

RESEARCH FOR THE WORLD

Are we underestimating the costs of daylight saving time?

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Research from **Joan Costa-i-Font** suggests that daylight saving time is taking a significant toll on our health and wellbeing, and it could be costing economies over 750 euros per capita each year.

In 2019, the European Parliament approved a proposal to bring an end to daylight saving time (DST), following a **public consultation** which saw an overwhelming majority in favour of the abolition of DST, as well as the highest number of responses ever received in any public consultation from the European Commission.

While the general public may feel quite strongly that DST has had its day, policymakers seem to have stalled on any clear decisions or decisive steps forward. Now, a new, **far-reaching research project** from Joan Costa-i-Font, Professor of Health Economics in the Department of Health Policy at LSE, reveals the full extent of DST's cost to individual health and wellbeing, which he believes until now may have been significantly neglected. The findings may serve as a wake-up call for policymakers across the debate.



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What are the costs of daylight saving time?

“The issue here is that individuals suffer a real loss when there is an abrupt time reduction to their daily routine,” explains Professor Costa-i-Font. “By moving clocks forward one hour in the spring, the transition into DST reduces the total time available to individuals in their schedules, and creates new time constraints in the days following the transition. We have found detrimental effects on sleep and physical health, and on feelings of fatigue, stress, time stress – which is the concern of running out of time or not being able to complete tasks at the right time – and mental health. The knock-on effects of this are substantial.”

Professor Costa-i-Font's findings corroborate mounting evidence that the effects on health of the spring transition to DST are broad and at times severe. On the days following the spring DST transition, for example, there is an increased likelihood of a heart attack, the overall number of hospitalisations increases, and the number of doctor visits also climbs. Overall, participants in the study were also found to be more likely to report feeling "run-down" and "less energetic" in the days after the clock change.

In terms of wellbeing, the study demonstrates that the DST transition increases people's feeling of being rushed for time, and respondents are also more likely to say that they "barely cope with things" one day after the DST transition. The number of hours spent on leisure decreases by roughly 10 minutes following the transition and findings suggests that the spring transition into DST decreases life satisfaction by around 1.44 per cent.

Neither is the outlook positive when it comes to economic productivity. As Professor Costa-i-Font notes, "we find that the number of hours worked increases by roughly 40 minutes on Mondays following the transition, while the time when a respondent starts working remains the same. This suggests that respondents are running on at least one hour less sleep that first day, and their individual productivity is affected as a result." In societies where sleep quality may also be pushed to the limits, the loss of even just one hour during the transition leads to compounding effects over the first six days of the transition, according to Professor Costa-i-Font.

Translated into monetary terms, the results are even more startling, as Professor Costa-i-Font explains: "We calculated the costs of each of these impacts, and weighed them up against any known benefits of the DST. Our cost-benefit analysis reveals that ending DST would be associated with welfare gains equivalent to an income gain of roughly 754 euros per capita per year."



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How can we calculate the cost of daylight saving time?

The project followed 30,000 individuals over a 30-year period from 1984 to 2018. Questions spanned life satisfaction, sleep satisfaction, childcare, physical and emotional health, wellbeing, work, leisure and time management. The next step for researchers was to work out the average costs of each of these impacts on physical health, wellbeing and productivity to assign a monetary value.

Professor Costa-i-Font explains how this works: "For example, where the spring DST transition leads to an increase in hospital admissions by three percentage points, and the average cost of a hospital admission in Germany is roughly 150 euros per day, the economic cost of an increase in the likelihood of being admitted to a hospital for one night over the last year can be calculated at about 34 euros per capita per year.

“Likewise, we know that the Spring DST is associated with an increase in working hours by 40 minutes. The average hourly wage in Germany is about 37 euros, and an increase in working hours by 40 minutes thus costs roughly 25 euros per capita.”

Interestingly, the research shows that there are benefits associated with the autumn transition, although they were not found to be strong enough to outweigh the negatives in the spring. As such, economies could still stand to gain 754 euros per capita each year with the ending of DST, despite the noted advantages to health and wellbeing of the 25-hour day in the autumn.



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Why haven't we put an end to daylight saving time?

According to Professor Costa-i-Font, there are several hurdles to clear before DST could be brought to an end in Europe and further afield. States will need to establish a standard time, choosing between winter or summer time, and will need to decide how to manage time between neighbours and trade partners. The European Union, for example, is hoping to find a way to allow member states to choose their own standard time, without creating a patchwork of time zones across the continent – no mean feat when countries seem to have opposing preferences for a permanent winter or summer time. These issues are what Professor Costa-i-Font calls “the politics of time”.

On the topic of DST, Professor Costa-i-Font's key message is clear: “It is costing us individually and as societies to switch time zones twice a year, and it is in our best interests to move the conversation along. I hope in future that decisionmakers will pay more attention to the potential consequences of policy on individual health and wellbeing, which, as we have seen with DST, often also translate into an economic cost.” ■

Professor Joan Costa-i-Font was speaking to Molly Rhead, Media Relations Officer at LSE.

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