

Chronobiologists advise flexible school starts for students

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They fall asleep too late at night, and are rudely expelled from dreamland by the shrill tones of the alarm clock in the morning. Classes begin early and they must be prepared to show their mettle. Adolescents are constantly sleep deprived, a phenomenon that can be observed worldwide. In addition, the problem is no longer confined to certain

personality types and therefore of individual concern, it has become a public health issue. Indeed, the Centers for Disease Control and Prevention in the US have officially designated the matter as a public health concern. The consequences of chronic sleep deficit include not only a reduced ability to concentrate but also an increased accident risk to and from school. Studies have also detected higher risks for depression, obesity, diabetes and other chronic metabolic diseases. In light of these findings, it is hardly surprising that calls for school classes to begin later in the morning are becoming louder.

But would such a move do any good? Would a later [school](#) start actually change the sleep of adolescents for the better, and enhance their cognitive performance in class? So far, there have been few research studies of this question in Europe. A group of chronobiologists in Munich, led by Eva Winnebeck and Till Roenneberg, studied the issue at a [high school](#) in Germany that made an exceptional change to their starting time arrangement. This school instituted a system that allows senior students to decide day by day whether or not to attend the first class of the day or to come to school an hour later. This form of flexible scheduling is possible because the school has adopted what is known as the Dalton Plan (for which the institution won the German School Prize in 2013). A major component of this idea (which originated in the US) is that students are required to tackle parts of the school curriculum independently in the context of project phases. The school timetable allots 10 hours per week for these activities, half of which are scheduled for the first class at 8 a.m. Students who choose to skip this class must work through the material in their free periods during the day or after the end of the regular school day.

Students from the three senior grades (i.e. 15- to 19-year-olds) served as the study population for LMU researchers from the Institute of Medical Psychology. For three weeks before and six weeks after the introduction of the flexible system in the school in Alsdorf, the team observed how

the students reacted and adapted to the change. The participating students were asked to record their sleeping patterns daily, and around half of them were equipped with activity monitors for objective sleep monitoring. At the end of the study, the participants provided information on their sleep, their overall level of satisfaction and their ability to concentrate in class and while studying course content.

The team was initially surprised by the fact that the students made relatively little use of the new-found freedom to start school later, says Eva Winnebeck. On average, they chose to miss out on the first class twice a week. On these days, they slept more than an hour longer than usual, irrespective of gender, grade, chronotype or frequency of later school starts. In other words, nearly all of the students involved in the project benefited when going later. In contrast to the era of rigid school start times, however, the switch to flexible starts did not result in a significant increase in the overall duration of students' sleep.

Nevertheless, the students were very satisfied with the new scheduling model. The vast majority of students reported that they slept better and were better able to focus on the course material in school. "Perhaps the very fact that one can decide for oneself when to get up in the morning is sufficient to break the cycle and reduce the pressure," says Winnebeck. According to the authors of the study, which appears in the journal *Sleep*, "flexible systems are a viable alternative for implementing later school starts to improve teenage sleep." But they also underline the importance of actively encouraging students to make use of the option to start the school day later.

More information: Eva C Winnebeck et al. Later school start times in a flexible system improve teenage sleep, *Sleep* (2019). [DOI: 10.1093/sleep/zsz307](https://doi.org/10.1093/sleep/zsz307)

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