therefore, on the flight from the USA to Beijing it is important for you to establish as much of a personal “comfort zone” as possible. The general strategy is to reduce physical and psychological stress, and therefore fatigue. Specific recommendations include:

- When scheduling your flight, make a serious attempt to sit in bulkhead or emergency rows . . . consider an upgrade to business class or first class when traveling to major competitions such as the Olympics.
- Wear comfortable, loose-fitting clothes. . . don’t be worried about making a fashion statement . . . be comfortable!
- Wear compression stockings to reduce fluid buildup in the lower legs and ankles. . . compression stockings can be purchased at a drugstore or medical supply store.
- Wear an “activated carbon filter” (ACF) facemask to reduce airborne dust, bacteria and carbon dioxide in the re-circulated air of the passenger cabin.
- Reset your wristwatch to Beijing time immediately upon boarding the plane.
- Travel with your own pillow . . . useful both on the plane and in Beijing housing.
- Hydrate with non-caffeinated, alcohol-free beverages such as fruit juice, carbohydrate-electrolyte drinks (Powerade), and ice water.
- Eat your own food (energy bars, fruit, healthy snacks) instead of airline meals . . . eat some roughage (e.g., apples) during flight to reduce constipation.

- Walk around and stretch at least once every two hours.
- Reduce stress by reading, listening to music, watching a movie, etc.
- Use earplugs to reduce extraneous noise.

“TO SLEEP OR NOT TO SLEEP” ON THE FLIGHT TO BEIJING

During the long flight to Beijing, it is very important for you to either stay awake or sleep at the proper times. Keep in mind that you are trying to extend the sleep-wakeup pattern that you established over the previous six days. That sleep-wakeup schedule was designed to gradually shift your body’s internal clock closer to Beijing time, thereby reducing jet lag and allowing you to begin high-quality training within a few days after arriving in Beijing. Whether you stay awake or sleep on a long distance flight over several time zones will depend in large part on what the local time is when you depart the USA, how long the flight time is, and what the local time is when you land at your final destination.

Shown below is a table that compares the local time for San Francisco and Beijing during the 12.0-hour flight (3-hour intervals). When you depart San Francisco on Sunday at 1:30 PM, it is Monday 5:30 AM in Beijing. When you land approximately 12.0 hours later, it is Monday 5:30 PM in Beijing and Monday 1:30 AM in San Francisco.

San Francisco	Sunday 1:30 PM	Sunday 4:30 PM	Sunday 7:30 PM	Sunday 10:30 PM	Monday 1:30 AM
Beijing	Monday 5:30 AM	Monday 8:30 AM	Monday 11:30 AM	Monday 2:30 PM	Monday 5:30 PM

The best in-flight strategy for the San Francisco-Beijing flight is to stay awake the entire flight. This will not be as difficult as you think for several reasons. First, you have already pre-programmed your body over the previous week to stay up until 1:30 AM, which is the approximate San Francisco time when your flight arrives in Beijing. So you should be able to stay awake during the flight with minimal difficulty assuming you keep yourself entertained with music, movies, walking around, talking to teammates, etc. It is possible that you may feel sleepy in the last hour or so of the trip, but that’s usually when the flight crew comes around to open the shades, serve the final meal, collect trash and generally make a lot of noise which should serve to keep you awake. If you feel yourself getting sleepy at any other point during the flight, do your

best to fight it by getting up out of your seat and walking around. If you sleep on the flight from San Francisco to Beijing, it's almost guaranteed that you will not sleep your first night in Beijing, which in turn will keep you jet-lagged and out of synch for several days, and prevent you from training effectively. In contrast, if you stay awake on the flight from San Francisco to Beijing (which arrives at 5:30 PM Beijing time), by the time you clear Customs, pick up your baggage, transport to your hotel or housing, and have some dinner it will be about 9:00 PM to 9:30 PM and you will be ready to sleep soundly, in tight synchrony with Beijing sleep time. If you go to bed at 9:00 PM Monday in Beijing, you will have been up 19.5 hours from the time you got up at 9:30 AM Sunday in San Francisco. You normally stay up 16.0 hours per day (7:00 AM wakeup – 11:00 PM bedtime), so it should not be that difficult for you to stay awake for an additional 3.0 to 4.0 hours, especially if you're walking through a busy airport, moving into a hotel or housing, walking to a restaurant, etc. Bottom line is that if you "push through" and stay awake on the flight from San Francisco to Beijing, you will have minimal trouble with jet lag and therefore be able to adjust to Beijing time rapidly and resume quality training within a few days of arrival.

Shown below is a table that compares the local time for New York City and Beijing during the 13.5-hour flight (3-hour intervals). When you depart New York on Sunday at 4:30 PM, it is Monday 5:30 AM in Beijing. When you land approximately 13.5 hours later, it is Monday 7:00 PM in Beijing and Monday 6:00 AM in New York.

New York	Sunday 4:30 PM	Sunday 7:30 PM	Sunday 10:30 PM	Monday 1:30 AM	Monday 4:30 AM	Monday 6:00 AM
Beijing	Monday 5:30 AM	Monday 8:30 AM	Monday 11:30 AM	Monday 2:30 PM	Monday 5:30 PM	Monday 7:00 PM

The flight from New York to Beijing presents a very difficult challenge in terms of whether to sleep or stay awake. There is no optimal time to sleep because the flight from New York spans the time period of 5:30 AM to 7:00 PM Beijing time, which is essentially the non-sleep part of the day. Of course, the goal is just the opposite, i.e., any sustained sleep you do on a long flight over several time zones should be done in synchrony with the sleep time of your destination. It is not possible to do so on the New York-Beijing flight based on a departure at 4:30 PM New York time. The first option on the New York-Beijing flight is to stay awake for the entire trip. Obviously this will be difficult to do because it will require you to stay awake for nearly 24 hours. You are scheduled to arrive in Beijing at approximately 7:00 PM local time. By the

time you clear Customs, pick up your baggage, transport to your hotel or housing, and have some dinner it will be about 10:30 PM to 11:00 PM. If you go to bed at 10:30 PM Monday in Beijing, you will have been up 23.5 hours from the time you got up at 10:00 AM Sunday in New York. A modification of the “stay awake” strategy is to take a couple of short naps (20-30 minutes) as needed. Another option would be to sleep for a couple of hours during the first half of the flight, which is the equivalent time to early morning and mid morning in Beijing. However, this is relatively impractical because of all the activity in the plane cabin during the first few hours of flight such as announcements, serving of drinks, serving of first meal, etc. Again, the New York-Beijing flight presents a very difficult challenge in terms of having an optimal sleep vs. wake strategy to combat jet lag. The solution to this travel dilemma has already been addressed in the “Preparation for Travel to Beijing” section of this paper. It is strongly recommended that, regardless of where you live in the USA, you schedule the USA-to-Beijing leg of your trip on a nonstop flight that departs from an airport on the West coast, typically San Francisco International. This will require you to travel to San Francisco on the day prior to your Beijing flight, but it has several advantages over traveling to Beijing from New York. It will allow you to break up your trip and conserve energy, stay on your 2:00 AM sleep and 10:00 AM wakeup schedule, and use a more effective in-flight sleep vs. wake strategy on the long flight to Beijing.

Shown below is a table that compares the local time for Chicago and Beijing during the 13.5-hour flight (3-hour intervals). When you depart Chicago on Sunday at 12:00 noon, it is Monday 2:00 AM in Beijing. When you land approximately 13.5 hours later, it is Monday 3:30 PM in Beijing and Monday 1:30 AM in Chicago.

Chicago	Sunday 12:00 Noon	Sunday 3:00 PM	Sunday 6:00 PM	Sunday 9:00 PM	Sunday 12:00 Midnight	Monday 1:30 AM
Beijing	Monday 2:00 AM	Monday 5:00 AM	Monday 8:00 AM	Monday 11:00 AM	Monday 2:00 PM	Monday 3:30 PM

The flight from Chicago to Beijing presents the same challenge as the New York-Beijing flight in terms of length of flight (approximately 13.5 hours) and optimal sleep vs. wake strategy.

Therefore, if you live in the Midwest USA, the recommendation is to fly to Beijing via San Francisco International, and travel to San Francisco on the day before your flight to China.

UPON ARRIVAL IN BEIJING

As previously described, it is strongly suggested that you schedule the USA-to-Beijing leg of your trip as a nonstop flight that departs from an airport on the West coast, typically San Francisco International. This suggestion holds true for everyone, regardless of where you live in the USA. If you travel to Beijing from San Francisco, you will arrive at approximately 5:30 PM Beijing time. Of course, it will take you a few hours to clear Customs, claim your baggage, and travel to your hotel or residence. By that time it will be early evening and you will probably want to have dinner in combination with some light social activity. By approximately 9:00 PM or 9:30 PM, you will be ready for bed and, if you “stayed awake” during the flight from San Francisco to Beijing, you will definitely be tired and should have little difficulty falling asleep. By falling asleep at this time, you will be in tight synchrony with Beijing sleep time, and therefore you will have minimal problems with jet lag over the next few days. Taking a warm shower prior to bed will also help you relax and sleep soundly. It is also suggested that you sleep with the window blinds open so that you will wake upon “first light” more easily.

Upon Arrival in Beijing			
			
M	Arrive Beijing @ 5:30 PM		9:30 PM
TU	6:00 AM	BLE EX BLE EX BLE	10:00 PM
W	6:30 AM	BLE EX BLE EX BLE	10:30 PM
TH	7:00 AM	Normal Training	11:00 PM
F	7:00 AM	Normal Training	11:00 PM
SAT	7:00 AM	Normal Training	11:00 PM
SUN	7:00 AM	Normal Training	11:00 PM

BLE = bright light exposure
EX = exercise (light to moderate intensity)

The next morning (Tuesday), get up at about 6:00 AM, one hour prior to your normal wakeup time in the USA. At this point, the best strategy to reduce jet lag and help expedite your body's adjustment to Beijing time is to combine BLE with exercise. The combination of BLE plus exercise has been shown to be the *most effective* way to readjust your body's internal clock to local time. In Beijing, the optimal time for BLE is 1:00 PM to 7:00 PM. Plan on two light to moderate training sessions on Tuesday. Also, plan on as much social activity as possible when you're not training. Stay busy and avoid taking naps. Go to bed on Tuesday night at about 10:00 PM, 30 minutes later than the previous night. The next morning (Wednesday), get up at about 6:30 AM and try to expand on the previous day's BLE, exercise and social activity schedule. Go to bed at about 10:30 PM on Wednesday night. On Thursday, get up at 7:00 AM and go to bed at 11:00 PM, which is your normal wakeup time and bedtime back in the USA. Feel free to begin more difficult training on Thursday, which will be your third full day in Beijing. So by Thursday, you should be fully adjusted to Beijing time in terms of your wakeup time and bedtime, as well as your normal training routine. It is important to note that the schedule shown in "Upon Arrival in Beijing" can be accelerated or decelerated as needed.

RESUMPTION OF TRAINING UPON ARRIVAL IN BEIJING

- High-volume and high-intensity training should be avoided in the first few days.
- Fine motor skill and coordination will be impaired in the first few days . . . increased potential for injury and accident.
- Exercise/Training alone will not reduce jet lag.
- Exercise/Training plus BLE will reduce jet lag and help your body's internal clock adjust to the Beijing time zone.

ERGOGENIC AIDS FOR JET LAG

- Compression stockings
- Activated carbon filter (ACF) facemask
- Sleeping pills
- Melatonin
- Caffeine
- Timing and composition of meals



It is highly recommended that you wear compression stockings (aka anti-embolism stockings) during the long flight from the USA to Beijing. You've probably noticed on previous long flights that your feet, ankles, and calf areas are very susceptible to swelling. This swelling is actually a buildup of intercellular fluid and is known in medical terms as *peripheral edema*. In a typical economy cabin seat, you sit in a relatively cramped, bent ankle, bent knee position. Maintaining this position for several hours in combination with the artificial gravity environment of the airline cabin causes peripheral edema. Peripheral edema will result in your legs feeling "sluggish" upon arrival at your destination, and will obviously impair your ability to train and perform, especially in sports where performance is heavily dependent on leg coordination, power and speed. Medical-grade compression stockings can serve to significantly reduce peripheral edema and its potential negative effects on training and performance. They can be purchased over-the-counter from any reputable drugstore or medical supply outlet.

An "activated carbon filter" (ACF) facemask is recommended for long international flights. An ACF facemask is much more effective than a conventional dust or surgical facemask in filtering out dust, particulate matter, pollen, mold, bacteria, exhaled carbon dioxide, air pollution and other

air-borne irritants and toxins. Several of these are found in above-average amounts in the re-circulated air of a commercial airline cabin filled to capacity. In addition, ACF reduces irritation of nasal passages and the Eustachian tube leading to the middle ear, thus minimizing a buildup of pressure and ear discomfort. ACF facemasks also help to humidify the dry air that passengers are exposed to in a typical commercial airliner. ACF facemasks and replacement carbon filters can be purchased at a reasonable price both online and at travel accessory shops.

Melatonin is a hormone that is secreted by the pineal gland, which is located at the base of the brain. It is secreted between 9:00 PM and 7:00 AM and helps to promote drowsiness and sleep. Melatonin is sold commercially in the United States but is not regulated by the Food and Drug Administration (FDA). The potential health risks of using melatonin have not been clearly established. Current available evidence suggests minimal health-impairing side effects for most individuals if taken as directed. Melatonin is contraindicated for individuals on oral anticoagulants (e.g., warfarin) and for individuals with epilepsy.

It should be noted that a recent study found that four of six melatonin products bought in health food stores in the United States contained unidentified impurities. Given that melatonin is not regulated by the FDA, and that it may contain ingredients that produce a “positive” drug test for IOC-banned substances, it is recommended that Team USA athletes NOT take melatonin.

However, after consulting with their physician, coaching staff and support staff may consider taking melatonin as a means of reducing jet lag. Based on the scientific research, the following recommendations are made to coaching staff and support staff for the use of melatonin:

- In the days prior to going to Beijing . . . do not take melatonin . . . in order for it to be effective, you would have to take it at approximately 7:00 AM, which would obviously impair your ability to work and train throughout the day, thereby doing more harm than good.
- In the first few days in Beijing . . . take 2.5 to 5.0 mg melatonin between 10:00 PM and 11:00 PM Beijing time.

Caffeine may be helpful in reducing jet lag if it is well timed and taken in moderate amounts. However, this recommendation is for regular caffeine users only. Caffeine ingestion may do more harm than good for non-caffeine users. On the flight to Beijing, caffeine ingestion (coffee, tea, soda, Excedrin®) by regular caffeine users may help promote alertness during the final hours of the flight, but may also act to maintain alertness later on when you're trying to go to sleep at approximately 9:00 PM to 9:30 PM Beijing time. **Caffeine was formerly banned by the IOC/WADA in amounts that exceeded 12.0 µg/ml urine, but it was removed from the “prohibited” list and placed on the “monitored” list effective January 1, 2004. However, there is a possibility that caffeine may go back on the “prohibited” list at some point in the future.**

At one time it was recommended to eat a high protein breakfast (eggs, meat, cheese) for the first few days at your new location for the purpose of reducing jet lag. This recommendation was based on the fact that a high protein meal may increase the amount of tyrosine in the blood, which in turn may lead to an increased production of the neurotransmitters, epinephrine and norepinephrine. Epinephrine and norepinephrine act on the sympathetic nervous system to promote alertness. It was also recommended at one time to eat a high carbohydrate dinner (pasta, potato, rice, bread) for the first few days at your new location. This recommendation was based on the fact that a high carbohydrate meal may increase the amount of tryptophan in the blood, which in turn may lead to an increased production of the neurotransmitter, serotonin. Serotonin acts on the brain to promote sleepiness. Although this may sound like a good strategy to follow upon arrival in Beijing, there is no conclusive scientific evidence to support this dietary regimen as a way to reduce jet lag. It is recommended that you follow your normal dietary routine.

SUMMARY

When you travel to Beijing to compete in the 2008 Olympic Games, you will want to make the transition as smooth as possible. Having a jet lag strategy in place will help you make that transition with relatively little stress and will allow you to resume training shortly after arrival without getting injured or overtrained. Making a smooth transition from the USA to Beijing will ultimately allow you to perform optimally during the Games. The information in this pamphlet is designed to help you as an athlete preparing for the Beijing 2008 Olympics to deal effectively with jet lag. Should you want to receive additional individual consultation on jet lag strategies, please feel free to contact:

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