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EDITORIALS

# Time to Show Leadership on the Daylight Saving Time Debate

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"Better three hours too soon than a minute too late."
—William Shakespeare

Wherever you look, it seems, daylight saving is under debate and making headlines. In Washington State, where I reside, the state senate just passed Bill 5139 to adopt daylight saving time (DST) year round. A similar bill passed the Washington State House 6 days prior. In November 2018, Californians approved Proposition 7, giving the state legislature, through a two-thirds majority vote, the ability to adopt DST year round. Oregon is debating similar legislation. Six New England states are considering moving to the Atlantic Time zone, essentially putting them on permanent DST. Florida passed the "Sunshine Act" in 2018 in support of year-round DST. Senators Marco Rubio and Rick Scott and Representative Vern Buchanan, all from Florida, just introduced the "Sunshine Protection Act" of 2019 in Congress to make DST permanent nationwide. Washington State Senator Patty Murray, ranking member of the Senate Health, Education, Labor, and Pensions Committee, has indicated an interest in discussing this issue at the federal level. President Donald Trump tweeted on March 11, 2019, "Making Daylight Saving Time permanent is O.K. with me!" More than half the states in our union have considered this issue legislatively at some point. The European Union just voted to eliminate the twice-yearly clock change and will allow member states to determine if they want to live on standard time (ST) or DST. During all this deliberation about changing clocks and the subsequent effect on millions of people, the sleep medicine community has remained essentially silent on the issue. If we truly believe circadian health is important to sleep and overall health, then time is running out to make our voices heard. If we wish to show leadership and demonstrate our expertise in this debate, we must speak now or forever hold our peace.

The Nobel Prize for Medicine and Physiology in 2017 was given to researchers investigating the importance of circadian rhythms to human function. Clearly the sleep community understands a healthy biological clock is key to overall health and well-being. Indeed, a PubMed search of the words "circadian" and "health" in March 2019 revealed more than 10,000 results. Eminent researchers such as Allan Pack never encompass our field as "sleep research," but always refer to our collective endeavors as "sleep and circadian research." The published vision statement of the journal *Sleep* states, "*Sleep* is the benchmark international journal for sleep and circadian science." One of the most read articles in 2019 in *Sleep* is titled "Circadian phenotype impacts the brain's resting-state functional connectivity, attentional performance, and sleepiness."[1] Our academic community has an entire section of the International Classification of Sleep Disorders, Third Edition, devoted to circadian rhythm sleep disorders. All of these actions indicate we care deeply about this issue, yet we sit idly as politicians create policy to interfere with human circadian rhythms as if it does not matter.

Why do politicians care about this issue? They point to energy savings and increased physical activity, but these assertions have been debunked.[2,3] They point to lower crime rates,[4] but is this alone enough to warrant tampering with our biological clocks? There must be some other reason. Consider the Uniform Time Act of 1966 standardized the dates DST would occur, which currently stipulates it begins on the second Sunday in March, and ends the first Sunday of November. This Act was renewed twice, in 1987 and 2007. Who were the biggest contributors to lobbying efforts to renew DST? It was not environmental groups concerned with energy conservation, nor was it law enforcement organizations concerned with crime rates. It was not physician groups or the President's Council on Sports, Fitness, and Nutrition focused on the physical fitness of the nation. Rather it was the National Association of Convenience Stores and Sporting Goods Manufacturing Association. Politicians support permanent daylight saving time, despite the negative effects on human health, to support business interests.[5,6]

A recent European Commission survey found 84% of individuals polled wanted to stop changing clocks back and forth.[7] I understand and share this sentiment. However, legislation and the surrounding conversation is always biased toward solving the problem by going to permanent DST although enacting permanent ST also solves the problem and is the healthier, more natural choice. The Uniform Time Act of 1966 defines the parameters of DST, but does not require states to follow it. States passing legislation to move to permanent DST cannot make this change until the Uniform Time Act of 1966 is altered at the federal level. Thus comes the motivation for Senator Rubio's federal "Sunshine Protection Act" legislation. Considering the dysfunctional nature of our federal government, nobody is holding their breath for

this legislation to become law. This is the reason New England states are considering moving to Atlantic Time zone, and the state of Washington considering a move to Mountain Time zone. These moves effectively allow these states to enact permanent DST without the need for intervention by the federal government. Importantly, there is nothing in the Uniform Time Act of 1966 preventing states from simply going back to ST as a solution to the biannual clock change conundrum. But our understanding of retail politics in the United States tells us we cannot expect the political establishment to embrace permanent ST. We are the group that must champion this option.

We champion ST because we know all too well the negative health effect of DST. The human circadian system simply does not adjust to DST.[8] Sleep becomes disrupted, less efficient, and shortened.[9,10] The incidence of acute myocardial infarction increases up to 29% and ischemic stroke increases 9% following DST-related time changes.[11–13] Mental health is impaired and suicide increases following the DST shift.[14] The effect on road safety and traffic accidents is mixed,[15] but workplace injuries increase in number and severity following DST clock changes.[16] DST is akin to dosing the population with a small amount of shift work due to misaligning the human circadian system with typical work schedules; we know shift work is associated with cardiovascular disease,[17] metabolic dysfunction,[18,19] and cancer.[20] DST forces our biological clocks out of sync with the inexorable rising and setting of the sun (eg, the sun clock). The harmonious link between our biological clock and the sun clock has been crucial to human health and well-being for millennia. The sleep community must fight to move the United States away from DST and toward ST because we thrive when living in harmony with the natural world.

As scientists, we are always seeking better, more conclusive data. Although admirable, policy making happens in real time and those in positions of power often have priorities beyond the health ramifications of their decisions. As sleep health care providers, we have no similar ulterior priorities or conflicts. We are entirely focused on the sleep and circadian health of our patients and the public at large. The time is now for us to act consistent with our beliefs. State and federal DST policies are being crafted to the detriment of the sleep health principles we hold dear. Almost 70% of the world is on ST, including Hawaii and most of the state of Arizona, indicating the international community understands the negative effect of DST on their health and well-being and rejects it. I strongly believe the United States should do the same. Internationally, organizations such as the European Biological Rhythms Society and the Society for Research on Biological Rhythms are taking up the fight by working with the European Union Commission on DST to ensure the health consequences of these DST policy decisions are fully represented in the clock-setting debate. No such voice currently exists in this ongoing debate in the United States and the silence is deafening. There is still time to influence these legislative outcomes, but we must speak loudly, with a coherent, unified voice. Nothing less than the health and well-being of our nation is at stake.

## CITATION

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