CHALLENGE SUCCESS

Do You Know?

High School

Academic Stress and Mental Health

- Independent school 11th grade students experience very high levels of chronic stress and the pressure to achieve academically, in order to boost the chances of admission to top-tier colleges and universities, constitutes the greatest source of stress. Parental expectations, coupled with demanding academic curricula, appears to convey to students that the main purpose of their high school experience is admission to a selective college or university; this futurist-oriented culture may push some students to use substances to cope with their stress.

  Source: Leonard, N.R., Gwadz, M.V., Ritchie, A., Linick, J.L., Cleland, C.M., Elliott, L. & Grethel, M. (2015). A multi-method exploratory study of stress, coping, and substance use among high school youth in private schools. *Frontiers in Psychology.* Retrieved from: http://dx.doi.org/10.3389/fpsyg.2015.01028

- Over 17 million children in the U.S. under 18 have or have had a diagnosable psychiatric disorder, 32% of which are anxiety disorders. The median age at which a child is diagnosed with an anxiety disorder is 6 years old.

  Source: Child Mind Institute. Children's Mental Health Report. (2015). Retrieved from: http://www.speakupforkids.org/ChildrensMentalHealthReport_052015.pdf

- The biggest influence of mothers' and parents' time with children may be during adolescence and related to fewer delinquent behaviors and better outcomes.

  Source: Milkie, M. A., Nomaguchi, K. M. and Denny, K. E. (2015), Does the Amount of Time Mothers Spend With Children or Adolescents Matter?. *Journal of Marriage and Family*, *7*, 355–372. doi: 10.1111/jomf.12170

- School-age children, (5 to 18 year-olds) were shown to have an increase in ER visits for headaches in the fall. The increase in fall headaches may be attributed to a number of factors, including academic stressors, schedule changes and an increase in extracurricular activity. Other common headache triggers include lack of adequate sleep, skipping meals, poor hydration, too much caffeine, lack of exercise and prolonged electronic screen time.

  Source: Palaknis, A. & Heyer, G. (2015). Comprehensive Headache Clinic at Nationwide Children's Hospital. Retrieved from: http://www.nationwidechildrens.org/news-room-articles/more-evidence-supports-that-kids-headaches-increase-at-back-to-school-time?contentid=145757

- Multiple factors are shown to predispose children to positive outcomes in the face of adversity: one stable, caring, and supportive relationship with an adult; a sense of mastery over life circumstances; strong executive functioning and self-regulation skills; and the supportive context of affirming faith or cultural traditions.

  Source: National Scientific Council on the Developing Child. (2015). *Supportive Relationships and Active Skill-Building Strengthen the Foundations of Resilience: Working Paper 13*. http://www.developingchild.harvard.edu

- Learning to cope with manageable threats (like failing a test or forgetting one's line's in a play) to our physical and social well-being is critical for the development of resilience.

  Source: National Scientific Council on the Developing Child. (2015). *Supportive Relationships and Active Skill-Building Strengthen the Foundations of Resilience: Working Paper 13*. http://www.developingchild.harvard.edu

- Resilience results from the interaction of an intrinsic resistance to adversity AND a strong relationship with important adults in family and community; it is the interaction of biology and environment that helps build the capacity to cope with adversity.

  Source: National Scientific Council on the Developing Child. (2015). *Supportive Relationships and Active Skill-Building Strengthen the Foundations of Resilience: Working Paper 13*. http://www.developingchild.harvard.edu

- A high-quality co-parenting relationship has been found to be important for supportive father-adolescent relationships and children's positive adjustment.

  Source: cited in Jia, R., Kotila, L.E., & Schoppe-Sullivan, S.J., (2012). Transactional relations between father involvement and preschoolers socioemotional adjustment. *Journal of Family Psychology, 26*(6), 848-857.

- The quality of adolescents' relationship with their parents plays a critical role in the development of internalizing (i.e., depression) and externalizing (i.e., tobacco, drug, or alcohol use) symptoms.

  Source: Kim-Spoon, J., Longo, G.S., & McCullough, M.E. (2012). Adolescents who are less religious than their parents are at risk for externalizing and internalizing symptoms: The mediating role of parent-adolescent relationship quality. *Journal of Family Psychology, 26*(4), 636-641.

- Over 1,000 teens were surveyed and they report that their stress level during the school year far exceeds what they believe to be healthy. Even during the summer teens reported their stress during the past months at levels higher than what they believe is healthy. 83% of teens reported that school is a somewhat or significant source of stress.

  Source: American Psychological Association (APA). (2009). *Stress in America.* Retrieved from http://www.apa.org/news/press/releases/stress/2009/stress-exec-summary.pdf

- Teens underestimate the impact stress has on their physical and mental health.

  Source: American Psychological Association (APA). (2009). *Stress in America.* Retrieved from http://www.apa.org/news/press/releases/stress/2009/stress-exec-summary.pdf

- When people are living with high stress, they are less likely to sleep well, exercise and eat healthy foods, which may lead to additional stress.

Source: American Psychological Association (APA). (2009). *Stress in America.* Retrieved from http://www.apa.org/news/press/releases/stress/2009/stress-exec-summary.pdf

- 42% of teens say they either are not doing enough to manage their stress or they are not sure if they are doing enough to manage it.
  Source: American Psychological Association (APA). (2009). *Stress in America.* Retrieved from http://www.apa.org/news/press/releases/stress/2009/stress-exec-summary.pdf

- 37% of teen girls and 23% of teen boys report feeling depressed or sad due to stress.
  Source: American Psychological Association (APA). (2009). *Stress in America.* Retrieved from http://www.apa.org/news/press/releases/stress/2009/stress-exec-summary.pdf

- 35% of teens report that stress caused them to lie awake at night and for teens who sleep fewer than 8 hours per school night, 42% say their stress level has increased over the past year.
  Source: American Psychological Association (APA). (2009). *Stress in America.* Retrieved from http://www.apa.org/news/press/releases/stress/2009/stress-exec-summary.pdf

- Among teens who report overeating or eating unhealthy foods because of stress (26%), 33% say they did so because it helps distract them from what was causing them stress.
  Source: American Psychological Association (APA). (2009). *Stress in America.* Retrieved from http://www.apa.org/news/press/releases/stress/2009/stress-exec-summary.pdf

- 67% of teens who report skipping meals due to stress say it was because of a lack of appetite, and 25% say it was because they did not have time to eat.
  Source: American Psychological Association. (2013). Press Release: Stress in America 2013 highlights: Are teens adopting adults' stress habits? Retrieved from http://www.apa.org/news/press/releases/stress/2013/highlights.aspx

- Of 1200 children ages 8-17 surveyed, 44% reported that doing well in school was a source of worry.
  Source: American Psychological Association (APA). (2009). *Stress in America.* Retrieved from http://www.apa.org/news/press/releases/stress/2009/stress-exec-summary.pdf

- In a 2005 poll, more than half the D.C. area adolescents surveyed (58%) said school was their biggest cause of stress. About 35% of local teens said they experienced stress frequently, compared with 27% of teens nationwide.
  Source: Kaiser Family Foundation. (2005). Survey of Teens in the Greater Washington, D.C. Area. Retrieved from: http://kaiserfamilyfoundation.files.wordpress.com/ 2013/01/survey-of-teens-in-the-greater-washington-dc-area-toplines.pdf

- 29% of children aged 13-17 report that they worry about getting into a good college and deciding what to do after high school, while only 5% of parents of 13-17 year-olds believe this is a source of stress for their child.
  Source: American Psychological Association. (2009). Stress in America 2009. Retrieved from: http://www.apa.org/news/press/releases/2009/11/stress.aspx

- In 2002/2003, American children aged 6-17 spent 6-7 hours a day in school, depending on their age/level of schooling. Twenty years prior, in the early 1980s, the time spent in

school ranged from 5-6 hours a day in school. The direct result has been less time for extracurricular activities, sleeping, and family time.

Source: Juster, F.T., Ono, H., & Stafford, F. (2004). Changing times of American youth: 1981-2003. Ann Arbor, MI: Institute for Social Research, University of Michigan. Retrieved from http://www.umich.edu/news/Releases/2004/Nov04/teen_time_report.pdf

- A study of 6,294 students at 15 high-achieving schools reveals that some students who work hard in school may be compromising their mental and physical health in the pursuit of top grades. Most students reported working hard but two-thirds of students reported not regularly being "fully engaged" in their academic schoolwork. Absence of full engagement was associated with more frequent school stress, higher rates of cheating, and greater internalizing, externalizing, and physical symptoms of stress.

  Source: Conner, J., & Pope, D. (2013). Not just robo-students: Why full engagement matters and how schools can promote it. *Journal of Youth and Adolescence*, Retrieved from http://link.springer.com/article/10.1007/s10964-013-9948-y#page-1

- In 2011 15.8% of high school students seriously considered attempting suicide in the previous 12 months. 12.8% of high school students made a plan about how they would attempt suicide, and 7.8% of students attempted suicide one or more times.

  Source: Eaton, D.K., Kann, L., Kinchen, S., et al. (2008). Youth risk behavior surveillance—United States, 2011. *MMWR Surveillance Summaries, 57*, 1-131.

- Between 2003 and 2004, suicides increased 32% among young women aged 15-19.

  Source: Lubell, K.M., Kegler, S.R., Crosby, A.E., & Karch, D. (2007). Suicide trends among youths and young adults aged 10-24 years—United States, 1990-2004. *MMWR Weekly, 56*(35), 905-908.

- 54% of high school females and 32% of high school males (out of a sample of nearly 5000 Bay Area youth) reported 3 or more symptoms of physical stress in the past month.

  Source: Galloway, M.K., Conner, J., & Pope, D. (2009). *Stanford Survey of Adolescent School Experiences*. Presentation at Challenge Success May Conference, Stanford, CA.

- 50% of Bay Area teens report headaches, difficulty sleeping, and exhaustion due to stress over the past month.

  Source: Galloway, M. K., Conner, J., & Pope, D. (2009). *Stanford Survey of Adolescent School Experiences*. Presentation at Challenge Success May Conference, Stanford, CA.

- The number of visits by children and adolescents during which depression was reported more than doubled from 1995–1996 (1.44 million) to 2001–2002 (3.22 million). Overall, depression affects 2-8% of all children and adolescents.

  Source: Ma J., Lee K-V. & Stafford R. S. (2005). Depression treatment during outpatient visits by U.S. children and adolescents. *Journal of Adolescent Health, 37(6)*, 434 – 42

- Suicide is the 4th largest cause of death among people between the ages of 10 and 24 after accidents and homicide and unintentional injury.

  Source: National Center for Injury Prevention and Control. (2007). WISQARS Leading Causes of Death Reports, 1999-2006. [Online Database]. Centers for Disease Control and Prevention. http://webappa.cdc.gov/sasweb/ncipc/leadcaus10.html.

- Nearly 30% of high school students with more than 3.5 hours of homework each night reported weight gain compared with 14% at 2 hours of homework or less per night.
  Source: Galloway, M. K. & Pope, D. (2007) Hazardous Homework? The Relationship between Homework, Goal Orientation, and Well-Being in Adolescence, *Encounter: Education for Meaning and Social Justice 20*(4), 25-31.

- 20-25% of youth in the United States experience symptoms indicative of emotional distress, such as depression, anxiety, eating disorders, and substance abuse.
  Source: Knopf, D., Park, M. J., & Paul Mulye, T. (2009). The mental health of adolescents: A national profile, 2008. San Francisco, CA: National Adolescent Health Information Center, University of California, San Francisco.

- Depression is one of the most common disorders in adolescents. An estimated 20% of adolescents will have had a depressive episode by age 18 with as many as 75% experiencing a second episode within 5 years. Depression is associated with substantial impairment in school, relationships, and work. Those with depression are more likely to abuse tobacco and other substances.
  Source: Clarke, G., & Harvey, A. G. (2012). The complex role of sleep in adolescent depression. *Child and adolescent psychiatric clinics of North America*, 21(2), 385.

Cheating

- 77% of parents say they are not very or not at all worried about their teens cheating online.
  Source: McAfee. (2012). The digital divide: How the online behavior of teens is getting past parents. Retrieved from: http://www.mcafee.com/us/resources/misc/digital-divide-study.pdf

- A survey of 43,000 students from both public and private high schools found that 59% of students surveyed admitted to having cheated on a test in the past year. More than 80% admitted to having copied another student's homework.
  Source: Josephson Institute. (2010). Josephson Institute's 2010 Report Card on the Ethics of American Youth. Los Angeles: Josephson Institute. Retrieved from http://charactercounts.org/pdf/reportcard/2010/ReportCard2010_data-tables.pdf

- A survey of over 1,400 high school students found 97% of students admitted to cheating at least one time in the past year, and 75% admitted to cheating 4 or more times in the past year. 26% admitted to being "repeat offenders" who admitted to cheating multiple times in a variety of ways.
  Source: Galloway, M. K., Conner, J. O., & Pope, D. (2009). *Stanford Survey of Adolescent School Experiences*. Presentation at Challenge Success May Conference, Stanford, CA.

- In an online survey with more than 1,000 teenage students, 35% of teens who had cell phones reported having used them to cheat at least once, and 65% said that they were aware that others in their school cheat by using cell phones. 52% of the students reported that they had cheated using the internet.
  Source: Benenson Strategy Group (2009). Hi-tech cheating: Cell phones and cheating in schools. Retrieved from: http://www.commonsensemedia.org/hi-tech-cheating

- A study of 204 ninth- and tenth-grade students found that students saw cheating as both more likely and more justified when classrooms focused on performance (grades, test scores, etc.) when compared to mastery (learning, continual improvement, etc.).

  Source: Murdock, T. B., Miller, A., & Kohlhardt, J. (2004). Effects of classroom context variables on high school students' judgments of the acceptability and likelihood of cheating. *Journal of Educational Psychology*, *96*, 765–777.

Drugs and Alcohol

- From 1997 to 2013, high school students' use of cigarettes and cigars in the U.S. has dropped, but marijuana use has more than doubled during the same period.

  Source: Rolle, I.V., Kennedy, S.M., Agaku, I., Jones, S.E., Bunnell, R., Caraballo, R.,…McAfee, T. (2015). *Cigarette, cigar, and marijuana use among high school students – United States, 1997 – 2013.* Morbidity and Mortality Weekly Report (MMWR). Retrieved from: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6440a2.htm?s_cid=mm6440a2_w

- Individuals both with and without ADHD misuse stimulant medications. Reported reasons for use and misuse of stimulants include to concentrate, improve alertness, "get high," or to experiment. Reported rates of past-year non-prescribed stimulant use to range from 5% to 9% in grade school- and high school-age children and 5% to 35% in college-age individuals.

  Source: Wilens, T.E., Adler, L.A., Adams, J., Sgambati, S., Rotrosen, J., Sawtelle, R,…Fusillo, S. (2008). Misuse and diversion of stimulants prescribed for ADHD: A systematic review of the literature. *Child & Adolescent Psychiatry, 47(1)*, 21-31.

- In 28 studies, researchers reported that students with higher academic achievement were significantly less likely to use tobacco.

  Source: Bradley, B.J. & Greene, A.C. (2013). Do health and education agencies in the United States share responsibility for academic achievement and health? A review of 25 years of evidence about the relationship of adolescents' academic achievement and health behaviors. *Journal of Adolescent Health, 52*, 523-532.

- Binge drinking and drinking to get drunk were associated with lower academic achievement, whereas achievement of those who drank alcohol (but did not binge or drink to get drunk) was not significantly lower than the achievement of those who abstained from drinking alcohol. Higher levels of drug use at age 13 were negatively related to both college attendance and college degree completion reported at age 25.

  Source: Bradley, B.J. & Greene, A.C. (2013). Do health and education agencies in the United States share responsibility for academic achievement and health? A review of 25 years of evidence about the relationship of adolescents' academic achievement and health behaviors. *Journal of Adolescent Health, 52*, 523-532.

- 9% of Bay Area high school students surveyed reported use of illegal prescription drugs to stay awake; an additional 25% use legal stimulants.

  Source: Galloway, M. K., Conner, J. O., & Pope, D. (2009). *Stanford Survey of Adolescent School Experiences*. Presentation at Challenge Success May Conference, Stanford, CA.

- Teens who have infrequent family dinners (fewer than three per week) are twice as likely to use tobacco or marijuana, more than one and a half times as likely to use alcohol, and twice as likely to expect to try drugs in the future than teens who have frequent family dinners (five or more per week).

  Source: The National Center on Addiction and Substance Abuse at Columbia University. (2009). *The Importance of family dinners V*.

- In 2010, 25% of 12th grade students, 20% of 10th grade students, and 11% of 8th grade students reported illicit drug use in the previous 30 days. For 8th graders, this was up from 8% in 2009.

  Source: Johnston, L.D., O'Malley, P.M., Bachman, J.G., & Schulenberg, J.E. (2011). *Monitoring the Future national survey results on drug use, 1975–2010: Volume I, Secondary school students.* Ann Arbor: Institute for Social Research, The University of Michigan.

- 1 in 5 (4.7 million in 2008) teens abuses prescription drugs at least once in their lives.

  Source: Partnership for a Drug-Free America, (2009). *Partnership attitude tracking study, 2008*. Retrieved from: http://www.drugfree.org/newsroom/fullreport-and-key-findings-pats-teens-2008-sponsored-by-metlife-foundation

- The most important factors for protecting teens from engaging in substance abuse are positive mental health, high academic achievement, engagement in school, close family relationships, and involvement in religious activities.

  Source: Jessor, R., Van Den Bos, Venderryn, J., Costa, F. & Turin, M. S. (*1995*). Protective factors in adolescent problem behavior*:* Moderator effects and developmental change. *Developmental Psychology*, *31*(6), 923-933.

- 73% of students listed academic stress as their number one reason for using drugs, yet only 7% of parents believe teens might use drugs to deal with stress.

  Source: Partnership for a Drug-Free America, (2008). *Partnership attitude tracking study, 2007*. Retrieved from: http://www.drugfree.org/newsroom/fullreport-pats-teens-2007

- Suburban youth are more likely to report using drugs and alcohol to self-medicate (to decrease feelings of stress and depression) compared to normative and urban youth populations.

  Source: Luthar, S. & D'Avanzo, K. (1999). Contextual factors in substance use: A study of suburban and inner-city adolescents. *Development and Psychopathology, 11*, 845-867.

- In a study of U.S. high school students, more than half of sleep-deprived teens reported alcohol use, compared to 37% of well-rested adolescents. Nearly a quarter of sleep-deprived teens smoked, compared to 15%. Sleep deprivation also increased the likelihood of contemplating suicide, to 17% compared with 9.8%. Tired teens were more likely to use marijuana, be sexually active and feel sad or hopeless. Results were attributed to a chronic lack of sleep impairing the ability to comprehend consequences and increasing the likelihood of giving in to peer pressure.

  Source: Eaton, D.K., Kann, L., Kinchen, S., Shanklin, S., Flint, K.H., Hawkins, J., ... & Lim, C. (2012). Youth risk behavior surveillance-United States Centers for Disease Control, 2011. *MMWR Surveill Summ*, *61*(4), 1-162.

Homework

- 26% of all students grades 3-12 say homework is just busywork and unrelated to what they are learning in school

  Source: MetLife survey of the American teacher: The homework experience. A survey of students, teachers and parents. (2007). Retrieved from: http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_&ERICExtSearch_SearchValue_0=ED500012&ERICExtSearch_SearchType_0=no&accno=ED500012

- High-achieving private and public high school students average 3.07 hours of homework each night.

  Source: Conner, J., Pope, D. & Galloway, M. (2009). Success with less stress. *Educational Leadership*, *67*(4), 54-58.

- No positive link was found between student math achievement and the frequency or amount of homework given.

  Source: Baker, D.P. & LeTendre, G.K. (2005). *National differences, global similarities: World culture and the future of schooling*. Stanford, CA: Stanford University Press.

- Countries that give students more math homework actually have lower overall math test scores than those that give students less math homework.

  Source: Mikki, J. (2006). Students' homework and TIMSS 2003 mathematics results. Paper presented at the International Conference, Teaching Mathematics Retrospective and Perspective.

- There is a correlation between the amount of time spent on homework and achievement in high school, but this association fades after two hours spent on homework.

  Source: Cooper, H. (2007). *The battle over homework: Common ground for administrators, teachers, and parents*. Thousand Oaks, CA: Corwin Press.

- Low income, lower-achieving 9th and 10th graders who were given homework but had few consequences for not completing it showed an increase in disengagement from school.

  Source: Bempechat, J., Li, J., Neier, S.M., Gillis, C.A. & Holloway, S.D. (2011). The homework experience: Perceptions of low-income youth. *Journal of Advanced Academics, 22*(2), 250-278.

Literacy

- Parents are concerned that digital devices are distracting children from reading. Among parents of children in every age group, nearly half (49%) feel their children do not spend enough time reading books for fun – the kind of reading practice that is critical for children to build stamina, fluency, vocabulary and comprehension.

  Source: Scholastic. (2012). Kids and Family Reading Report, 4th Edition. Retrieved from: http://mediaroom.scholastic.com/files/kfrr2013-wappendix.pdf

- Among girls, there has been a decline since 2010 in frequent readers (42% vs. 36%), reading enjoyment (71% vs. 66%), and the importance of reading books for fun (62% vs. 56%).

Source: Scholastic. (2012). Kids and Family Reading Report, 4th Edition. Retrieved from: http://mediaroom.scholastic.com/files/kfrr2013-wappendix.pdf

- Compared to 2010, boys are more likely to think reading books for fun is important (39% in 2010 vs. 47% in 2012), but they still lag girls on this measure (47% for boys in 2012 vs. 56% for girls in 2012).

  Source: Scholastic. (2012). Kids and Family Reading Report, 4th Edition. Retrieved from: http://mediaroom.scholastic.com/files/kfrr2013-wappendix.pdf

- Frequency of reading books for fun is significantly lower for kids age 12-17 than for children age 6-11; frequency for reading books for school is also lower for kids age 12-17 than for kids age 6-11.

  Source: Scholastic. (2012). Kids and Family Reading Report, 4th Edition. Retrieved from: http://mediaroom.scholastic.com/files/kfrr2013-wappendix.pdf

- The percentage of boys who read 5-7 days a week drops at every age, whereas girls level off in their teens. 47.5% of both cohorts age 6-8 say they read for fun and it decreases to 18% for boys age 15-17 and 30% for girls.

  Source: Scholastic. (2012). Kids and Family Reading Report, 4th Edition. Retrieved from: http://mediaroom.scholastic.com/files/kfrr2013-wappendix.pdf

- Having reading role-model parents or a large book collection at home has a greater impact on kids' reading frequency than does household income.

  Source: Scholastic. (2012). Kids and Family Reading Report, 4th Edition. Retrieved from: http://mediaroom.scholastic.com/files/kfrr2013-wappendix.pdf

Media

- Independent school 11th grade students experience very high levels of chronic stress and the pressure to achieve academically, in order to boost the chances of admission to top-tier colleges and universities, constitutes the greatest source of stress. Parental expectations, coupled with demanding academic curricula, appears to convey to students that the main purpose of their high school experience is admission to a selective college or university; this futurist-oriented culture may push some students to use substances to cope with their stress.

  Source: Leonard, N.R., Gwadz, M.V., Ritchie, A., Linick, J.L., Cleland, C.M., Elliott, L. & Grethel, M. (2015). A multi-method exploratory study of stress, coping, and substance use among high school youth in private schools. *Frontiers in Psychology.* Retrieved from: http://dx.doi.org/10.3389/fpsyg.2015.01028

- Boys and girls have very different media preferences and habits: boys spend more time than girls playing video games but girls spend more time than boys on social media.

  Source: Common Sense Media. (2015). *The common sense census: Media use by tweens and teens.* Retrieved from: https://www.commonsensemedia.org/sites/default/files/uploads/research/census_executivesummary.pdf

- Teens still prefer watching TV and listening to music over spending time on social media.

  Source: Common Sense Media. (2015). *The common sense census: Media use by tweens and teens.* Retrieved from: https://www.commonsensemedia.org/sites/default/files/uploads/research/census_executivesummary.pdf

- 92% of teens 13-17 report going online daily, with 24% who say they go online "almost constantly". 71% of teens use Facebook while 52% and 41% use Instagram and Snapchat, respectively. Additionally, 71% of teens report using more than 1 social network site. Girls are more likely to use visually-oriented social media platforms while boys continue to be more likely to play videogames.

  Source: Lenhart, A. (2015). Pew Research Center. *Teen, Social Media and Technology Overview 2015.* Retrieved from: http://www.pewinternet.org/files/2015/04/PI_TeensandTech_Update2015_0409151.pdf

- Highly multipurpose technology, such as mobile phones, can have a negative impact on productivity through distraction. Schools that restrict access to mobile phones subsequently experience an improvement in test scores. Banning mobile phones improves outcomes for the low-achieving students the most and has no significant impact on high achievers.

  Source: Beland, L-P. & Murphy, R. (2015). Ill communication: Technology, distraction & student performance. *Centre for Economic Performance, CEP Discussion Paper No. 1350.*

- Compared to 2010, in 2012 more girls age 12-17 are connecting through technology 5-7 days a week. Girls age 15-17 use a cell phone to text or talk 78%, compared to 81% in 2010. However use of a smartphone to go online for girls age 15-17 is 48% vs. 27% in 2010. 68% of girls age 15-17 used social media sites (like Facebook or Twitter) in 2012 compared to 59% in 2010.
  - **Source:** Scholastic. (2012). Kids and Family Reading Report, 4th Edition. Retrieved from: http://mediaroom.scholastic.com/files/kfrr2013-wappendix.pdf

- More boys age 15-17 are going online via computer, visiting networking sites, and playing video games 5-7 days a week in 2012 than they were in 2010. There was a 10% increase from 2010-2012 for boys 15-17 playing video or computer games (46% to 56%). 54% of boys age 15-17 are visiting social networking sites compared to 39% in 2010.

  Source: Scholastic. (2012). Kids and Family Reading Report, 4th Edition. Retrieved from: http://mediaroom.scholastic.com/files/kfrr2013-wappendix.pdf

- Researchers found that having a bedroom television was a significant predictor of adolescent weight gain, about 1 pound per year, even after accounting for hours of TV watched each day and socioeconomic factors.

  Source: Li, Z., Adachi-Mejia, A., McClure, A., & Sargent, J. (2014). Do bedroom televisions contribute to youth obesity? *JAMA Pediatrics*. Dartmouth-Hitchcock Norris Cotton Cancer Center.

- Parents believe the use of electronic or digital devices negatively affects the time kids aged 6-17, spend reading books (41%), doing physical activity (40%), and engaging with family (33%).

Source: Scholastic. (2010). 2010 Kids and family reading report. Retrieved from: http://mediaroom.scholastic.com/research

- In a survey of youth ages 8-18, nearly 1 in 4 said they have felt "addicted" to video games.

  Source: Harris Interactive (2007). Video Game Addiction: Is it real? Retrieved from: http://www.harrisinteractive.com/NEWS/allnewsbydate.asp?NewsID=1196

- Nearly one in three (31%) 8- to 18-year-olds say that "most" of the time they are doing homework, they are also using one medium or another—watching TV, texting, listening to music, etc.

  Source: Kaiser Family Foundation. (2010). Generation M2: Media in the lives of 8- to 18-year-olds. Retrieved from: http://www.kff.org/entmedia/upload/Executive-Summary-Generation-M-Mediain-the-Lives-of-8-18-Year-olds.pdf

- Between 2004 and 2009, the average amount of time 8- to 18-year-olds spent consuming media increased to 7.5 hours of media exposure per day (an increase of 2.25 hours). Factoring in multi-tasking (time spent using more than one medium at a time), today's youth pack a total of 10 hours and 45 minutes worth of media content into those hours**.** This does not include time spent talking on cell phones or sending text messages (8- to 18-year-olds spend an average of 1.5 hours a day talking, while 7th to 12th graders spend an average of 1.5 hours a day texting.)

  Source: Kaiser Family Foundation. (2010). Generation M2: Media in the lives of 8- to 18-year-olds. Retrieved from: http://www.kff.org/entmedia/upload/Executive-Summary-Generation-M-Mediain- the-Lives-of-8-18-Year-olds.pdf

- In a sample of 2000 teens, 70% said they spend time on a social media site during the day. Teens in that group are five times more likely to buy tobacco, three times more likely to use alcohol and two times more likely to use marijuana. Parents are unaware of the correlation. 9 out of 10 parents surveyed said they don't think there's a link.

  Source: The National Center on Addiction and Substance Abuse at Columbia University. (2011). National Survey of American Attitudes on Substance Abuse XVI: Teens and Parents. Retrieved from: www.casacolumbia.org/upload/2011/20110824teensurveyreport.pdf

- 71% of all 8- to 18-year-olds have their own television in their rooms (ranging from 54% of 8- to 10-year-olds to 76% of 11- to 18-year-olds). In addition, half have a video game player (50%) or cable TV (49%), and a third have a computer (36%) and internet access (33%) in their rooms.

  Source: Kaiser Family Foundation. (2010). Generation M2: Media in the lives of 8- to 18-year-olds. Retrieved from: http://www.kff.org/entmedia/upload/Executive-Summary-Generation-M-Mediain-the-Lives-of-8-18-Year-olds.pdf

- Teens hide online behavior from their parents. 53% of teens clear their browser history (17.5% of parents are aware), 46% (16.6% of parents are aware) close or minimize the browser when a parent walks in, 34% hide or delete IMs or videos (5.4% of parents are aware), 23% lie or omit details about online activities (10.5% of parents are aware), 23% use a computer their parents do not check, 21% use an Internet-enabled mobile device (9.7% of parents are aware), 20% use privacy settings (8.1% of parents are aware), 20% use private browsing modes (3.7% of parents are aware), 15% (8.1% of parents are

aware) create email addresses unknown to their parents, and 9% create a duplicate or fake social network profile.

Source: McAfee. (2012). The digital divide: How the online behavior of teens is getting past parents. Retrieved from: http://www.mcafee.com/us/resources/misc/digital-divide-study.pdf

- 48% of parents think that their teens check their social media accounts daily, but 60% of teens say they do. 22% of parents of teens believe their children check their accounts constantly, but 41% say they do.

  Source: McAfee. (2012). The digital divide: How the online behavior of teens is getting past parents. Retrieved from: http://www.mcafee.com/us/resources/misc/digital-divide-study.pdf

- 49% of 13- to 17-year-olds say their favorite way to communicate with friends is in person. 33% say their favorite way is texting. 7% say through a social networking site. 38% of 13- to 17-year-olds prefer face-to-face communication because it's more fun. 29% prefer it because they can understand what people mean better. 30% of 13- to 17-year-olds who prefer texting as a form of communication prefer it because it's the quickest. 23% prefer it because it's the easiest.

  Source: Common Sense Media. (2012). "Social Media, Social Life: How Teens View Their Digital Lives."

- A study of 1,037 individuals from birth to the age of 26 revealed that those who engaged in excessive television viewing (>3 hours of television viewing on an average weekday) during childhood and adolescence were significantly more likely to have a criminal conviction, a diagnosis of antisocial personality disorder, and more aggressive personality traits compared with those who viewed less television, controlling for sex IQ, socioeconomic status, previous antisocial behavior, and parental control. Thus excessive television was found to have long-term psychosocial consequences.

  Source: Robertson, L.A., et al. (2013). Childhood and Adolescent Television Viewing and Antisocial Behavior in Early Adulthood. *Pediatrics, 131*(2). Retrieved from http://pediatrics.aappublications.org/content/131/3/439.full.pdf+html

Playtime, Downtime, and Family Time

- Family meals during adolescence were shown to be protective against the development of overweight and obesity in young adulthood.

  Source: Berge, J.M., Wall, M., Hsueh, T-F., Fulkerson, J.A., Larson, N., & Neumark-Sztainer, D. (2014). The protective role of family meals for youth obesity: 10-year longitudinal associations. *The Journal of Pediatrics, 166*(2), 296-301.

- How families manage household responsibilities and chores can impact their happiness. Caretakers report more satisfaction and less stress when family members do chores together, rather than getting the chores done by a division of labor.

  Source: Galovan, A.M., Holmes, E.K., Schramm, D.G. & Lee, T.R. (in press). Father involvement, father-child relationship quality, and satisfaction with family work: Actor and partner influences on marital quality. *Journal of Family Issues*. Cited in Rende, R. (2014). *The Misperceptions of Chores: What's Really at Stake?* White paper.

- Children are *less likely* to help an adult (e.g., by picking up an object that the adult dropped) if they have been given a *material reward* for doing so in the past. A material reward diminishes the intrinsic motivation to help.

  Source: Hepach, R., Vaish, A. & Tomasello, M. (2013). A new look at children's prosocial motivation. *Infancy*, *18*, 67-90.

- While parental involvement might be the extra boost that students need to build their own confidence and abilities, over-parenting (helicopter parenting) appears to do the converse in creating a sense that one cannot accomplish things socially or in general on one's own.

  Source: Bradley-Geist, J. C. & Olson-Buchanan J.B. (2014). Helicopter parents: an examination of the correlates of over-parenting of college students. *Education + Training, 56*(4), 314 – 328.

- The percentage of youth aged 12–15 who had adequate levels of cardiorespiratory fitness decreased from 52.4% in 1999–2000 to 42.2% in 2012. One-half of boys and about one-third of girls aged 12–15 years had adequate levels of cardiorespiratory fitness.

  Source: Gahche, J., Fakhouri, T., Carroll, D.D., et al. (2014). Cardiorespiratory fitness levels among U.S. youth aged 12–15 years: United States, 1999–2004 and 2012. NCHS data brief, no 153. Hyattsville, MD: National Center for Health Statistics.

- In a survey of over 10,000 middle and high school students, 80% chose happiness and achievement as personal values over caring for others (20%). 80% also reported that their parents value personal happiness and achievement over caring for others. Youth were also 3 times more like to agree than disagree with the statement: "My parents are prouder if I get good grades in my classes than if I'm a caring community member in class and school."

  Source: Weissbourd, R., Jones, S., Ross-Anderson, T., Kahn, J. & Russell, M. (2014). The children we mean to raise: The real messages adults are sending about values. *Making Caring Common Project, Harvard Graduate School of Education.* Retrieved from: http://sites.gse.harvard.edu/sites/default/files/making-caring-common/files/mcc_the_children_we_mean_to_raise_0.pdf

- Studies reporting significant associations found that adolescents who frequently ate meals with their family and/or parents were less likely to engage in risk behaviors when compared to peers who never or rarely ate meals with their families.

  Source: Skeer, M. & Ballard, E. (2013). Are family meals as good for youth as we think they are? A review of the literature on family meals as they pertain to adolescent risk prevention. *Journal of Youth & Adolescence, 42*(7), 943-963.

- Frequent family meals are associated with greater consumption of fruits and vegetables and breakfast. Adolescents who frequently shared family meals were also more likely to report that what they ate in the past week was healthier than adolescents who did not.

  Source: Utter, J., Denny, S., Robinson, E., Fleming, T., Ameratunga, S., & Grant, S. (2013). Family meals among New Zealand young people: Relationships with eating behaviors and body mass index. *Journal of Nutrition and Behavior, 45*(1), 3-11.

- Family meals were found to offer protection against dangerous disordered eating behaviors and substance abuse in adolescence. Protection of family meals tends to be stronger among girls than boys, regarding disordered eating behavior. Adolescents who eat frequent family meals have higher self-esteem and are less likely to report depressive

symptoms, suicidal ideation and attempts compared to adolescents who eat fewer family meals. Eating frequent family meals was found to be associated with lower levels of cigarette smoking, alcohol and marijuana use in adolescents.

Source: Loth, K.A. (2013). The importance of family meals. *Pediatrics for Parents, 29*(3/4), 26-27.

- Teens who have frequent family dinners (at least 5/week) are 1.5 times more likely (than teens who eat less than 3/week) to say their parents know a great deal/fair amount about what's really going on in their lives. Those who say their parents know very little/nothing at all about what goes on in their lives are 1.5 times more likely to have used marijuana and alcohol. Teens who have frequent family meals report having high-quality relationships with their parents. These teens are less likely to use drugs, drink, or smoke. Teens who have frequent family meals are 1.5 times less likely to report high levels of stress and thus, less likely to have used marijuana, alcohol, or tobacco. Teens who have IN-frequent family meals are less likely to say their parents would be extremely upset to find they had used marijuana and are 3x likelier to say "it's ok for teens my age to use marijuana or get drunk".

  Source: National Center on Addiction and Substance Abuse at Columbia University. (2012). The importance of family dinners VIII: A CASAColumbia White Paper. Retrieved from http://www.casacolumbia.org/addiction-research/reports/importance-of-family-dinners-2012

- Eating with others, particularly family, is associated with healthier dietary outcomes among children and adolescents of both genders.

  Source: Fulkerson, J.A., Larson, N., Horning, M., & Newmark-Sztainer, D. (2014). A review of associations between family or shared meal frequency and dietary and weight status outcomes across the lifespan. *Journal of Nutrition Education & Behavior, 46*(1), 2-19.

- Family mealtime communication was significantly associated with higher positive affect and engagement and with lower negative affect and stress.

  Source: Offer, S. (2013). Assessing the relationship between family mealtime communication and adolescent emotional well-being using the experience sampling method. *Journal of Adolescence, 36*(3), 577-585.

School Culture and Student Engagement

- Five best flags to predict dropout included: attending school 80% or less of the time during 5th grade, failing math in 6th grade, failing English in 6th grade, receiving an out-of-school suspension in 6th grade, and receiving an unsatisfactory final behavior mark in any subject in 6th grade. This work makes it clear that the vast majority of dropouts, at least in large, high-poverty urban schools, are highly identifiable and predictable before they have entered or spent much time in high school.

  Source: Balfanz, R., Herzog, L., & MacIver, D.J. (2007). Preventing student disengagement and keeping students on the graduation path in urban middle-grades schools: early identification and effective interventions. *Educational Psychologist, 42*(4), 223-235.

- In school year 2011–12, some 3.1 million public high school students, or 81%, graduated on time with a regular diploma. Among all public high school students, Asians/Pacific Islanders had the highest graduation rate (93%), followed by Whites (85%), Hispanics

(76%), and American Indians/Alaska Natives and Blacks (68% each).

Source: Public high school graduation rates for the 2011-2012 school year compared to past years. (2014). U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. Retrieved from: http://nces.ed.gov/programs/coe/indicator_coi.asp

- Research suggests that enjoyment of education as an expression of the 'affective' aspects of school engagement has a longitudinal effect on learner identity across the lifespan. In turn, this appears to further influence subsequent education and career choices well into adulthood. These findings highlight the importance of schools providing a rich learning environment inside and outside the classroom, that challenges and rewards effort, and helps to create a mastery goal orientation among students. Active, rather than passive learning styles that engage both mind and body, involving humour, music and movement, and learning activities, which promote interest, concentration, enjoyment and a feeling of accomplishment have been credited with encouraging engagement.

  Source: Abbott-Chapman, J., Martin, K., Ollington, N., Venn, A., Dwyer, T., & Gall, S. (2014). The longitudinal association of childhood school engagement with adult educational and occupational achievement: Findings from an Australian national study. *British Educational Research Journal, 40*(1), 102-120.

- It is suggested that intelligence (IQ) helps students learn and solve problems independent of formal instruction, whereas self-control helps students study, complete homework, and behave positively in the classroom.

  Source: Duckworth, A.L., Quinn, P. D., & Tsukayama, E. (2012). What *No Child Left Behind* leaves behind: The roles of IQ and self-control in predicting standardized achievement test scores and report card grades. *Journal of Educational Psychology, 104*(2), 439-451.

- Student engagement is vital to academic achievement. Engaged students are attentive and participate in class discussions, exert effort in class activities, and exhibit interest and motivation to learn. Disengaged students become disruptive, are less likely to aspire to higher educational goals, have lower grades, and are more likely to drop out of school. This evidence suggests that when teachers create a sense of community, respond to students' needs, and foster positive relationships, academic success likely ensues.

  Source: Reyes, M.R., Brackett, M.A., Rivers, S.E., White, M., & Salovey, P. (2012). Classroom emotional climate, student engagement, and academic achievement. *Journal of Educational Psychology, 104*(3), 700-712.

- The stress that society places on financial success as the "ultimate reward" of learning is counterproductive, partially because it has detrimental effects on mastery-oriented learning. It may be that government and parental attempts to raise the educational aspirations of their children by linking education to increased earning power may not have its desired effect at all; such a focus could very well discourage youths from fully engaging with learning. Additionally, materialistic values are negatively associated with teenagers' mastery-oriented learning motivation and also resulted in a deterioration of school grades over time.

  Source: Ku, L., Dittmar, H., & Banerjee, R. (2012). Are materialistic teenagers less motivated to learn? Cross-sectional and longitudinal evidence from the United Kingdom and Hong Kong. *Journal of Educational Psychology, 104*(1), 74-86.

- A study of 6,294 students at high-achieving schools found that fully engaged students achieved significantly higher GPAs, took significantly more advanced courses, cheated significantly less, and experienced significantly less academic worry and significantly fewer symptoms of stress than students who lacked full engagement.

  Source: Conner, J., & Pope, D. (2013). Not just robo-students: Why full engagement matters and how schools can promote it. *Journal of Youth and Adolescence,* Retrieved from http://link.springer.com/article/10.1007/s10964-013-9948-y#page-1

- Given an unfamiliar biology problem, high school freshman who discussed the problem prior to reading a six-page text remembered 40% more on the topic than the group who did not participate in any prior discussion, regardless of whether initial theories were relevant or correct. This is described as prior knowledge activation.

  Source: Schmidt et al. Problem-Based Learning is Compatible with Human Cognitive Architecture: Commentary on Kirschner, Sweller, and Clark (2006). (2007). *Educational Psychologist, 42*(2), 91-97.

- A longitudinal study of a national sample of 7,779 students attending one of 431 public high schools found teacher evaluation policies that allowed students to evaluate their teachers were associated with more positive student reports of the classroom teaching climate. Furthermore, schools with better student perceptions of the teacher-student relationship climate were associated with lower student dropout rates by students' senior year.

  Source: Barile, J. P., Donohue, D. K., Anthony, E. R., Baker, A. M, Weaver, S. R., & Henrich, C. C. (2012). Teacher-student relationship climate and school outcomes: Implications for educational policy initiatives. *Journal of Youth and Adolescence. 41*, 256-267.

- Research shows that playful learning leads to better academic success than does a skills-and-drills approach, but this isn't happening in many of our schools: Teens reported being bored 27% of the time that they are in class and disengaged 75% of the time.

  Source: Larson, R. (2000). Toward a psychology of positive youth development. *American Psychologist, 55*(1), 170-183.

- In a national survey, students were asked to use 3 words to describe how they felt in school. The word most often used by students was "bored" followed by "tired."

  Source: Lyons, L. (2004). Most teens associate school with boredom, fatigue. *The Gallup Youth Survey, January 22-March 9, 2004*. Retrieved June 24, 2009, from http://www.gallup.com/poll/11893/Most-Teens-Associate-School-Boredom-Fatigue.aspx

- Students who are exposed to project-based learning activities prior to directed instruction show greater learning gains than students who are exposed to only the directed instruction (traditional approach), as measured by changes in scores from pre- to post-tests.

  Sources: Geier et al. (2007). Standardized Test Outcomes for Students Engaged in Inquiry-Based Science Curricula in the Context of Urban Reform. *Journal of Research in Science Teaching*. 45(8), 922-39. Schneider et al. Preparing for Future Learning with a Tangible User Interface: The Case of Neuroscience. (2013). IEEE Transactions on Learning Technologies. Volume 6, Issue 2. Schmidt et al. (1989). Explanatory Models in the Processing of Science Text: The Role of Prior Knowledge Activation Through Small-Group Discussion. *Journal of Educational Psychology.* 81(4), 610-619.

- High school seniors taking a macroeconomics course implementing problem-based learning methods (emphasizing ill-structured problems and small group work) showed significantly more improvement after course completion than students who were taught in a traditional environment. This improvement was especially significant among students of midrange and below average verbal ability, students with high interest level and students with either high or low problem solving efficacy.

  Source: Mergendoller, J.R., Maxwell, N.L. and Bellisimo, Y. (2006). The Effectiveness of Problem-based Instruction: A Comparative Study of Instructional Methods and Student Characterisitics. *Interdisciplinary Journal of Problem-based Learning, 1*(2).

Sleep

- During adolescence biological changes dictate both a sleep duration of nine hours and later wake and sleep times. The conflict between social time (social conventions of when school and work days should start) and biological time (actual biological and circadian rhythms of sleep pressure and wakefulness) in adolescence is greater than at any other point in our lives. The level of sleep loss due to this conflict causes impairment to physiological, metabolic and psychological health in adolescents while they are undergoing other major physical and neurological changes.

  Source: Kelley, P., Lockley, S.W., Goster, R.G. & Kelley, J. (2015). Synchronizing education to adolescent biology: 'let teens sleep, start school later'. *Learning, Media and Technology, 40(2)*, 210-226. DOI: 10.1080/17439884.2014.942666

- What is sleep's role in achievement and learning? Too little sleep impairs acquisition of material and leads to irritability, distractibility, and inattention; ability to process input is diminished; it impairs retrieval or ability to access learned information. Sleep allows for consolidation, stabilization, strengthening, and filtering of information.

  Source: Carskadon, M. (2013). Biology of Teen Sleep Patterns. Presentation at National Sleep Foundation Conference. Retrieved from: http://www.cehd.umn.edu/carei/sleepresources.html

- Sleep is a biological imperative; it enhances brain function, and balances mood (memory, temperature change, metabolism of drugs). Absence of sleep results in impairment, injury, and death in animals in experimentation situations. Sleep is a structured process of nightly brain performance enhancement.

  Source: Iber, C. (2013). Sleep and Brain Basics. Presentation at National Sleep Foundation Conference. Retrieved from: http://www.cehd.umn.edu/carei/sleepresources.html

- Results from a three-year research study, conducted with over 9,000 students in eight public high schools in three states, reveal that high schools that start at 8:30AM or later allow for more than 60% of students to obtain at least 8 hours of sleep per school night. Teens getting less than 8 hours of sleep reported significantly higher depression symptoms, greater use of caffeine, and are at greater risk for making poor choices for substance use. Academic performance outcomes, including grades earned in core subject areas of math, English, science and social studies, plus performance on state and national achievement tests, attendance rates and reduced tardiness show significantly positive improvement with the later start times of 8:35AM or later. Finally, the number of car crashes for teen drives from 16-18 years of age was significantly reduced by 70% when a school shifted start times from 7:35AM to 8:55AM.

  Source: Wahlstrom, K., Dretzke, B., Gordon, M., Peterson, K., Edwards, K., & Gdula, J. (2014). *Examining the Impact of Later School Start Times on the Health and Academic Performance of High School Students: A Multi-Site Study*. Center for Applied Research and Educational Improvement. St. Paul, MN: University of Minnesota.

- 200 boarding school students completed the School Sleep Habits Survey before and after school time was delayed from 8:00AM to 8:25AM. Results suggest that this modest delay was associated with significant improvements in sleep duration, daytime sleepiness, mood, and caffeine use.

  Source: Boergers, J., Gable, C., & Owens, J. (2014). Later school start time is associated with improved sleep and daytime functioning in adolescents. *Journal of Developmental and Behavioral Pediatrics, 35, (1)*, 11-17. doi: 10.1097/DBP.0000000000000018

- A healthy sleep cycle promotes the academic and emotional success of adolescents. Bright lights associated with laptops, smartphones and other electronic devices have been found to suppress melatonin, a hormone that helps regulate the sleep cycle. Sleep behavior is highly modifiable with the right support.

  Source: Asarnow, L.D., McGlinchey, E., & Harvey, A.G. (2013). The effects of bedtime and sleep duration on academic and emotional outcomes in a nationally representative sample of adolescents. *Journal of Adolescent Health, published online.* DOI:10.1016/j.jadohealth.2013.09.004

- Teenagers who go to bed late during the school year are more prone to academic and emotional difficulties in the long run, compared to their earlier-to-bed counterparts. Teens who went to bed after 11:30pm on school nights had lower GPA scores, and were more vulnerable to emotional problems than teens with earlier bedtimes. While going to bed late in the summer did not appear to impact their academic achievement, including grades, researchers did find a correlation between later summer bedtimes and emotional problems in young adulthood.

  Source: Asarnow., L.D., McGlinchey, E., & Harvey, A.G. (2013). The effects of bedtime and sleep duration on academic and emotional outcomes in a nationally representative sample of adolescents. *Journal of Adolescent Health, published online.* DOI:10.1016/j.jadohealth.2013.09.004

- Results of a longitudinal study suggest "regardless of how much a student generally studies each day, if that student sacrifices sleep time to study more than usual, he or she will have more trouble understanding material taught in class and be more likely to struggle on an assignment or test the following day."

  Source: Gillen-O'Neel, C., Huynh, V.W., & Fuligni, A.J. (2013). To Study or to sleep? The academic costs of extra studying at the expense of sleep. *Child Development, 84,* 133-142.

- Teens need 8-10 hours of sleep each night.

  Source: National Sleep Foundation. (2014). How much sleep do we really need?

- A 2011 national survey reveals rampant and pervasive use of communication technology in the hour before bed—when bodies, in fact, need dim-light conditions and de-arousing activities in order to promote release of the sleep-inducing hormone melatonin: 36% of 13- to18-year-olds play a video game within the hour before bedtime at least a few times a week and 14% say they do so every night or almost every night before going to sleep; 56%; say they send, read or receive text messages every night or almost every night in the hour before bed; and 9% say that they are awakened after they go to bed every night or almost every night by a phone call, text message or email.

  Source: National Sleep Foundation (2011). Press Release: *Sleepy connected Americans: National sleep foundation releases annual sleep in America poll exploring connections with communications technology use and sleep.* Retrieved from: http://www.sleepfoundation.org/article/press-release/annual-sleep-americapoll-exploring-connections-communications-technology-use

- Teenagers who go to bed after midnight are 24% more likely to suffer from depression and 20% more likely to think about harming themselves than teenagers who go to bed at or before 10 pm.

  Source: Gangwisch, J., Babiss, L., Malaspina, D., Turner, J., Zammit, G., & Posner, K.. (2010). Earlier parental set bedtimes as a protective factor against depression and suicidal ideation. *Sleep, 33*(1)*,* 97–106.

- 68.9% of teens get 7 hours of sleep or less per night, and only (7.6%) get at least 9 hours of sleep per night (prevalence of insufficient sleep is highest among students in grades 11 and 12).

  Source: Eaton D. K., McKnight-Eily, L. R., Lowry, R., Perry, G.S., Presley-Cantrell, L. & Croft, J. B. (2010). Prevalence of insufficient, borderline, and optimal hours of sleep among high school students – United States, 2007. *Journal of Adolescent Health*, *46*(4), 399-401.

- 85% of adolescents are reported to be mildly sleep deprived, and 10-40% may be significantly sleep deprived. Sleep deprivation decreases motivation, concentration, attention, and coherent reasoning; it also decreases memory, self-control, and increases frequency of mistakes.

  Source: Bergin, C. & Bergin, D. (2010). Sleep: The E-Z Z Z Intervention*. Educational Leadership 67*(4)*,* 44-46.

- Taking the extra time to study for an exam or to work on a project is not necessarily a good idea, since the student often sacrifices sleep in order to do so. Then the student is not as alert during the test or the following school day, which inhibits learning.

Source: Gillen-O'Neel, C., Huynh, V., & Fuligni, A. J. (2012). To study or to sleep? The academic costs of extra studying at the expense of sleep. *Child Development*, *10*.1111.

- The National Sleep Foundation recommends teens keep a regular sleep schedule on weekends and vacations. This is attained by avoiding delayed bedtimes by more than 1 hour and waking within 2 hours of regular sleep schedule on weekends. Exposure to ambient light in the morning and afternoon naps to cope with daytime sleepiness are also recommended.

  Source: Crowley, S. J., & Carskadon, M. A. (2010). Modifications to weekend recovery sleep delay circadian phase in older adolescents. *Chronobiology International, 27*(7), 1469.

- In a study of U.S. high school students, more than half of sleep-deprived teens reported alcohol use, compared to 37% of more well-rested adolescents. Nearly a quarter of sleep-deprived teens smoked, compared to 15% of those who got a good night's rest. Sleep deprivation also increased the likelihood a high-school student had seriously contemplated suicide, to 17% compared with 9.8%. Tired teens were also more likely to be less physically active, use marijuana, be sexually active and feel sad or hopeless, among other behaviors. Results were attributed to a chronic lack of sleep impairing the ability to comprehend consequences and increasing the likelihood a teen gives in to peer pressure.

  Source: Eaton, D., Kann, L., Kinchen, S., Shanklin, S., Flint, K., ... & Lim, C. (2012). Youth risk behavior surveillance-United States CDC, 2011. *MMWR Surveill Summ*, *61*(4), 1-162.

Sports and Extracurriculars

- American teens may not get enough daily exercise which can set them up for a host of chronic diseases including diabetes and heart disease.

  Source: Carlson, J.A., et al. (2015). Locations of physical activity as assessed by GPS in young adolescents. *Pediatrics (online)*. Retrieved from: www.pediatrics.org/cgi/doi/10.1542/peds.2015-2430

- As of September 2013, there are more than 460,000 NCAA student-athletes and fewer than two percent will go pro in their sports.

  Source: National Collegiate Athletic Association (NCAA). (2013). *Probability of competing beyond high school.* Retrieved from http://www.ncaa.org/about/resources/research/probability-competing-beyond-high-school

- 1.24 million kids were seen in emergency rooms for sports injuries in 2013. 13-15 year olds accounted for 37% of these injuries. 23% of coaches, 28% of athletes, and 31% of parents said they don't do anything to prevent injuries. Fewer than half the coaches surveyed said they had received certification on how to prevent and recognize sport injuries. 54% of youth athletes said they have played injured, and 42% said they have hidden or downplayed an injury during a game so they could keep playing. 53% of coaches said they felt pressure from a parent or player to put an athlete back into a game even if the child had been injured.

Source: SafeKids Worldwide. (2014). *Changing the culture of youth sports.* Retrieved from http://www.safekids.org/research-report/research-report-changing-culture-youth-sports-august-2014

- 19 studies examining the relationship between participation in extracurricular physical activities and academic performance found one or more positive associations.

  Source: Centers for Disease Control and Prevention. (2010). *The association between school-based physical activity, including physical education, and academic performance.* Atlanta, GA: U.S. Department of Health and Human Services.

- Moderate to vigorous physical activity was positively associated with higher GPAs of both males and females.

  Source: Bradley, B.J. & Greene, A.C. (2013). Do health and education agencies in the United States share responsibility for academic achievement and health? A review of 25 years of evidence about the relationship of adolescents' academic achievement and health behaviors. *Journal of Adolescent Health, 52*, 523-532.

- Children who are more physically fit also tend to have higher cognitive functions and academic achievement.

  Source: Fedewa, A.L. & Ahn, S. (2011). The effects of physical activity and physical fitness on children's achievement and cognitive outcomes: A meta-analysis. *Research Quarterly for Exercise and Sport, 82*(3), 521-535.

- Adolescent participants in high injury sports (like football and wrestling) had higher odds of NMUPO (non-medical use of prescription opioids) than adolescents who did not participate in these types of sports. There is an increased opportunity for non-injured teammates to get opioids from injured teammates on the pain medication.

  Source: Veliz, Philip T. (2013). Playing through the pain: Sports participation and nonmedical use of opioid medications among adolescents. *American Journal of Public Health, 103*(5).

- Female 9^{th}-12^{th} grade athletes suffer more overuse injuries than males. Students who play sports all year long had a 42% increased risk of overuse injuries compared to those who played fewer than 4 seasons. Reducing the number of sport seasons played by high school athletes could decrease their rate of overuse injuries with greatest gains potentially achieved by taking at least 1 season off from sports entirely each calendar year.

  Source: Cuff, S., Loud, K., & O'Riordan, M.A. (2010). Overuse injuries in high school athletes. *Clinical Pediatrics, 49*(8), 731-736.

- A TBI (traumatic brain injury) is an injury caused by a blow to the head or rapid acceleration – deceleration forces, and such an injury may lead to decreased levels of consciousness, amnesia, neurologic or neuropsychological abnormalities, or other consequences including death. Symptoms and effects are wide-ranging from mild headaches to memory loss to significant neurological deficits. In athletics, individuals who suffer TBI and resume play too soon may be at greater risk of re-injury.

  Source: Harvey, H.H. (2013). Reducing traumatic brain injuries in youth sports: Youth sports traumatic brain injury state laws, January 2009-December 2012. *American Journal of Public Health, 103*(7), 1249-1254.

- Sports activities account for an estimated 20% of all TBI's among youths and young adults. Children and young teens are at greatest risk of TBIs and they take longer to heal in part because youths' brains are still growing and developing. Sports associated with TBI include football, hockey, cheer, dance, lacrosse, baseball, and soccer.

  Source: Harvey, H.H. (2013). Reducing traumatic brain injuries in youth sports: Youth sports traumatic brain injury state laws, January 2009-December 2012. *American Journal of Public Health, 103*(7), 1249-1254.

- Between 2009-2012 44 states (and DC) enacted 1 or more youth sports TBI laws. 6 states have no TBI laws as of July 2013.

  Source: Harvey, H.H. (2013). Reducing traumatic brain injuries in youth sports: Youth sports traumatic brain injury state laws, January 2009-December 2012. *American Journal of Public Health,* 103(7), 1249-1254.

- The number one reason why kids drop out of organized sports at age 13 and older is that it just isn't fun anymore.

  Source: Youth Sports Quality Institute. (2010). *Primary reasons why kids drop-out of community sports programs.* Retrieved from: http://ysqi4ed.wordpress.com/2010/02/21/primary-reasons-why-kids-drop-out-ofcommunity-sports-programs/

- 39% of coaches of athletes aged 8-18 have been pressured by a parent and 20% have been pressured by an athlete to continue playing an injured young athlete. 31% of young athletes aged 8-18 believe that "good players should keep playing their sport even if they are hurt."

  Source: Toporek, Bryan. (2012). Survey: Many coaches misinformed about youth sports safety risks. *Education Week*. Retrieved from: http://blogs.edweek.org/edweek/schooled_in_sports/2012/04/survey_many_coaches_misinformed_about_youth_sports_safety_risks.html?cmp=ENL-EU-NEWS2

- 52% of coaches of athletes aged 8-18 describe themselves as "very knowledgeable/well-trained" at recognizing sports injuries, yet 4 out of 10 coaches have had no sports safety training. 47% of coaches said that they had too many responsibilities and not enough time to focus on injury prevention. But 49% of youth sports injuries are treated by a coach or adult on-site. 32% of those injuries were severe enough to require medical treatment.

  Source: Toporek, Bryan. (2012). Survey: Many coaches misinformed about youth sports safety risks. *Education Week*. Retrieved from: http://blogs.edweek.org/edweek/schooled_in_sports/2012/04/survey_many_coaches_misinformed_about_youth_sports_safety_risks.html?cmp=ENL-EU-NEWS2

- The greater the amount of time adolescents report spending in regularly scheduled structured activities, the higher their self-reported level of anxiety tends to be.

  Source: Melman, S., Little, S. G., & Akin-Little, K. A. (2007). Adolescent overscheduling: The relationship between levels of participation in scheduled activities and self-reported clinical symptomology. *The High School Journal, 90*(3), 18-30.