

Later school start times may produce benefits for students but more evidence is needed



There is a positive association between later school start times and academic and psychosocial outcomes.

What is the aim of this review?

This Campbell systematic review examines the impact of later school start times on student academic performance, mental health and family and community outcomes. The review summarises findings from 17 reports of 11 interventions in six countries.

Later school start times may have beneficial effects for student mental health and academic performance. There appear to be some positive effects from later start times, but the evidence base is too weak to have confidence in the findings. Additional research is needed.

What did the review study?

Later school start times have been implemented around the world as a means of avoiding the potentially negative impacts that early morning schedules can have on adolescent students. Even mild sleep deprivation has been associated with significant health and educational concerns: increased risk for accidents and injuries, impaired learning, aggression, memory loss, poor self-esteem, and changes in metabolism. This review examines the effects of later start times on these outcomes.

What studies are included?

Included studies were randomized controlled trials, controlled before-and-after studies, and interrupted time series studies with data for students aged 13 to 19 years and that compared different school start times. Studies had to report either primary outcomes of interest (academic outcomes, amount or quality of sleep, mental health indicators, attendance, or alertness) or secondary outcomes (health behaviors, health and safety indicators, social outcomes, family outcomes, school outcomes, or community outcomes) were eligible.

The evidence base covers 17 studies reporting on 11 unique interventions with 297,994 participants. Six studies took place in the USA, and one study each was in Brazil, Canada, Croatia, Israel, and New Zealand.

What are the main results in this review?

Later school start times appear to increase sleeping time. Some of the studies suggest there may be a positive association between later



How up-to-date is this review?

The review authors searched for studies published up to February 2016. This Campbell Systematic Review was published in December 2017.

What is the Campbell Collaboration?

The Campbell Collaboration is an international, voluntary, non-profit research network that publishes systematic reviews. We summarise and evaluate the quality of evidence about programmes in the social and behavioural sciences. Our aim is to help people make better choices and better policy decisions.

About this summary

This summary was prepared by Howard White (Campbell Collaboration) based on the Campbell Systematic Review 2017:15 Later school start times for supporting the education, health, and well-being of high school students by Robert Marx, Emily E Tanner-Smith, Colleen M Davison, Lee-Anne Ufholz, John Freeman, Ravi Shankar, Lisa Newton, Robert S Brown, Alyssa S Parpia, Ioana Cozma, Shawn Hendrikx (10.4703/csr.2017.15). The summary was redesigned and proofread by Tanya Kristiansen (Campbell Collaboration). Financial support from the American Institutes for Research for the production of this summary is gratefully acknowledged.

school start times and academic and psychosocial outcomes. The evidence on absenteeism and student alertness is mixed. However, the quality of the evidence and comparability of studies is low.

Adverse effects may be reduced interaction with parents, and staffing and scheduling difficulties. There is insufficient evidence to draw firm conclusions concerning these possible adverse effects.

Later school start times appear to be associated with increased sleeping time, but the evidence on absenteeism and student alertness is mixed and incomplete.

What do the findings in this review mean?

This systematic review on later school start times suggests several potential benefits for this intervention and points to the need for higher quality primary studies. However, because of the limited evidence base, we could not determine the effects of later school start times with any confidence.

