BEAT JET LAG

It's 5:30 A.M. in London. You've just exited the jetway of the 6:00 P.M. flight from New York. You feel as though you've been wearing your clothes for a week, and could swear your shoes have shrunk two sizes.

Your mouth and nose are dry, your head is pounding, and your eyes sting. Your stomach feels twice its normal size, as though it's filled with cement. Forget food: you'd settle for a swallow of antacid liquid. A minute ago you were sweating; now you feel cold. You're so tired that nothing makes sense except a ten-minute nap on the bench next to the luggage carousel.

You feel terrible. Are you starting your trip with the onset of a dreaded disease? Nope. Just jet lag. Jet lag occurs when your body's rhythms are out of synchronisation with the clock time at your destination. In short, jet lag occurs any time you travel east or west and abruptly cross two or more time zones.

The distance you fly does not affect jet lag. What does make a difference, however, is whether you are flying across the earth's meridians (east or west) or in line with the earth's axis (north or south). If you cross no time zones on a north-south flight from Montreal to Ecuador, for instance, even though you are flying a long distance, you will not experience jet lag. Why? Because you have not crossed a time zone.

According to Richard Dawood, M.D. the intensity of your jet lag is determined by the minimum number of time zones between you and your destination. For instance, you will cross fifteen time zones flying an easterly route from the East Cost to Sydney, Australia, but only nine if you fly west to get there. Jet lag intensity will be based on nine.

The human body is governed by two complex timing devices: one to promote sleep (the circadian clock), the other to promote awakening (the homeostatic clock). (The homeostatic clock is also known as the build up of decay clock. It is reset daily by hormones and hormone like brain chemicals called neurotransmitters as they are used up during the day and replenished at night.) Together they constitute our circadian (from the Latin circa meaning «around» and dian meaning «day») rhythm, the 24-hour human cycle of about a day.

The homeostatic clock runs on a slightly longer schedule than the circadian clock. Thus, for normal sleep, synchronisation of the two timekeepers is critical. Scientists explain that we achieve this daily co-ordination and maintain our body's rhythms by responding to time cues called zeitgebers. Zeitgebers may be external: social cues, such as diner time, clock time, work, or exercise; or environmental cues, such as darkness and daylight. Zeitgebers may be internal, such as the digestion of food or medication, or the brain's release of melatolin to signal sleep.

While a person's natural circadian rhythm can range anywhere from twenty-two to twenty-eight hours, most adults' bodies run on a twenty-five hour clock. As a civilisation, we have forced the twenty-five hours into a tidier twenty-four hour rhythm that matches the sun's twenty-four hour pattern as the earth rotates east to west. Tuned to this cycle of light and darkness, the human brain's circadian timing mechanism permits people throughout the world to live reasonably synchronised daily schedules.

When daylight occurs at a different time from a traveller's home time zone, the circadian clock, cued by the daily light dark cycle goes askew. (Jetlag is technically known as circadian dysrhythmia, or circadian rhythm disorder.) Your body is not sure whether to stay on its established internal schedule, the pull that is the strongest or to follow light, and dark, and environmental cues at the new destination. It starts following strong external zeitgebers almost right away, switching over entirely once your body adjusts to the new time zone and emerges from jet lag.

Jet lag symptoms are*:*

- *Exhaustion.*
- *Memory and concentration loss.*
- *Decrease in physical and mental acuity.*
- *Feeling disoriented.*
- *Hunger at wrong times.*
- *Off-schedule bowel and urinary movements.*
- *Limited peripheral vision.*
- *Decreased muscle-tone.*
- *Insomnia, acute fatigue.*
- *Loss of appetite and headache.*
- *The gastrointestinal system pumps digestive enzymes into the stomach when there is no food to digest.*
- *When jet travel disrupts our circadian clock, we put more than one hundred bodily functions or systems into temporary disarray.*

Jet lag is a temporary physiological disorder that affects every human being that abruptly flies across two or more time zones. You can succeed in minimising jet lag by using a combination of natural tips.

1. **Prepare in advance.**

   Choose your seat in advance and be selective. Seating that allows for maximum mental and physical comfort is important to helping prevent jet lag. Request a seating assignment and boarding pass at the time of your reservation. A midplane seat closest to the wing affords the most stable ride, seats in the rear of the plane least. Seats just behind the emergency doors and bulkheads allow the most leg room, yet each has disadvantages. These disadvantages are armrest tray tables and no underseat storage. These may be worthwhile trade-offs to you. Emergency door row seating has special requirements (no children or physically challenged individuals), and bulkheads are usually where parents travelling with infants are seated.

   On long flights when you are crossing more than two time zones and sleep or rest is important try to avoid seats near areas of high activity: the galley and the lavatories. Further, calculate when you will be sleeping and choose a seat on the opposite side of the plane from where the sun will be shining.

   Consider these seating issues: An aisle seat gives you more leg room but may mean you have to get up more often when inner seatmates want out. A window seat, while more cramped, is a better sleeping seat because there is less disturbance by restless seatmates.

2. **Lighten up:**

   Without even trying, when travelling, you are going to feel heavier during jet travel because of two physiological changes that occur in a pressurised cabin. First at cruising altitude, your cabin will be pressurised to between 5,000 and 7,500 feet, therefore the air gets pretty thin. With less air pressure, there is a tendency toward swelling as body gases expand, making your stomach feel full, fat, and bloated. Second, when you sit for long periods of time, gravity pulls body fluid to the extremities, making your feet, legs, and hands swell. Some flyers can gain as much as four to six pounds. Once you factor in the shrinking size of a coach-class airplane space (confinement of a twenty by thirty-two inch box and the small seats) varying from eighteen to twenty inches wide by twenty-nine to thirty-four inches front to back, you should be convinced to follow these health promoting tips in the time leading up to travel:

a) Observe regular mealtimes.
b) Avoid high-fat, high-carbohydrate, processed foods.
c) Drink fluids copiously; eight to ten glasses of water per day, low sugar juices daily, to maintain cellular health and bodily waste removal.
d) Exercise. Regular walks and low impact exercise will promote easier breathing in the plane's thinner air.
e) Assemble a contingency kit to carry on board. A kit stock with toiletries and other items to meet various needs of air travel can help you combat jet lag and other discomfort of a long flight. The following covers only items having to do with jet lag and general health and comfort while in flight. You will want to add to it your own list of items (such as one day changes of clothes, in case your luggage is lost).

3. Prepare yourself a travel kit

Face cloth in a plastic bag; Been bag.; comfort neck warmer (microwavable in the aeroplane).; Eye-covers; Travel games (electronic solitaire or travel board games) or books; Inflatable neck support; Personal hygiene items (tooth brush, moisturiser, lip gloss). Eye drops, sun glasses, ear plugs, chewing gum, analgesics, lumbar and neck pillow, moisturiser, travel alarm, slippers, snacks on board).

All these items above will help you remain comfortable, stay alert and allow you a more comfortable flight.

4. Sleep or wake-up on time

Try to get an arrival time closest to your regular bedtime in the new time zone.
Give yourself adequate rest upon your arrival. Try to get a good night of sleep but do not go to bed until it is night time in the country you are visiting. A day of rest before visiting or scheduling meetings may be helpful as your physical and mental capabilities will generally be significantly reduced because of the jet lag. Yet, this does not mean to sleep during daytime as this would make it impossible for your body to adjust to the new time. If this is impossible, try to schedule activities that fall at a time where you are generally most alert according to your time zone (for instance, 8 A.M your time which in this example would be 2 P.M according to the local time of your new destination).

5. Try leaving your stress at home.

Practice stress-coping strategies (relaxation, deep breathing, and exercise…). Exercise will help you feel tired enough so that you can sleep properly at night.

6. Protect your health.

Eat well, load up on vitamins A and C which play a role in your immune system's functioning, vitamins B1, B2, B3, B6, B12 will help your metabolism function better. Make sure to take in enough iron, calcium and zinc. Cut down on carbohydrates and load up on proteins. Eat regularly and drink plenty of fluids particularly during the flight and in warm weather. Cut down on alcohol, caffeine and cigarettes. Exercise, get some rest, practice good hygiene and get the appropriate shots before leaving.

7. Start your trip healthy

Take care of your allergies or sinus problems if you suffer from them. Make sure to take a decongestant or anti-histamine (if your doctor recommends it) as flying increases inner ear pressure and may result in ear damage.

8 See you doctor

Get cleared by your physician if you have been sick. Especially after surgery, if you have chronic gastrointestinal disorders or if you have had a contagious disease.

9 Get your body to adapt gradually.

Set up a travel watch, before your trip, if you travel east set your watch an hour later every day until you reach the time of your destination, if you travel west set your clock an hour back each day. Follow the time on your travel watch to go to bed, eat etc…Also, wearing sunglasses during the day will help you change your biological rhythm gradually. Doing this disrupts your circadian rhythm, which allows you to make progressive changes to your eating and sleeping habits. You can wear dark glasses up to a week before your departure and during this time period you can get used to sleeping and eating earlier or later (depending on whether you are travelling east or west) progressively each day. You may shift your entire routine by an hour a day (or a bit more or less depending on the number of hours of time difference).

10 It's hard to come back

Upon your return, you may feel more tired and depressed than usually, this usually occurs because of the psychological difficulties associated with coming back home. It is often difficult to leave from a vacation (where you had time for yourself and everything done for you) and come back to a life full of stress and daily problems. This phenomenon is

often confused with jet lag, yet it is an adaptation of a different nature that must take place. Acknowledging this may help you cope better with the way you feel. Upon your return try to do things to manage your stress, try to exercise, eat well, do things for yourself and enjoy life. This would make coming back home an event less difficult to face.

Some additional strategies:

Pre-trip activity strategies

The third day before your trip, along with the light and dark activity and rest, the determinants of your sleep-wake cycle are the most important external zeitgerbers in resetting your body's clocks.

Reduce all unnecessary noise when you sleep; turn off the telephone: make the bedroon as dark as possible, using opaque window shades, or dark eyeshades. Similarly, for activity peridos when others may be sleeping, devise in advance active strategies such as exercises you can do quietly and activities that engage you mentally, including work that interests you or fastpaced reading. Remember if you are unable to sleep at all or for only part of your sleep-rest phase, remaining inactive in dark surroundings is as effective.

During the remainder of the active period, move whenever you feel as though you're tiring, and keep yoru mind engaged by doing or readiung something lively or that requires your concentration.

Do not be active mentally or physically when you should be resting, or sedentary and mentally disengaged if you need to be active. Rest or activity at the worng times will have the opposite effect of what you desire.

Pretrip food strategies

On the second day before your trip, this is a feast day (high protein breakfast and luch and high0 carbohydrate dinner). Abstain from xanthines except between 6 pm and 11 pm. Then consume only sparingly. Continue to move mealtimes an hour later or earlier than the day before, depending on which direction your are flying.

On the day before your trip, this is a fast day (low-calorie, low carbohydrate, low-fat meals to a maximum of eight hundred calories for the day). Coffee, tea, cola, and other xanthines are permitted only between 6 pm. And 11 pm. Eastboung. And theyare permitted only in the morning westbound.

Repeat the same schedule as on the third day before yoru trip, advancing your waking and bedtimes two hours or delaying yoru waking and bedtimes two hours.

In-Flight Strategies

Continue to have light exposure in the morning flying east, and shade and dark in late afternoon and evening. Those flying west need to have shade or dark in mornings, with as much lioght as possible in late afternoon up until 6 P.M.

Remember to have eyeshades as well as dark glasses readily available at your seat. If daylight outside during your light-avoidance stage, pull down the window shade and turn off the reading light. Keep the dari glasses where you can find them easily. If you have scheduled a stopover, keep on the same light-dark schedule.

On a short stoover where you must leave the plane bbriefly, seek well-lighted areas near airport displays, in hallways, and by ticket counters. Seek darkest areas in less well-lit corners of unused airport lounges near your deplaning site. If you are restin, be sure to set your alarm.

In flight food strategies

After yourhigh protein breakfast and before landing, eat foods tthat will help you fulfill your light and activity theapies. (Remember the formu8la: proteins for alertness, carbohydrates for drowsiness and sleep.)

If your strategy calls for sleeping on the plane, it's okay to drink one or two glasses of wine to make you sleepy. (If you do, compensate for the diuriertic effect by drinking more watewr and using your saline nasal spray to help opffset dehydration's effect. Ask to be awakened for breakfast, which on Ewurope bound flights is usually ninety minutes before landing. If you eat, go easy on carbihydrates (which can be real knockouts if you have not sleep well on the flight.) If you are traveling farther east than Europe, skip breakfast aloft and maintain your lseep schedule.

Take an aspirin. Studies show that aspirin en route, along with exercise, reduces thae possibility of blood clots caused by long periods of immobility. Check with your doctors first, though, before you take an aspirin or to proceed on long flight.

Don't sit with your leg crossed which reduces blood flow.
Exercise your claf muscles and avoid the economy-class syndrome. Raise your toes and use your heel as a pivot and contract your calf muscles or lift your heel while using the toe as a pivot. Dso these exercises for twenty seconds every five to ten minutes.
Take a walk and stretch regularly.

Strategies upon arrival.

Forget the past :

Begin immediatley to live in your new time zone, if you haven't already changed over. You should avoid gradual adaptation at this point, even if it means shocking your system into

accepting your destinationtime. Social cues and externeal zeitgebers from the world aroung you become ven more influential once you've reached your destination. Since much of your body's adjustament depends on your mental asdjustment, nothing's gained by allowing your mind to creep back home everytime you look at a clock.

Use the combination of tips that works best for you, and you will find that the aftermath of flying across many time zones is no longer the ordeal it used to be. Bon voyage!

For more information, please contact International Human Factors at 1-877-443-2374