

DATE: September 27, 2011
TO: Board of Trustees
FROM: Edgar Schmidt, Superintendent of Schools
SUBJECT: Sleep Deficit and Impact on Students (Response to TT #98)
ORIGINATOR: Tanni Parker, Assistant Superintendent
RESOURCE STAFF: Sandy Forster, John Macnab

ISSUE

At the May 24, 2011 board meeting, Trustee Spencer requested the following information: Summarize recent research into the sleep deficit problem affecting many junior high and high school students. Also, provide and briefly analyze some options the District could implement to help address this issue.

BACKGROUND

There is a growing body of evidence that many adolescents are sleep deprived during the school year. This deprivation has been associated with absenteeism, behaviour problems and reduced academic achievement. Some studies have suggested that early start times for school can contribute to the problem, but there also appear to be other relevant factors including diet, physical activity, mental health and exposure to sunlight. Research indicates that the problem of sleep-deprivation typically begins at around Grade 10.

KEY POINTS

- Studies in Minnesota in 1997-1998 noted marked improvement in achievement and behaviour of high school students when the school start time was changed from 7:15 a.m. to 8:40 a.m.
- A similar result was found by comparing two high schools in Wisconsin, one beginning its day at 7:35 a.m. and the other at 8:35 a.m., again with improved results in the late-starting school.
- It is worth noting that these times are typical of American research, with schools beginning the day before 7:30 a.m. being identified as “early-starting” and those that begin the day after 8:30 a.m. being identified as “late-starting”.

CURRENT SITUATION

For the 2011-2012 year, all but two Edmonton Public high schools begin after 8:30, with most starting at or around 9:00 a.m. The two early starting schools are Old Scona, which begins at 8:02 a.m. and the Academy at King Edward, which has an optional leadership class beginning at 8:00 a.m. District junior highs all begin after 8:20 a.m. with the average start time being 8:42.

With the two exceptions noted, these start times all fit well within the guidelines recommended by researchers. It has been suggested that latitude and time of year may play a role in the optimal start times for students, but there does not appear to be any empirical evidence on which to base recommendations for Edmonton. Finally, student waking times are influenced by transportation and family matters, and in many cases are independent of school start time.

ATTACHMENTS & APPENDICES

APPENDIX I Research References

SF:ja

RESEARCH REFERENCES

- Carskadon, M.A., Wolfson, A.R., Acebo, C., Tzischinsky, O., and Seifer, R. (1998) Adolescent sleep patterns, circadian timing, and sleepiness at a transition to early school days. *Sleep* 21(8):871-881,
1998.<http://sleepforscience.com/stuff/contentmgr/files/5598e427689cd7382cdb641dbb672c2a/pdf/carskadonschltrans1998.pdf>
- Dexter D, Bijwadia J, Schilling D, Applebaugh G. (2003). Sleep, sleepiness and school start times: a preliminary study; *WMJ: Official Publication of the State Medical Society of Wisconsin*. Vol. 102. pp. 44–6.
http://www.wisconsinmedicalsociety.org/_wms/publications/wmj/pdf/102/1/44.pdf
- Eliasson A, Eliasson A, King J, Gould B, Eliasson A. (2002). Association of sleep and academic performance. *Sleep Breath* 2002;6:45–8.
<http://web.mit.edu/writing/2010/July/EliassonEtAl2002.pdf>
- Hansen, M., Janssen, I., Schiff, A., Zee, P.C., Dubocovich, M.L. (2005). The impact of school daily schedule on adolescent sleep. *Pediatrics*. 115: 1555-1561.
<http://pediatrics.aappublications.org/content/115/6/1555.full.pdf+html>
- Kirby M, Maggi, S & D'Angiulli (2011). School start times and the sleep-wake cycle of adolescents: A Review and critical evaluation of available evidence. *Educational Researcher*. March 2011 vol. 40 no. 2 56-61.
http://www.aera.net/uploadedFiles/Publications/Journals/Educational_Researcher/4002/56-61_03EdR11.pdf