

## What Does *Getting Results* Say About Student Health, Supportive Schools, and Academic Success?

Much of the focus of the current school reform movement to improve the scholastic achievement of students has been on implementing new standards, curriculum, teaching techniques, and other practices that focus directly on academics. However, too many students come to school with a variety of health-related problems that make successful learning difficult. In order to continue improving students' academic achievement, attention must be directed toward removing health-related behavioral and environmental barriers to learning.

### What Is "Academic Success"?

Test scores are one dimension of achievement, yet researchers use other indications of academic outcomes, such as school attendance, course grades, teacher evaluations, and graduation. While success on one of these dimensions does not automatically translate into success on another, these achievement indicators together compose a picture of factors that are related to long-term school success (p. 8).

### Research Findings About Associations Between Health Variables and Academic Success

Evidence is mounting that ensuring students are safe, drug-free, healthy, and resilient and have a sense of connectedness to school is essential for improving academic performance (pp. 10–15).

- Students in elementary school through high school perform better academically when they are physically active. Studies demonstrate that **physical activity** is connected to physiological aspects of cognitive functioning (Sallis et al. 1999; Shephard 1997).
- Increases in **physical education** time accompanied by reductions in academic instruction time have favorable effects on students' academic achievement (Tremblay et al. 1998).
- Lack of **breakfast** is associated with reduced cognitive performance among nutritionally at-risk children (Chandler et al. 1995) as well as among well-nourished children (Pollitt et al. 1981).
- Adolescent use of **alcohol, tobacco, and other drugs (ATOD)** and academic performance are reciprocally related to each other (substance use is related to poor academic performance and poor academic performance is related to subsequent increased substance use). Substance use is also related to reduced attention span, lower investment in homework, more negative attitudes toward school, lower motivation, and increased absenteeism (Andrews et al. 1994; Beauvais et al. 1996; Crum et al. 1998; Ellickson et al. 1998; Schulenberg et al. 1994).
- Students' self-reported recurrent **physical health problems** are associated with school failure, most likely because they are absent more often (Needham et al. 2003).
- Sick students who can easily gain access to health care — such as through school-based clinics — are likely to experience higher achievement over multiple school years (Felner and Felner 1989).

In sum, the strongest **causal** relationships are between physical activity and academic success and between nutrient supplementation (including school breakfasts) and cognitive performance. A number of studies also find a correlation (a non-causal relationship) between adolescent use of alcohol, tobacco, and other drugs (ATOD) and academic performance, and between recurrent physical health problems and school failure.

## Associations between Health and the Academic Performance Index (API)

The results of a series of analyses of the school-level API data and data from the 1998-2002 California Healthy Kids Survey (CHKS) shed light on the connections between promoting resilience, reducing health risk behaviors, and improving academic achievement.

- Schools with the highest percentage of students who engage in any **physical activity** have the highest API scores. API scores go up as physical activity goes up (pp. 29–30).
- Schools with the lowest percentage of students who report eating **nutritious food** items have the lowest API scores, and API scores increase as the proportion of students who meet their basic nutritional needs goes up (p. 30).
- API scores increase substantially as the percentage of students who report that they eat **breakfast** increases (p. 30).
- Schools with many students who **use substances** or report being **intoxicated** on school property and schools with large percentages of students who report being **offered drugs** on school grounds exhibit lower API scores than other schools (pp. 31–32).
- Regardless of socioeconomic makeup, schools with proportionately high numbers of students who perceive that their school is **safe** have higher API scores than other schools. API scores were significantly lower in schools with a high percentage of students who reported being **threatened with a weapon** on school property (pp. 32–33).
- As **external resilience assets** (caring relationships, high expectations, and meaningful participation) go up, API scores go up (pp. 33–34).

In sum, schools in this analysis with large percentages of students who engage in risky behavior, are exposed to health risks, or report low levels of developmental supports at school have *lower* API scores than do other schools. Those schools that have high percentages of students who engage in moderate physical activity, eat nutritious food and eat breakfast daily, feel safe at school, and have high levels of school external resilience assets have higher API scores than do other schools.

## The Role of Supportive School Environments in Promoting Academic Success

A number of research studies focus on whether, and under what conditions, building a caring school culture or “community” helps or hinders academic achievement. Several have found relationships between aspects of the school environment and student academic outcomes.

- School **connectedness** (feeling part of one’s school and feeling close to people at school) was positively related to grade point average in major school subjects and negatively correlated with a variety of problem behaviors.
- Among suburban middle school students, **perceived teacher support and caring** was associated with greater interest in class and school, which in turn positively affected grade point averages. At-risk students who perceived their teachers as caring showed significantly higher test scores and greater math proficiency than those who reported lower levels of teacher caring.
- Efforts to improve school community also need to be combined with **academic press** (a set of strong norms and expectations in the school encouraging academic effort and achievement by all students) to be effective.
- Finally, **relatedness to teachers, peers, and parents** was positively associated with engagement in school, which in turn was related to increased achievement.

Several programs that focus on building positive school climate have been evaluated for their effects on achievement-related outcomes. These programs aim to create a supportive school environment so that students will become attached to school, their teachers, and fellow students. The academic outcomes of these programs include increased grade point average and achievement on district testing (Child Development Project/Caring School Community, School Transitional Environment Project, Seattle Social Development Project/SOAR); increased school attendance (Positive Action Through Holistic Education); and lower dropout rates (School Transitional Environment Project).<sup>1</sup>

---

Note: The California Department of Education, through a grant from the Stuart Foundation, funded WestEd to analyze the relationship of scores on California’s Academic Performance Index (API) to student health risk and resilience factors as measured by the state-sponsored California Healthy Kids Survey (CHKS). The CHKS is a comprehensive student self-report assessment tool for monitoring the school environment, student health risks, and resilience assets.

<sup>1</sup> Evaluations of these programs are discussed in *Update 5*, pages 46–52. The Appendix also lists SAMSHSA Model Programs that are primarily designed to prevent or reduce substance abuse, violence, and other high-risk behaviors; and improve reading, written expression, and math skills; increase school attendance and school bonding; and reduce school failure.

## Recommendations for Supporting Academic Success in Schools

Based on the research, schools can best support academic achievement by promoting their students' health, safety, and connection with school. Specifically, schools can (1) increase student access to moderate-to-vigorous physical activity in physical education classes; (2) monitor the nutritional content of food offered at school; (3) offer nutritious breakfasts at school; (4) target substance use, school violence, and antisocial behavior with effective science-based prevention programs that also show improved academic outcomes; (5) foster a positive school climate by implementing an effective science-based program that creates a supportive school environment; and (6) complement community building and school connectedness with strong norms and teacher expectations for academic effort and achievement by all students.

## References

- Andrews, J. A., Duncan, S. C., & Hops, H. (1994). *Explaining the relationship between academic motivation and substance use: Effects of family relationships and self-esteem*. Paper presented at the Biennial Meeting of the Society for Research on Adolescence, San Diego, CA.
- Beauvais, F., Chavez, E. L., Oetting, E. R., Deffenbacher, J. L., & Cornell, G. R. (1996). Drug use, violence, and victimization among White American, Mexican American, and American Indian dropouts, students with academic problems, and students in good academic standing. *Journal of Counseling Psychology, 43*(3), 292–299.
- Chandler, A. M. K., Walder, S. P., Connolly, K., & Grantham-McGregor, S. (1989). School breakfast improves verbal fluency in undernourished Jamaica children. *Journal of Nutrition, 125*, 894–900.
- Crum, R. M., Ensminger, M. E., Ro, M. J., & McCord, J. (1998). The association of education achievement and school dropout with risk of alcoholism: A twenty-five-year prospective study of inner-city children. *Journal of Studies on Alcohol, 59*, 318–326.
- Ellickson, P., Bui, K., Bell, R., & McGuigan, K. (1998). Does early drug use increase the risk of dropping out of high school? *Journal of Drug Issues, 28*(2), 357–380.
- Felner, R. D., & Felner, T. Y. (1989). Primary prevention programs in the educational context: A transactional-ecological framework and analysis. In L. A. Bonc & B. E. Compas. *Primary prevention and promotion in the schools*. Newbury Park, CA: Sage Publications.
- Needham, B. L., Crosnoe, R., & Muller, C. (2003). *Academic failure in secondary school: The inter-related role of physical health problems and educational context*. Austin: Population Research Center, University of Texas.
- Pollitt, E., Leibel, R. L., & Greenfield, D. (1981). Brief fasting, stress, and cognition in children. *American Journal of Clinical Nutrition, 34*, 1526–1533.
- Sallis, J. F., McKenzie, T. L., Kolody, B., Lewis, M., Marshall, S., & Rosengard, P. (1999). Effects of health-related physical education on academic achievement: Project SPARK. *Research Quarterly for Exercise and Sport, 70*(2), 127–134.
- Schulenberg, J., Bachman, J. G., O'Malley, P. M., & Johnson, L. D. (1994). High school educational success and subsequent substance use: A panel analysis following adolescents into young adulthood. *Journal of Health and Social Behavior, 35*(1), 45–62.
- Shephard, R. (1997). Curricular physical activity and academic performance. *Pediatric Exercise Science, 9*, 113–126.
- Tremblay, M., Inman, W., & Willms, J. D. (1998). The relationship between physical activity, self-esteem, and academic achievement in twelve-year old children. *Pediatric Exercise Science, 12*, 312–324.