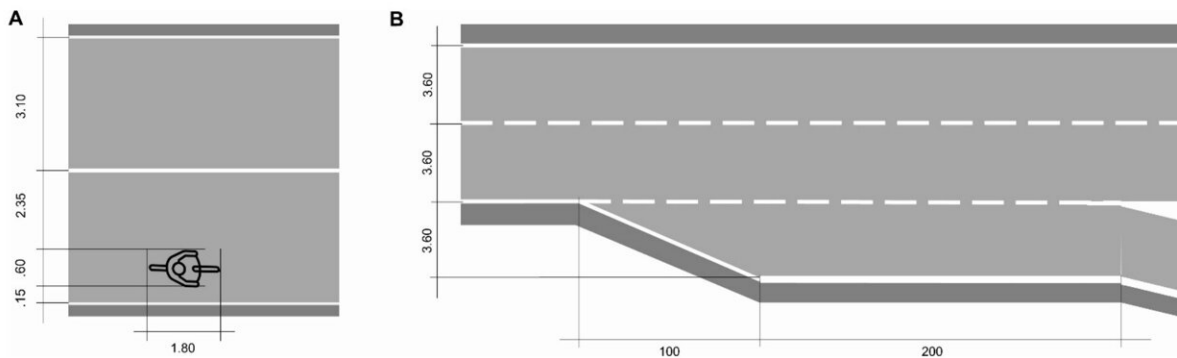


Research finds Daylight Saving Time clock changes affect road safety

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Geometrical characteristics (in meters) of: (a) bicycle overtake driving situation; (b) freeway exit driving situation. Credit: *iScience* (2022). DOI: 10.1016/j.isci.2022.104666

Researchers found that, after Daylight Saving Time (DST) is introduced, drivers' behaviors are riskier, and their reaction time and ability to read situations are compromised.

Sara Montagnese, Professor of Chronobiology at the University of Surrey, says that "the disruption to our sleep and circadian rhythms caused by [daylight](#) saving time is known to increase [health risks](#) such as heart attacks, but what is not known is the danger it can cause on our roads due to its impact on driver behavior. Findings from our study will

show there is no place for daylight saving time in today's world, as the negatives strongly outweigh the positives."

Publishing their findings in the journal *iScience*, researchers from the University of Surrey and the University of Padova in Italy investigated if disruption to circadian rhythms (the internal process that regulates the [sleep-wake cycle](#) and other rhythmic functions) and sleep deprivation caused by the spring transition to DST had an impact on driving performance.

The driving performance of 23 males (the experimental group) was assessed before and after the introduction of springtime DST. A [control group](#) of 22 males also undertook two assessments, both prior to DST. In each experiment, participants were asked to drive an 11.5 km route on a [driving simulator](#), which included both rural and urban roads, and were faced with different driving scenarios.

To test if drivers would take unnecessary risks, participants found themselves behind a vehicle on a long straight road with a continuous centerline to see if any of them would try to overtake. Following the first assessment, which took place before DST, it was found that the behavior of drivers in both groups was similar, with only 9% opting to overtake.

During assessment two, which took place after DST was introduced, 39% of people in the experimental group overtook the leading vehicle. In contrast, those in the control group maintained safer behaviors. This indicates that those in the experimental group were more likely to engage in risky behavior as they were more prone to commit overtaking violations in the post-DST trial than in their first assessment.

When encountering a cyclist, most experimental and control participants overtook in both simulations; however, noticeable differences were identified in the second assessment. Those in the control group increased

the distance between themselves and the cyclist when passing. In contrast, the experimental group shortened the distance, compromising the cyclist's safety.

The behaviors of those in the experimental group when exiting a motorway raised safety concerns. For example, researchers noted those in this group tended to be more abrupt when changing direction and when decelerating to exit, increasing the likelihood of causing an accident.

Professor Montagnese added that "it is clear from our findings that the disruption to the [circadian rhythms](#) and [sleep](#) deprivation caused by daylight saving time led drivers to take more risks and not judge situations properly, making accidents more likely."

"Furthermore, the presence of a control group, whose behaviors remained similar across both assessments, showed that daylight saving time affected those in the experimental group and impacted them for several days after the time change. Such an impact cannot be ignored, and it is important to reconsider our daylight-saving time policy as our safety is at risk."

More information: Federico Orsini et al, Driving simulator performance worsens after the Spring transition to Daylight Saving Time, *iScience* (2022). [DOI: 10.1016/j.isci.2022.104666](https://doi.org/10.1016/j.isci.2022.104666)

Provided by University of Surrey

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