

# Daylight saving time: harmed by hands of the clock

Adjusting our lives by an hour every year damages our health and wellbeing

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For millennia, humans lived and worked in synchrony and alliance with the skies above. Towns and cities set their own clocks according to the movement of the sun overhead; until the 1850s, London was 10 minutes ahead of Bristol and 13 minutes ahead of Cardiff. With little need for times any more precise than “noon” or “dusk”, society carried on regardless.

The industrial revolution changed everything. The new urban factory demanded punctuality to maximise production, and the train company that moved its goods could not hope to draw up a comprehensible timetable if every stop required the driver to change his pocket watch.

In just a few decades, the sun clock was replaced by the clock on the wall. Also known as the “social clock” of the modern world, it was set to a new “standard time” that ticked along to the drone of factory production lines and the roar of the steam engine.

Standard time, while not perfect, is the closest approximation we have to the sun clock; it's also the only practicable solution for a globalised, connected society. With standard time, the start of the working day more or less aligns with sunrise and ends with sunset. Unfortunately, the entirely arbitrary biannual ritual of daylight savings time means we only stay in this synchrony with the sun for five months of the year.

In 1895, British-born New Zealander George Hudson, an avid insect collector, first proposed “daylight savings time” because it would give him more sunlight after work to pursue his hobby.

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His idea was to put the clocks forward by two hours in summer, then reset them in the winter. “In this way, the early-morning daylight would be utilised,” Hudson wrote, “and a long period of daylight leisure would be made available in the evening for cricket, gardening, cycling or any other outdoor pursuit desired.” Hudson’s proposal received a tepid reception in Wellington, but the idea, explored independently by others for mostly the same reasons, gained ground.

## Energy myth

Countries around the world started to adopt daylight savings time during the first World War to encourage fuel conservation. Bar a few adjustments and experiments, it has remained in effect despite little evidence that it actually does save energy.

Today, more than 1.6 billion people in 70 countries change their clocks twice a year, which we now know has profound effects on our health and wellbeing. As long as we can see natural light, our body clock aligns to the sun clock. During standard time, the highest point of the sun at midday aligns to when the social clock says noon, staying in sync with our body clock. However, during daylight savings time when the sun and body clock are at midday, the social clock is at 1pm.

Therefore, changing the clocks on the wall during daylight savings time causes a one-hour mismatch between our body clock and social clock.

Though a few extra hours of daylight after work or school are enjoyable for some, it may be a false economy. This disconnect between what time our body clock thinks it is and the actual local time has effects that are similar to chronic jetlag. More and more studies show this mismatch can affect our health, leading to chronic fatigue and depression and increased risks of developing diabetes, obesity, heart disease and possibly some types of cancer.

These conditions all fall under the umbrella of chronic inflammatory diseases and a mismatched body clock can lead certain cells in the body to produce higher levels of inflammatory molecules, which could be one of the reasons to link daylight savings time with increased chronic inflammatory disease.

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Another big factor affecting our health is sleep. The switch to daylight savings time causes acute sleep deprivation, which leads to worse performance, more negative moods and higher incidence of traffic accidents. The incidence of heart attacks and strokes is higher at this time also in comparison to the rest of the year. One study found that the extra hour of light in the evening led to 19 minutes less of sleep, which had significant negative effects on obesity, cardiovascular disease, diabetes and breast cancer. These effects may last throughout daylight savings time because the body clock never adjusts to the new social time. It always tracks with the sun clock, which is always one hour behind the social clock during daylight savings time.

### Efficient performance

Abolishing daylight savings time and remaining on standard time will ensure that the sunrise in wintertime will occur before most people travel to work or school. As such, individuals on their commute will be exposed to the morning light that is essential for the daily adjustment of our body clocks to the sun clock. Without this morning “light kick”, our body clocks will drift and will no longer perform efficiently across the day.

Unless national parliaments veto it, a European Union directive will abolish daylight savings time in 2021. Member states will have the choice to remain on either standard (or “winter”) time or permanent daylight savings time (“summer time”).

Policymakers need to review the scientific evidence and make this a health issue for their citizens, not a political issue. We must recognise the absolute importance of sunlight in controlling our body clocks and thus our health, wellbeing and performance. There are no scientific or medical reasons for daylight savings time – quite the contrary, in fact. If we want to improve human health and wellbeing from its current state, we need to stop ignoring our body clock, abolish daylight savings time and stay on standard time.

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