

Heart Attack Alert

Switching Away from DAYLIGHT SAVING TIME Can Be Dangerous To Your Health



At 2:00 am on Sunday, November 1, 2009, the US officially switches from Daylight Saving Time (DST) to Standard Time (ST)—you “fall back” one hour. On March 14, 2010, the US switches from ST to DST—you “spring forward” one hour.

Warning: These time changes can be dangerous to your health. Researchers looked at the rate of heart attacks around the time switches—comparing the seven days right after the switches with the seven days two weeks before and two weeks after the switches...

In spring there was a 5% to 10% increase in heart attacks during the three days after the switch to DST.

In fall there was a significant spike in heart attacks on the Monday after the switch to ST.

The researchers theorized that sleep disruption from switching the clock may hurt the heart by increasing the activity of the sympathetic nervous system, which speeds heart rate, and by increasing the level of *cytokines*, immune cells that spark inflammation and damage arteries.

Research also shows that the sleep-disturbing switches can cause other health-related problems, including insomnia, daytime fatigue, a decrease in daytime alertness and negative mood states, such as depression and anxiety.

We asked Michael Terman, PhD, one of the world's leading experts in this field, how to protect your health...

WHO IS MOST VULNERABLE?

Every person has an internal clock that matches wakefulness and sleepiness with the day-night cycle—a

phenomenon called *circadian rhythm*. The science of how circadian rhythm affects health is called *chronobiology*—and it has shown that each person has a genetically determined chronotype.

“Owls” are chronotypes that usually go to sleep very late and have difficulty waking up in the morning for a normal workday.

“Larks” feel sleepy at a so-called normal hour of the night (such as 10:00 pm) and wake up easily in the morning.

The vast majority of the population is somewhere in between an owl and a lark. But about 10% of the population are owls—and they have far more difficulty adjusting to time switches than larks. Owls are more likely to suffer from switch-caused health problems in the days and even weeks afterward.

If you're not sure whether you're an owl or a lark—or somewhere in between—go to the Web site of the Center for Environmental Therapeutics, www.cet.org. On the home page, click on “Self-Assessment” and then “Your Circadian Rhythm Type,” which will open the “Automated Morningness-Eveningness Questionnaire.” The 19 questions take about five to 10 minutes to answer, after which ▶

Bottom Line/Personal interviewed Michael Terman, PhD, professor of clinical psychology at Columbia University, director of the Center for Light Treatment and Biological Rhythms at New York–Presbyterian Hospital/Columbia University Medical Center, director of clinical chronobiology at New York State Psychiatric Institute and president of the Center for Environmental Therapeutics (www.cet.org), all in New York City. He is author or coauthor of more than 75 scientific papers appearing in leading medical journals.



▶▶ you will receive detailed feedback about your likely chronotype.

PROTECT YOURSELF

If you're an owl, there are many ways to modulate your internal clock so that you're less vulnerable to health problems from the sudden time switches...

Gradually set the alarm later. For the fall switch from DST to ST, your goal is to allow your circadian clock to drift one hour later during the week or so after the switch.

If you typically wake up to an alarm clock at 7:00 am, set the alarm for 6:00 am ST on the Sunday morning of the switch, which is when you'll be inclined to wake up anyway. Over the next six days, set your clock 10 minutes later each day until you arrive at 7:00 am ST.

Reverse this process in the spring, starting six days *before* the ST to DST switch. Set the alarm 10 minutes earlier each day so that you arrive smoothly at 7:00 am DST on Sunday morning.

Exercise daily. Daily aerobic exercise helps stabilize the circadian system, preventing an owl's tendency to go to sleep later and later. It will help manage both time switches. But avoid aerobic exercise in the hours right before sleep, which can cause insomnia.

To help with the spring transition: As soon as the sun starts to rise after 7:00 am, take a brisk 20-minute walk outside right after you wake up, to jump-start your day. This is the best measure owls can take to prevent health problems caused by the March transition from ST to DST.

Eat regular meals. Owls rarely feel hungry when they first wake up, so they skip breakfast. They then eat a big meal around 1:00 pm and tend to eat again late at night.

Best: Eat breakfast within a half-hour of waking, eat lunch around noon and finish dinner before 8 pm. This helps normalize your circadian rhythm.

Take melatonin—the right way. *Melatonin*, a hormone produced by the pineal gland in the brain, helps control wakefulness and sleepiness. It's usually not detectable in the blood at midday but begins to rise in the evening, about two

to three hours before you feel sleepy.

In the general population, there is a six-hour spread between the average times that melatonin rises. If you're an owl, you tend to have a late onset—in some cases, as late as 1:00 am, so you don't feel sleepy until about 3:00 am. To decrease vulnerability to the time shift, an owl needs to feel sleepy earlier and can do that by taking a melatonin supplement.

Most people who take melatonin mismanage it, taking it like a sleeping pill, 30 to 45 minutes before bedtime. But by that hour, the brain has already started to produce the hormone, and the additional supplement has little effect.

Better: Take a very small amount of melatonin—0.25 milligrams (mg)—five hours before your desired bedtime, starting a week before the springtime switch to DST. Your circadian clock will sense that nighttime has begun and will adjust itself toward earlier sleep onset. Move the melatonin earlier as your sleep adjusts earlier, then stop it when you reach your goal.

After taking melatonin, remain in dim, indoor light because bright, fluorescent light or outdoor light reverses the effect. Also, refrain from intense physical exercise.

Resource: Microtonin, a 0.5-mg melatonin supplement (which can be cut in half), is available from The Vitamin Shoppe (866-293-3367, www.vitaminshoppe.com, \$9 for 60 capsules).

Use a "dawn simulator." You can adjust your circadian rhythm using a sophisticated device that plugs into your light fixture and "simulates" the outdoor transition from a starlight level of light to a sunrise level of light. The device allows you to gradually move "dawn" later in the day during the week or so after the "fall backward" switch to ST, and later in the day during the week or so before the switch to DST.

The subtly intensifying light passes through your eyelids, entraining your internal clock to the time you want to start your day—no matter what is happening outdoors.

Resource: You can order a Dawn Simulation System at www.cet.org. Cost: \$215. ■ ■

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