Hanover Wellness Education News

January, 2013 http://www.hanoverschools.org

Is Sugar Bad for You?

Americans consume 12 teaspoons of added sugars per day and about 45 pounds per year.

Sugar is defined as beet and cane sugar (whether white or brown) and high-fructose corn syrup (HFCS) (Taubes, 2011).

Refined sugar (sucrose) is made up of a molecule of the carbohydrate glucose, bonded to a molecule of the carbohydrate fructose — a 50-50 mixture. The fructose, which is almost twice as sweet as glucose, is what distinguishes sugar from other carbohydrate-rich foods like bread or potatoes that break down upon digestion to glucose alone. The more fructose in a substance, the sweeter it will be. HFCS is 55 percent fructose, and the remaining 45 percent is nearly all glucose. It was first marketed in the late 1970s and was created to be indistinguishable from refined sugar when used in soft drinks. Because each of these sugars ends up as glucose and fructose in our stomach, our bodies react the same way to both, and the physiological effects are identical. Researchers have stated that HFCS is not more harmful than other sources of sugar.

Refined sugar and HFCS do not provide you with any protein, vitamins, minerals, antioxidants or fiber. They either displace other more nutritious elements of our diet or are eaten over and above what we need to sustain our weight.

Research has shown that plenty of evidence suggests that sugar could increase the risk of heart disease and diabetes — even raising LDL cholesterol, known as bad cholesterol. However, the research is not definitive. Therefore, an upper limit on sugar consumption has not been identified.

It may be true that sugar and HFCS, because of the unique way in which we metabolize fructose and at the levels we now consume it, cause fat to accumulate in our livers followed by insulin resistance and metabolic syndrome, and so trigger the process that leads to heart disease, diabetes and obesity. They could indeed be toxic, but they take years to do their damage. It doesn't happen overnight. Until long-term studies are done, we cannot be sure.

The content of this newsletter is not meant to provide anyone with personal medical advice, which you should obtain from your health care provider.

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See also the following video: 60 minutes report on sugar by Sanjay Gupta

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Hanover Wellness Education News

February, 2013 http://www.hanoverschools.org

The Importance of Failure for Learning

This month's issue of the Hanover Wellness Education News contains some useful information on the importance of failure in the process of learning and healthy development.

In order to learn one must not be afraid to fail. Such a mindset requires one to accept the short lived feelings that accompany failure, mistakes, and errors. Holt (1964/1982, p. 112) described how a baby reacts to failure.

*"*A baby does not react to failure as an adult does, or even a five-year-old, because she has not yet been made to feel that failure is shame disgrace, a crime. Unlike her elders, she is not concerned with protecting herself against everything that is not easy or familiar; she reaches out to experience, she embraces life."

Holt suggested that older folks would be wise to see mistakes as a normal and necessary part of learning and life. The psychologist Thomas Szasz explained why adults are afraid to accept challenging tasks by stating,

"Every act of conscious learning requires the willingness to suffer an injury to one's self-esteem. That is why young children, before they are aware of their own self-importance, learn so easily; and why older persons, especially if vain or important, cannot learn at all." Thomas Szasz. (Andrews, 1993, p. 267).

Another psychologist and educator Jerome Bruner (2006, p. 62) noted that we should see the results of our efforts as information that helps us improve with the following remark,

"Experience success and failure not as reward and punishment but as information (Bruner, 2006, p. 62)."

Finally, Swaim (2010, p. 87) offered a comment from the former CEO of Johnson & Johnson who noted that, "Failure is our most important product."

If we are afraid to fail we cannot learn, develop and grow. Students and adults must be willing to accept failure as a temporary and normal state that beginners inhabit. It is merely a stop on the way to becoming an expert performer.

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Hanover Wellness Education News

March, 2013 **http://www.hanoverschools.org**

What are the benefits of physical activity?

This month's issue of the Hanover Wellness education news provides information on the benefits of physical activity.

A Review of the Strength of the Scientific Evidence

Adults and Older Adults
Strong Evidence

- Lower risk of:
  - Early death
  - Heart disease
  - Stroke
  - Type 2 diabetes
  - High blood pressure
  - Adverse blood lipid profile
  - Metabolic syndrome
  - Colon and breast cancers
- Prevention of weight gain
- Weight loss when combined with diet
- Improved cardiorespiratory and muscular fitness
- Prevention of falls
- Reduced depression
- Better cognitive function (older adults)

Moderate to Strong Evidence

- Better functional health (older adults)
- Reduced abdominal obesity

Moderate Evidence

- Weight maintenance after weight loss
- Lower risk of hip fracture
- Increased bone density
- Improved sleep quality
- Lower risk of lung and endometrial cancers

Children and Adolescents
Strong Evidence

- Improved cardiorespiratory endurance and muscular fitness
- Favorable body composition
- Improved bone health
- Improved cardiovascular and metabolic health biomarkers

Moderate Evidence

- Reduced symptoms of anxiety and depression

Reference

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Hanover Wellness Education News

April, 2013 http://www.hanoverschools.org

This month's issue provides highlights from the National Association for Sport and Physical Education (NASPE, 2012) Shape of the Nation Report: Status of Physical Education in the USA.

Here are some facts from the report:

- Only six states (Illinois, Hawaii, Massachusetts, Mississippi, New York and Vermont) require physical education in every grade, K-12.
- Fifty states have their own state standards for physical education, only Iowa has not adopted state standards.
- Only 26 states (51%) require some form of student assessment in physical education.
- Fifty-nine percent of states (30) allow required physical education credits to be earned through online physical education courses.
- Twice as many states (28 vs. 14 in 2010) require physical education grades to be included in students' grade point averages.
- Fourteen states (27%) require schools/school districts to perform fitness assessments.
- Only 11 states prohibit the practice of withholding physical activity, including recess, as punishment and prohibit the use of physical activity as punishment for inappropriate behavior or for disciplinary reasons.

- Massachusetts does not require that elementary schools provide recess
- Massachusetts does not require student assessment in physical education
- Massachusetts does not require that physical education grades be a factor in a student's grade point average
- Massachusetts does not require a fitness assessment protocol

Massachusetts does permit local education agencies or school districts to determine recess, assessment practices, and fitness assessment practices.

Reference

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Hanover Wellness Physical Education News

May, 2013 http://www.hanoverschools.org

12th Annual Cedar School Screen-based Media Turnoff Week

Excessive recreational screen-based media time (e.g., watching video and television, playing video games and recreational computer, tablet, and smart phone use) displaces time that could be spent reading (potentially delaying literacy), doing homework, engaging in health enhancing physical activity and interacting with one's family. Excessive screen-based media time can have adverse physical, behavioral and psychosocial effects on children (Davis, 2008).

Physical effects
Video game use is associated with upper body musculoskeletal disorders (repetitive use injures). Video games and television viewing are independently associated with obesity (Davis, 2008).

Behavioral effects
Screen-based media can influence children in undesirable ways. Aggressive thoughts can be more common while pro-social behavior can be decreased in the short term (Davis, 2008). TV shows are often filled with violent solutions to problems (University of Michigan, 2010). These violent acts often go unpunished and are accompanied by humor. The consequences of human suffering and loss are rarely depicted. Too much time watching television has been associated with higher rates of attention problems in children (Medlineplus, 2011).

Psychosocial effects
Excessive amounts of screen-based media may take the place of social interaction with friends and family, depriving young people of sharing ideas and feelings with others. This can prevent parents and caregivers from learning more about their children (Medlineplus, 2011).

Children can learn information from screen-based media that is inappropriate and incorrect. Violence, sexuality, race and gender stereotypes, drug and alcohol abuse can be common themes of television (AACAP, 2001). Many young people cannot tell the difference between the fantasy presented on video and reality. Some are influenced by thousands of advertisements for alcohol, junk food, and toys they view each day. Those who play violent video games can experience angry thoughts (WebMD, 2012).

More facts about screen-based media.

The likelihood of poorer school performance increases with increasing weekday screen time (Sharif & Sargent, 2006). The American Academy of Pediatrics (2009) recommends that children limit TV watching to one to two hours of quality programming per day.

Screen based media rates (KFF, 2010)
8-18-year-olds spend:

- 4 hours and 29 minutes watching television per day
- 1 hour and 29 minutes using computers per day
- 2-11-year-olds spend 24 minutes using the Internet per day (Nielson, 2010a)
- 25 minutes watching movies per day
- Boys spend 1 hour and 21 minutes per day playing console video game and computer games per day

The average American watches 35 hours and 34 minutes of TV per week (Nielson, 2010b).

In order to create more time for physical activity and reading Cedar students (and parents and staff) may participate in our annual Screen turnoff week from Monday, February 25 through Sunday, March 3, 2013. See the April 2013 Physical Education News for guidelines and a log to record your progress.

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Hanover Wellness Education News

June, 2013 http://www.hanoverschools.org

12th Annual Cedar School Screen-based Media Turnoff Week

Hanover students (and parents and staff) who wish to reduce their screen-based media time may participate in our annual Screen turnoff week from Monday, February 25 through Sunday, March 3, 2013.

Table 1 provides an explanation of the challenge. Table 2 is a log for recording your physical activity, reading and screen time.

Table 1: The Screen-based Media, Physical Activity, and Reading Challenge (Screen turnoff week).

Name _____ Class _____

I am learning to increase my level of physical activity and reading and decrease my level of sedentary behavior and recreational screen-based media

Instructions. Set a goal for screen time, physical activity time, and reading time. Choose your level of commitment by writing level one, two, three or four on the log for each aspect of the challenge (i.e., screen time, physical activity, and reading). In other words, indicate the time you will spend: using screen-based media, being physically active and reading. You may choose a different level for each aspect of the challenge.

The screen based media that we ask you to limit or sacrifice includes:

- Watching television, movies, DVD's and video
- Playing video games
- Using a computer for a non-educational/recreational purpose such as playing a video game

Reading online (at a website like www.nytimes.com) would be an acceptable use of time. Using a computer for research, writing/typing and composing an email or a Word document would also be acceptable (educational). We defer to you, the parent or caregiver, to identify non educational/recreational computer time

Participate in enjoyable physical activity

Physical activity includes any moderate to vigorous physical activity that you will enjoy doing such as walking, jogging, cycling, swimming, exercise, playing a sport, dancing, gymnastics, strength training, stretching and so forth. Aim for at least one hour of enjoyable physical activity every day.

Read

Try to read at least 15-20 minutes each day. This can include the newspaper (on line, e-reader [if no other alternative], or in print), a magazine, picture book chapter book and or comic book. Younger children can ask a caregiver to read to them.

Level of commitment	Total screen time For the week	Total Physical activity time for the week	Total Reading time for the week
Level 4	0	Greater than or equal to 21 hours	Greater than or equal to 8 hours
Level 3	Less than 4 hours	Greater than or equal to 16 hours	Greater than or equal to 6 hours
Level 2	Less than 8 hours	Greater than or equal to 11 hours	Greater than or equal to 4 hours
Level 1	Less than 14 hours	Greater than or equal to 7 hours	Greater than or equal to 2 hours

Tips for Success

1. Identify reasons why it is important for you to achieve your goal of eliminating or reducing screen based media time. It will give me more time to spend: with my family, reading, exercising, playing, doing school work...
2. Identify obstacles that might keep you from avoiding recreational screen based media: other people in the house watching TV, bad weather might prevent outside activity, boredom, feeling tired.
3. Identify physical activities that you enjoy doing: playing sports, dancing, going for a walk, exercising, playing games with family and or friends.
4. Identify books and periodicals that you would enjoy reading (or having read to you). Picture books, chapter books, newspaper, magazine, comic book.
5. Identify friends or family members who will support you: Father, mother, brother, sister, friend, grandmother, grandfather.
6. Celebrate your success. You could celebrate a job well done by having a party for yourself, reading a book, or doing a favorite physical activity.

What about Motion Gaming?

Motion Games are video games that provide physical activity. These include such electronic devices as Konami's Dance Dance Revolution, Xbox Kinect, PlayStation Move, and Nintendo's Wii and Wii Fit,, game stationary bicycles and the like. We recommend that motion gaming NOT take the place of physical activity performed in realistic settings. Whenever possible, physical activity should occur unconnected or untethered to electronic devices. These activities include: going for a walk, dancing, doing gymnastics, or playing sports. However, motion game physical activity is better than no physical activity.

Table 2: Screen-based Media, Physical Activity, and Reading Challenge Log

Name _____ Class _____ Date _____

I am learning to increase my level of physical activity and reading and decrease my level of sedentary behavior

Instructions: Choose a goal representing the amount of time you will spend for screen time, physical activity and reading for the week. Record the number of hours and minutes that you participate in physical activity, watch screen based media and read in the appropriate box at the end of each day. Write the total amount of time you spent doing each behavior for the week in the proper box in the column on the far right.

Activity Type	**Monday 2/25 Total time**	**Tuesday 2/26 Total time**	**Wednesday 2/27 Total time**	**Thursday 2/28 Total time**	**Friday 3/1 Total time**	**Saturday 3/2 Total time**	**Sunday 3/3 Total time**	**Total hours and minutes**
Screen Time **Goal level:**	Screen time:	Screen time:	Screen time:	Screen time:	Screen time:	Screen time:	Screen time:	Screen time:
Physical activity time **Goal level:**	Physical activity time:	Physical activity time:	Physical activity time:	Physical activity time:	Physical activity time:	Physical activity time:	Physical activity time:	Physical activity time:
Reading time **Goal level:**	Reading time:	Reading time:	Reading time:	Reading time:	Reading time:	Reading time:	Reading time:	Reading time:

_____has successfully completed the requirements of level ___ for screen time, level ___ for physical activity and

level ___ for reading.

Signature of parent or caregiver:

Hanover Wellness Education News

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What are genetically modified foods?

Genetically modified (engineered) foods are foods produced from genetically modified organisms. Genetically engineered foods have had foreign genes (genes from other plants or animals) inserted into their genetic codes. Genetic engineering can be done with plants, animals, or microorganisms.

Genetically modified food has become ubiquitous in the United States. Sixty to 70% of processed foods on U.S. grocery shelves have genetically modified ingredients. The most common genetically modified foods are soybeans, maize, cotton, and rapeseed oil. That means many foods made in the U.S. containing field corn or high-fructose corn syrup, such as many cereals, snack foods, and soda; foods made with soybeans; and foods made with cottonseed and canola oils could have genetically modified ingredients. Genetically modified food is controversial. The benefits of genetically engineered food potentially include:

- Greater nutrition
- Increased taste
- Disease- and drought-resistant plants that require fewer environmental resources
- Decreased use of pesticides
- Increased supply of food with reduced cost and longer shelf life
- Faster growing plants and animals
- Food with more desirable traits, such as potatoes that absorb less fat when fried
- Medicinal foods that could be used as vaccines or other medications

Potential risks include:

- Modified plants or animals may have genetic changes that are unexpected and harmful.
- Modified organisms may interbreed with natural organisms and out-compete them, leading to extinction of the original organism or to other unpredictable environmental effects.
- Plants may be less resistant to some pests and more susceptible to others.

The content of this newsletter is not meant to provide anyone with personal medical advice, which you should obtain from your health care provider.

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WebMD. (2013). *Are biotech foods safe to eat*. Retrieved May 25, 2013, from http://www.webmd.com/food-recipes/features/are-biotech-foods-safe-to-eat

Hanover Wellness Education News

August, 2013 http://www.hanoverschools.org

Physical Education as a Core Subject in All Public Schools

Children and adolescents have grown accustomed to a sedentary lifestyle. Only about half of youth meet the current *Physical Activity Guidelines for Americans'* recommendation of at least 60 minutes of daily vigorous or moderate- intensity physical activity. Children and adolescents face growing health risks — perhaps none more important than increased obesity — that can jeopardize their well-being not only today but throughout their lifespans.

Regular physical activity promotes growth and development in youth and has multiple benefits for physical, mental, and cognitive health. Physical activity is related to lower body fat, greater muscular strength, stronger bones, and improvements in cardiovascular and metabolic health, as well as to improvements in mental health by reducing and preventing conditions such as anxiety and depression and enhancing self-esteem.

There is a relationship between vigorous and moderate intensity physical activity and the structure and functioning of the brain. Children who are more active show greater attention, have faster cognitive processing speed, and perform better on standardized academic tests than children who are less active. Ensuring that children and adolescents achieve at least the recommended amount of vigorous or moderate-intensity physical activity may well improve overall academic performance.

There is sound evidence that high quality physical education with appropriate instruction and assessments is effective in increasing students' physical activity. Quality physical education provides students the opportunity to learn meaningful content and skills—what students should "know and be able to do" relative to physical activity.

Schools traditionally have used physical education as their primary means of promoting physical activity. But they face challenges in continuing to deliver it both equitably and effectively. Fiscal pressures, resulting in teacher layoffs or reassignments and a lack of equipment and other resources, inhibit the offering of quality physical education in some schools and districts. Safety concerns associated with allowing children to play sometimes pose barriers. Policy pressures, such as a demand for raising standardized test scores through increased classroom time, further challenge schools to spend time providing physical activity for youth.

The Institute of Medicine (IOM) is recommending that schools provide opportunities for at least 60 minutes of physical activity each day for students and that physical education be designated a core subject. The IOM report stated that only about half of America's students are getting at least an hour of vigorous or moderate-intensity physical activity each day. Forty-four percent of school administrators reported reducing time from physical education, arts and recess since the passage of the No Child Left Behind law in 2001 in order increase time for reading and mathematics. Physical education in school is the "only sure opportunity" for students to have access to activity that will help keep them healthy.

The majority of states mandate physical education, according to the American Alliance for Health, Physical Education, Recreation, and Dance (AAHPERD). Most do not require a specific amount of time for physical education in school, and more than half allow exemptions or substitutions, such as marching band, cheerleading and community sports.

The report recommends:

- All elementary school students should spend an average of 30 minutes each day in physical education class (150 minutes per week for K-6).
- Middle and high school students should spend an average of 45 minutes each day in physical education class (225 minutes per week).
- State and local school leaders should find ways get children more physical activity in the school environment.
- NOT using student exclusion from recess as a form of punishment, give students frequent classroom breaks.

Reference

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Hanover Wellness Education News

September 2013 http://www.hanoverschools.org

This month's issue of the news tackles the issue of waiving, exempting and making substitutions for high quality physical education at the secondary level.

When we eliminate academic content such as visual arts, theatre, music, vocational arts, and physical education (the so called non-academic subject areas) from the school's curriculum it is like training young people for the marathon of life by asking them to exercise one leg.

Education should develop the whole child and not just the traditional subjects at the top of the educational hierarchy (i.e., English/language arts, mathematics, and science). A holistic and balanced education should develop the cognitive, social/emotional, and motor domains of learning. Each part of such a balanced curriculum represents an essential area of knowledge and skill to which all students should have equal access.

A narrow curriculum that emphasizes only reading, writing, and math will lead to a narrow and unbalanced education. The result for many students who have the potential to be highly skilled and intelligent within these missing areas will be an inability to learn where there true strengths lie. These students may complete their K-12 education feeling unsuccessful and incompetent. A vital component of a holistic education is a physical education.

Student participation in physical education helps improve cognitive function, which in turn, promotes learning in other academic subject areas (Ratey, 2002; Ratey & Hagerman, 2008). It helps students learn about their abilities, aptitudes, limitations, and potential. Furthermore, it provides opportunities for students to develop creativity, positive attitudes toward physical activity, assume more personal and social responsibility, and meet performance obligations as individuals and in groups.

Despite the many benefits of physical education U. S. school districts often allow students to be exempted from participation in this important subject. However, many government, medical and education leaders as well as parents, and students are in favor of quality, daily physical education (Robert Wood Johnson Foundation, 2003; NASPE & the American Heart Association, 2006).

The U. S. Surgeon General's (United States Department of Health and Human Services, 1996) report on physical activity and health recommended that schools (and universities) reintroduce daily, quality physical activity as a key component of a comprehensive education. Healthy people 2010 (USDHHS, 2000) includes the following recommendation: increase the proportion of the nation's public and private schools that require daily physical education for all schools. The National Association for Sport and Physical Education, the Centers for Disease Control and Prevention, the American Heart Association, the American Academy of Pediatrics, and the National Association of State Boards of Education recommended that all students participate in daily physical education or its equivalent (NASPE & the American Heart Association, 2006).

Ninety-five percent of parents want physical education included in the school curriculum for K-12 students (NASPE & American Heart Association, 2006). A survey conducted by the Robert Wood Johnson Foundation (2003) found that 92% of teens wanted to receive daily physical education.

Neuroscience also supports more physical education and physical activity in schools since they promote cognitive development. Dr. John Ratey (2002), Harvard Medical School professor of psychiatry, told us that physical activity optimizes alertness, attention, motivation and mental health. When students learn complex motor patterns complex synaptic connections are formed in the brain that improve its ability to process new information. The brain responds to motor development like muscles do, growing with it and withering without (Ratey & Hagerman, 2008).

California and Texas mandate physical education learning time and assessment of physical education learners. They have found that their students who attend physical education and are physically fit, score higher on their state standardized tests, provide less discipline problems, and attend school more often than their less fit peers (California Department of Education, 2004; Carlson, Fulton, & Lee, 2008; NASPE, 2002; Robert Wood Johnson Foundation, 2007; Texas Education Agency, 2009).

More time in physical education leads to improved grades and standardized test scores; while daily physical education does not adversely affect academic performance it enhances it (Robert Wood Johnson Foundation, 2007; Singh et al, 2012). Regular physical education improves concentration and cognitive functioning (University of Illinois, 2009).

High quality daily public school physical education should also play a major role in reducing obesity and spiraling health care costs. It is estimated that obesity will cost the U. S. about $344 billion in medical expenses by 2018 (about 21% of U. S. health care spending (United Health Foundation, 2009). This can be achieved by following the National Association of Sport and Physical Education's (2004) recommendation of providing elementary students with 150 minutes of quality physical education each week and students in grades seven through twelve with 225 minutes per week. However, such opportunity for students to learn in physical education is difficult to achieve when waivers, exemptions and substitutions are provided for regular participation in physical education to school districts by state departments of education .

Interscholastic athletics and other physical activity based programs should not serve as a proxy for regular instruction and participation in physical education. Physical Education and Interscholastic athletics are separate and distinct with different purposes.

Participation in a quality physical education program from Pre-K through grade twelve is an integral and essential component of a comprehensive education. Participation in team and individual competitive sports can provide an individual with meaningful, challenging, and rewarding athletic experiences. A competitive, athletic lifestyle contributes to an active lifestyle. However, competitive sport experiences are only one part of a physically active and healthy lifestyle and should never, under any circumstance, serve as a substitute for regular participation in a physical education program. Athletics and physical education have different purposes.

Physical education is not simply a physical activity period. The objective of a physical education program is to equip all students with the skills, understanding, attitudes, and confidence necessary to adopt and maintain a health enhancing and physically active lifestyle. When students participate in a quality physical education program from kindergarten through grade twelve the result is a physically educated person. This is one who (NASPE, 2004):

1. Demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities (i.e., social/cultural/creative dance, body management/gymnastics, individual and team sports, aquatics, track and field, and cooperative physical activities)

2. Demonstrates understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities
3. Participates regularly in physical activity (at least 60 minutes and up to several hours of moderate to vigorous physical activity on most if not all days per week)
4. Achieves and maintains a health enhancing level of physical fitness (cardiorespiratory fitness, muscular strength and endurance, flexibility, and body composition)
5. Exhibits responsible personal and social behavior that respects self and others in physical activity settings
6. Values physical activity for health, enjoyment, challenge, self-expression, and or social interaction

Interscholastic sport will not equip students with the skill and understanding required to become physically educated nor do they provide a comparable educational experience as does physical education.

A quality physical education curriculum is aligned with National Association for Sport and Physical Education (NASPE, 2004) content standards and Massachusetts Department of Education comprehensive health education frameworks. It offers learners developmentally appropriate learning experiences and a clear scope and sequence. Graduates who become physically educated will take with them the skills that will support a healthy, physically active and productive life which is of grave importance in this era of obesity, overweight and health misinformation. Interscholastic athletic programs help children and adolescents develop sport specific skills and enjoy safe participation.

In order to achieve the objectives and enjoy the benefits of a physical education program and become physically educated all students must be active participants in all physical education learning experiences from kindergarten through grade twelve. Physical education learning experiences address all three domains of learning – the cognitive, affective (i.e., emotional/social), and psychomotor development of every child (not just the highly skilled). Physical educators include all students by differentiating what students learn, how they learn it, and how they demonstrate what they've learned. Physical educators match curriculum content, instruction and assessment to the learner's current skills and understanding. Further, they provide tasks that ignite curiosity and passion within each learner by matching tasks to the preferred learning style of each student in order to increase learning and achievement. Finally, many children and

adolescents will not play competitive sports as adults. Physical education helps learners develop competency in a variety of lifetime movement skills.

If a school system were to implement a system of substitution of an activity-based program for an educationally based program, such as physical education, it would have to overcome many obstacles.

1. What would be done if a student were injured, quit a team, lost interest in the activity, was ruled ineligible, or was suspended due to rules violations? Having students re-enter physical education in the middle of a unit of study having missed essential learning experiences would diminish that student's learning and achievement and be disruptive to the physical education learning environment.

2. Interscholastic coaches are not required to be lifelong learners. All physical educators must be highly qualified. Physical educators must hold a valid teaching certificate from the Commonwealth of Massachusetts. These teachers must participate in continuing professional development learning experiences, renewing their license every five years. Physical educators are required by the Massachusetts Department of Education to make a continuing effort to keep informed of current trends and best practices in teaching, learning and their curriculum content area. U. S. high school coaches are typically not held to such professional standards.

3. Increasingly interscholastic athletic coaches come from outside the schools in which they coach. These coaches are often disconnected from the school's culture, values and goals as well as the student athletes themselves.

4. What affect would a system of substitution have on the overall learning environment of the school as a whole? What other groups will want to substitute an activity based program for a course of study? Will schools substitute writing for the school newspaper for regular instruction and participation in an English class? Could being a member of the math team serve as a substitute for regular instruction and participation in geometry, trigonometry, or calculus?

5. Physical education is the only place where students learn to understand concepts of health related physical fitness. A complete and detailed understanding of health related fitness that includes cardio-respiratory endurance, muscular strength and muscular endurance, joint flexibility and

mobility, body composition, nutrition, optimal wellness, and healthy habits can only be gained by regular instruction and participation in physical education. A strong understanding of health related fitness is essential for all students. Students must learn how to apply their understanding so they can make informed and optimal health decisions and judgments about the quality of health information. This empowers them to lead a productive and physically active, health enhancing lifestyle.

All of the courses, sports, clubs and extracurricular activities in schools offer our learners rich, meaningful, challenging, and rewarding learning experiences. Each class and extracurricular activity:

- Challenges learners to think deeply and critically in a unique way
- Provides students with a unique variety of learning experiences, goals, and skills
- Receives a unique and diverse group of learners with varied interests, skills, motivation and attitudes, learning styles, readiness, and understanding who enter learning on a variety of levels
- Requires our learners to demonstrate their learning and achievement in a variety of unique ways

Each course of study and extracurricular activity offered is unique and thus separate from all other courses and extracurricular activities. We should never allow one to serve as a substitute for regular instruction and participation in the unique and rewarding learning experiences another can provide our students.

It is inappropriate to substitute experiences that occur outside of the instructional program for regular participation in the physical education program. To excuse varsity athletes, members of marching band, cheerleading, or other students who engage in physical activity based programs robs students of an opportunity to become physically educated. Physical education programs have distinctly different objectives and purposes than these other programs. It is educationally unacceptable to deprive students of the opportunity to experience a comprehensive, sequential curriculum that leads to the development of a physically educated person.

Excluding by substitution (of alternate programs), any student from a comprehensive and sequential physical education program will have a negative impact on the social framework of the school as well as the basic educational program for all students. Schools within a democracy should model that

democracy, avoid setting up privileged groups, and educate the whole student mentally, socially and physically.

Physical educators and coaches try to provide students with the best physical education and athletic experiences they can. They each hold high expectations for students and athletes. We must not compromise a program nor deprive students the benefits one program can provide by substituting it with another.

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Learning to Move: Moving to Learn in Physical Education

This months' issue of the HWEN provides a summary of the report *Educating the Student Body* by the Committee on Physical Activity and Physical Education in the School Environment (2013). Like most of the population of the United States, children and adolescents are used to enjoying a sedentary lifestyle. Only about half of youth meet the current recommendation of at least 60 minutes of daily vigorous or moderate- intensity physical activity. It may not be surprising, then, that children and adolescents face health risks such as increased obesity that can risk their well-being today and throughout their lifetimes.

Evidence of health and academic benefits

A mountain of scientific evidence demonstrates that regular physical activity promotes growth and development in youth and has multiple benefits for physical, mental, and cognitive health. Physical activity is related to lower body fat, greater muscular strength, stronger bones, and improvements in cardiovascular and metabolic health, as well as to improvements in mental health by reducing and preventing conditions such as anxiety and depression and enhancing self-esteem.

The scholarship also suggests a relationship between vigorous and moderate intensity physical activity and the structure and functioning of the brain. Children who are more active show greater attention, have faster cognitive processing speed, and perform better on standardized academic tests than children who are less active. Of course, academic performance is influenced by other factors as well, such as parental involvement and socioeconomic status. Nevertheless, ensuring that children and adolescents achieve at least the recommended amount of vigorous or moderate-intensity physical activity may well improve overall academic performance.

There is also strong evidence that quality physical education with appropriate instruction and assessments is effective in increasing students' physical activity. Quality physical education provides students the opportunity to learn meaningful content and skills—what students should "know and be able to do" relative to physical activity.

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Recommendations for Implementing Physical Activity in School

The Committee for Physical Activity and Physical Education in the School Environment (2013) has issued guidelines for implementing physical activity in schools. Here are the top three.

Take a Whole-of-School Approach to Increasing Physical Activity Levels in Schools

District and school administrators, teachers, and parents should advocate for and create a whole school approach to physical activity that promotes and provides access in the school environment to at least 60 minutes per day of vigorous to moderate-intensity physical activity more than half of which should be accomplished during regular school hours.

• At least half of physical education time should consist of students engaged in vigorous or moderate-intensity physical activity. All elementary school physical education students should spend an average of 30 minutes per day, middle and high school physical education learners should participate in 45 minutes per day; this recommendation is equivalent to 150 minutes per week for elementary school students and 225 minutes per week for middle and high school students.

• Students should engage in additional vigorous or moderate-intensity physical activity throughout the school day during recess, classroom physical activity time, and other opportunities.

• Additional opportunities for physical activity before and after school hours, including but not limited to active transport, before and after school programming, and intramural and extramural sports, should be made accessible to all students.

• Increasing the amount of time youth spend in physical activity through brief classroom breaks or incorporating physical activity directly into academic sessions.

• Using traffic calming (e.g., reduced speed limits, speed bumps, sidewalks with buffers, and traffic control strategies) into community planning to ensure safe active travel routes for students.

Consider Physical Activity in All School-Related Policy Decisions

Federal and state governments, school systems at all levels, city governments and city planners, and parent-teacher organizations should systematically consider access to and provision for physical activity in policy decisions related to the school environment as a contributing factor to improving academic performance, health, and development for all youth.

Designate Physical Education as a Core Subject

Because physical education is fundamental for lifelong health and learning, the Department of Education (DOE) must designate physical education as a core subject. Physical education in school is the only opportunity for all children to engage in health-enhancing physical activity and the only subject area that offers education to ensure that students develop knowledge, skill, and motivation to engage in health enhancing physical activity for a lifetime.

Reference

Committee on physical activity and physical education in the school environment. (2013). *Educating the Student Body: Taking Physical Activity and Physical Education to School*. Washington, DC: Institute of Medicine.

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Physical activity for children and adolescents

Regular physical activity in children and adolescents promotes health and fitness. Compared to those who are inactive, physically active youth have higher levels of cardiorespiratory fitness and stronger muscles. They also typically have lower body fatness. Their bones are stronger, and they may have reduced symptoms of anxiety and depression.

Youth who are regularly active also have a better chance of a healthy adulthood. Children and adolescents don't usually develop chronic diseases, such as heart disease, hypertension, type 2 diabetes, or osteoporosis. However, risk factors for these diseases can begin to develop early in life. Regular physical activity makes it less likely that these risk factors will develop and more likely that children will remain healthy as adults.

Youth can achieve substantial health benefits by doing moderate- and vigorous-intensity physical activity for periods of time that add up to 60 minutes (1 hour) or more each day. This activity should include aerobic activity as well as age-appropriate muscle- and bone–strengthening activities. Although current science is not complete, it appears that, as with adults, the total amount of physical activity is more important for achieving health benefits than is any one component (frequency, intensity, or duration) or specific mix of activities (aerobic, muscle-strengthening, bone strengthening). Even so, bone-strengthening activities remain especially important for children and young adolescents because the greatest gains in bone mass occur during the years just before and during puberty. In addition, the majority of peak bone mass is obtained by the end of adolescence.

Children and adolescents should do 60 minutes (1 hour) or more of physical activity daily.

Aerobic: Most of the 60 or more minutes a day should be either moderate- or vigorous-intensity aerobic physical activity, and should include vigorous-intensity physical activity at least 3 days a week. **Aerobic activities** are those in which young people rhythmically move their large muscles. Running, hopping, skipping, jumping rope, swimming, dancing, and bicycling are all examples of aerobic activities. Aerobic activities increase cardiorespiratory fitness. Children often do activities in short bursts, which may not technically be aerobic activities. However, this document will also use the term aerobic to refer to these brief activities.

Muscle-strengthening: As part of their 60 or more minutes of daily physical activity, children and adolescents should include muscle-strengthening physical activity on at least 3 days of the week. **Muscle-strengthening activities** make muscles do more work than usual during activities of daily life. This is called “overload,” and it strengthens the muscles. Muscle-strengthening activities can be unstructured and part of play, such as playing on playground equipment, climbing trees, and playing tug-of-war. Or these activities can be structured, such as lifting weights or working with resistance bands.

Bone-strengthening: As part of their 60 or more minutes of daily physical activity, children and adolescents should include bone-strengthening physical activity on at least 3 days of the week. It is important to encourage young people to participate in physical activities that are appropriate for their age, that are enjoyable, and that offer variety. **Bone-strengthening activities** produce a force on the bones that promotes bone growth and strength. This force is commonly produced by impact with the ground. Running, jumping rope, basketball, tennis, and hopscotch are all examples of bone strengthening activities. As these examples illustrate, bone-strengthening activities can also be aerobic and muscle-strengthening

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Examples of Moderate- and Vigorous-Intensity Aerobic Physical Activities and Muscle- and Bone-Strengthening Activities for Children and Adolescents

Type of Physical Activity	
Moderate–intensity aerobic	Active recreation, such as hiking, skateboarding, rollerblading
	Bicycle riding
	Brisk walking
Vigorous–intensity aerobic	Active games involving running and chasing, such as tag
	Bicycle riding
	Jumping rope
	Running
	Sports such as soccer, ice or field hockey, basketball, swimming, tennis
	Cross-country skiing
Muscle-strengthening	Modified push-ups (with knees on the floor)
	Resistance exercises
	Sit-ups (curl-ups or crunches)
	Swinging on playground equipment/bars
Bone-strengthening	Games such as hopscotch
	Hopping, skipping, jumping
	Jumping rope
	Running
	Sports such as gymnastics, basketball, volleyball, tennis

Children and adolescents who do not meet the Guidelines should slowly increase their activity in small steps and in ways that they enjoy. A gradual increase in the number of days and the time spent being active will help reduce the risk of injury.

Children and adolescents who meet the Guidelines should continue being active on a daily basis and, if appropriate, become even more active. Evidence suggests that even more than 60 minutes of activity every day may provide additional health benefits.

Children and adolescents who exceed the Guidelines should maintain their activity level and vary the kinds of activities they do to reduce the risk of overtraining or injury.

Children and adolescents with disabilities are more likely to be inactive than those without disabilities. Youth with disabilities should work with their health-care provider to understand the types and amounts of physical activity appropriate for them. When possible, children and adolescents with disabilities should meet the Guidelines. When young people are not able to participate in appropriate physical activities to meet the Guidelines, they should be as active as possible and avoid being inactive.

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