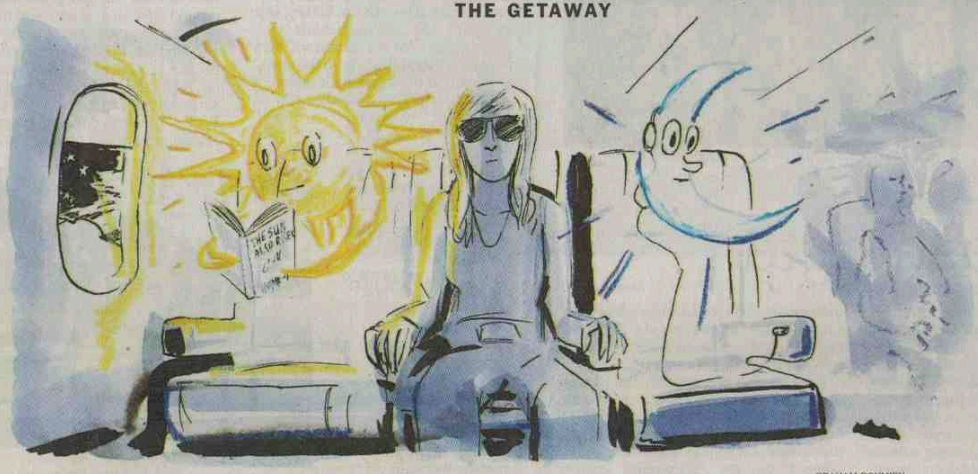
STEPHANIE ROSENBLOOM

THE GETAWAY



GRAHAM ROUMIEU

A Battle Plan for Jet Lag

THERE are more so-called remedies for jet lag than there are time zones, from long-standing antidotes like No-Jet-Lag's homeopathic tablets to new innovations like the Valkee Brain Stimulation Headset, which was tested earlier this year by Finnair and purports to alleviate jet lag by channeling bright light into the brain through the ear canal.

Yet some of the latest (and perhaps most effective) jet-lag solutions are being developed for people who fly to places most of us never will. The fatigue management team at NASA Johnson Space Center in Houston helps astronauts — who, for training purposes, must fly frequently among international space agencies in Russia, Japan and Germany — overcome jet lag two to three times faster than other travelers. And while the anti-jet-lag plans that the team prescribes are highly individualized, the general principles can be simplified for the bleary-eyed rest of us.

As anyone who has ever flitted across multiple time zones knows, when your internal clock is unable to adapt to a rapid change in the light-dark cycle, the result is jet lag. Read: fatigue, moodiness, gastrointestinal unpleasantness. In a perfect world, everyone would take preventive measures — like preparing for a trip to Paris from Washington by going to sleep earlier and earlier each night a few days before the flight. But most of us spend the days before a vacation frantically trying to polish off work and make sure the plants and pets won't die while we're gone.

And so below are steps you can take to minimize jet lag, from

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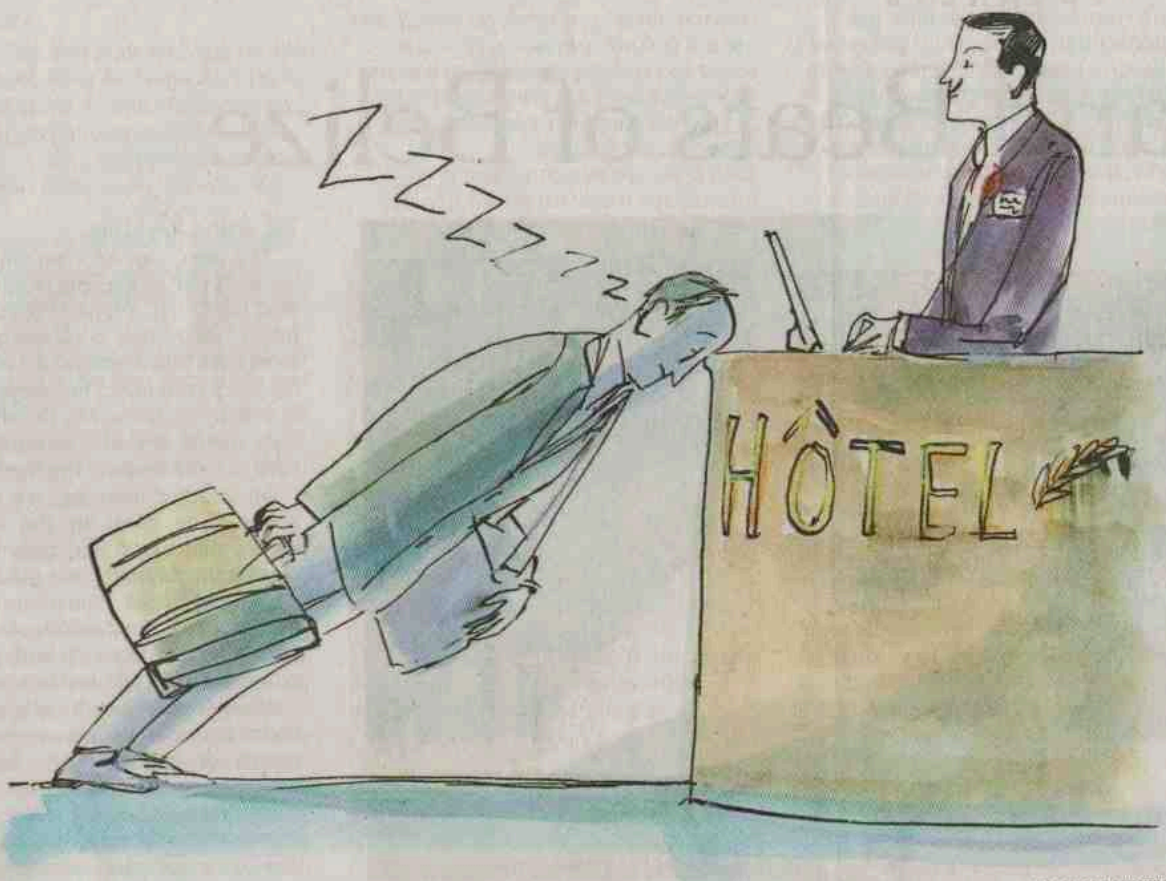

GRAHAM ROUMIEU

A Battle Plan for Jet Lag

From First Travel Page

the moment you board the plane through your first night in a far-flung destination.

1. Understand that the direction you are traveling makes a difference.

"It's only in the past 100 years that we've been able to jump time zones," said Steven W. Lockley, a consulting member of NASA's fatigue management team, who is also a neuroscientist specializing in sleep medicine at Brigham and Women's Hospital and Harvard in Boston. "We haven't evolved a way to adapt yet."

There are, however, ways to cope. Begin by determining whether you are traveling east or west. Most people (three quarters of us, according to Professor Lockley) have an internal body clock that makes it harder for them to travel east. So, while most of Florence, Italy, is sleeping, a tourist from New York is wide awake and itching to climb the Duomo because it's barely time for dinner back on the East Coast.

Even within the United States, traveling east over just three time zones can be taxing: a study led by Dr. Lawrence D. Recht, a neurologist, of 19 Major League Baseball teams using season records from 1991 to 1993 showed that the team that had just completed eastward travel would give up more than one run than usual in every game.

If you're traveling east and want to adapt to the new time, you will have to wake up earlier and go to bed earlier than you normally would. This is known as advancing your body clock. If you're traveling west, you'll have to adapt to the new time by waking up later than usual and going to bed later than usual, delaying your body clock. Easier said than done. So how does one do this as painlessly as possible?

2. Schedule when to expose yourself to light and when to avoid it.

It takes about a day to shift one time zone, said Dr. Smith L. Johnston, a flight surgeon and the chief of the fatigue management team at NASA. To do it faster, you must regulate your exposure to light — both natural and artificial — and darkness. Yes, there are all kinds of jet-lag cure-alls on the market, but experts say that since light is the primary environmental cue telling your body's clock when to sleep and when to wake, controlling jet lag is fundamentally about controlling light and darkness.

With that in mind, here are the general guidelines: if you are traveling east, you must expose yourself to light early, advancing your body clock so that it will be in sync with the new time zone. Conversely, if traveling west, you should expose yourself to light at dusk and the early part of the evening, delaying your body clock so that it will be in sync with the new time zone.

This may be best understood with an example. Let's say that at 7 p.m. you board a plane in New York that is scheduled to arrive in London at 7 a.m. local time (when it's 2 a.m. in New York). You're traveling east, which means you need to advance your internal clock toward London time. To do that, avoid any kind of light during the flight because the exposure will delay your body clock rather than advance it. An obvious (albeit odd) way to accomplish this is to wear sunglasses in the plane. That's what Professor Lockley and his colleagues do despite the fact that they are flying at night. "People think you're a rock star," he said.

Typically, when travelers arrive in London at 7 a.m. they attempt to get on the new time zone right away. "Which is exactly the wrong thing," Professor Lockley said, because your internal clock is still set to New York time, and trying to adjust too quickly will only exhaust you. What you need to do is to ease yourself into the new time zone by consciously manipulating your exposure to light. So keep those sunglasses on.

"I'm the only person wearing sunglasses at Heathrow," said Professor Lockley, who, in the London example, would recommend wearing sunglasses for the entire flight, and once off the plane, until 11 a.m. London time (6 a.m. New York time). Throughout the rest of the day, seeing light will help you to be more alert and to reset your internal clock to local London time. (For those who want to get granular, the new book "Sleep: A Very Short Introduction," which Professor Lockley co-authored, provides details about which hours of the day exposing yourself to light or darkness will be most beneficial to overcoming jet lag.)

If you are able to sleep during the flight, even better. Astronauts and mission-control personnel have used eye masks, earplugs and sleep aids like Ambien to help them doze, Dr. Johnston said. But he cautioned travelers who want to take a sleeping pill to check with their doctor first and to avoid taking any medication with alcohol. Many airline passengers "just get drunk and pass out," he said, underscoring that a hangover does nothing to alleviate jet lag.

Those who want to take synthetic melatonin because it might induce sleepiness during a flight should also consult a doctor first to find out if it is safe for them. Furthermore, as the Centers for Disease Control and Prevention caution, synthetic melatonin is not regulated by the Food and Drug Administration.

Now, if you were to take a morning flight instead of an evening flight to London from New York, you would want to expose yourself to light throughout the flight (no need for sunglasses), as well as when you land in London, soaking up as much sun as possible all day. "You can have exactly the same trip but the advice is opposite depending on what time you're taking the flight," said Professor Lockley, who has also used these principles to help racehorses acclimate to new time zones. "Once you understand the timing issue you can go through that process for any trip."

3. Survive the first night by eating right and preparing the hotel room for a good night's sleep.

Whatever you do on your first day, remember that the things capable of upsetting your body when you're at home can be even more troublesome when traveling. For instance, some of us know that alcohol may help when it comes to falling asleep but that it can interrupt later stages of sleep, which would only exacerbate jet lag. Large or spicy meals should also be avoided in the evening at your destination, Professor Lockley advised, because the body is not as efficient at metabolizing food at that time.

At night (and for each night of your London trip) about an hour or so before bed, keep the lights in your room as dim as possible. Close blinds or curtains and cover any light from a clock, computer, television, even your smartphone, because light can make you more alert and reset your internal clock to the wrong time, making you think the day has begun.

More tips on improving sleep at home or on the road are available at Harvard University's "healthy sleep" Web site, healthysleep.med.harvard.edu/healthy/getting/overcoming/tips. Just don't log on before bedtime. ■