

July 19, 2019

Estimated Reader of British Columbia

I want here to share with you very important data about your choice to stop changing clock annually. I am writing to you from France with the knowledge of the Association ACHED which has been founded in 1983 for the purpose to have France reducing its time advance.

Yes time changes are a burden. They cost and have negative effects on health, disruption and accidents around time of the change. Clearly time changes don't go unnoticed. People don't like the time change itself. People confuse summer and DST time easily giving them even the same name. People like summer (DST) time and winter time differently. The time change gives them a situation to distinguish them.

Time advances, also, = being ahead of solar time, are damaging. They cost also and also have negative effects. Until recently people only knew time solar time. End of the 19th century, the railway system introduced standard / normal time, a time close to solar time + or minus 30 minutes. That was still close to solar time year round. Then in the 20th century, the idea of moving the clock forward in the summer attracted some. Where DST was adopted people know about being ahead one hour during the 6-8 hot months but is a recent experience vs the humanity existence and also they don't know about having DST during winter time. In the 70, under Nixon, the US clocks were also forwarded during a winter. People thought it was going to be fine, and good to save energy, but the experience led to an intense backlash and was stopped suddenly and a law passed prohibiting year round DST. Also no energy savings were observed.

Choosing PDT for permanent time in BC would be a repeat of the Nixon error of the 70. People might think they could live with DST time during the winter but will realise it is terrible. Some people know it is terrible and you should listen to them, in particular when they know based on scientific and economic studies.

Some special interest might be pushing for but the general interest and the risk of backlash should tell you to steer away from PDT and stay at PST year round.

Unfortunately a superficial analysis of the issue in Washington State and Oregon led the local legislatures to vote for a permanent DST.

Hopefully you clarify that PDT year round is a fallacy and instead PST year round would be good. Hopefully California also clarifies the same.

In order to help you in understanding , please find attached evidence of the nuisance of DST time during the summer and worse when year round, and public recommendations from experts.

HEALTH	<p>-Health experts say pick Standard they say, avoid DST annual or permanent</p> <p>Growing anxious that politicians are not getting it, they are raising their voices</p> <p>-2018 https://www.ebrs-online.org/news/item/dst-statement-ebrs-endorsed</p> <p>-Roenneberg, Till, et al. "Why Should We Abolish Daylight Saving Time?" June 2019 https://doi.org/10.1177/0748730419854197</p> <p>-current https://srbr.org/resources/daylight-saving-time-presskit/</p> <p>-June 2019: Time to show leadership on the DST debate http://dx.doi.org/10.5664/jcsm.7822</p>
ADVANCED TIMES COST BILLIONS	<p>Costs in the BILLIONS the more you live ahead of solar time</p> <p>Journal of Health Economics May 2019 Giuntella, Mazzona https://www.sciencedirect.com/science/article/abs/pii/S0167629618309718</p> <p>Summarized in the May 20th press release of ACHED, attached page 5 of this document Delayed Sunset time, Health and Economic impacts in the USA (https://www.heure-ete.net/CP_20190520_EN.pdf)</p>
ENERGY	<p>-Energy spending \$\$\$ increased with DST</p> <p>Kotchen & Grant 2008, DST Indiana experiment https://www.nber.org/papers/w14429</p> <p>"Our main finding is that -- contrary to the policy's intent -- DST increases residential electricity demand. Estimates of the overall increase are approximately 1 percent, but we find that the effect is not constant throughout the DST period. DST causes the greatest increase in electricity consumption in the fall, when estimates range between 2 and 4 percent. "</p> <p>YearRound DST expected to be even worse</p>
TRAFFIC and POLLUTION	<p>Already in the 80s, impact on increased traffic and also Ozone pollution was known</p> <p>1992 https://www.sciencedirect.com/science/article/pii/0048969793902485</p>

CLIMATE	More greenhouse gases from all the above. All effects compounded, this is not at all negligible. Difficult to evaluate by how much but clearly adopting EST, your real standard time is a great and urgent opportunity
OTHER	<p>Many other reasons to adopt Standard time instead of DST time</p> <ul style="list-style-type: none"> -Impact on schools and Education -costs of construction -Electrical grid benefits
Other references	<p>I recommend you don't take example on other states that have voted permanent DST after a very superficial analysis. DST affects many compartments of the life and I have observed that some legislatures have difficulties in analysing all aspects. Consider California and how surprising Health , Education, Transports and pollution are kind of bypassed by bill AB7 that as of June wanted to put California under DST year round. . Hopefully the energy committee will be enough to deter it.. A June 3rd Analysis prior to hearing by the Energy, Utilities and Com committee was such that the author pulled out of the hearing planned the next day. You can find the analysis on their site.</p> <p>https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=201920200AB7</p> <p>Instead take example on Arizona or Saskatchewan or the places of British Columbia that don't use DST and stay on standard time all year.</p> <p>Remember also that in the US in 1974 the idea of permanent DST had followers. But it was a backlash after implementation and should warn us against doing it again.</p> <p>https://www.nytimes.com/1974/01/31/archives/schools-ask-end-to-daylight-time-pressure-follows-success-in-easing.html</p>

As a conclusion

You asked British Columbia about stopping Time changes.

<https://engage.gov.bc.ca/daylightsavingtime/>

Giving only 2 options

“The following choices are being considered:

1. B.C. continues the practice of changing our clocks bi-annually; or
2. B.C. adopts year-round observance of Daylight Saving Time.

This is very biased and directs people to say they want DST time if they don't want time changes. I think the approach is invalid and will give you data that can't be used honestly and for the general interest.

For the general interest of British Columbia, of the Pacific Region, North America and the WORLD, every state and every country should stop practising time changes and should observe year-round of Standard time as defined in 1884, PST for British Columbia

PST is the best choice for British Columbia

-for the Health of its citizens

less obesity, less diabetes, less heart attacks, less cancer, more life expectancy, more mental agility

-for the energy conservation, the clean air, and less carbon emissions

-for showing the good example to the rest of the world and that the world emits less carbon and has a longer future.

For a longer future, please choose Standard time!

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Press Release, May 20, 2019

Delayed bedtime because of delayed Sunset time, Health and Economic impacts in the USA

ACHED - French Association Against Double Summer Time - For the reduction of time advancements
Association (law of 1901) since 1983

The association ACHED informs you of the very recent publication of a study about the impact of delayed sunset time: Osea Giuntella, Fabrizio Mazzonna; **Sunset Time and the Economic Effects of "Social Jetlag" Evidence from US Time Zone Borders**; Journal of Health Economics (May 2019), ISSN: 1879-1646, Vol: 65, Pages: 210-226; <https://doi.org/10.1016/j.jhealeco.2019.03.007>

Chronobiologists use the term "Social Jetlag" (although it has nothing to do with travel and jets) about the misalignment between biological clocks and social clocks (Roennenberg 2012). Natural light, an important factor for human biological clocks, has a temporal variable distribution affected by time zones (and by legal forward / backward clock changes). The authors Giuntella and Mazzonna take advantage of the temporal discontinuity at the boundaries of the time zones in the United States, to characterize and study the cause-and-effect relationships between "Social Jetlag" and the health and economic observations. They find that there is discontinuity in the "Social Jetlag" as well as in the observations at the passage of the demarcation line between two contiguous time zones. They show that, on the right side, east of the demarcation line, having delayed sunsets (by one hour according to the clocks), people who reside there, start sleeping later than those on the left side (west of the demarcation line). These people, right side, often fail to get up later, especially if they work or have school children and, as a result, suffer 19 minutes of sleep loss on average. This sleep deficit is associated with health problems: they are 11% more likely of being overweight, and they have as well increased probabilities for obesity, diabetes, breast cancer and cardiovascular diseases. Increased health problems mean higher health costs per person. The authors also show a link with lost productivity and lower wages.

1 hour ahead on the clock	
19 minutes less sleep per night \$ 82 additional health expenses / person 11% more likelihood of being overweight + 19% heart attacks	- 3% wages \$ 23 lost daily productivity / person 21 % more likelihood of obesity + 5% breast cancer

Some French facts to put in the perspective of this study;

In 25 years, the time spent sleeping at night has decreased by 18 minutes.

Source Insee, France social portrait 2012, Layla Ricoch

<https://www.insee.fr/fr/statistiques/1374047?sommaire=1374058>

In France, we know that

-in 1916, we moved the summer clocks by one hour forward (compared to before the first world war)

-in 1945, we moved the winter clocks by one hour (compared to before the second world war), resulting in a permanent one hour ahead clock.

-in 1976, the summer clocks were advanced by an additional hour, resulting in a seasonal two hours ahead clock for 6 and later 7 months ..

This obviously has a cost. This study gives us an idea.

Our comments on www.ached.fr

<https://www.ached.fr/page/568608>

