

# CDC Healthy Schools

## Chronic Health Conditions in School Settings





# Presentation Goals

- Describe the relationship between chronic health conditions and academic achievement.
- Discuss ways schools can help support students with chronic health conditions.



# Presentation overview

- U.S. children and adolescents with chronic health conditions
- Relationship between chronic health conditions and academic achievement
- Strategies for managing chronic health conditions in schools
- CDC resources



# Introduction

- Students spend many hours every week in school.
- Some children and adolescents with chronic health conditions may have lower academic achievement than those without those conditions.
- Managing chronic health conditions can be challenging for school systems, educators, and clinicians.

# Introduction

Estimated Prevalence of Chronic Health Conditions Among U.S. children aged 0-18 years\*

Chronic health condition	Estimated percentage of U.S. students affected*
Asthma	7.3-9.5% of all children 18% of children living in poverty
Seizure disorders	0.7%
Diabetes	0.3% (Includes type 1 and type 2)
Poor oral health	15.6%[untreated dental caries (cavities)]
Food allergies	4.0%

\*Estimates reflect populations from various studies—specific age groups may vary

Centers for Disease Control and Prevention (2017). *Chronic Health Conditions and Academic Achievement*.



# Introduction

- Published scientific evidence shows the benefits of school-based management of chronic health conditions.
- Managing chronic health conditions may help improve health and academic outcomes.
- Schools can use several strategies to support students with chronic health conditions.

# Coordinated School Health





# Whole School, Whole Community, Whole Child Model

WHOLE SCHOOL, **WHOLE COMMUNITY**, WHOLE CHILD




<https://www.cdc.gov/healthyschools/wsc/index.htm>



# Chronic Health Conditions and Academic Achievement



# Chronic Health Conditions and Academic Achievement



## Research Brief

### Chronic Health Conditions and Academic Achievement

#### Introduction

This brief describes the relationship between certain chronic health conditions and academic achievement, based on a review of the scientific literature. These include seizure disorders/epilepsy, asthma, diabetes, poor oral health conditions, and food allergies. These are examples of chronic health conditions that are commonly observed among school-aged youth, possibly affect academic achievement, or use significant resources when addressed at school. Academic achievement refers to academic performance, educational behaviors, and cognitive skills. This brief also makes recommendations for future research.

#### Students and Chronic Health Conditions


About 25% of children in the United States aged 2 to 8 years have a chronic health condition such as asthma, obesity, other physical conditions, and behavior/learning problems.<sup>1</sup> Although it is difficult to estimate and there is not one single source of information for chronic conditions in school aged children, various studies state that for children aged less than 18 years, about 16% have poor oral health, 7% to 10% have asthma, 4% have food allergies, 0.7% have seizure disorders, and 0.3% have diabetes (Table 1). Students with chronic health conditions may face lower academic achievement, increased disability, fewer job opportunities and limited community interactions as they enter adulthood.<sup>2</sup> Because these youth spend a significant amount of their time in schools, it is important to understand the relationship between chronic health conditions and academic achievement. Previous reports show that students who are able to manage their chronic health conditions tend to have better academic outcomes.<sup>3</sup>

Studies show that some students with chronic health conditions have lower academic achievement than students who do not have such conditions, although this relationship varies by condition and can be influenced by additional factors. In this brief, "academic achievement" refers to academic performance, education-related behavior, and cognitive skills. "Academic performance" refers to class grades, grade point average (GPA), standardized test scores, and graduation rates. "Education-related behavior" includes attendance, dropout rate, and behavior problems. "Cognitive skills" include students' concentration, language ability, and short-term and long-term memory.

#### Sources for Information in This Brief

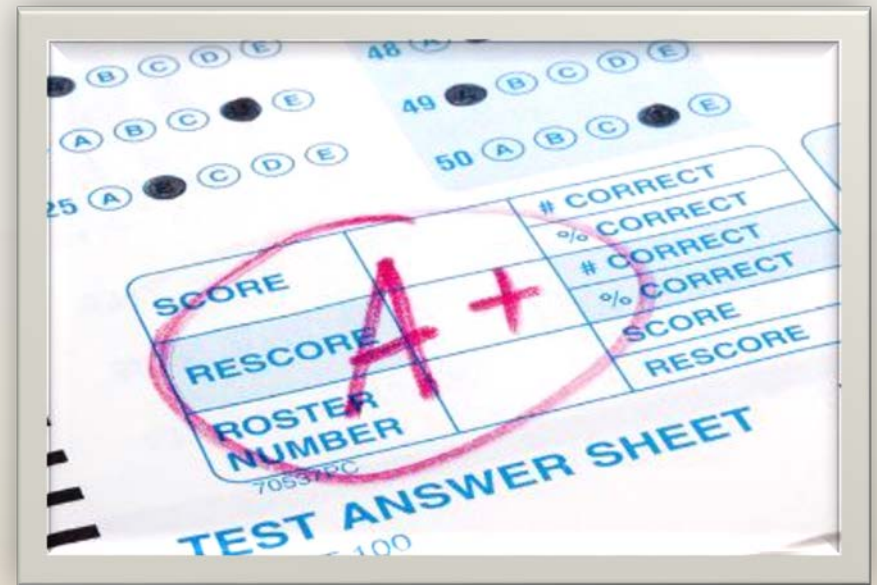
We searched PubMed and Medline for peer-reviewed research on academic achievement and chronic health conditions. This brief summarizes studies published from 1990 through 2014 that focused on school-aged youth (i.e., grades K-12, age 5-19 years), included at least one of the five chronic health conditions (seizure disorders/

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# Chronic Health Conditions and Academic Achievement

- Academic achievement includes:
  - Academic performance
    - class grades, standardized test scores, and graduation rates
  - Education behavior
    - attendance, retention, and classroom behavior
  - Cognitive skills
    - concentration and memory





# Chronic Health Conditions and Absenteeism

- Attendance is linked to student progress and academic achievement.
- Poor attendance can lead to dropping out.
- Chronic absenteeism (missing 10 % or more of school days for any reason, excused or unexcused) is an early warning sign of academic risk.



# Chronic Health Conditions and Academic Achievement: Asthma

- Asthma has been the focus of most studies that have student outcome data
  - most frequently associated with school days missed
- Students in schools with a higher percentage of low-income students are more likely to miss school because of asthma.
- Having asthma alone does not **cause** absenteeism or lower academic achievement.

# Chronic Health Conditions and Academic Achievement: Asthma

- Both asthma education programs and having a full-time school nurse lead to improved symptom management and fewer school absences.



# Chronic Health Conditions and Academic Achievement: Diabetes

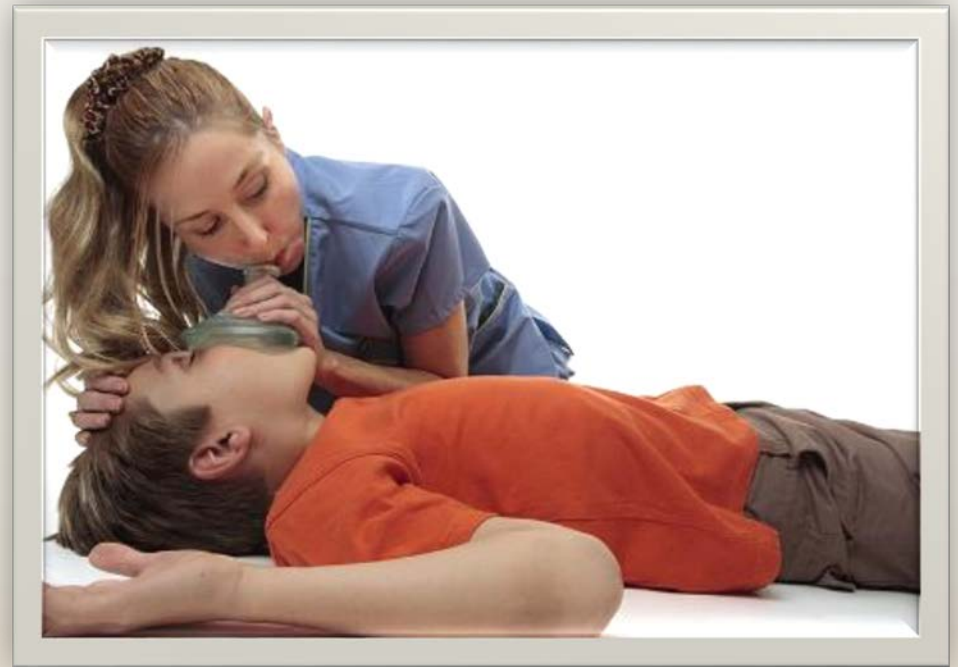
- Diabetes does not have any association with lower academic achievement.
- Socio-economic status (SES) and gender have a stronger effect on test scores for students with diabetes than the condition itself.





# Chronic Health Conditions and Academic Achievement: Seizure Disorders

- Some students with epilepsy also have impaired cognitive function and lower academic achievement.
- Medications can contribute to impaired cognition.





# Chronic Health Conditions and Academic Achievement: Seizure Disorders

- There can be variation in academic achievement by age.
- Students with both ADHD and seizure disorders may have lower academic achievement than students with only one of these conditions.

# Chronic Health Conditions and Academic Achievement: Food Allergies

- No current studies link food allergies and academic achievement.
- Food allergies are associated with bullying, which can lead to students' feeling less connected to school and to lower grades.



# Chronic Health Conditions and Academic Achievement: Poor Oral Health


- Poor oral health conditions are associated with more school absences and a reduction in overall ability to learn.
- It does not **cause** poor academic achievement.



# Managing Chronic Health Conditions in Schools



# Strategies to address the needs of students with chronic conditions



## Research Brief

### Addressing the Needs of Students with Chronic Health Conditions: Strategies for Schools

#### US Students and Chronic Health Conditions

Children and adolescents with chronic health conditions spend many hours in school and depend on trained school staff and a healthy school environment to help them manage these conditions. A good working partnership between students, school nurses, clinicians, school staff, and administrators, can help reduce absenteeism and improve academic achievement.

About 25% of children aged 2 through 8 years have a chronic health condition, including asthma, obesity, other physical conditions, and behavior or learning problems.<sup>1</sup> Although it is difficult to estimate and there is not one single source of information for chronic conditions in school aged children, various studies state that for children and teens younger than 18, about 16% have poor oral health conditions,<sup>2</sup> 7% to 10% have asthma,<sup>3,4</sup> 4% have food allergies,<sup>7</sup> 0.7% have seizure disorders,<sup>6,8,9</sup> and 0.3% have diabetes.<sup>4,10</sup>

Studies show that for some students, chronic health conditions are associated with lower academic achievement, but this finding varies by condition and can be influenced by other factors. Schools are responsible for helping students manage chronic health conditions for two reasons. First, students may rely on the school for clinical services, such as those provided by a school nurse or at a school-based health center, because of barriers to health care access. Second, federal and state regulations require schools to provide services and accommodations for students with chronic health conditions.

This brief describes strategies for school-based management of students' chronic health conditions, for example, seizure disorders/epilepsy, asthma, diabetes, poor oral health, and food allergies.


#### Sources for Information in This Brief

This brief summarizes current scientific knowledge from a systematic literature review on the relationship between the role of school health services in the health and academic outcomes of students with chronic health conditions.<sup>11</sup> It also reflects position statements and guidelines from national organizations with expertise in school health, and the [Whole School, Whole Community, Whole Child](#) (WSCC) approach for comprehensive school health.<sup>12</sup> School districts and schools can use the following strategies and activities to address the needs of students with chronic health conditions.

**Strategy 1. Plan and develop a coordinated system to meet the needs of students with chronic health conditions.**

A coordinated system based on the WSCC framework is one that reinforces the connection between health and learning. It can help facilitate collaboration across several disciplines—for example, nursing, mental health or

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# Strategies to address the needs of students with chronic conditions

1. Plan and develop a coordinated system
2. Provide school-based health services and care coordination
3. Provide specific and age-appropriate education to students and their families
4. Provide professional development opportunities for school staff
5. Provide appropriate counseling, psychological, and social services
6. Provide a safe physical environment with appropriate nutrition, physical education, and physical activity opportunities





# Plan and develop a coordinated system

- Assess existing school health policies and practices
- Designate a leader at the district level
- Identify a person in the school building to coordinate the implementation systems that support students with chronic health conditions
- Leverage and strengthen school-community connections

# Provide school-based health services and care coordination

- Screen students for chronic conditions
- Identify, track and regularly monitor cases
- Coordinate care with family and providers and create individual health plans
- Provide access to medications or directly observed therapy (DOT)
- Help students and their families establish care with a primary care provider



# Provide school-based health services and care coordination (cont'd.)

- School-based health centers (SBHCs) provide comprehensive care, that can include medical, dental, mental health, and sexual health services
- SBHCs are linked to improved health, fewer emergency department visits, and reduced absenteeism



# Provide specific and age-appropriate education to students and their families

- Education for students should include
  - Age-appropriate information about their chronic health condition to improve self-management
  - How to recognize symptoms and the need for medication
  - How to use medication correctly
  - How to find help at school when they need it



# Provide specific and age-appropriate education to students and their families (cont'd.)

- Education for families and coordination with health-care providers can
  - Help reduce symptoms
  - Reduce hospitalizations
- Ideal education for families is culturally and linguistically appropriate
- Consider web-based education or an external organization





# Provide professional development opportunities for school staff

- Create emergency protocols and Inform all school staff about the signs and symptoms of chronic health conditions that require immediate action
- Provide training for appropriate school staff on resources that support students with chronic health conditions.
- Consider allowing staff time to participate in off-site learning opportunities, e-learning modules, or webinars.

# Provide appropriate counseling, psychological, and social services

- Identify and track students with emotional, behavioral, and mental health needs.
- Provide or refer students and families to school- and community-based counseling services.
- Help students during transitions such as changes in schools or in family structure.
- Promote a positive school climate where respect is encouraged and students can seek help from trusted adults.








# Provide a safe environment with appropriate nutrition, physical education, and physical activity

- Provide a safe physical environment, both outside and inside school buildings.
- Ensure that foods are labeled and that menus are available to students and their families. In addition, food allergens, such as peanuts, should be prohibited in the classroom.
- Encourage all students to participate in physical activity, regardless of ability, unless medical needs prevent it.
- Align activities with provisions in local wellness policies and with national or state physical education standards.

# The Role of the School Nurse



## Managing Chronic Health Conditions in Schools: The Role of the School Nurse

Approximately 25% of children ages 2-8 years old in the United States are affected by chronic health conditions.<sup>1</sup> These can include asthma, diabetes, seizure disorders, food allergies, and poor oral health. Managing chronic health conditions in schools can be complex. This fact sheet focuses on the role of the school nurse in helping students manage their condition to help reach their full academic potential.

Health services in schools are a key component of the [Whole School, Whole Community, Whole Child Model](#).<sup>2</sup> The healthcare needs of students with a chronic health condition may be complex and continuous. The school nurse is often the only healthcare provider in a school for both emergencies and daily management of chronic health conditions. The National Association of School Nurses (NASN) and the American Academy of Pediatrics (AAP) recommend that school districts provide a full-time school nurse in every school building. A full-time school nurse and dependable funding are essential to achieve high quality health services and to meet student health needs.

### School nurses often have three main roles in managing chronic health conditions

#### 1 Providing direct care, such as giving children medications.

- Many students with a chronic health condition are able to attend school and succeed due to services offered by school nurses.
- School nurses may be the first to identify chronic health conditions in students when they enter school.

#### 2 Providing case management.

- The school nurse is a key member of the educational team and is usually responsible for assessing, planning, implementing, and monitoring individual health plans (IHP) and emergency care plans for students with chronic health conditions.



### DID YOU KNOW

- A recent study estimated that for every dollar invested in a school nursing program, society gains \$2.20.<sup>4</sup>
- School nurses often lead the development and evaluation of school health policies and provide healthcare services for students who qualify under Section 504 of the Rehabilitation Act of 1973 to meet requirements of federal laws.
- School nurses assist students in learning to manage their chronic health conditions, increasing time in the classroom and decreasing absenteeism. This saves costs to the school district and increases students' academic success.
- Smaller nurse-to-student ratios are associated with lower absenteeism rates and higher graduation rates.<sup>5</sup>

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- Provide direct care, such as giving children medications
- Provide case management
- Advocate for students and their families to help them get the resources and support they need.
- School nurses help improve academic achievement and decrease absenteeism
- For every dollar invested in a school nursing program, society gains \$2.20

# Health Insurance for Children



## Health Insurance for Children: How Schools Can Help

*A student's health strongly affects their school attendance and academic performance. Schools are often the first to identify students who may need additional help to perform at their full potential. This fact sheet provides schools with guidance on how to improve educational outcomes of students by connecting them to health insurance.*

Millions of children and teens are not insured who could qualify for health insurance.<sup>1</sup> Research shows that students who had Children's Medicaid (CHIP) coverage were more likely to complete high school and graduate from college.<sup>2</sup> Schools can help boost attendance and academic performance with one action: help students and their families get health insurance.<sup>2</sup>

Schools can help students enroll in health insurance in three ways

### STEP 1 Identify students without insurance and those who may have a chronic health condition

At the beginning of the school year or upon enrollment during the school year, identify whether a student has health insurance and if they have a chronic health condition. Update existing school health records or enrollment forms to note this information.

Updating records or forms may help schools increase enrollment of eligible students and family members in Medicaid, CHIP, private or other eligible insurance plans.<sup>3</sup>

- This can be as easy as adding questions about health insurance and chronic health conditions to the [Federal School Lunch program enrollment form](#).
- If a student does not have health insurance, request parental permission to talk with them about obtaining coverage and enrollment assistance, if appropriate.

Recording student health information is a recommended practice for school nurses and state law might require it.<sup>4</sup>



### DID YOU KNOW

Chronic health conditions may include:

- asthma
- diabetes
- epilepsy or seizure disorder
- food allergies
- hypertension/high blood pressure
- poor oral health



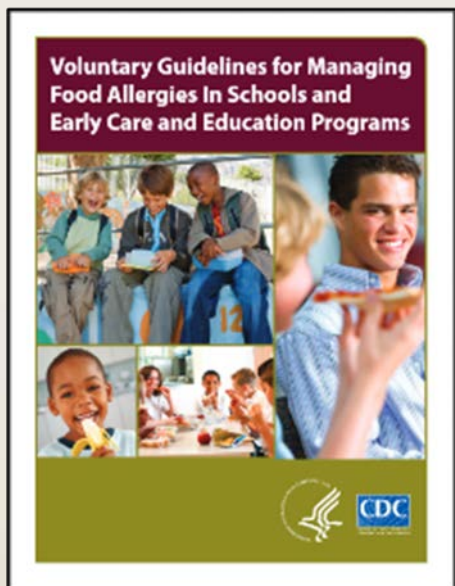
- Identify students without insurance and those who may have a chronic health condition
- Help students and families obtain coverage
- Refer Families to School-based or Community-Based Medical Care Providers and other Resources
- Identify and assist at-risk or vulnerable populations students and their families



# Additional Resources



# CDC Food Allergy Toolkit for Schools



- 6 audience-specific tip sheets
- 6 audience-specific customizable PowerPoint presentations
- 7 audience-specific podcasts
- Select Resources list for schools

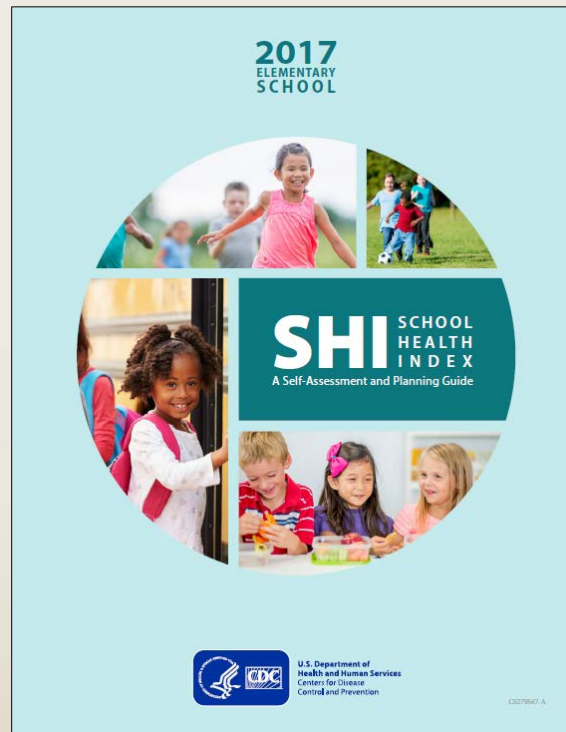




# Strategies for Addressing Asthma in Schools



# School level assessment tool: CDC School Health Index



[www.cdc.gov/HealthySchools/SHI](http://www.cdc.gov/HealthySchools/SHI)



# Family Engagement

### Healthy Students Do Better in School

**STUDENTS THAT ARE**

- Physically active
- Eating breakfast and healthy foods
- Managing their chronic health conditions like asthma or diabetes

- Have increased test scores.
- Have better grades.
- Have increased school attendance.
- Have improved classroom behavior.

### PARENT ENGAGEMENT

#### Strategies for Involving Parents in School Health

### Physical Education How Can You Help?

Physical education should be an enjoyable experience for all students. Students should be active for most of the time in each week during their physical education classes. Supporting students' participation in physical education can provide students with important knowledge, skills, behaviors, and confidence to be physically active for life. In addition, physical education can help improve students' academic achievement, such as grades and test scores.

**IDEAS FOR PARENTS**

- Encourage your child to be active.
- Ask your child to help you plan their physical education activities.
- Encourage your child to be active during their free time.

**What's Happening at School?**

Physical education teachers often use a variety of strategies to make lessons fun and engaging for students with disabilities. There are many opportunities for parents to help with and participate in physical education!

**IDEAS FOR PARENTS**

- Ask the school to participate in the National Youth Fitness Program, which helps promote physical activity, such as increasing physical education and physical activity.
- Does the school participate in PE? What are the benefits?
- Encourage your child to be active during their free time.

### Healthy Events and Classroom Celebrations How Can You Help?

Students may have access to foods and beverages through special events and classroom celebrations during the school day. These items are not sold to students, but rather offered to students to school staff or parents. Encouraging that healthy options, such as fruits, vegetables, low fat or fat free dairy, and whole grain snacks, are available at school events, such as field day, fundraisers, parties, and celebrations (e.g., classroom awards for good behavior) can help improve students' academic achievement, such as grades and test scores.

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### Parents for Healthy Schools

#### A Guide for Getting Parents Involved from K-12

November 2015

### Children and Adolescents with Asthma How Can You Help?

Asthma is a disease that affects airways in the lungs and is one of the most common long-term diseases. Asthma may cause wheezing, breathlessness, chest tightness, or coughing at night or early in the morning. An asthma episode can happen when a person is exposed to asthma triggers, such as pollen, animal dander, dust, mold, air pollution, smoke, fragrances, and perfumes. Children with asthma may also have asthma symptoms in schools. Asthma symptoms can be controlled by avoiding triggers and using medications prescribed by a health care provider. Asthma that is not well controlled may lead to emergency room visits, and possibly being admitted to the hospital. It is the leading cause of days missed at school. Schools can support students with asthma by working with families and medical providers to help manage asthma care at school. Healthy students are more likely to have better attendance, grades, and test scores.

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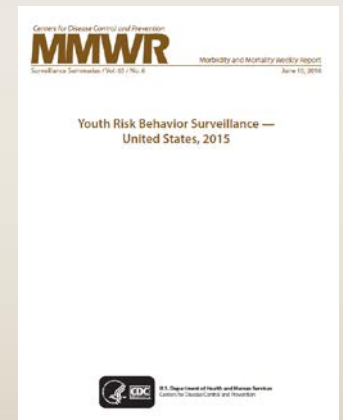
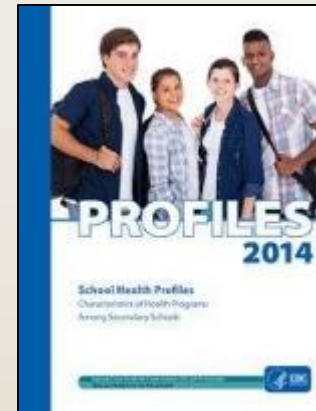
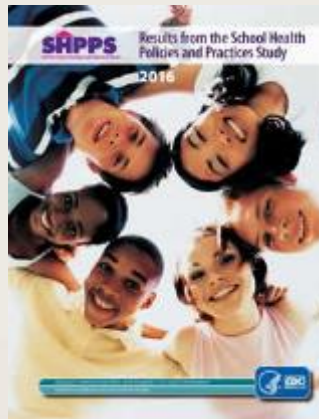
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# CDC Division of Adolescent and School Health (DASH)

## School-Based Surveillance

- School Health Policies and Practices Study
- School Health Profiles
- Youth Risk Behavior Surveillance System



<http://www.cdc.gov/healthyyouth/data/index.htm>

# CDC's Virtual Healthy School

An online interactive school building that will visualize how the ten components of the WSCC model are integrated into the classroom, staff break room, hallways, cafeteria, gymnasium, recreational field, community, and home.



# CDC Healthy Schools Website: www.cdc.gov/healthyschools

The screenshot displays the CDC Healthy Schools website interface. At the top, there are social media icons for Facebook, Twitter, and a plus sign. Below this, four main topic areas are highlighted with blue headers and corresponding images: Nutrition, Physical Activity, Obesity Prevention, and Chronic Conditions. A central navigation menu includes icons and text for Data & Statistics, State Programs, Professional Development & Training, Physical Education Curriculum Analysis Tool (PECAT), School Health Index, and School Health Services. The main content area features four article teasers: 'Parents for Healthy Schools', 'Health & Academics', 'School Health Guidelines', and 'Local School Wellness Policy'. To the right, a circular diagram titled 'Whole School, Whole Community, Whole Child' illustrates a collaborative approach to learning and health. At the bottom, there is a 'BAM! Body and Mind' logo and a 'Visit Our Virtual Healthy School' banner.

**Nutrition**  
**Physical Activity**  
**Obesity Prevention**  
**Chronic Conditions**

**DATA & STATISTICS**  
**STATE PROGRAMS**  
**PROFESSIONAL DEVELOPMENT & TRAINING**  
**PHYSICAL EDUCATION CURRICULUM ANALYSIS TOOL (PECAT)**  
**SCHOOL HEALTH INDEX**  
**SCHOOL HEALTH SERVICES**

**Parents for Healthy Schools**  
Strategies to help parents and schools improve learning and health.  
More >

**Health & Academics**  
Research and resources showing the link between health and academic success.  
More >

**School Health Guidelines**  
Guidelines and resources to promote healthy eating and physical activity.  
More >

**Local School Wellness Policy**  
Opportunities to create and support a healthy school environment.  
More >

**Whole School, Whole Community, Whole Child**  
A collaborative approach to learning and health

**Visit Our Virtual Healthy School**  
Make your virtual classroom a better place for students and teachers.

**BAM! Body and Mind**



# Conclusion

- Studies show that school services can help school-aged youth and their families with chronic health conditions
- Student whose symptoms are controlled are more likely to have higher school achievement
- School nurses and school-based services can help schools increase students' overall health and academic success
- Teacher and staff training should include accurate expectations about the academic potential of children with chronic health conditions – Try not to underestimate!



# Thank you!



For more information, please contact the Centers for Disease Control and Prevention:

4770 Buford Highway NE, Atlanta Georgia 30341 USA

Visit: <http://www.cdc.gov/healthyschools/>

Email CDC-INFO: [www.cdc.gov/cdc-info](http://www.cdc.gov/cdc-info)

Call: 1-800-CDC-INFO (232-4636);

TTY: 1-888-232-6348

