



**To: Local League Presidents** **9/2005**  
**From: LWVCT School Start Time Concurrence Steering Committee**

The 2005 LWVCT Convention approved a 1-year concurrence study of a statewide position favoring later school start times for Connecticut adolescents. The concurrence study is based upon an original study by the LWVWilton. This study group examined the body of adolescent sleep research which has provided the impetus for a national movement toward later school start times for adolescents and offered a blueprint for assessing the feasibility of such a change for any school district; in their case, for Wilton.

A statewide position will guide League advocacy for future state legislation or state policies. It does not require each local League to begin an advocacy campaign in their community for later school start times for teens. Instead, like many LWVCT positions, it would provide the justification and state League “umbrella” for local Leagues who may wish to advocate for change in their towns. We believe that the Concurrence Statement is structured in such a way to support local flexibility in implementation because of each community’s differing needs and resources.

The League of Women Voters of Connecticut is providing local Leagues with this attached file of information—background research, references, a sheet of FAQs, online resources, and other suggestions—to help League members make an informed decision on the LWVCT school start time concurrence. The material in this packet reviews:

- the scientific and medical research on sleep deprivation’s detrimental effects on adolescent health, safety, and learning and
- the data showing the benefits of later school start times—and more sleep—for adolescents.

The School Start Time Steering Committee suggests several options to familiarize your membership with this study:

- Organize 2-3 meetings for members’ discussion.
- Host a guest speaker—we will help!
- Arrange a brown bag lunch with the School Start Time Steering Committee.
- Sponsor a public forum with guest panelists.

Research shows that adolescents are the most sleep deprived segment of our population because of a mismatch between their biologically-determined sleeping patterns and the start of the school day. A later start time—at least after 8 am—will permit adolescents to learn when they are most alert and attentive and will support adolescent health and safety.

Please feel free to contact us with any questions. Please review this packet AND the entire text of the Wilton League of Women Voters School Start Time Study Report online at [www.wiltonlww.org](http://www.wiltonlww.org) . Contact the Committee at [jwhitney@snet.net](mailto:jwhitney@snet.net) or [Catharinekempson@hotmail.com](mailto:Catharinekempson@hotmail.com) .

Sincerely yours,

**LWVCT School Start Time Concurrence Steering Committee**

Catharine Kempson, (Wilton), Co-Chair  
Lt. Governor Kevin B. Sullivan (Greater Hartford)  
Sandy Fry (Greater Hartford)  
Louise Herot (Wilton)

Janice Whitney, (Wilton)Co-Chair  
Lisa Bogan (Wilton)  
Amy Harris (Wilton)  
Carole Young-Kleinfeld (Wilton)

*Please submit your concurrence statement sheet by April 1, 2006 to the LWVCT Office.*

# School Start Time Study Concurrence

***Adolescent Sleep Research.*** In recent years, the growing field of sleep research, both here and abroad, has made startling discoveries about adolescents. This has raised an issue so compelling the LWVCT is considering a new action position. Leading universities—Brown Medical School, Stanford University, Cornell, and Holy Cross—have provided much of the research in the U.S.

Adolescents require 9.5 to 10 hours of sleep each night. With puberty, the onrush of hormonal changes rewires the cerebral cortex of the brain. Melatonin, the “drowsiness” hormone that prepares the body for sleep, is secreted later in the evening for adolescents than for younger children, shifting the teenage sleep cycle back 2 hours. A natural fall-asleep time of 10:30-11:00 p.m., combined with early rise times for school, results in extreme sleep deprivation in adolescents with negative consequences for their health, safety and learning.

***Learning.*** Lack of sleep in adolescents reduces the ability to master learning-related skills. It curtails memory, concentration, critical thinking, complex planning, and creative thought. Adequate sleep is necessary for the brain to properly process and retain learning. Sleepier students do worse in school. Learning improves with restored sleep.

***Safety.*** Sleep deprivation kills, particularly behind the wheel. Drivers between the ages of 16 and 25 are involved in 55% of all “fall asleep” crashes — single car accidents where there are no skid marks, no mechanical failures, no weather concerns, and no other apparent cause. Those who are most at risk are the busiest, the hardest working, the most overcommitted, and the highest achieving teens.

***Health.*** Sleep deprivation affects behavior, health, and use of stimulants. Sleep deprivation increases the effects of blood alcohol twofold and can lead to increased use of stimulants as sufferers “self-medicate” in efforts to control their biological clocks and to counteract their lack of sleep. In students, lack of sleep correlates with increased incidence of depression, can impair the ability to control emotional responses and can increase impulsivity. Signs of sleepiness, such as the inability to stay focused, pay attention, and complete tasks can resemble the signs of Attention Deficit/Hyperactivity Disorder.

***Studies of Later Start Times.*** Although the scientific data on teenagers and sleep deprivation are harrowing, the problem has an easy fix. Since teens can’t fall asleep at night, let them sleep a little later in the morning when they need it the most. Align the school day with adolescents’ biological clocks and natural sleep patterns. Wait until at least after 8am to start school.

In two large research studies evaluating the later school start time experience both in urban Minneapolis and Edina, an affluent suburb, the University of Minnesota’s Center for Applied Research and Educational Improvement found that students really do get more sleep, earn higher grades overall, and fall asleep in class less frequently when school starts later. The studies also found that attendance rose, dropout rates fell, and tardiness declined. Data from both urban and suburban communities in Minnesota—and from Wilton, CT—show no significant change in costs of transportation or in participation in extra-curricular activities, after changing school start times.

***Typical objections***—The Steering Committee has identified two types of possible objections to a statewide LWVCT position: those with statewide applicability and those with local applicability. The Committee believes that local concerns will be relevant only if a local League opts to lobby their Board of Education for a school start time change for their local students. In the case of local action, a logistical concern for one community may not pose a problem for others.

***Statewide.*** Some might argue that adopting a statewide position favoring later school start times for adolescents undercuts local autonomy or may indirectly encourage the imposition of a financial burden on cities and towns.

Although each Connecticut school district is autonomous in many ways, educational and social policy direction often originates from both the state legislature and from the CT Department of Education. Both have issued educational directives in several areas that some might consider local prerogatives: student health promotion, reports on bullying, healthy snacks, curriculum items, silent meditation, and even athletics.

Determining whether adopting a statewide LWVCT policy may inadvertently support a financial burden on CT communities is not an easy task, since local resources and challenges, especially in transportation, vary from town to town. As mentioned in the Minnesota research, actual experience in both urban and rural settings has shown this concern to be unfounded so far in the communities that have worked out cost-effective ways of implementing a later school start time for teenagers. The Connecticut General Assembly’s nonpartisan Office of Legislative Research has itself confirmed these findings in their report, based upon review of the research and communications with Minnesota officials. However, because each community has different fiscal considerations, federal or state grant

assistance may be a future option to defray local transportation costs, if needed. In fact, several years ago, U.S. Representative Zoe Lofgren of California proposed this very idea to Congress in her “Z’s to A’s Act”.

***Local.*** Local logistical challenges become relevant only if a local League chooses to advocate locally for a change, under the auspices of a future LWVCT position. Each community has unique local concerns about implementing school start time changes. These may include sports schedules, costs of transportation, re-scheduling bus routes, or scheduling after-school activities. Please keep in mind that a problem for one community may not be a concern for others. If a local League wishes to advocate for their local Board of Education to develop a plan for changing the start times for adolescent students, Wilton LWV’s School Start Time Report at [www.wiltonlww.org](http://www.wiltonlww.org) provides a blueprint for analyzing the “problem potential” of local logistical challenges.

***Need for a LWVCT Position*** Should the League of Women Voters of Connecticut adopt a statewide position favoring later school starting times for adolescent students? Regardless of whether a local League may wish to advocate locally for change, adopting a state position enables the LWVCT to participate in the discussion of any proposed legislation or regulations. In 2001, the legislature considered mandating later school start times and could do so again. With many national and statewide groups, such as the National Sleep Foundation, the CT Thoracic Society, and the Connecticut PTA, speaking in favor of later school start times, the LWVCT should be ready to take action if similar legislation arises. In the future, should a local League wish to take action locally, it would have a state position on which to base its advocacy.

To summarize, the League of Women Voters of Connecticut is asking local Leagues to concur with a state position supporting modified school start times for Connecticut adolescents. This position will guide League advocacy for specific legislation or state policies. There is more information available to local Leagues, including the entire text of the Wilton League of Women Voters’ School Start Time Study, on the Web at [www.wiltonlww.org](http://www.wiltonlww.org).

### **Terminology**

**Adolescence**—the transitional stage of development between childhood and full adulthood. A biological and social phenomenon with individual and cultural variation, adolescence is generally considered to begin around age 12-13, and end at 17-18 in the United States. In the onset of adolescence, children usually complete elementary school and enter secondary education, such as middle school or high school.

**Circadian rhythms**—daily cycles of alertness and sleepiness. The Circadian rhythms of teenagers undergo a phase delay that keeps them awake when younger children are falling asleep.

**Melatonin**—the drowsiness hormone that increases to prepare the body for sleep and subsides to allow awakening. Because of normal biological adolescent sleep patterns, research shows that the melatonin levels for adolescents are still elevated well into the school day.

**Sleep-debt**—cumulative sleep deprivation. Sleep-debt causes teenage weekend binge-sleeping. People must catch up on lost sleep for optimal brain functioning to occur.

# School Start Time Study—Concurrence Statement

The League of Women Voters has long supported policies and programs that promote quality education as well as the health, well-being, and safety of all children. Research shows that modifying school start times in accordance with the biologically-determined sleep patterns of adolescents is associated with increased school attendance, higher grades, lower drop-out rates, less tardiness, and fewer fall-asleep car crashes by young drivers. In order to set a high priority on the health and safety of Connecticut’s adolescent students and to offer them the opportunity to learn when they are most alert and receptive, the League of Women Voters of Connecticut supports policies and practices that facilitate the alignment of school start times with adolescent sleep patterns. Specifically, we believe that:

	Agree	Disagree
1. Adolescent students – in middle school, junior high, and high school—would benefit academically, socially, and physically from starting school no earlier than 8 am.	_____	_____
2. Public schools in Connecticut—junior high schools, middle schools, and high schools—should delay academic instruction until after 8 am.	_____	_____
3. The State of Connecticut should support local efforts to delay the school start times until after 8 am for adolescent students through consultation and technical assistance.	_____	_____
4. State policies should be flexible enough to allow variation in local plans to implement later school start times for adolescents.	_____	_____
5. The state legislature should pass legislation prohibiting academic instruction before 8 am for adolescents in junior high, middle school, and high school.	_____	_____

**Name & Title (if any)** \_\_\_\_\_

**League** \_\_\_\_\_ **No. of Members Participating** \_\_\_\_\_

*Please*

- *list names of participating members on reverse*
- *return your responses to the LWVCT Office, 1890 Dixwell Ave., Hamden, CT 06514 no later than April 1, 2006.*

## **School Start Time Concurrence Steering Committee Frequently Asked Questions—September 2005**

### **1. Is this a League issue that has statewide applicability?**

Absolutely. *The Too Sleepy to Learn?* study by the WiltonLWV started after a legislative proposal that would have mandated later start times statewide for all public schools. At that time, because the LWVCT had not studied and had no position on the issue, it could not take action on the proposal; nor could any local League. This is one of the strongest arguments for a statewide League consensus.

In the past, the Connecticut legislature and Department of Education have issued statewide policy directives and mandates to schools on health, nutrition, bullying, curriculum, and even athletics. With other groups, such as the state's medical associations and the National Sleep Foundation, supporting later school start times for adolescents, legislative interest will continue. As a matter of fact, the Connecticut PTA has made later school start times a legislative priority. By participating in this concurrence study now, League members can become well informed and able to contribute to local or state deliberations on this topic. Also, a statewide position allows for proactive LWVCT collaboration with legislators or policymakers on any future initiatives that may arise.

The Steering Committee believes that what's right for Wilton teenagers is right for all Connecticut teenagers. The issue is universal – sleep deprivation affects adolescents in Hartford in the same way as those in Wilton, New Haven, or Greenwich. A strong statewide position will enable each local league to focus on the real challenge in the future, should they wish to do so; that is, how best to tailor a change in school start times to fit their community and how best to educate the public on the reasons for doing so. Because of sleep deprivation's effects on adolescent health, safety, and learning, our suggested statewide position statement is consistent with the LWVCT goal of promoting quality education and with the LWVUS's support for the best interests of children at risk.

### **2. Why don't parents just make their teenagers go to bed earlier?**

Parents may be able to wrestle their teenagers into bed earlier, but they cannot make them sleep. In fact, one of the first signs of puberty is change in sleep patterns. Starting at puberty, all human beings undergo hormonal changes, biologically necessary for growth. Puberty resets the biological clock, shifting the sleep cycle later by as much as two hours, for a fall-asleep time of 11 pm for the average teenager. Since adolescents require 9.5 to 10 hours sleep at night, "early to bed and early to rise" only makes a teenager sleep-deprived.

### **3. Why not leave decisions about school starting times to local school jurisdictions?**

There are several issues here: *whether* to advocate for later start times in CT schools, *how* best to support change, and *how* to implement change.

Change is difficult in any bureaucracy, regardless of size or mission. Pressure for reform typically originates not from within, but from outside forces—parent groups, taxpayers, voters, or citizens organizations like the League—who lobby for change based on their research and positions. The School Start Time Steering Committee believes that the state LWV should advocate for later start times in Connecticut schools. How far this advocacy extends will depend on members' answers to the Concurrence Statement questions.

Certainly, in implementing school start time changes, certain logistics must be left to local boards of education and local school administrators. They are the professionals best equipped to assess local priorities, financial concerns, and resources. School districts around the nation have structured a later start time in different ways: flipping schedules with elementary schools, adding more buses, staggering school openings, or providing students a choice of opening times.

#### **4. Have there been any studies of actual benefits for adolescents from later school start times?**

Yes, several. Here are a few of the most persuasive studies.

The University of Minnesota evaluated delayed start times for high school in both Minneapolis and Edina (an affluent suburb) through two massive research projects, in 1998 and 2001. Some statistically significant findings of these reports were:

- students with later start times reported getting more actual sleep
- drop out rates decreased each year
- tardiness and absenteeism were down
- teachers reported fewer students as falling asleep in class
- students received higher grades overall at later-starting schools

In 2000, a University of Kentucky study examined auto collision statistics in Fayette County, Kentucky, a year after the school county district had changed their high school start times from 7:30 to 8:30 am. The Kentucky research found that crash rates for 16-18 year olds in Fayette County dropped significantly, while crash rates for teenagers increased in the rest of the state. The study also confirmed that, with the change in start times, Fayette County students actually received an average of 50 minutes of extra sleep per night.

Recently in Connecticut, researchers from the CT Thoracic Society and Norwalk Hospital's Center for Sleep Disorders, in completing a "before and after" study, determined that Wilton's high school students are, in fact, getting almost an hour more sleep than previously and are not staying up any later in reaction to a later start time. Anecdotally, during this period of time, Wilton High School students have not only continued to excel in their curricular work but, as a group, have achieved standardized test scores which are even better than in previous years.

#### **5. How did Wilton structure its school start time change?**

There are lots of ways to restructure the school schedule to align with the teenage biological clock. Wilton switched the high- and middle-school opening times with that of its upper elementary school. Edina, Minnesota, switched its high school start time with its elementary schools. Minneapolis gave parents a choice of late- or early-opening high schools.

#### **6. Won't a change in school start times increase local transportation costs? What did it cost Wilton?**

Wilton implemented this change with no extra cost to the transportation budget. Edina, Minnesota, reported no impact on their transportation budget either. However, every community has different resources and transportation considerations. When evaluating different transportation options and the costs/benefits of each, a community must assess its resources, its school configuration, family preferences, traffic patterns, and student habits against its commitment to help students make the most of their time in the classroom. Strategies such as staggered school opening schedules, reversal of elementary schedules with middle and high school start times, varying elementary times to allow parents a choice of opening times, adding additional bus runs, or shifting all schools in a district to a later start time are just some of the options that other communities have explored to keep costs down.

#### **7. What about the impact on extracurricular activities?**

The University of Minnesota's research finds that the Minneapolis suburb of Edina has actually seen an increase in participation since implementing later start times. It estimates that more than 90% of its students participate in some form of extracurricular or sports activities in the course of a year. In Wilton, the percentage has been estimated at more than 75%. Because many student organizations and clubs meet weekly or monthly -- frequently outside of school hours, in the morning or evening, a shift in the school day schedule should affect these organizations only minimally, if at all.

## **8. Sports?**

A school system can both maintain strong participation in interscholastic athletics and align school schedules with adolescents' biological clocks. In developing a plan for later school start times, a school district should consider creative, "out-of-the-box" approaches to the scheduling, duration, and frequency of athletic practices. For instance, morning practices, already common for swim and hockey teams, would require only those athletes choosing to play a sport to wake up early, not the entire student body. The cooperation of interscholastic leagues in scheduling games is important. Some towns have granted team members an occasional early dismissal for travel time to out-of-conference away-games. Interestingly, school systems, including Wilton, which have made the change to later start times, continue to enjoy robust participation in athletics and a great deal of success on the field.

## **9. Have there been follow up surveys? Is everyone happy with the change?**

At the close of the first year of the new start time, Wilton's PTAs surveyed the high school, middle school, and upper elementary school communities to determine satisfaction with the new start time. Responses at all three schools were overwhelmingly positive. Also, the Norwalk Hospital Center for Sleep Disorders did surveys of WHS students' sleep patterns before and after the time change. Wilton students report getting an average of 55 minutes more sleep each night after the change. The League of Women Voters has held morning coffee meetings with the principals from all three affected schools to gauge progress over the past two years, with very positive reports from all.

During the first year, there were occasional complaints about athletes being late for "away" athletic events. Also, during the second year, in response to parental concerns, the Board of Education adjusted the early bus pick-up times for Wilton's upper elementary school. More importantly, however, no one questions the benefits of the change for Wilton's middle school and high school and no one has recommended returning to the former schedule.

## **10. Where can my League and I learn more about adolescent sleep patterns and school start times?**

You can:

- read the full Wilton LWV School Start Time Study Report -- It's on the web at [www.wiltonlwg.org](http://www.wiltonlwg.org) (Check the reference list, too, if you want more detailed accounts of the science);
- invite our Steering Committee to come to a meeting to talk about the concurrence study;
- conduct your own mini-study to look impartially at the research and consider whether it is appropriate for a state position, regardless of whether your local community wishes to undertake a change;
- sponsor a community forum or a community conversation—perhaps with another local group—with a panel of speakers, including sleep doctors, the School Start Time Steering Committee members, and other experts.
- Contact our committee for further information.

## **LWVCT School Start Time Concurrence Study--Annotated Resource List for Further Information**

1. Carskadon, M. PhD, Brown University School of Medicine. *When Worlds Collide*, *Phi Delta Kappan*. 1999. 80(5). Dr. Carskadon is Professor of Psychiatry, Brown University School of Medicine and Director, Sleep Research Laboratory at Bradley Hospital, Providence, RI
  2. Carskadon M., PhD, Sleepiness in adolescents and young adults. Proceedings of the Highway Safety Forum on Fatigue, Sleep Disorders and Traffic Safety. State University of New York, Institute for Traffic Safety Management and Research; 1993(a) Dec 1. pp. 28-36.
  3. Kyla Wahlstrom, Ph.D., Editor, *Adolescent Sleep Needs and School Starting Times*. Phi Delta Kappa Educational Foundation, Bloomington, IN. 1999. This book examines sleep needs of adolescents and discusses the implications of these needs for school starting times. The book is a collection of five articles that appeared in a special section of the Phi Delta Kappan in January 1999. Contributors are Kyla L. Wahlstrom, Mary A. Carskadon, Ronald E. Dahl, Gordon D. Wrobel, Patricia K. Kubow, and Amy E. Bemis. ISBN-0-87367-817-6.
  4. Dragseth, Kenneth A. *A Minneapolis Suburb Reaps Early Benefits From a Late Start*, *The School Administrator* (Web Edition) March 1999. The superintendent of schools in Edina, MN reports on his district's experience in implementing a later school start time. <http://www.edina.k12.mn.us/news/reports/latersstart/index.htm>
  5. Wahlstrom, Kyla, Ph.D., Associate Director and Research Associate, University of Minnesota, Center for Applied Research and Educational Improvement (CAREI), *School Start Times Studies*, November 1998 and August 2001. <http://education.umn.edu/CAREI/Topic-Schedule.html>
  6. National Sleep Foundation (NSF), *Adolescent Sleep Needs and Patterns*, Washington, DC, 1999. [www.sleepfoundation.org](http://www.sleepfoundation.org)  
A comprehensive review of adolescent sleep research. Recommendations:
    - Delay school start times for adolescents
    - Establish sleep-smart schools with sleep integrated into health curriculum
    - Educate school personnel to recognize signs of adolescent sleep deprivation
    - Create sleep-smart homes. Parents/ guardians must make sufficient sleep and a regular sleep schedule a top priority for their adolescents.For more, see section on Teens and Sleep.
  7. Public Broadcasting Systems, *Frontline: Inside the Teenage Brain*, Interview with Mary Carskadon, PhD, one of the top adolescent sleep researchers in the US. <http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/from/>. 2002.
  8. National Highway Traffic and Safety Administration (NHTSA), *Drowsy Driving and Automobile Crashes*, NCSDR/NHTSA Expert Panel On Driver Fatigue And Sleepiness, April 1998. [http://www.nhtsa.dot.gov/people/injury/drowsy\\_driving1/Drowsy.html](http://www.nhtsa.dot.gov/people/injury/drowsy_driving1/Drowsy.html)
  9. National Institutes of Health, National Institute of Mental Health. *How biological clocks work*. 1999, *NIH Publication No. 99-4603*. National Institutes of Health, Washington, DC.  
The National Center on Sleep Disorders Research (NCSDR), created in 1993, is the main coordinating unit for all sleep research within the NIH. The NCSDR is part of the National Heart, Lung, and Blood Institute. <http://www.nhlbi.nih.gov/about/ncsdr/index.htm>
  10. Born, Jan, Ullrich Wagner, Steffen Gais, Hilde Haider, & Rolf Verleger "Sleep Inspires Insight". *Nature* 427, 352 - 355 (22 January 2004) .This study, reported in 2004, was important because it links creativity and problem-solving with adequate sleep. Study participants had to perform a task that required "insight" not just memorization or repeating a newly-learned skill. Hence, the link to creativity and problem-solving. See an abstract at [http://www.nature.com/nature/journal/v427/n6972/abs/nature02223\\_fs.html](http://www.nature.com/nature/journal/v427/n6972/abs/nature02223_fs.html) and read a description at <http://www.cbsnews.com/stories/2004/01/21/tech/main594879.shtml>
- Carskadon M., PhD, "Sleep and Circadian Rhythms in Children and Adolescents: Relevance for Athletic Performance of Young People", *Clinics in Sports Medicine*, May 24, 2005. Also see WebMD "How Sleep, or Lack of, Affects Teen Athletes" at <http://my.webmd.com/content/article/105/107981.htm>
- Carnegie Council on Adolescent Development. *Matter of Time: Risk and Opportunity in the Nonschool Hours*. Report of the Task Force on Youth Development and Community Programs New York: Carnegie Corporation of New York. (1992)
- Danner FW. High school start times and teen auto accidents. *SLEEP* (Abstract Supplement) 2002; 25: A86-87.
- Huntley M, Centybear T: Alcohol, sleep deprivation and driving speed effects upon control use during driving. *Hum Factors* 1974; 16:19-28.