

Spring daylight saving time may cause an increased risk of heart attacks

March 11 2016, by Adam Pope



DAYLIGHT SAVINGS TIME & HEART ATTACKS

Large studies of hospital records have found that there is a

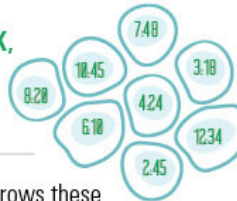
10-24% 

increase in heart attacks on the **MONDAY AFTER DAYLIGHT SAVINGS TIME** begins in spring.

(It's important to note that these heart attacks primarily occur in people with underlying conditions that already increase their risk for heart disease.)

WHY?

EACH CELL HAS AN INTERNAL CLOCK, which drives rhythms in biological processes on a roughly 24-hour cycle.



SPRINGING FORWARD throws these clocks out of sync. And you can't reset them as easily as the alarm on your nightstand.

Several factors contribute to the **increased heart attack risk**, including **sleep deprivation**, increased **inflammation**, and **changes in the normal pattern of electrical signals** that the body sends to the heart to get it ready for the challenges of the day.

▶▶ HERE'S WHAT YOU CAN DO TO HELP

1. Divide the time loss over the weekend:

If you usually wake up at **6 a.m.** on weekdays, wake up at **5:40 a.m.** on Saturday **6:20 a.m.** (new time) on Sunday and **6:00 a.m.** on Monday



2. Eat a decent-sized breakfast

3. Each morning, expose yourself to light



4. Be active each morning *(as recommended by your doctor)*



These steps help reset the master clock in the brain, and the peripheral clocks throughout the body.

Many people may groan about losing an hour of sleep March 13, but there may be a more serious reason to be mindful of daylight saving time.

Martin Young, Ph.D., in the University of Alabama at Birmingham Division of Cardiovascular Disease says that springing forward one hour may lead to an increased risk of heart attacks for people with a history of heart disease.

"Moving the clocks ahead one hour in March is associated with a 10-24 percent increase in the risk of having a heart attack the following Monday and to some degree Tuesday," Young said.

Young says every cell in the human body has an internal time mechanism, also known as a circadian clock, which is responsible for driving rhythms in biological processes. These rhythms follow a roughly 24-hour cycle, responding to changes in light and darkness in an organism's environment. Young says when these clocks are interrupted or experience a sudden change, there can be a number of different health effects.

"Going from a sleeping state to waking is already a stressful event in the body," he said. "When we have an abrupt change, like losing an hour of sleep with daylight saving time, our internal clocks don't have enough time to prepare our organs."

Young says there are many factors that may contribute to increased risk

of heart attacks when internal clocks become out of synch with the environment. These include sleep deprivation, inflammation and sympathetic tone.

Sleep deprivation

Individuals who are sleep-deprived generally weigh more and are at an increased risk of developing diabetes and heart disease. Sleep deprivation also can alter other body processes, including inflammatory response, which may contribute to [heart attack risk](#). A person's reaction to sleep deprivation and the time change also depends on whether he or she is a morning person or night owl. Night owls have a much more difficult time with springing forward.

Immune function

Immune cells also have a clock, and normal immune responses depend greatly on the time of day. A time shift like daylight saving puts the body in a pro-inflammatory state, which can worsen [heart disease](#) outcome.

Sympathetic tone

When a person normally wakes up in the morning, the body sends a large number of electrical signals to the heart, called sympathetic tone. Conversely, sympathetic tone decreases during sleep. However, when someone is sleep-deprived, sympathetic tone can be elevated even when asleep, which is strongly correlated with [cardiovascular disease](#). "Sleep period is one time the heart should not be challenged," Young said.

Young also says changing time zones and jet lag can cause circadian desynchrony, and increase the risk of heart attacks. It is important to note that these circadian disruptions will increase risk of a [heart attack](#)

primarily in susceptible individuals, who often have underlying diseases.

So, what to do?

"The question then becomes, 'How do you reset your internal clock?'" Young said.

He says different organs in the body have different ways of resetting their own clocks. For example, the brain resets according to light exposure, while the liver resets according to when the body receives nourishment from food. However, some organs, such as the heart, receive mixed signals, thereby leading to confusion and dysfunction.

Young says [daylight saving time](#) likely doesn't impact just the heart, since all cells in the body possess [internal clocks](#). Researchers like David and Jennifer Pollock, Ph.D., are studying the effects of clocks on blood pressure, while Shannon Bailey, Ph.D., is studying their effects on the liver.

So before you set your clock forward one hour, what should you do to prepare your body to a new schedule?

Young suggests easing the transition, by dividing up the one-hour loss over the course of the weekend. For example, if you usually wake up at 6 a.m. on a weekday, then set your alarm for 5:40 a.m. Saturday, 6:20 a.m. (new [time](#)) Sunday, and 6 a.m. Monday. In addition, eat a decent-sized breakfast, then go outside in the sunlight and exercise (as appropriate and as recommended by your doctor).

"Doing all of this will help reset the central, or master, clock in the brain that reacts to changes in light/dark cycles, and the peripheral clocks—the ones everywhere else, including the one in the [heart](#)—that react to food intake and physical activity," Young said. "This will enable your [body](#) to

naturally synch with the change in the environment, which may lessen your chance of adverse health issues Monday."

Provided by University of Alabama at Birmingham

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