HOUSE JOINT RESOLUTION NO. 20

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-SIXTH LEGISLATURE - FIRST SESSION

BY REPRESENTATIVES FAIRCLOUGH, Keller

Introduced: 2/23/09
Referred: Community and Regional Affairs, Labor and Commerce

A RESOLUTION

Urging the United States Congress to end daylight saving time.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS 15 U.S.C. 260 - 267 (Uniform Time Act of 1966) establishes a system of uniform time within standard time zones, and 15 U.S.C. 260a establishes daylight saving time for the nation; and

WHEREAS daylight saving time originally began during World War I primarily to save fuel by reducing the need to produce electrical power for artificial lighting; and

WHEREAS a recent study at the University of California, Santa Barbara, showed that the introduction of daylight saving time in Indiana increased electricity costs by millions of dollars; and

WHEREAS Alaska is called the Land of the Midnight Sun, so traditional notions of dusk and dawn are irrelevant in much of the state; and

WHEREAS, before 1983, Alaska used five time zones that allowed for "sun time" and "clock time" to be synchronized; and

WHEREAS, during transitions into and out of daylight saving time, people sensitive to the time of sunrise and sunset experience a disruption of their circadian rhythm, a

recognized sleep disorder called jet lag; and

WHEREAS Alaska created "political time" in 1983, which is not based on the position of the sun in the sky; and

WHEREAS during each transition into and out of daylight saving time, the nation's productivity suffers while the population adjusts to the new time; and

WHEREAS many teachers and administrators in Alaska have suggested that there is a disruption in student productivity as Alaska transitions into and out of daylight saving time; and

WHEREAS a majority of Alaska's students go to school in the dark and return home in the dark; and

WHEREAS Alaska rapidly gains and loses natural daylight, which makes the use of daylight saving time pointless within days of its implementation; and

WHEREAS every transition into and out of daylight saving time requires the population to waste time changing the settings on clocks and other items; and

WHEREAS communication technology has improved the ability of businesses to interact with vendors around the world; and

WHEREAS there are benefits to the nation of not changing time during the year, including the benefit to businesses of having a consistent time for communicating with their business partners in other American time zones and international time zones;

BE IT RESOLVED that the Alaska State Legislature urges the United States Congress to end daylight saving time by repealing 15 U.S.C. 260a.

COPIES of this resolution shall be sent to the Honorable Barack Obama, President of the United States; the Honorable Joseph R. Biden, Jr., Vice-President of the United States and President of the U.S. Senate; the Honorable Nancy Pelosi, Speaker of the U.S. House of Representatives; the Honorable John Boehner, Minority Leader of the U.S. House of Representatives; the Honorable Harry Reid, Majority Leader of the U.S. Senate; the Honorable Mitch McConnell, Minority Leader of the U.S. Senate; and the Honorable Lisa Murkowski and the Honorable Mark Begich, U.S. Senators, and the Honorable Don Young, U.S. Representative, members of the Alaska delegation in Congress.

(page 1591), the second sentence should have begun with "Subtypes and sub-subtypes."

Barbara S. Taylor, M.D.
Scott M. Hammer, M.D.
Columbia University Medical Center
New York, NY 10032
bs2026@columbia.edu

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Shifts to and from Daylight Saving Time and Incidence of Myocardial Infarction

TO THE EDITOR: More than 1.5 billion men and women are exposed to the transitions involved in daylight saving time: turning clocks forward by an hour in the spring and backward by an hour in the autumn. These transitions can disrupt chronobiologic rhythms and influence the duration and quality of sleep, and the effect lasts for several days after the shifts.[1,2]

We examined the influence of these transitions on the incidence of acute myocardial infarction. To calculate the incidence ratio, we compared the incidence of acute myocardial infarction during each of the first 7 days after the spring or autumn transition and the mean of the incidences on the corresponding weekdays 2 weeks before and 2 weeks after the day of interest. For example, for the Tuesday after the transition, we would have divided the incidence on that Tuesday by the mean of the incidence on the Tuesday 2 weeks earlier and the incidence on the Tuesday 2 weeks later. We used data from the Swedish registry of acute myocardial infarction, which provides high-quality information on all acute myocardial infarctions in the country since 1987. The incidence ratios, as measures of relative risk, and exact 95% confidence intervals were calculated.

The incidence of acute myocardial infarction was significantly increased for the first 3 weekdays after the transition to daylight saving time in the spring (Fig. 1A). The incidence ratio for the first week after the spring shift, calculated as the incidence for all 7 days divided by the mean of the weekly incidences 2 weeks before and 2 weeks after, was 1.051 (95% confidence interval [CI], 1.032 to 1.071). In contrast, after the transition out of daylight saving time in the autumn, only the first weekday was affected significantly (Fig. 1B); the incidence ratio for the whole week was 0.985 (95% CI, 0.969 to 1.002).

The effect of the spring transition to daylight saving time on the incidence of acute myocardial infarction was somewhat more pronounced in women than in men, and the autumn effect was more pronounced in men than in women. The separate analyses of the 1987–1996 and 1997–2006 periods yielded essentially the same results as those for the whole 1987–2006 period. The effects of transitions were consistently more pronounced for people under 65 years of age than for those 65 years of age or older.

The most plausible explanation for our findings is the adverse effect of sleep deprivation on cardiovascular health. According to experimental studies, this adverse effect includes the predominance of sympathetic activity and an increase in proinflammatory cytokine levels.[3,4] Our data suggest that vulnerable people might benefit from avoiding sudden changes in their biologic rhythms.

It has been postulated that people in Western societies are chronically sleep deprived, since the average sleep duration decreased from 9.0 to 7.5 hours during the 20th century.[4] Therefore, it is important to examine whether we can achieve beneficial effects with prolonged sleep. The finding that the possibility of additional sleep seems to be protective on the first workday after the autumn shift is intriguing. Monday is the day of the week associated with the highest risk of acute myocardial infarction, with the mental stress of starting a new workweek and the increase in activity suggested as an explanation.[5] Our results raise the possibility that there is another, sleep-related component in the excess incidence of acute myocardial infarction on Monday. Sleep-diary studies suggest that bedtimes and wake-up times are usually later on weekend days than on weekdays; the earlier wake-up times on the first workday of the week and the consequent minor sleep depri-

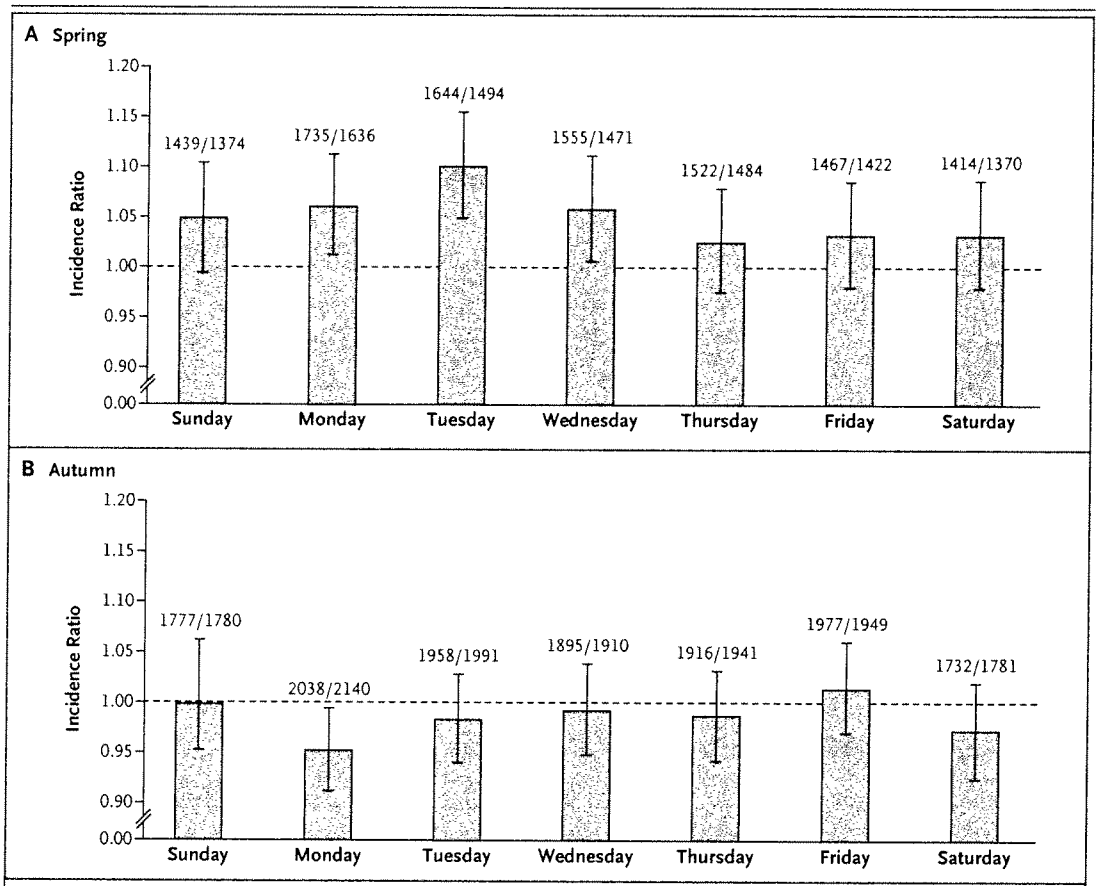

Figure 1. **Incidence Ratios of Acute Myocardial Infarction on the First 7 Days after the Spring and Autumn Clock Shifts for Daylight Saving Time.**

The incidence is represented by the ratio of the number of acute myocardial infarctions (as the main diagnosis) on the given day after the shift to the mean number on the corresponding days 2 weeks earlier and 2 weeks later (both numbers given above the bars). Analyses of the data for the spring shift are based on the 15 years between 1987 and 2006 in which Easter Sunday was not the transition day (Panel A). Analyses of the data for the autumn shift are based on all 20 years between 1987 and 2006 (Panel B). In the autumn (Panel B), the control period was defined as the corresponding weekdays 2 weeks before and 2 weeks after the day of interest. In spring (Panel A), we aimed to avoid interference with Easter, the only public holiday that could influence our results. For years in which Easter Sunday was celebrated 2 weeks after the Sunday of the spring shift, we defined the control period for the Sunday of the shift as the Sunday 3 weeks before and the Sunday 3 weeks after (thus skipping Easter Sunday). When we did not exclude Easter if it coincided with the exposure or control days, we observed an even higher effect size associated with the spring transition. The number of acute myocardial infarctions on the transition Sunday was adjusted for the difference in day length as compared with the control Sundays (i.e., 23 vs. 24 hours in the spring [Panel A] and 25 vs. 24 hours in the autumn [Panel B]). The results of secondary analyses for both spring and autumn, which included acute myocardial infarctions that were either the main or secondary diagnoses, were essentially similar to the results of the analyses that included main diagnoses alone, as were the results of analyses of the spring shift that were restricted to fatal cases. For the autumn shift, in contrast to the analyses of all acute myocardial infarctions, analyses restricted to fatal cases showed a smaller decrease in the incidence of acute myocardial infarction on Monday, and the risk of fatal acute myocardial infarction increased during the first week after the shift. I bars denote 95% confidence intervals.

vation can be hypothesized to have an adverse cardiovascular effect in some people. This effect would be less pronounced with the transition out of daylight saving time, since it allows for additional sleep. Studies are warranted to examine the possibility that a more stable weekly pattern of waking up in the morning and going to sleep at night or a somewhat later wake-up time on Monday might prevent some acute myocardial infarctions.

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Imre Janszky, M.D., Ph.D.

Karolinska Institute
SE-171 76 Stockholm, Sweden
imre.janszky@ki.se

Rickard Ljung, M.D., Ph.D.

National Board of Health and Welfare
SE-106 30 Stockholm, Sweden

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NATIONAL GEOGRAPHIC NEWS
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Extended Daylight Saving Time Not an Energy Saver?

Brian Handwerk
for National Geographic News

March 7, 2008

On Sunday people in the United States will roll their clocks forward an hour at 2 a.m. and begin the country's second consecutive year of extended daylight saving time.

The change, adopted into law last year, was touted as a way to save energy. But some studies suggest the move actually has consumers using more power—and paying bigger energy bills.

Hendrik Wolff, an environmental economist at the University of Washington in Seattle, is skeptical of the purported savings.

Wolff and colleague Ryan Kellogg studied Australian power-use data surrounding the 2000 Sydney Olympics, when parts of the country extended daylight saving time to accommodate the games.

The pair compared energy use in the state of Victoria, which adopted daylight saving time earlier than normal, to South Australia, which did not.

"Basically if people wake up early in the morning and go to bed earlier, they do save artificial illumination at night and reduce electricity consumption in the evening," Wolff said.

"Our study confirmed that effect. But we also found that more electricity is consumed in the morning. In the end, these two effects wash each other out."

Wolff stresses that it's difficult to determine how increased daylight saving time affected energy use across the U.S. last year. But he's inclined to reject the government's pre-change projections of modest energy savings.

Lights Out, But Bills Up

In 2007 the U.S. Congress passed a bill mandating that daylight saving time begin on the second Sunday in March and end on the first Sunday in November, creating an extra month of earlier mornings.

The U.S. Department of Energy is now sorting through the variables that drive power use—from weather patterns to the proliferation of high-definition televisions—to determine the yearlong impact of extended daylight saving time. (Related photos: sunrises and sunsets.)

Meanwhile the quirky chronology of Indiana's daylight saving time history allowed Matthew Kotchen, an economist at the University of California, Santa Barbara, to measure the time change's energy impact in that state.

No federal rule mandates that states or even individual counties observe daylight saving time, so for years only 15 of Indiana's 92 counties made the time switch.

When the entire state adopted daylight saving time in spring 2006, Kotchen and colleague Laura Grant were able to observe changes in energy use in homes throughout southern Indiana over a three-year period.

Their finding was clear: The switch to daylight saving time cost Indiana homeowners dearly on their electric bills.

"Just in the state of Indiana, it turns out to be almost seven million dollars a year in increased residential electricity bills," Kotchen said. "And that's at a far lower price for electricity than the national average."

The study found that daylight saving time did save on lighting use but that heating and air-conditioning use more than offset any gains.

"At least in southern Indiana, and probably in other places that have a similar climate, it's resulting in an increase in residential electricity consumption. Our estimates range between one and four percent."

But Kotchen cautions about applying results from Indiana to the entire nation.

For example, "we really don't know what's happening in California, Florida, or Texas," he said.

Steve Nadel, executive director of the nonprofit American Council for an Energy-Efficient Economy, noted that people will have to wait and see whether extended daylight saving time saves energy—and if so, in which parts of the country.

He also stressed that electricity-use patterns have changed significantly since the 1970s, when studies were done that suggested modest energy gains from the time shift.

"I would say certainly since the 1970s there's a lot more use of air conditioning," he said.

UCSB's Kotchen added that "in places where you have to use a lot of air conditioning [daylight saving time] may have a detrimental effect for the same reason that we [see] in Indiana, but it's difficult to say."

Impacts Beyond Energy

Massachusetts Democrat Ed Markey was one of the co-sponsors of the bill that mandated daylight saving time begin on the second Sunday in March and end on the first Sunday in November.

Jessica Schafer, press secretary in Congressman Markey's office, said she hasn't seen any hard data about energy savings since the switch.

"We've always said that the energy savings from this would be small compared to other changes you could make, but every little bit counts."

Other effects have been easier to identify, she said.

"People walk up to [Congressman Markey] and tell him what they think," she said. "By and large it's been positive. People feel that it's very family friendly."

That's because the shifting schedule allows most people to be more active during actual daylight hours—daylight saving time is about more than just saving energy.

"Added to the other reasons—increased traffic safety, increased leisure time, reduced crime—all told, I think the benefits are significant and meaningful."

Such social benefits may be even harder to quantify than energy savings. If they do exist, however, they may outweigh the original reason for the change.

"There are lots of reasons we might want to have daylight saving time," UCSB's Kotchen said.

"But the notion that it's an energy-saving policy—as people have been suggesting for at least 200 years—is not necessarily the case."