

Daylight Saving Time Linked to Increased Stroke Risk

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New research, carried out at the University of Turku, Finland, has uncovered a rather surprising association. The team found that changing the clock forward or back by an hour increases the risk of stroke.

Shifting the clocks by an hour increases the occurrence of stroke.

Stroke kills around 130,000 Americans per year; that equates to 1 in 20 total deaths.

The most common type of stroke is ischemic, accounting for 85% of all strokes.

Ischemic strokes occur when the artery that supplies oxygen-carrying blood to the brain becomes blocked, often by a blood clot.

Although a number of risk factors for stroke are known, including alcohol, smoking, obesity and lack of exercise, the current study adds another, rather different, factor to the list.

The research, authored by Dr. Jori Ruuskanen, utilized a decade of Finnish health care information, including thousands of patient records.

The team used the data from 3,033 individuals hospitalized during the week after a daylight saving time transition and compared it with the rate of stroke in a group of 11,801 people who were hospitalized 2 weeks before or 2 weeks after the clock change.

Clocks and strokes

The results are to be presented at the American Academy of Neurology's 68th Annual Meeting in Vancouver, Canada, in April.

The researchers found that for the first 2 days after the daylight saving switch, the overall rate of ischemic stroke was 8% higher. After 2 days, the levels were back to normal.

For certain groups, the risks were higher; people with cancer were 25% more likely to have a stroke just after the transition than any other period. Also, individuals over the age of 65 were 20% more likely to have a stroke immediately after the shift.

Although the results do sound quite surprising, there are some existing theories that might help explain why a simple shift of 1 hour in time might bring about such a disruptive medical outcome.

Why daylight saving can be lethal

Researchers have previously spotted some circadian influence on stroke levels. A meta-analysis of stroke research, including data from 11,816 strokes, found that the chance of an ischemic stroke between midnight and 6 am was 55% higher than at any other time of the day.

It does seem that timing is somehow important in the etiology of strokes. However, this is the first time that daylight saving has been specifically investigated as a risk factor.

Medical News Today asked Dr. Ruuskanen what he thought was behind the observed effect. He said:

"We know from previous studies that stroke risk is highest in the morning hours and daylight saving time slightly shifts the timing pattern of stroke onset.

Previous studies have also shown that the disruption of the circadian clock due to other reasons (e.g. due to rotating shift work) and sleep fragmentation are associated with an increased risk of stroke."

The findings will need to be corroborated with more investigation, but the team believes the results are strong. *MNT* asked Dr. Ruuskanen what further research would need to be done to prove the connection.

He advised that to make the findings unequivocal "would require abandoning the daylight saving time changes." Debates do, occasionally, come up about whether daylight saving is necessary, so in the future this could become a reality.

Dr. Ruuskanen said that, should the time switch eventually be removed, and "a follow-up of several years saw that the small increase in stroke incidence [...] disappears, it would make a strong argument that it actually is the clock change that raises the stroke risk."

Even before follow-up research is completed, the results remain convincing, firstly due to the large data size, and, secondly, because the weeks after the clock change were compared with similar weeks over the course of a decade.

Dr. Ruuskanen told *MNT* that "it is hard to see any specific factors other than the shift that could be identified to differ between these weeks and affect stroke incidence."

It truly does seem that a change of just 1 hour could raise the risk of stroke; *MNT* recently covered research in a similar vein demonstrating that broken sleep raises the risk of stroke.