



February 7, 2020

TO: The Honorable Anne R. Kaiser, Chair
The Honorable Alonzo T. Washington, Vice-Chair
Members of the Ways and Means Committee
6 Bladen St., Room 131
Annapolis, MD 21401

FROM: Jocelyn Collins, Maryland and DC Government Relations Director
American Cancer Society Cancer Action Network, Inc.
555 11th St. NW, Suite 300
Washington, DC 20004

SUBJECT: HB 413 Prince George's County— Elementary School Students—Daily Physical Activity (Student Health and Fitness Act)

Position: SUPPORT w/Amendments

To improve the health outcomes of Maryland's youth the American Cancer Society Cancer Action Network supports HB 413, however, ACS CAN would like to see the bill amended to require 150 per week of quality physical education in Prince George's County, Maryland elementary schools with additional opportunities for physical activity.

Physical Activity Helps Prevent Serious Diseases including Cancer

The connections between physical inactivity and diseases like heart disease and diabetes are well known, but many of us are surprised to learn that physical inactivity, along with poor diet and excess weight, are second only to tobacco use as major cancer risk factors.¹ In fact, these risk factors are responsible for approximately 20 percent of annual U.S. cancer cases.² Being overweight or obese is also linked to an increased risk of cancer recurrence, decreased quality of life, and a lower chance of survival for many cancers.^{3,4}

The research is clear - maintaining a healthy weight and staying physically active throughout life are among the best ways to reduce the risk of developing and dying from cancer.⁵ There is a clear link between being overweight or obese and increased risk of cancers of the breast in postmenopausal women, colon and rectum, endometrium, kidney, and pancreas, and adenocarcinoma of the esophagus. Excess weight may also be associated with risk for cancers of the liver, cervix, and ovary; non-Hodgkin lymphoma; multiple myeloma; and aggressive prostate cancer.⁶

Fortunately, research also shows that physical activity appears to have a direct effect on reducing risk of cancers of the breast, colon, and endometrium, as well as advanced prostate cancer, and possibly, pancreatic cancer.⁷

Unfortunately, many school-aged children are not at a healthy weight or are not physically active.

About 1 in 6, or 17 percent, of children ages 2-19 are obese. When combined with those who are overweight, that figure jumps to 32 percent.^{8,9} To make matters worse, daily physical activity among youth has been declining for the past several decades.¹⁰ While experts across the country have highlighted the importance of both quality physical education as well as physical activity among youth, many school-age children do not meet national recommendations for either.^{11,12} The high prevalence of overweight and obese children and adolescents, coupled with inactivity, puts too many of them at risk. We know that children who are overweight and obese are more likely to be overweight and obese adults, increasing their risk for developing cancer and a host of other chronic diseases.^{13, 14, 15, 16} For these reasons, we support HB 413, but encourage this physical activity to take place in addition to 30 minutes of daily physical education or 150 minutes per week for elementary students.

The Broad, Positives Impacts of Physical Activity and Physical Education

The benefits of quality physical education and physical activity for youth extend far beyond the classroom. In addition to decreased long-term cancer risk, other positive health outcomes associated with being physically active include less body fat, improved muscular strength and heart health, reduced anxiety and depression symptoms, and enhanced self-esteem.¹⁷

Children who are more active have also demonstrated higher scholastic achievement, better classroom behavior, greater ability to focus, and less absenteeism compare to their unfit peers.^{18, 19, 20, 21, 22} ACS CAN advocates for public policies that help children and adolescents meet evidence-based physical activity recommendations. Helping children to establish healthy habits when they are young, including at least an hour of daily physical activity, is one of the best ways to set them on a path toward lifelong health and lower cancer risk.

Laying the Groundwork for a Healthy Life

Quality physical education is the best way for children and adolescents to reach their activity goals and gain the knowledge and skills they need to be physically active for the rest of their lives. A quality program should be standards-based, sequential, and available to all students in grades K-12 as part of the yearly curriculum. To be effective, these programs engage students in moderate to vigorous physical activity for at least half of the physical education class time. Trained, licensed, and certified physical educators should be responsible for teaching physical education; like teachers in other disciplines, they must receive regular, field-specific professional development. Quality physical education programs must have adequate facilities and equipment and a student-to-teacher ratio that is comparable to other subjects. General waivers, substitutions for other courses or activities, or exemptions for test prep or other assignments should not be allowed.

Ideally, physical education should be provided for 150 minutes per week in elementary schools and 225 minutes per week in middle and high school students. Unfortunately, many schools fall far short of these recommendations. Only 3.6 percent of elementary, 3.4 percent of middle, and 4.0 percent of high schools required any daily physical education or its equivalent for the entire school year.²³ In nearly one-quarter of schools, students are not required to take any physical education.²⁴

A quality physical education program should encompass accountability mechanisms that provide for the collection and reporting of information. Specifically, student progress in meeting intended academic and activity goals as well as outcomes data on fitness should be collected and regularly reported to district and state agencies, parents, and the community. These accountability mechanisms hold districts and

schools responsible for implementing high-quality physical education in the same way that districts and schools are held accountable for other courses of study. Reporting on these measures allows parents and the broader community to fully understand how schools are meeting the needs of the child and provides a mechanism to track activity levels and make improvements along the way. School districts should also use aggregate student and program assessment results to improve their future physical education and physical activity programs and policies.

In addition to quality physical education, supplemental opportunities for physical activity should be part of every school day. Such activities can include physical activity breaks, active learning, intramurals and other sports, walk-and bike-to-school and after-school activities, and recess. These activities should be an integral part of a students' daily experience with the goal of supplementing and complementing, not replacing, a high-quality physical education curriculum delivered by qualified teachers.

Not only do health experts support quality physical education and regular physical activity, parents also overwhelmingly support it. In fact, a parent survey found that nearly all parents agreed that physical education should be part of a school curriculum for students in grades K-12.²⁵ Another survey found that parents believe physical education is as important as other academic subjects.²⁶ And because the benefits of regular, quality physical education are realized across diverse racial, ethnic, and socioeconomic groups, among boys and girls, elementary- and high-school students, and in urban and rural settings,²⁷ quality physical education programs in schools have the potential to help tackle health disparities, and provide equitable physical activity and skills-building opportunities for all, bridging the achievement gap.^{28,29,30,31,32,33,34,35,36,37,38}

We look to our leaders to support and help promote efforts that improve our children's health and simultaneously help boost academic achievement. Ensuring every child in Maryland has access to quality physical education and opportunities for additional regular physical activity will afford our children the opportunity to lead happier, healthier, and more productive lives.

This is why ACS CAN supports HB 413, but encourages this physical activity requirement to be in addition to 150 minutes per week of quality physical education.

I look forward to working with you as you continue your efforts to support the health and education of students across Maryland, including Prince George's County, Maryland. Please feel free to contact me directly if I can provide any additional information or if you have any questions.

Sincerely,

**Jocelyn Collins, MD and DC Government Relations Director
American Cancer Society Cancer Action Network, Inc.**

¹Kushi LH, Doyle C, McCullough M, et al, and the American Cancer Society 2010 Nutrition and Physical Activity Guidelines Advisory Committee. American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention. *CA Cancer J Clin* 2012; 62:30-67.

² World Cancer Research Fund International. *Cancer preventability estimates for diet, nutrition, body fatness, and physical activity*. London: World Cancer Research Fund International; 2015. Available at <http://www.wcrf.org/int/cancer-facts-figures/preventability-estimates/cancer-preventability-estimates-diet-nutrition>.

³ Kushi et al, 2012.

⁴ Rock CL, Doyle C, Demark-Wahnefried W. Nutrition and Physical Activity Guidelines for Cancer Survivors. *CA Cancer J Clin* 2012;62:242-274.

⁵ Kushi et al, 2012.

⁶ Ibid.

⁷ Ibid.

⁸ Ogden CL, Carroll MD, Fryar CD, et al. *Prevalence of obesity among adults and youth: United States, 2011–2014*. NCHS data brief, no 219. Hyattsville, MD: National Center for Health Statistics; 2015. Available at <http://www.cdc.gov/nchs/data/databriefs/db219.pdf>.

⁹ Ogden CL, Carroll MD, Kit BK, et al. Prevalence of childhood and adult obesity in the United States, 2011–2012. *Journal of the American Medical Association* 2014; 311(8):806–814.

¹⁰ Institute of Medicine. *Educating the student body: Taking physical activity and physical education to school*. Washington, DC: The National Academies Press; 2013.

¹¹ U.S. Government Accountability Office. *K-12 Education: School-based physical education and sports programs*. GAO report 12-350. Washington, DC: GAO; 2012.

¹² U.S. Department of Health and Human Resources. *Strategies to increase physical activity among youth: Physical Activity Guidelines for Americans: Midcourse report*. Washington, DC: HHS; 2012. Available at <http://health.gov/paguidelines/midcourse/>.

¹³ Guo SS and Chumlea WC. Tracking of body mass index in children in relation to overweight in adulthood. *American Journal of Clinical Nutrition* 1999; 70:S145–148.

¹⁴ Freedman DS, Kettel L, Serdula MK, et al. The relation of childhood BMI to adult adiposity: the Bogalusa Heart Study. *Pediatrics* 2005; 115:22–27.

¹⁵ Freedman D, Wang J, Thornton JC, et al. Classification of body fatness by body mass index-for-age categories among children. *Archives of Pediatric and Adolescent Medicine* 2009; 163:801–811.

¹⁶ Freedman DS, Khan LK, Dietz WH, et al. Relationship of childhood obesity to coronary heart disease risk factors in adulthood: The Bogalusa Heart Study. *Pediatrics* 2001; 108:712–718

¹⁷ Institute of Medicine. *Educating the student body: Taking physical activity and physical education to school*. Washington, DC: National Academies Press; 2013.

¹⁸ Shore SM, Sachs ML, Lidicker JR, et al. Decreased scholastic achievement in overweight middle school students. *Obesity* 2008; 16(7):1535–1538.

¹⁹ Geier AB, Foster GD, Womble LG, et al. The relationship between relative weight and school attendance. *Obesity* 2007; 15(8):2157–2161.

²⁰ Centers for Disease Control and Prevention. *The association between school-based physical activity, including physical education, and academic performance*. Atlanta, GA: Centers for Disease Control and Prevention; 2010.

²¹ Roberts CK, Freed B, McCarthy WJ. Low aerobic fitness and obesity are associated with lower standardized test scores in children. *The Journal of Pediatrics* 2010; 156:711–8, 718 e1.

²² Van Dusen DP, Kelder SH, Kohl HW, et al. Associations of physical fitness and academic performance among schoolchildren. *The Journal of School Health* 2011; 81:733–40.

²³ Centers for Disease Control and Prevention, Division of Adolescent and School Health. *Results from the School Health Policies and Practices Study 2014*. Atlanta, GA: Centers for Disease Control and Prevention; 2015. Available at http://www.cdc.gov/healthyyouth/data/shpps/pdf/shpps-508-final_101315.pdf.

²⁴ U.S. Department of Health and Human Services. *Physical Activity Guidelines for Americans*. Washington, DC: HHS; 2008.

²⁵ KidsHealth in the Classroom. Parents, Teachers Want More Health, PE Classes. 2013. Available at: http://kidshealth.org/parent/kh_misc/health-pe-survey.html#.

²⁶ Centers for Disease Control and Prevention, 2010.

²⁷ McKenzie T, Sallis, JF, Rosengard, P. Beyond the stucco tower: Design, development, and dissemination of the SPARK physical education programs. *Quest* 2009; 61:114–127.

²⁸ Singh A, Uijtewilligen L, Twisk JW, et al. Physical activity and performance at school: A systematic review of the literature including a methodological quality assessment. *Archives of Pediatrics & Adolescent Medicine* 2012; 166:49–55.

²⁹ Coe DP, Pivarnik JM, Womack CJ, et al. Effect of physical education and activity levels on academic achievement in children. *Medicine and Science in Sports and Exercise* 2006; 38:1515–9.

³⁰ Castelli DM, Hillman CH, Buck SM, et al. Physical fitness and academic achievement in third- and fifth-grade students. *Journal of Sport & Exercise Psychology* 2007; 29:239–52.

³¹ Mahar, MT. Impact of short bouts of physical activity on attention-to-task in elementary school children. *Preventive Medicine* 2011; 52(Suppl 1):S60–4.

³² Donnelly JE and Lambourne K. Classroom-based physical activity, cognition, and academic achievement. *Preventive Medicine* 2011; 52(Suppl 1):S36–42.

³³ Efrat M. The relationship between low-income and minority children's physical activity and academic-related outcomes: a review of the literature. *Health Education & Behavior: the official publication of the Society for Public Health Education* 2011; 38:441–51.

³⁴ Rasberry CN, Lee SM, Robin L, et al. The association between school-based physical activity, including physical education, and academic performance: a systematic review of the literature. *Preventive Medicine* 2011; 52(Suppl 1):S10–20.

³⁵ Basch CE. Physical activity and the achievement gap among urban minority youth. *The Journal of School Health* 2011; 81:626-34.

³⁶ Ickovics JR, Carroll-Scott A, Peters SM, et al. Health and academic achievement: Cumulative effects of health assets on standardized test scores among urban youth in the United States. *The Journal of School Health* 2014; 84:40-8.

³⁷ Donnelly JE, Greene JL, Gibson CA, et al. Physical activity and academic achievement across the curriculum (A + PAAC): rationale and design of a 3-year, cluster-randomized trial. *BMC Public Health* 2013; 13:307.

³⁸ Hillman CH, Erickson KI, Kramer AF. Be smart, exercise your heart: exercise effects on brain and cognition. *Nature Reviews Neuroscience* 2008; 9:58-65.

overweight, that figure jumps to 32 percent.^{8,9} To make matters worse, daily physical activity among youth has been declining for the past several decades.¹⁰ While experts across the country have highlighted the importance of both quality physical education as well as physical activity among youth, many school-age children do not meet national recommendations for either.^{11,12} The high prevalence of overweight and obese children and adolescents, coupled with inactivity, puts too many of them at risk. We know that children who are overweight and obese are more likely to be overweight and obese adults, increasing their risk for developing cancer and a host of other chronic diseases.^{13, 14, 15, 16} For these reasons, we support HB 264, but encourage this physical activity to take place in addition to 30 minutes of daily physical education or 150 minutes per week for elementary students.

The Broad, Positives Impacts of Physical Activity and Physical Education

The benefits of quality physical education and physical activity for youth extend far beyond the classroom. In addition to decreased long-term cancer risk, other positive health outcomes associated with being physically active include less body fat, improved muscular strength and heart health, reduced anxiety and depression symptoms, and enhanced self-esteem.¹⁷

Children who are more active have also demonstrated higher scholastic achievement, better classroom behavior, greater ability to focus, and less absenteeism compare to their unfit peers.^{18, 19, 20, 21, 22} ACS CAN advocates for public policies that help children and adolescents meet evidence-based physical activity recommendations. Helping children to establish healthy habits when they are young, including at least an hour of daily physical activity, is one of the best ways to set them on a path toward lifelong health and lower cancer risk.

Laying the Groundwork for a Healthy Life

Quality physical education is the best way for children and adolescents to reach their activity goals and gain the knowledge and skills they need to be physically active for the rest of their lives. A quality program should be standards-based, sequential, and available to all students in grades K-12 as part of the yearly curriculum. To be effective, these programs engage students in moderate to vigorous physical activity for at least half of the physical education class time. Trained, licensed, and certified physical educators should be responsible for teaching physical education; like teachers in other disciplines, they must receive regular, field-specific professional development. Quality physical education programs must have adequate facilities and equipment and a student-to-teacher ratio that is comparable to other subjects. General waivers, substitutions for other courses or activities, or exemptions for test prep or other assignments should not be allowed.

Ideally, physical education should be provided for 150 minutes per week in elementary schools and 225 minutes per week in middle and high school students. Unfortunately, many schools fall far short of these recommendations. Only 3.6 percent of elementary, 3.4 percent of middle, and 4.0 percent of high schools required any daily physical education or its equivalent for the entire school year.²³ In nearly one-quarter of schools, students are not required to take any physical education.²⁴

A quality physical education program should encompass accountability mechanisms that provide for the collection and reporting of information. Specifically, student progress in meeting intended academic and activity goals as well as outcomes data on fitness should be collected and regularly reported to district and state agencies, parents, and the community. These accountability mechanisms hold districts and schools responsible for implementing high-quality physical education in the same way that districts and

schools are held accountable for other courses of study. Reporting on these measures allows parents and the broader community to fully understand how schools are meeting the needs of the child and provides a mechanism to track activity levels and make improvements along the way. School districts should also use aggregate student and program assessment results to improve their future physical education and physical activity programs and policies.

In addition to quality physical education, supplemental opportunities for physical activity should be part of every school day. Such activities can include physical activity breaks, active learning, intramurals and other sports, walk-and bike-to-school and after-school activities, and recess. These activities should be an integral part of a students' daily experience with the goal of supplementing and complementing, not replacing, a high-quality physical education curriculum delivered by qualified teachers.

Not only do health experts support quality physical education and regular physical activity, parents also overwhelmingly support it. In fact, a parent survey found that nearly all parents agreed that physical education should be part of a school curriculum for students in grades K-12.²⁵ Another survey found that parents believe physical education is as important as other academic subjects.²⁶ And because the benefits of regular, quality physical education are realized across diverse racial, ethnic, and socioeconomic groups, among boys and girls, elementary- and high-school students, and in urban and rural settings,²⁷ quality physical education programs in schools have the potential to help tackle health disparities, and provide equitable physical activity and skills-building opportunities for all, bridging the achievement gap.^{28,29,30,31,32,33,34,35,36,37,38}

We look to our leaders to support and help promote efforts that improve our children's health and simultaneously help boost academic achievement. Ensuring every child in Maryland has access to quality physical education and opportunities for additional regular physical activity will afford our children the opportunity to lead happier, healthier, and more productive lives.

This is why ACS CAN supports HB 264, but encourages this physical activity requirement to be in addition to 150 minutes per week of quality physical education.

I look forward to working with you as you continue your efforts to support the health and education of students across Maryland, including Prince George's County, Maryland. Please feel free to contact me directly if I can provide any additional information or if you have any questions.

Sincerely,

**Jocelyn Collins, MD and DC Government Relations Director
American Cancer Society Cancer Action Network, Inc.**

¹Kushi LH, Doyle C, McCullough M, et al, and the American Cancer Society 2010 Nutrition and Physical Activity Guidelines Advisory Committee. American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention. *CA Cancer J Clin* 2012; 62:30-67.

² World Cancer Research Fund International. *Cancer preventability estimates for diet, nutrition, body fatness, and physical activity*. London: World Cancer Research Fund International; 2015. Available at <http://www.wcrf.org/int/cancer-facts-figures/preventability-estimates/cancer-preventability-estimates-diet-nutrition>.

³ Kushi et al, 2012.

⁴ Rock CL, Doyle C, Demark-Wahnefried W. Nutrition and Physical Activity Guidelines for Cancer Survivors. *CA Cancer J Clin* 2012;62:242-274.

⁵ Kushi et al, 2012.

⁶ Ibid.

⁷ Ibid.

⁸ Ogden CL, Carroll MD, Fryar CD, et al. *Prevalence of obesity among adults and youth: United States, 2011–2014*. NCHS data brief, no 219. Hyattsville, MD: National Center for Health Statistics; 2015. Available at <http://www.cdc.gov/nchs/data/databriefs/db219.pdf>.

⁹ Ogden CL, Carroll MD, Kit BK, et al. Prevalence of childhood and adult obesity in the United States, 2011–2012. *Journal of the American Medical Association* 2014; 311(8):806–814.

¹⁰ Institute of Medicine. *Educating the student body: Taking physical activity and physical education to school*. Washington, DC: The National Academies Press; 2013.

¹¹ U.S. Government Accountability Office. *K-12 Education: School-based physical education and sports programs*. GAO report 12-350. Washington, DC: GAO; 2012.

¹² U.S. Department of Health and Human Resources. *Strategies to increase physical activity among youth: Physical Activity Guidelines for Americans: Midcourse report*. Washington, DC: HHS; 2012. Available at <http://health.gov/paguidelines/midcourse/>.

¹³ Guo SS and Chumlea WC. Tracking of body mass index in children in relation to overweight in adulthood. *American Journal of Clinical Nutrition* 1999; 70:S145–148.

¹⁴ Freedman DS, Kettel L, Serdula MK, et al. The relation of childhood BMI to adult adiposity: the Bogalusa Heart Study. *Pediatrics* 2005; 115:22–27.

¹⁵ Freedman D, Wang J, Thornton JC, et al. Classification of body fatness by body mass index-for-age categories among children. *Archives of Pediatric and Adolescent Medicine* 2009; 163:801–811.

¹⁶ Freedman DS, Khan LK, Dietz WH, et al. Relationship of childhood obesity to coronary heart disease risk factors in adulthood: The Bogalusa Heart Study. *Pediatrics* 2001; 108:712–718

¹⁷ Institute of Medicine. *Educating the student body: Taking physical activity and physical education to school*. Washington, DC: National Academies Press; 2013.

¹⁸ Shore SM, Sachs ML, Lidicker JR, et al. Decreased scholastic achievement in overweight middle school students. *Obesity* 2008; 16(7):1535–1538.

¹⁹ Geier AB, Foster GD, Womble LG, et al. The relationship between relative weight and school attendance. *Obesity* 2007; 15(8):2157–2161.

²⁰ Centers for Disease Control and Prevention. *The association between school-based physical activity, including physical education, and academic performance*. Atlanta, GA: Centers for Disease Control and Prevention; 2010.

²¹ Roberts CK, Freed B, McCarthy WJ. Low aerobic fitness and obesity are associated with lower standardized test scores in children. *The Journal of Pediatrics* 2010; 156:711–8, 718 e1.

²² Van Dusen DP, Kelder SH, Kohl HW, et al. Associations of physical fitness and academic performance among schoolchildren. *The Journal of School Health* 2011; 81:733–40.

²³ Centers for Disease Control and Prevention, Division of Adolescent and School Health. *Results from the School Health Policies and Practices Study 2014*. Atlanta, GA: Centers for Disease Control and Prevention; 2015. Available at http://www.cdc.gov/healthyyouth/data/shpps/pdf/shpps-508-final_101315.pdf.

²⁴ U.S. Department of Health and Human Services. *Physical Activity Guidelines for Americans*. Washington, DC: HHS; 2008.

²⁵ KidsHealth in the Classroom. Parents, Teachers Want More Health, PE Classes. 2013. Available at: http://kidshealth.org/parent/kh_misc/health-pe-survey.html#.

²⁶ Centers for Disease Control and Prevention, 2010.

²⁷ McKenzie T, Sallis, JF, Rosengard, P. Beyond the stucco tower: Design, development, and dissemination of the SPARK physical education programs. *Quest* 2009; 61:114–127.

²⁸ Singh A, Uijtdewilligen L, Twisk JW, et al. Physical activity and performance at school: A systematic review of the literature including a methodological quality assessment. *Archives of Pediatrics & Adolescent Medicine* 2012; 166:49–55.

²⁹ Coe DP, Pivarnik JM, Womack CJ, et al. Effect of physical education and activity levels on academic achievement in children. *Medicine and Science in Sports and Exercise* 2006; 38:1515–9.

³⁰ Castelli DM, Hillman CH, Buck SM, et al. Physical fitness and academic achievement in third- and fifth-grade students. *Journal of Sport & Exercise Psychology* 2007; 29:239–52.

³¹ Mahar, MT. Impact of short bouts of physical activity on attention-to-task in elementary school children. *Preventive Medicine* 2011; 52(Suppl 1):S60–4.

³² Donnelly JE and Lambourne K. Classroom-based physical activity, cognition, and academic achievement. *Preventive Medicine* 2011; 52(Suppl 1):S36–42.

³³ Efrat M. The relationship between low-income and minority children's physical activity and academic-related outcomes: a review of the literature. *Health Education & Behavior: the official publication of the Society for Public Health Education* 2011; 38:441–51.

³⁴ Rasberry CN, Lee SM, Robin L, et al. The association between school-based physical activity, including physical education, and academic performance: a systematic review of the literature. *Preventive Medicine* 2011; 52(Suppl 1):S10–20.

³⁵ Basch CE. Physical activity and the achievement gap among urban minority youth. *The Journal of School Health* 2011; 81:626-34.

³⁶ Ickovics JR, Carroll-Scott A, Peters SM, et al. Health and academic achievement: Cumulative effects of health assets on standardized test scores among urban youth in the United States. *The Journal of School Health* 2014; 84:40-8.

³⁷ Donnelly JE, Greene JL, Gibson CA, et al. Physical activity and academic achievement across the curriculum (A + PAAC): rationale and design of a 3-year, cluster-randomized trial. *BMC Public Health* 2013; 13:307.

³⁸ Hillman CH, Erickson KI, Kramer AF. Be smart, exercise your heart: exercise effects on brain and cognition. *Nature Reviews Neuroscience* 2008; 9:58-65.

About 1 in 6, or 17 percent, of children ages 2-19 are obese. When combined with those who are overweight, that figure jumps to 32 percent.^{8,9} To make matters worse, daily physical activity among youth has been declining for the past several decades.¹⁰ While experts across the country have highlighted the importance of both quality physical education as well as physical activity among youth, many school-age children do not meet national recommendations for either.^{11,12} The high prevalence of overweight and obese children and adolescents, coupled with inactivity, puts too many of them at risk. We know that children who are overweight and obese are more likely to be overweight and obese adults, increasing their risk for developing cancer and a host of other chronic diseases.^{13, 14, 15, 16} For these reasons, we support HB 264, but encourage this physical activity to take place in addition to 30 minutes of daily physical education or 150 minutes per week for elementary students.

The Broad, Positives Impacts of Physical Activity and Physical Education

The benefits of quality physical education and physical activity for youth extend far beyond the classroom. In addition to decreased long-term cancer risk, other positive health outcomes associated with being physically active include less body fat, improved muscular strength and heart health, reduced anxiety and depression symptoms, and enhanced self-esteem.¹⁷

Children who are more active have also demonstrated higher scholastic achievement, better classroom behavior, greater ability to focus, and less absenteeism compare to their unfit peers.^{18, 19, 20, 21, 22} ACS CAN advocates for public policies that help children and adolescents meet evidence-based physical activity recommendations. Helping children to establish healthy habits when they are young, including at least an hour of daily physical activity, is one of the best ways to set them on a path toward lifelong health and lower cancer risk.

Laying the Groundwork for a Healthy Life

Quality physical education is the best way for children and adolescents to reach their activity goals and gain the knowledge and skills they need to be physically active for the rest of their lives. A quality program should be standards-based, sequential, and available to all students in grades K-12 as part of the yearly curriculum. To be effective, these programs engage students in moderate to vigorous physical activity for at least half of the physical education class time. Trained, licensed, and certified physical educators should be responsible for teaching physical education; like teachers in other disciplines, they must receive regular, field-specific professional development. Quality physical education programs must have adequate facilities and equipment and a student-to-teacher ratio that is comparable to other subjects. General waivers, substitutions for other courses or activities, or exemptions for test prep or other assignments should not be allowed.

Ideally, physical education should be provided for 150 minutes per week in elementary schools and 225 minutes per week in middle and high school students. Unfortunately, many schools fall far short of these recommendations. Only 3.6 percent of elementary, 3.4 percent of middle, and 4.0 percent of high schools required any daily physical education or its equivalent for the entire school year.²³ In nearly one-quarter of schools, students are not required to take any physical education.²⁴

A quality physical education program should encompass accountability mechanisms that provide for the collection and reporting of information. Specifically, student progress in meeting intended academic and activity goals as well as outcomes data on fitness should be collected and regularly reported to district and state agencies, parents, and the community. These accountability mechanisms hold districts and

schools responsible for implementing high-quality physical education in the same way that districts and schools are held accountable for other courses of study. Reporting on these measures allows parents and the broader community to fully understand how schools are meeting the needs of the child and provides a mechanism to track activity levels and make improvements along the way. School districts should also use aggregate student and program assessment results to improve their future physical education and physical activity programs and policies.

In addition to quality physical education, supplemental opportunities for physical activity should be part of every school day. Such activities can include physical activity breaks, active learning, intramurals and other sports, walk-and bike-to-school and after-school activities, and recess. These activities should be an integral part of a students' daily experience with the goal of supplementing and complementing, not replacing, a high-quality physical education curriculum delivered by qualified teachers.

Not only do health experts support quality physical education and regular physical activity, parents also overwhelmingly support it. In fact, a parent survey found that nearly all parents agreed that physical education should be part of a school curriculum for students in grades K-12.²⁵ Another survey found that parents believe physical education is as important as other academic subjects.²⁶ And because the benefits of regular, quality physical education are realized across diverse racial, ethnic, and socioeconomic groups, among boys and girls, elementary- and high-school students, and in urban and rural settings,²⁷ quality physical education programs in schools have the potential to help tackle health disparities, and provide equitable physical activity and skills-building opportunities for all, bridging the achievement gap.^{28,29,30,31,32,33,34,35,36,37,38}

We look to our leaders to support and help promote efforts that improve our children's health and simultaneously help boost academic achievement. Ensuring every child in Maryland has access to quality physical education and opportunities for additional regular physical activity will afford our children the opportunity to lead happier, healthier, and more productive lives.

This is why ACS CAN supports HB 264, but encourages this physical activity requirement to be in addition to 150 minutes per week of quality physical education.

I look forward to working with you as you continue your efforts to support the health and education of students across Maryland, including Prince George's County, Maryland. Please feel free to contact me directly if I can provide any additional information or if you have any questions.

Sincerely,

**Jocelyn Collins, MD and DC Government Relations Director
American Cancer Society Cancer Action Network, Inc.**

¹Kushi LH, Doyle C, McCullough M, et al, and the American Cancer Society 2010 Nutrition and Physical Activity Guidelines Advisory Committee. American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention. *CA Cancer J Clin* 2012; 62:30-67.

² World Cancer Research Fund International. *Cancer preventability estimates for diet, nutrition, body fatness, and physical activity*. London: World Cancer Research Fund International; 2015. Available at <http://www.wcrf.org/int/cancer-facts-figures/preventability-estimates/cancer-preventability-estimates-diet-nutrition>.

³ Kushi et al, 2012.

⁴ Rock CL, Doyle C, Demark-Wahnefried W. Nutrition and Physical Activity Guidelines for Cancer Survivors. *CA Cancer J Clin* 2012;62:242-274.

⁵ Kushi et al, 2012.

⁶ Ibid.

⁷ Ibid.

⁸ Ogden CL, Carroll MD, Fryar CD, et al. *Prevalence of obesity among adults and youth: United States, 2011–2014*. NCHS data brief, no 219. Hyattsville, MD: National Center for Health Statistics; 2015. Available at <http://www.cdc.gov/nchs/data/databriefs/db219.pdf>.

⁹ Ogden CL, Carroll MD, Kit BK, et al. Prevalence of childhood and adult obesity in the United States, 2011–2012. *Journal of the American Medical Association* 2014; 311(8):806–814.

¹⁰ Institute of Medicine. *Educating the student body: Taking physical activity and physical education to school*. Washington, DC: The National Academies Press; 2013.

¹¹ U.S. Government Accountability Office. *K-12 Education: School-based physical education and sports programs*. GAO report 12-350. Washington, DC: GAO; 2012.

¹² U.S. Department of Health and Human Resources. *Strategies to increase physical activity among youth: Physical Activity Guidelines for Americans: Midcourse report*. Washington, DC: HHS; 2012. Available at <http://health.gov/paguidelines/midcourse/>.

¹³ Guo SS and Chumlea WC. Tracking of body mass index in children in relation to overweight in adulthood. *American Journal of Clinical Nutrition* 1999; 70:S145–148.

¹⁴ Freedman DS, Kettel L, Serdula MK, et al. The relation of childhood BMI to adult adiposity: the Bogalusa Heart Study. *Pediatrics* 2005; 115:22–27.

¹⁵ Freedman D, Wang J, Thornton JC, et al. Classification of body fatness by body mass index-for-age categories among children. *Archives of Pediatric and Adolescent Medicine* 2009; 163:801–811.

¹⁶ Freedman DS, Khan LK, Dietz WH, et al. Relationship of childhood obesity to coronary heart disease risk factors in adulthood: The Bogalusa Heart Study. *Pediatrics* 2001; 108:712–718

¹⁷ Institute of Medicine. *Educating the student body: Taking physical activity and physical education to school*. Washington, DC: National Academies Press; 2013.

¹⁸ Shore SM, Sachs ML, Lidicker JR, et al. Decreased scholastic achievement in overweight middle school students. *Obesity* 2008; 16(7):1535–1538.

¹⁹ Geier AB, Foster GD, Womble LG, et al. The relationship between relative weight and school attendance. *Obesity* 2007; 15(8):2157–2161.

²⁰ Centers for Disease Control and Prevention. *The association between school-based physical activity, including physical education, and academic performance*. Atlanta, GA: Centers for Disease Control and Prevention; 2010.

²¹ Roberts CK, Freed B, McCarthy WJ. Low aerobic fitness and obesity are associated with lower standardized test scores in children. *The Journal of Pediatrics* 2010; 156:711–8, 718 e1.

²² Van Dusen DP, Kelder SH, Kohl HW, et al. Associations of physical fitness and academic performance among schoolchildren. *The Journal of School Health* 2011; 81:733–40.

²³ Centers for Disease Control and Prevention, Division of Adolescent and School Health. *Results from the School Health Policies and Practices Study 2014*. Atlanta, GA: Centers for Disease Control and Prevention; 2015. Available at http://www.cdc.gov/healthyyouth/data/shpps/pdf/shpps-508-final_101315.pdf.

²⁴ U.S. Department of Health and Human Services. *Physical Activity Guidelines for Americans*. Washington, DC: HHS; 2008.

²⁵ KidsHealth in the Classroom. Parents, Teachers Want More Health, PE Classes. 2013. Available at: http://kidshealth.org/parent/kh_misc/health-pe-survey.html#.

²⁶ Centers for Disease Control and Prevention, 2010.

²⁷ McKenzie T, Sallis, JF, Rosengard, P. Beyond the stucco tower: Design, development, and dissemination of the SPARK physical education programs. *Quest* 2009; 61:114–127.

²⁸ Singh A, Uijtdewilligen L, Twisk JW, et al. Physical activity and performance at school: A systematic review of the literature including a methodological quality assessment. *Archives of Pediatrics & Adolescent Medicine* 2012; 166:49–55.

²⁹ Coe DP, Pivarnik JM, Womack CJ, et al. Effect of physical education and activity levels on academic achievement in children. *Medicine and Science in Sports and Exercise* 2006; 38:1515–9.

³⁰ Castelli DM, Hillman CH, Buck SM, et al. Physical fitness and academic achievement in third- and fifth-grade students. *Journal of Sport & Exercise Psychology* 2007; 29:239–52.

³¹ Mahar, MT. Impact of short bouts of physical activity on attention-to-task in elementary school children. *Preventive Medicine* 2011; 52(Suppl 1):S60–4.

³² Donnelly JE and Lambourne K. Classroom-based physical activity, cognition, and academic achievement. *Preventive Medicine* 2011; 52(Suppl 1):S36–42.

³³ Efrat M. The relationship between low-income and minority children's physical activity and academic-related outcomes: a review of the literature. *Health Education & Behavior: the official publication of the Society for Public Health Education* 2011; 38:441–51.

³⁴ Rasberry CN, Lee SM, Robin L, et al. The association between school-based physical activity, including physical education, and academic performance: a systematic review of the literature. *Preventive Medicine* 2011; 52(Suppl 1):S10–20.

³⁵ Basch CE. Physical activity and the achievement gap among urban minority youth. *The Journal of School Health* 2011; 81:626-34.

³⁶ Ickovics JR, Carroll-Scott A, Peters SM, et al. Health and academic achievement: Cumulative effects of health assets on standardized test scores among urban youth in the United States. *The Journal of School Health* 2014; 84:40-8.

³⁷ Donnelly JE, Greene JL, Gibson CA, et al. Physical activity and academic achievement across the curriculum (A + PAAC): rationale and design of a 3-year, cluster-randomized trial. *BMC Public Health* 2013; 13:307.

³⁸ Hillman CH, Erickson KI, Kramer AF. Be smart, exercise your heart: exercise effects on brain and cognition. *Nature Reviews Neuroscience* 2008; 9:58-65.

Frequently Asked Questions: Physical Education and Physical Activity in Schools



Physical Activity and Cancer

What does physical activity have to do with cancer?

The research is clear - maintaining a healthy weight and staying physically active throughout life are among the best ways to reduce the risk of developing and dying from cancer.¹ Specifically, physical activity appears to have a direct effect on reducing risk of cancers of the breast, colon, and endometrium, as well as advanced prostate cancer, and possibly, pancreatic cancer.² Being physically active after a cancer diagnosis can improve physical functioning and quality of life and reduce the risk of recurrence of some cancers in adults.^{3,4}

Isn't tobacco use the main contributor to cancer?

For the large majority of Americans who do not use tobacco products, excess weight and obesity, physical inactivity, and poor diet are the greatest modifiable cancer risk factors.⁵ Evidence indicates that these, often preventable, lifestyle-related risk factors are responsible for approximately 20 percent of annual cancer cases.⁶

Specifically, there is a clear link between being overweight or obese and increased risk of cancers of the breast in postmenopausal women, colon and rectum, endometrium, kidney, and pancreas, and adenocarcinoma of the esophagus. Excess weight may also be associated with risk for cancers of the liver, cervix, and ovary, and non-Hodgkin lymphoma, multiple myeloma, and aggressive prostate cancer.⁷ Furthermore, being overweight or obese is linked to increased risk of cancer recurrence, and a lower chance of survival.⁸ Maintaining a healthy weight and staying physically active throughout life are among the best ways to reduce the risk of developing and dying from cancer.^{9,10}

What are the benefits of physical activity in children?

Extensive evidence supports regular physical activity as a promoter of children's growth and development, offering benefits to physical, mental, and cognitive health.

Health-related benefits of physical activity include reduced long-term cancer risk.^{11,12} Children who are physically active are more likely to be active adults, which decreases their risk for developing cancer¹³ and other chronic diseases.¹⁴ Physical activity is also linked to reduced likelihood of being overweight or obese; improved cardiorespiratory endurance, muscular fitness, bone health, and cardiovascular and metabolic health markers; and favorable body composition.¹⁵

Studies show that children who are physically active on a regular basis have improved self-esteem, greater social interaction amongst peers, and are more goal-oriented.¹⁶ Children who are more active also demonstrate higher scholastic achievement, better classroom behavior, greater ability to focus, and less absenteeism than their unfit peers.^{17, 18, 19, 20, 21}

How much daily physical activity do children need?

The 2008 *Physical Activity Guidelines for Americans*, issued by the U.S. Department of Health and Human Services, recommend school-age children (6-17 years) engage in 60 minutes (1 hour) or more of physical activity every day, most of which should be moderate- or vigorous-intensity.²²

Moderate-intensity activity is physical exertion that is equivalent to brisk walking. Such activities are usually done at between 3.5 and 6.0 times resting metabolic rate (that is, the energy expended while sitting at rest).

Vigorous-intensity activity is physical exertion that leads to sweating and heavy breathing, such as running, basketball, soccer, and swimming; usually done at or above an intensity of 6.0 times resting metabolic rate.

The chart below provides examples of moderate and vigorous activity.²³

	Moderate-intensity Activities	Vigorous-intensity Activities
Exercise and leisure	Walking, dancing, leisurely bicycling, ice and roller skating, horseback riding, canoeing, power yoga	Jogging or running, fast bicycling, circuit weight training, aerobic dance, martial arts, jumping rope, swimming
Sports	Volleyball, golfing (without a cart), softball, baseball, badminton, doubles tennis, downhill skiing	Soccer, field or ice hockey, lacrosse, singles tennis, racquetball, basketball, cross-country skiing
Home activities	Mowing the lawn, general yard and garden maintenance	Digging, carrying, hauling, masonry, carpentry
Occupational activity	Walking and lifting as part of the job (custodial work, farming, auto or machine repair)	Heavy manual labor (forestry, construction, fire-fighting)

ACS CAN endorses the *Physical Activity Guidelines for Americans* recommendations,²⁴ along with other major national scientific bodies and health groups such as the Institute of Medicine,²⁵ the American Heart Association,²⁶ the American Diabetes Association²⁷ and the Society of Health and Physical Educators.²⁸

Activities should vary and fit a child’s age and physical development. Children are naturally active and a variety of activities, particularly those that are of moderate- or vigorous-intensity, could count toward the advised 60 minutes or more per day. Additionally, the activity does not all need to occur in a continuous 60-minute block; increments of at least 10-minutes are sufficient.²⁹ For example, if a child is active for at least 20 minutes, three times a day, that child would meet the recommendation.

What is the difference between physical activity and physical education?

Physical activity is any bodily movement that increases energy expenditure. It may include recreational, fitness, and sport activities like jumping rope, playing basketball or soccer, lifting weights, as well as daily activities such as walking to the store, taking the stairs, vacuuming, or raking leaves.

Physical education is a planned, sequential K-12 standards-based program of curricula and instruction designed to develop the motor skills, knowledge, and behaviors of healthy active living, physical fitness, sportsmanship, self-efficacy, and emotional intelligence.³⁰ According to Society of Health and Physical Educators (SHAPE) America, the nation's largest membership organization of health and physical education professionals, the goal of physical education is to develop physically literate individuals who have the knowledge, skills, and confidence to enjoy a lifetime of healthful physical activity.³¹ Physical activity is neither an equivalent to nor substitute for physical education; both contribute meaningfully to the development of healthy, active children.

How do today's children fare with respect to overweight/obesity and physical inactivity, both significant cancer risk factors?

Even with clear evidence that excess weight and physical inactivity increase cancer risk, a significant portion of school-age youth are not at a healthy weight, nor are they physically active on a regular basis.

Overall, 17 percent (about 1 in 6) of children ages 2-19 are obese.³² When overweight children are included, the figure rises to nearly 32 percent.³³ Obesity prevalence increases with age: 8.9 percent, 17.5 percent, and 20.5 percent of 2-5, 6-11, and 12-19 year-olds are obese, respectively.³⁴ Children who are overweight or obese are much more likely than children in the normal weight range to be overweight or obese as adults, increasing their long-term risk of cancer and other chronic diseases.^{35, 36, 37, 38}

Estimates show that many youth in the United States are not meeting the recommendation of at least 60 minutes of daily moderate- or vigorous-intensity physical activity. A 2008 survey found that 42 percent of children engaged in these types of activities for 60 minutes over the course of a week.³⁹ By 2012, only about one-quarter of youth ages 12-15 years met recommended levels of daily physical activity.⁴⁰ In 2013, only 27 percent of high school students met physical activity recommendations. The proportion varied by state, ranging from approximately 16 percent in the District of Columbia to 39 percent in Oklahoma.⁴¹

Additionally, children age eight to eighteen spend an average of more than 7.5 hours a day in front of a screen (e.g., TV, videogames, computer)⁴² and one-third of high school students play video or computer games for 3 or more hours on an average school day.⁴³ Roughly 17 percent of children eight years old and younger (in 2013) use mobile devices one or more times every day. These children report spending an average of one hour and seven minutes on screens during a typical day in 2013, an increase from forty-seven minutes reported in 2011.⁴⁴ Sedentary behaviors (e.g., sitting and television viewing) contribute to health risks by reducing physical activity.⁴⁵

Physical Education

What are characteristics of high quality, effective physical education programs?

Evidence demonstrates that high quality, effective physical education increases students' physical activity and imparts knowledge and skills they need to be physically active for the rest of their lives.⁴⁶ Components of high quality physical education include:

- A curriculum that meets the National Standards and Grade-Level Outcomes for K-12 Physical Education and does not have the option for waivers, exceptions, or substitutions;
- Opportunities for students to spend at least half of class time being physically active;
- Minimum of 150 minutes/week (average of 30 minutes/day) for elementary school children and 225 minutes/week (average of 45 minutes/day) for middle and high school youth;
- Instruction provided by a licensed, certified physical education teacher where the pupil-teacher ratio is equivalent to that in other classrooms;
- Adequate equipment and facilities, with materials that are appropriate for the age and skill level of the students;
- Activities that meet the needs of all students, especially those who are not athletically gifted, and foster an enjoyable experience for all students;
- Tangible standards for student achievement and for high school graduation;
- Assessment of student gains in knowledge and physical fitness to help them understand, improve and/or maintain their physical well-being and reporting of this data to parents; and

- Reporting of aggregate student assessment results to the district and appropriate state agency and use of these assessment results to improve the quality of the program.

What is the status of physical education in the American education system?

The Federal law authorizing education policy in the United States, the *Every Student Succeeds Act* (PL 114-95, signed in December, 2015), includes a number of provisions that highlight the importance of physical education as an integral component to the overall education of students. First, the law designates physical education as part of a well-rounded curriculum (previously known as core subjects), which now makes physical education eligible for funding through Title I. Second, the law includes a new block grant program under which physical education programs will have access to funding. At the state and local level, physical education policies and requirements vary widely. Most schools do not require a specific amount of instructional time, and more than half allow exemptions, waivers, and/or substitutions for physical education.⁴⁷ According to the Centers for Disease Control and Prevention (CDC) 2013 Youth Risk Behavior Survey, 52 percent of youth did not attend physical education during an average school week.⁴⁸

In addition:

- Only 3.6 percent of elementary, 3.4 percent of middle, and 4.0 percent of high schools required daily physical education or its equivalent for the entire school year;⁴⁹
- Less than half (48 percent) of high school students attend physical education classes on at least 1 day of the week and about only 29 percent of students have daily physical education, during any portion of the school year;⁵⁰ and
- In nearly one-quarter of schools, students aren't required to take any physical education.⁵¹

Given how important physical education is, why are so few schools providing it for students?

School leaders face a range of competing priorities related to ensuring strong academic outcomes for students. They struggle to balance insufficient resources, including financial, personnel, time, and space constraints, to meet the needs of their student population. Despite these challenges, state legislators and education policymakers should invest in and support efforts to increase the provision of and accountability for high-quality physical education for all students.

Strong physical education and physical activity programs offer a valuable return on investment. The inclusion of physical education and physical activity in a comprehensive education is an evidence-based approach to improving academics, student health, and the overall school climate and environment.⁵² Children who are regularly active reap health rewards while schools benefit through higher student achievement, better classroom behavior, and less absenteeism -- a win-win situation for students and educators.

Why is physical education the best way for students to get physical activity?

Physical education offers a consistent and accessible way for all students to be physically active, regardless of other factors that might otherwise impede activity. Beyond simply providing an outlet for physical activity, physical education helps children and adolescents develop and demonstrate the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness, while exhibiting personal responsibility and social behavior that respects self and others.⁵³

In addition to requiring quality physical education, what can state legislators and education leaders do to promote physical activity?

- Provide or allocate resources, including financial and technical assistance resources, to schools and school districts to increase or improve physical education;

- Require that school districts complete a comprehensive self-assessment of their physical education programs and physical activity offerings, publicly report findings, and use the results to inform future programs and policies;
- Examine whether physical education standards are measured and assessed at the student level, how these assessments inform instruction, and how the program overall is periodically evaluated;
- Require that students are routinely assessed on progress towards physical education state standards and report individual students' results to parents and aggregate results to the community and relevant state agencies for the purpose of assessing the quality of the program and progress towards goals;
- Require daily recess in elementary schools, in addition to physical education;
- Require that physical education and physical activity requirements be included as part of a school district's local school wellness policy;
- Promote and fund Safe Routes to School programs and active transportation infrastructure and safety projects that encourage safely walking and biking to school;
- Implement the federal *Healthy, Hunger-Free Kids Act* requirement that school districts have district wellness committees to establish goals for and to oversee school health policies and programs, which should include representation from parents, students, community members, school administrators and school board members, school health and physical education teachers, and school health services professionals; and
- Encourage shared use agreements to open school facilities, including playgrounds, fields, and possibly the gymnasium, for families to use after school and on the weekends.

Should policies permit students to be allowed exemptions from physical education?

Physical education teaches students essential knowledge and skills, just like other classes in school. Students would not be excused from English class because they read at home; similarly, they should not be granted exemptions for physical education because they participate in outside physical activity such as an athletic team, community recreation program, ROTC, or marching band. Students should also not be allowed an exemption from physical education to prepare for other classes or standardized tests. Likewise, schools should not withhold physical education as a punishment or disciplinary action. There are some limited cases, however, when a child should be excused such as when a physician states in writing that physical activity will jeopardize the students' health and well-being.⁵⁴

What about students with disabilities?

Physical education can reach and benefit all students, including those with disabilities. Under the *Individuals with Disabilities Education and Rehabilitation Act*, schools are required to afford students the opportunity to participate in physical education in the least restrictive environment that may also be adapted to meet the needs of a particular student. Physical activity has been reported to be 4.5 times lower for children and youth with disabilities than their peers without disabilities,⁵⁵ and children and youth with disabilities typically engage in very little school-based physical activity, less healthy after-school activities, and more sedentary leisure activities.⁵⁶ Students with disabilities face many challenges and barriers accessing opportunities to be physically active, making physical education a vital source of instruction and skill development for these students.⁵⁷ Students with disabilities should not be waived from physical education requirements, but should instead be provided with modifications or adaptations that allow physical education courses to meet their needs in the most inclusive and positive way possible.

Addressing Challenges to Implementing Quality Physical Education and Physical Activity Policies

Adopting and Implementing Effective Physical Education and Physical Activity Policies and Practices

Why can't we just leave it up to parents to make sure their children are active?

Most children spend more than half of their waking hours at school, making it critical for schools to provide opportunities for children to be physically active. Because schools are the one place where nearly all children from diverse backgrounds go and expect to learn, schools can and should provide equal opportunities for movement to all students. Other environments provide opportunities for activity, but research shows that youth are mostly sedentary once they leave school and are not getting sufficient physical activity at home. Screen time is increasing, even among our youngest students, making schools a critical setting for teaching children the value of and behaviors for being physically active.⁵⁸ Physical education classes also provide a safe, supervised, and structured environment for physical activity in a way that helps children understand the importance of being active throughout life.

Parents support increasing physical education in schools. A 2013 online survey found that 92 percent of parents of elementary students and 87 percent of parents of middle and high school students should be required to take physical education (and health for secondary students).⁵⁹ These findings echo findings from previous surveys in which nearly all surveyed parents of K-12 children believed physical education should be part of a school curriculum for all students⁶⁰ and that physical education is at least as important as other academic subjects.⁶¹ Legislators can help to ensure that youth are as active as possible during the school day by supporting and mandating quality physical education and other physical activity opportunities.

Why are current laws requiring school-based physical activity insufficient?

Requirements for schools to set aside a certain amount of time for physical activity do not guarantee that students will have an opportunity to gain what physical education often provides: the knowledge and skills to be active for the rest of their lives, as well as the competencies (according to SHAPE America's national standards) of physically literate individuals.⁶² Quality physical education provides instruction based on a curriculum consistent with state or national standards, in addition to opportunities for students to be physically active. Often, an unintended consequence of physical activity requirements is the replacement of physical education with other less resource-intensive physical activity opportunities, such as recess, classroom-based physical activity, or active travel time between classes. While additional opportunities for school-based physical activity are important supplements to physical education, they should not take the place of structured physical education.

How can lawmakers, policymakers, and other decision makers help schools that don't have adequate facilities or equipment, or enough space to be active or store equipment?

Lawmakers can ensure that sufficient funds for equipment and facilities are available to support physical education legislation. They can support legislation to help schools overcome space and equipment constraints through:

- Partnerships and/or contractual agreements with local community recreation centers, universities, or businesses to use their facilities for various physical activity opportunities and sports programs;
- Group purchasing arrangements with nearby schools to split the costs of equipment and rotate the equipment between the schools;
- Shared use agreements between schools and other potential uses of school recreational facilities; and

- Providing teachers access to tools to increase classroom-based physical activity, including equipping classrooms with mobile desks, standing chairs, physio balls.

Policymakers also should invest in professional development for school faculty and staff to effectively implement these physical activity strategies. Policymakers might also consider any additional time requirements for school staff, and if those changes warrant adjustments in staff contracts.

Additionally, policymakers can be instrumental in promoting community-wide recognition of schools' efforts to promote physical activity by participating in walk-to-school days, actively partnering with schools, or by providing recognition or incentives to schools who excel in implementation of quality physical education and physical activity. Recognition of schools' work is a low- or no-cost—but invaluable—tool in promoting change.

Why do students need additional opportunities for physical activity beyond physical education?

Physical activity opportunities should occur throughout the day to supplement, but not replace, physical education. These activities may occur before, during, or after the school day and may include classroom physical activity breaks; recess; intramural, clubs, and sports programs; walk or bike-to-school programs, and afterschool programs. These other occasions for vigorous or moderate physical activity offer additional health benefits, even in increments of as little as 10 minutes,⁶³ and help students fill the gap between the amount of physical activity students receive through physical education and the recommended 60 minutes per day. These opportunities are important because even if quality physical education is occurring, students still need opportunities throughout the day to move and be active.

Children are naturally active and should be given the opportunity to move during the school day in a way that is not disruptive to the learning environment. For some children, such as those with attention deficit disorder or similar conditions, even a small addition of physical activity during the school day can help them focus and learn.⁶⁴

Why isn't it a good idea to withhold physical education or recess as a punishment for bad behavior, or to let students catch up on homework during these times?

Physical education and recess can have a positive impact on the development of students' social skills, achievement, and learning in the classroom (by enhancing attention and memory). It has also been shown to reduce stress, decrease restlessness, teach conflict/problem solving, and develop cognitive abilities.⁶⁵ Play is essential to the social, emotional and physical development of children and withholding recess as a punishment can compromise child development.⁶⁶ Additionally, physical activity is associated with improved cognitive and academic outcomes.⁶⁷

Don't intramural and inter-scholastic sports give students equal opportunities to be active?

Intramural and inter-scholastic sports are beneficial for many children but are not necessarily available to everyone. Competitive teams may accept only the most skilled athletes and some schools lack sports facilities. Other barriers to participation are "pay-to-play" policies or lack of transportation to and from team events. Physical education levels the playing field and teaches children of all income and athletic abilities the skills they need for a lifetime of physical activity.

Connecting Physical Education and Physical Activity to Academic Achievement

Will physical activity and physical education take time away from academic subjects and hurt test scores?

Physical activity is key to academic achievement. A recent analysis of many studies shows that physical education and physical activity opportunities consistently enhance cognition, learning, memory, and academic

achievement.⁶⁸ According to the Institute of Medicine, “the benefits of additional time dedicated to physical education and other physical activity opportunities before, during, and after school outweigh the benefits of exclusive utilization of school time for academic learning.” School principals agree. A Gallup survey of elementary school principals found that principals overwhelmingly believe recess has a positive impact not only on the development of students’ social skills, but also on achievement and learning in the classroom.⁶⁹ Studies also show that more time in physical education and other school-based physical activity does not adversely affect academic performance.⁷⁰

Physical fitness is related to improvements in the brain structure and functions that underlie academic performance. Children who are more active and fit consistently outperform their inactive, unfit peers academically on both a short- and long-term basis. They also show greater attention in the classroom, have faster cognitive processing speed, and perform better on standardized tests. Time spent being physically active is also related to enriched cognitive development and lifelong brain health.⁷¹

The benefits of improving the school physical education curricula are realized across diverse racial, ethnic, and socioeconomic groups, among boys and girls, elementary- and high-school students, and in urban and rural settings.⁷² In short, quality physical education has potential to help bridge the achievement gap.⁷³

There isn’t enough time in the school day for regular physical education and physical activity, especially with competing priorities like core curriculum classes and standardized testing. How are schools expected to add one more thing to the daily curriculum?

There are many reasons for the decline in physical education in schools. Since the passage of the *No Child Left Behind Act*, nearly half of school administrators (44%) reported cutting significant time from physical education and recess to increase time spent in reading and mathematics.⁷⁴

There are, however, relatively easy ways to build physical education and activity into the school day. Offering children short periods of activity time before and after school, encouraging active lessons, active classroom breaks, and recess during the school day can add up to the recommended 60 minutes.

For example, the Miami-Dade County Public Schools district ensures physical education is a priority throughout the school day. One way they do this is by scheduling physical activity during the teacher’s planning time. Through an intense focus on quality physical education, required recess, and school environments that support daily physical activity, the district has seen a reduction in BMI and an increase in the number of students achieving pass rates on all six FitnessGram® assessments. These results have been realized across their student population, including in students with disabilities.⁷⁵

Low-resource California schools have also leveraged funding from a variety of grant resources and federal funding to transition to high-quality programs using innovative strategies including wellness centers and video games such as WiiFit or Dance, Dance Revolution that get students up and moving.⁷⁶

Highly-Qualified Physical Education Teachers and Staff

Why can’t any educator teach physical education classes?

Just like math teachers are trained in the appropriate ways to teach math, physical education teachers are specially trained and certified to provide all children with well-designed, developmentally-appropriate activities. All physical education teachers should regularly participate in professional development activities specific to their field that will allow them to keep current on emerging technologies, model programs, and

improved teaching methods. Quality professional development programs are an essential component for both novice and veteran teachers to ensure the continued delivery of quality physical education.⁷⁷

With tight budgets, how can we afford more physical education teachers?

We can't afford to omit physical education from a well-rounded curriculum. Physical education is an integral academic subject for all students and offers the opportunity to teach students skills for a lifetime of physical activity. These skills have the potential to protect future adults from a range of chronic diseases, including cancer. State legislators, school administrators, and other decision makers should consider their resources and promote evidence-based programs and approaches that can improve academic achievement and school climate, enhance mental and physical health, and impart skills and knowledge that can fundamentally impact students' lives now and in the future.

Regular physical activity has no shortage of benefits in the classroom. Children with higher fitness levels achieved through regular physical activity have higher scholastic achievement, better classroom behavior, greater ability to focus, and less absenteeism (compared to unfit children).^{78, 79, 80} Academic performance did not suffer among children who spent time in physical education in place of a classroom session, compared to students who didn't take physical education.⁸¹

Accountability

How should schools and school districts be held accountable?

Assessing whether and how well school districts' provide physical education and supplemental physical activity opportunities, as well as student gains in knowledge and physical fitness, are important for determining the extent to which programs are having their intended benefits. School districts do not need to develop their own assessments, as evidence-based tools such as [CDC's Physical Education Curriculum Assessment Tool \(PECAT\)](#),⁸² already exist.

Monitoring and assessment can help demonstrate to lawmakers where efforts are successful or need additional supports. They also provide important feedback to allow for tailored programming and interventions to strengthen programs and meet the needs of students. School districts should use the outcome of their assessments to improve the quality of their physical education program and physical activity offerings.

School districts and schools should complete comprehensive programmatic assessments of physical education and supplemental physical activity using existing tools. Results can help improve future program and policies to ensure that physical education and physical activity programs are meeting education and activity goals. Assessment findings should be integrated into the district or school's long-term strategic planning, School Improvement Plan, and/or school wellness policy, to address and continually improve the quality and quantity of physical education and activities offered. School districts and schools should be required to report the findings of their assessment to parents and members of the community through communication channels such as websites, school newsletters, school board reports, and presentations.

In addition, all students should be regularly assessed for attainment of physical education learning objectives and progress towards meeting state physical activity standards. Health-related fitness testing should be integrated into the curriculum as an instructional tool in most grades. This testing can teach students how to assess their fitness levels, set goals for improvement, and monitor progress in reaching their goals. Individual student results should be made available to each student's parents. For the most part, fitness testing should be

used to assess improvements in individual students' fitness levels rather than to compare students' fitness levels to absolute targets or to other students.

An assessment of implemented policies can help determine the quality of a school's physical education program. Sample questions that may be part of the quality assessment include:

- How many students are taking physical education?
- Is there a limit on the maximum number of students per class?
- How often are students in physical education – by days per week and minutes per week?
- How many physical education teachers are certified to teach physical education?
- What space(s) are being used for teaching physical education, both on school campuses and away from school?
- How often are physical education substitutions, such as sports, used/allowed?
- How is physical education being adapted for students with special needs?⁸³
- How often do physical education classes engage students in moderate-to-vigorous physical activity for at least half of class time?
- Are students being assessed for improvements in knowledge and physical fitness? What are the results of those assessments?
- How are aggregate results being reported to students, parents, the public, and education agencies?

Ongoing monitoring, data collection, and program improvement efforts will help ensure all children have consistent and regular access to quality, effective physical education.

References

- ¹ Kushi LH, Doyle C, McCullough M, et al, and the American Cancer Society 2010 Nutrition and Physical Activity Guidelines Advisory Committee. American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention. *CA Cancer J Clin* 2012; 62:30-67.
- ² Ibid.
- ³ Schmitz KH, Courneya KS, Matthews C, et al. American College of Sports Medicine Roundtable on Exercise Guidelines for Cancer Survivors. *Medicine & Science in Sports & Exercise* 2010; 42(7):1409-1426.
- ⁴ Rock CL, Doyle C, Demark-Wahnefried W. Nutrition and Physical Activity Guidelines for Cancer Survivors. *CA Cancer J Clin* 2012; 62:242-274.
- ⁵ Kushi et al, 2012.
- ⁶ World Cancer Research Fund International. *Cancer preventability estimates for diet, nutrition, body fatness, and physical activity*. London: World Cancer Research Fund International. 2015. Available at <http://www.wcrf.org/int/cancer-facts-figures/preventability-estimates/cancer-preventability-estimates-diet-nutrition>.
- ⁷ Kushi et al, 2012.
- ⁸ Rock et al, 2012.
- ⁹ Kushi et al, 2012.
- ¹⁰ American Cancer Society. *Cancer prevention and early detection facts & figures 2015-2016*. Atlanta, GA: American Cancer Society; 2015.
- ¹¹ Kushi et al, 2012.
- ¹² Rock et al, 2012.
- ¹³ Kushi et al, 2012.
- ¹⁴ U.S. Department of Health and Human Services. *Physical Activity Guidelines for Americans*. Washington, DC: HHS; 2008.
- ¹⁵ Ibid.
- ¹⁶ Institute of Medicine. *Educating the student body: Taking physical activity and physical education to school*. Washington, DC: National Academies Press; 2013.
- ¹⁷ Shore SM, Sachs ML, Lidicker JR, et al. Decreased scholastic achievement in overweight middle school students. *Obesity* 2008; 16(7):1535–1538.
- ¹⁸ Geier AB, Foster GB, Womble LG, et al. The relationship between relative weight and school attendance. *Obesity* 2007; 15(8):2157-2161.

- ¹⁹ Centers for Disease Control and Prevention. *The association between school-based physical activity, including physical education, and academic performance*. Atlanta, GA: Centers for Disease Control and Prevention; 2010.
- ²⁰ Roberts CK, Freed B, McCarthy WJ. Low aerobic fitness and obesity are associated with lower standardized test scores in children. *The Journal of Pediatrics* 2010; 156:711-8, 718 e1.
- ²¹ Van Dusen DP, Kelder SH, Kohl HW, et al. Associations of physical fitness and academic performance among schoolchildren. *The Journal of School Health* 2011; 81:733-40.
- ²² U.S. Department of Health and Human Services, 2008.
- ²³ American Cancer Society, 2015.
- ²⁴ Kushi et al, 2012.
- ²⁵ Institute of Medicine, 2013.
- ²⁶ Lloyd-Jones DM, Hong Y, Labarthe D, et al; on behalf of the American Heart Association Strategic Planning Task Force and Statistics Committee. Defining and setting national goals for cardiovascular health promotion and disease reduction: the American Heart Association's Strategic Impact Goal through 2020 and beyond. *Circulation* 2010; 121:586-613.
- ²⁷ American Diabetes Association. Foundations of care: Education, nutrition, physical activity, smoking cessation, psychosocial care, and immunization. *Diabetes Care* 2015; 38(Suppl 1):S20-S30.
- ²⁸ Society of Health and Physical Educators (SHAPE America). *Physical activity guidelines*. Reston, VA: SHAPE America. Available at <http://www.shapeamerica.org/standards/guidelines/paguidelines.cfm>.
- ²⁹ U.S. Department of Health and Human Services, 2008.
- ³⁰ Institute of Medicine, 2013.
- ³¹ Society of Health and Physical Educators (SHAPE America). *National standards and grade-level outcomes for K-12 physical education*. Reston, VA: SHAPE America; 2014.
- ³² Ogden CL, Carroll MD, Fryar CD, et al. Prevalence of obesity among adults and youth: United States, 2011-2014. NCHS data brief, no 219. Hyattsville, MD: National Center for Health Statistics; 2015. Available at <http://www.cdc.gov/nchs/data/databriefs/db219.pdf>.
- ³³ Ogden CL, Carroll MD, Kit BK, et al. Prevalence of childhood and adult obesity in the United States, 2011-2012. *Journal of the American Medical Association* 2014; 311(8):806-814. Available at <http://www.cdc.gov/nchs/data/databriefs/db219.pdf>.
- ³⁴ Ogden et al, 2015.
- ³⁵ Guo SS and Chumlea WC. Tracking of body mass index in children in relation to overweight in adulthood. *American Journal of Clinical Nutrition* 1999; 70:S145-148.
- ³⁶ Freedman DS, Kettel L, Serdula MK, et al. The relation of childhood BMI to adult adiposity: the Bogalusa Heart Study. *Pediatrics* 2005; 115:22-27.
- ³⁷ Freedman D, Wang J, Thornton JC, et al. Classification of body fatness by body mass index-for-age categories among children. *Archives of Pediatric and Adolescent Medicine* 2009; 163:801-811.
- ³⁸ Freedman DS, Khan LK, Dietz WH, et al. Relationship of childhood obesity to coronary heart disease risk factors in adulthood: The Bogalusa Heart Study. *Pediatrics* 2001; 108:712-718
- ³⁹ Troiano RP, Berrigan D, Dodd KW, et al. Physical activity in the United States measured by accelerometer. *Med Sci Sports Exerc.* 2008; 40(1): 181-8.
- ⁴⁰ Fakhouri THI, Hughes JP, Burt VL, et al. *Physical activity in U.S. youth aged 12-15 years, 2012*. NCHS data brief, no 141. Hyattsville, MD: National Center for Health Statistics; 2014. Available at <http://www.cdc.gov/nchs/data/databriefs/db141.pdf>.
- ⁴¹ Kann et al, 2014.
- ⁴² Rideout VJ, Foehr UG, Roberts DF. *Generation M2: Media in the lives of 8- to 18-year-olds*. Rep. Menlo Park: Henry J. Kaiser Family Foundation; 2010.
- ⁴³ Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance—United States, 2011. *Morbidity and Mortality Weekly Report* 2012; 61(No. SS-66104):1-168. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6104a1.htm>.
- ⁴⁴ Common Sense Media. *Zero to eight: Children's media use in America 2013*. San Francisco, CA: Common Sense Media; 2013. Available at <https://www.commonsensemedia.org/research>.
- ⁴⁵ Institute of Medicine, 2013.
- ⁴⁶ Ibid.
- ⁴⁷ National Association for Sport and Physical Education & American Heart Association. *2012 Shape of the Nation report: Status of physical education in the USA*. Reston, VA: American Alliance for Health, Physical Education, Recreation and Dance; 2012.
- ⁴⁸ Kann L, Kinchen, S, Shanklin, SL, et al. Youth Risk Behavior Surveillance - United States 2013. *MMWR Surveil Summ* 2014; 63(Suppl 4).
- ⁴⁹ Centers for Disease Control and Prevention Division of Adolescent and School Health. *Results from the School Health Policies and Practices Study 2014*. Atlanta, GA: Centers for Disease Control and Prevention. 2015. Available at http://www.cdc.gov/healthyyouth/data/shpps/pdf/shpps-508-final_101315.pdf.
- ⁵⁰ Kann et al, 2014.
- ⁵¹ U.S. Department of Health and Human Services, 2008.
- ⁵² Stuart-Cassel, V. *School-based physical fitness and the link to student academic outcomes and school climate*. American Institutes for Research (AIR): Washington, DC; 2015.

- ⁵³ SHAPE America, 2014.
- ⁵⁴ American Cancer Society. *Model legislation for physical education*. Washington, DC: American Cancer Society; 2012.
- ⁵⁵ Rimmer, J. Promoting inclusive physical activity communities for people with disabilities. *President's Council on Physical Fitness and Sports Research Digest 2008*; 9(2):1-8.
- ⁵⁶ Rimmer, J and Rowland, JL. Physical activity for youth with disabilities: A critical need in an underserved population. *Developmental Rehabilitation 2007*, 11(2):141-148.
- ⁵⁷ Rimmer, JH and Rowland, JA. Physical activity for youth with disabilities: A critical need in an underserved population. *Developmental Neurorehabilitation 2008*; 11(2):141-148.
- ⁵⁸ Common Sense Media, 2013.
- ⁵⁹ KidsHealth in the Classroom. *Parents and Teachers Want More Health, PE Classes*. 2013. Available at: http://kidshealth.org/parent/kh_misc/health-pe-survey.html#.
- ⁶⁰ National Association for Sport Health Education survey conducted by Opinion Research Corporation International. *Public attitudes toward physical education: Are schools providing what the public wants?* 2003.
- ⁶¹ Centers for Disease Control and Prevention, 2010.
- ⁶² SHAPE America, 2014.
- ⁶³ President's Council on Fitness, Sports, and Nutrition. *General Fit Facts and Tips*. Available at <http://www.fitness.gov/resources-and-grants/fitfacts-and-tips/general-fit-facts/>.
- ⁶⁴ Smith, A, Hoza, B, Linnea, K. *Pilot physical activity intervention reduces severity of ADHD symptoms in young children*. *Journal of Attention Disorders 2013*; 17(1): 70-82.
- ⁶⁵ Institute of Medicine, 2013.
- ⁶⁶ Robert Wood Johnson Foundation. *State of play: Gallup survey of principles on school recess*. Princeton: Robert Wood Johnson Foundation; 2010. Available at <http://www.rwjf.org/en/library/research/2010/02/the-state-of-play.html>.
- ⁶⁷ Institute of Medicine, 2013.
- ⁶⁸ Centers for Disease Control and Prevention, 2010.
- ⁶⁹ Robert Wood Johnson Foundation, 2010.
- ⁷⁰ Trost S. *Active education: Physical education, physical activity and academic performance. A research brief*. Princeton, NJ: Active Living Research, a National Program of the Robert Wood Johnson Foundation; 2009. Available at www.activelivingresearch.org.
- ⁷¹ Institute of Medicine, 2013.
- ⁷² McKenzie T, Sallis, JF, Rosengard, P. Beyond the stucco tower: Design, development, and dissemination of the SPARK physical education programs. *Quest*. 2009; 61:114-127.
- ⁷³ Joint policy position of the American Cancer Society Cancer Action Network, American Diabetes Association, and American Heart Association: *Increasing and Improving Physical Education and Physical Activity in Schools: Benefits for Children's Health and Educational Outcomes*. 2015. Available at <http://www.acscan.org/content/wp-content/uploads/2013/08/PE-in-Schools-Policy-Statement.pdf>
- ⁷⁴ Center on Education Policy. *Choices, changes, and challenges: Curriculum and instruction in the NCLB era*. Washington, DC: Center on Education Policy; 2007.
- ⁷⁵ Let's Move Active Schools. *Miami-Dade schools adopt "Fitness focus" success story*; 2014. Available at <http://www.letsmoveschools.org/latest-stories/2014/7/18/miami-dade-schools-adopt-fitness-focus>.
- ⁷⁶ San Diego State University. *Physical education matters: Success stories from California low resource schools that have achieved excellent P.E. programs*. Los Angeles: The California Endowment; 2007.
- ⁷⁷ Institute of Medicine, 2013.
- ⁷⁸ Shore et al, 2008.
- ⁷⁹ Geier et al, 2007.
- ⁸⁰ Centers for Disease Control and Prevention, 2010.
- ⁸¹ Sallis JF, McKenzie TL, Kolody B, et al. Effects of health-related physical education on academic achievement: Project SPARK. *Research Quarterly for Exercise and Sport 1999*; 70:127-34.
- ⁸² Centers for Disease Control and Prevention. *Physical education curriculum analysis tool*. Atlanta, GA: Centers for Disease Control and Prevention. Available at <http://www.cdc.gov/healthyschools/pecat/index.htm>.
- ⁸³ Preventobesity.net. *Searching for Equality in NYC's PE Quality*, 2015. Available at <http://preventobesity.net/Inside-Track-November-19-15-c>.



Physical Education in Schools - Both Quality and Quantity are Important

A Statement on Physical Education from the American Cancer Society Cancer Action Network (ACS CAN), the American Diabetes Association (ADA), and the American Heart Association (AHA)

Position:

The quality and quantity of physical education in the nation's schools is an important part of a student's comprehensive, well-rounded education program and a means of positively affecting life-long health and well-being. The optimal physical education program will foster a long-term commitment to physical activity as part of a healthy lifestyle that will help children prevent chronic disease and numerous other conditions, including abnormal cholesterol, high blood pressure, obesity, and heart disease. AHA, ACS CAN, and the ADA advocate for more frequent, quality physical education in all schools. Quality physical education will engage students in health-promoting physical activity for at least half of class time and teach them the knowledge and skills necessary for lifelong physical activity. Quality physical education also should be supplemented, but not replaced, by additional school-based physical activity.

The Importance of Physical Education

Physical education is the cornerstone of increasing the overall quantity of physical activity in schools. Furthermore, it teaches students the basics of physical literacy and how to integrate exercise into their lives in order to establish a lifetime of healthy living. Regular physical activity is associated with a healthier, longer life and with a lower risk of heart disease, high blood pressure, diabetes, obesity, and some cancers.¹ The *2008 Physical Activity Guidelines for Americans*² and national public health organizations, including the American Cancer Society,³ AHA,⁴ and ADA, recommend that children engage in at least 60 minutes of physical activity each day. The Institute of Medicine recommends that children have adequate opportunities to get 60 minutes of physical activity every school day.⁵ Physical education should be an important part of that physical activity time.

The Current Landscape

The current obesity rate for youth in the United States is nearly 20% compared to 7% in 1980.⁶ Unfortunately, many youth are increasingly sedentary throughout their day, meeting neither physical education nor national physical activity recommendations. Physical education in schools has been decreasing in recent years.⁷ Only 3.8% of elementary, 7.9% of middle, and 2.1% of high schools provide daily physical education or its equivalent for the entire school year.⁸ Twenty-two percent of schools do not require students to take any physical education at all.² Nationwide, only 51.8% of high school students attend at least some physical education (PE) classes and 31.5% of those students have daily physical education.⁹ Recent analysis shows that physical education continues to decline in schools while opportunities for school-based sports programs have increased for some students.¹⁰

Although school districts are required to include goals for physical activity in their local school wellness policies (as mandated by the federal Child Nutrition and WIC Reauthorization Act of 2004 and Healthy, Hunger-Free Kids Act of 2010), they are not required to address physical education specifically. Despite the lack of this requirement, more than 90 percent of students are in school districts with wellness policies that address physical education. However, only 10 percent of students are enrolled in a district with a wellness policy that requires students to engage in moderate to vigorous physical activity for at least half of physical education class time.¹¹ Only 6 percent of elementary school students and 2 percent of middle and high school students are in a district with a wellness policy that requires 150 minutes per week of physical education at the elementary level and 225 minutes per week of physical education at the middle and high school levels.¹²

Public support exists for increasing physical education in schools. The vast majority of parents of children under 18 (95%) think physical education should be part of a school curriculum for all students in grades K-12.¹³ The majority of parents believe that physical education is at least as important as other academic subjects ranging from 54% to 84%, depending on the subject being compared.¹⁴ Numerous professional associations, medical societies, and government agencies formally support the need for physical activity for youth and for quality physical education in schools.¹⁵

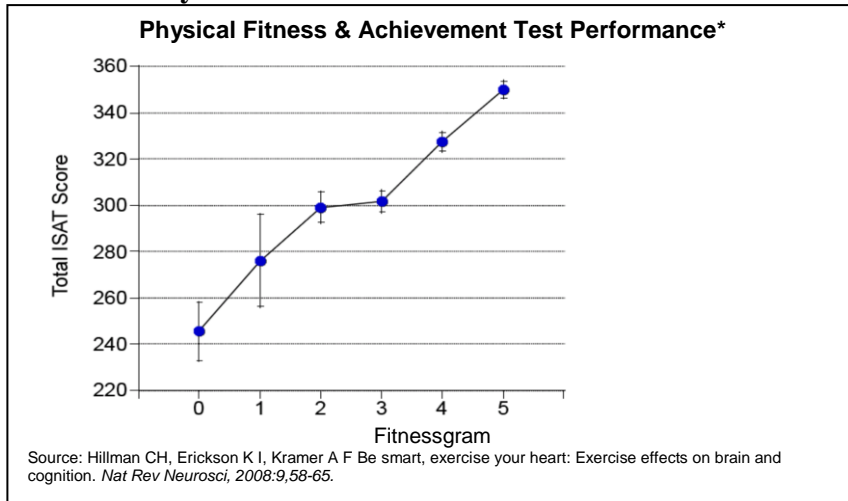
Overview of the Evidence

A large number of studies have focused on the impact of improving physical education in schools by updating physical education curricula, increasing the number of classes offered, and improving teacher training, often in coordination with additional educational or home-based components.^{16,17,18,19,20,21} In a systematic review of physical education programs that increased the amount of time that students were physically active, students' aerobic and physical fitness increased.^{22,23} Compliance with state physical education laws or regulations regarding time requirements for physical education is critical for seeing improvement in student fitness.²² The benefits of modifying the school physical education curricula are experienced across diverse racial, ethnic, and socioeconomic groups, among boys and girls, elementary- and high-school students, and in urban and rural settings.²¹ A six-month exercise program among obese children and adolescents reduced body mass index, diabetes risk factors and low-degree inflammation and demonstrated that regular exercise can restore blood vessel function and improve cardiovascular risk factors.²⁴ Evidence from the Early Childhood Longitudinal Study showed that physical education programs do have an impact on improving risk factors in young overweight girls.²⁵

Improved coordinated school health programs, of which physical education is a central component, will augment prevention efforts and help improve fitness, academic performance, mental health, physical health and well-being across the school environment. A growing body of evidence demonstrates that the benefits of physical education are beyond the classroom. Physical fitness can have a positive impact on cognitive ability, avoiding tobacco use, and reducing insomnia, depression, and anxiety.²⁶ Physically fit children have higher scholastic achievement, better classroom behavior, greater ability to focus, and less absenteeism than their unfit counterparts.^{27,28,29} The relationship between physical fitness and academic achievement is

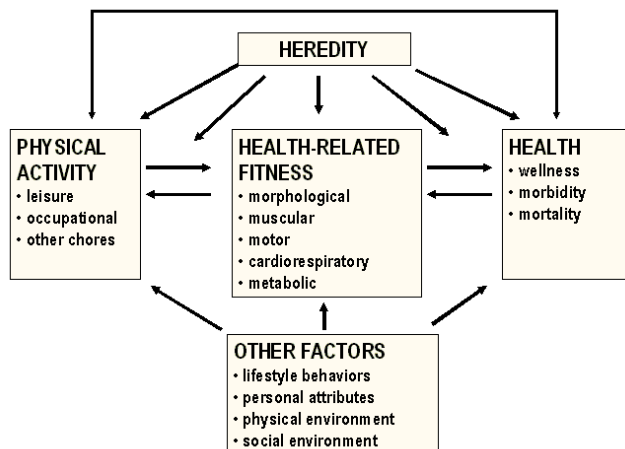
illustrated in Chart 1. School-based physical activity also correlates with improved academic performance.^{30,31,32} Several large-scale studies found improvements in students' academic performance and cognitive ability with increased time spent in physical education.³³ Additionally, children who spent time in physical education in place of a classroom activity performed no worse academically than students not enrolled in physical education.³⁴

Chart 1: Physical Fitness & Achievement Test Performance*



As depicted in Figure 1, the relationship between physical activity, physical fitness and health is complex and also impacted by the physical and social environments where children spend a majority of their time. In general, as children increase the intensity and duration of their physical activity, their physical fitness will increase. Physical fitness is the outcome measure of more frequent, and more intense physical activity. A higher level of physical fitness is associated with lower all-cause mortality, coronary heart disease, and risk factors for cardiovascular disease, whereas a low level of fitness is associated with obesity, high blood pressure, colon cancer, diabetes, osteoporosis, and depression.³⁵ Physical fitness is the correlate with academic achievement and better classroom behavior.

Figure 1. The relationships between physical activity, health-related fitness and health³⁶



Quality and Quantity of Physical Education

Our organizations and other national groups including the National Association for Sport and Physical Education (NASPE), the National Association of State Boards of Education (NASBE), the Centers for Disease Control and Prevention and the Institute of Medicine recommend 150 minutes of physical education each week for children in elementary school and 225 minutes per week for middle school and high school. At least 50 percent of physical education class time should be spent in moderate to vigorous physical activity. Additionally, high schools should make physical education a graduation requirement.

Physical education benefits all students -- including students with disabilities. Under the Individuals with Disabilities Education Act (IDEA) and Rehabilitation Act regulations, schools must generally provide a free and appropriate public education that enables students to participate in physical education in the least restrictive environment. Adapted physical education must be provided when a student's Individualized Education Plan or Section 504 Plan includes it.

Physical education policy should prioritize quality while, simultaneously and/or subsequently, trying to increase the amount of time physical education is offered in schools. According to NASPE, a high quality physical education program should enhance the physical, mental, and social/emotional development of every child and incorporate fitness education and assessment to help children understand, improve and/or maintain their physical well-being.

The core components of quality physical education are a curriculum that meets the National Standards for Physical Education taught by a certified physical education teacher in a setting with adequate equipment and facilities where the pupil-teacher ratio is equivalent to that in other classrooms. Quality physical education helps students acquire the knowledge and skills necessary to engage in a lifetime of physical activity.³⁷ Certified physical educators should also serve as school-site physical activity leaders that promote physical activity both within and beyond the regular school day.

A comprehensive self-assessment of physical education programs, such as the Physical Education Curriculum Analysis Tool (PECAT), can provide schools with important information about their alignment with national standards for curriculum content and student assessment. Robust assessments and evaluations help identify curriculum changes designed to deliver high-quality physical education to students.

Increasing School-based Physical Activity

In addition to quality physical education, other opportunities exist to increase the level of physical activity at school. Classroom-based physical activity, recess, walking or biking to school, and before and after school physical activity should supplement physical activity provided through physical education. Increasing other school-based physical activity should not be an excuse to cut or substitute for the quantity of physical education. Physical activity is neither an equivalent to nor substitute for physical education, but both can contribute meaningfully to the development of healthy, active children.³⁸ According to NASPE, "physical

activity is bodily movement of any type and may include recreational, fitness, and sport activities such as jumping rope, playing soccer, lifting weights, as well as daily activities such as walking to the store, taking the stairs, or raking leaves.³⁹

In addition to its health benefits, physical activity breaks can improve children's cognitive functioning and attention and behavior in the classroom.^{40,41,42} Structured physical activity during recess can also reduce bullying.⁴³

Physical activity must be moderate to vigorous and occur for a duration of at least 10 minutes to provide health benefits.⁴⁴ Walking between classes and occasional field trips should not count toward meeting regular physical activity requirements. We recommend that school-age children, including those with disabilities, accumulate at least 60 minutes per day of physical activity and avoid prolonged periods of inactivity.

Specific Policy Recommendations:

Legislation and/or regulation to promote physical education should:

- Require all school districts to develop and implement a planned, K-12 sequential physical education curriculum that adheres to national and state standards for health and physical education.
- Require all schools districts to provide all students with 150 minutes per week of physical education in elementary schools and 225 minutes per week in middle schools and high schools.
- Encourage school districts and schools to provide school-age children with numerous opportunities to accumulate at least 60 minutes per day of physical activity and avoid prolonged periods of inactivity. The key method for achieving this goal is physical education supplemented by additional opportunities for physical activity before, during, and after the regular school day.⁴⁵ Require physical education credit(s) for graduation from high school with appropriate accommodations and considerations for children with disabilities and medical conditions.
- Require that students be active in moderate to vigorous physical activity for at least 50% of physical education class time.
- Require school districts and schools to complete comprehensive self-assessments of their physical education programs using existing tools. The results of the assessment should be integrated into the district's or school's long-term strategic planning, School Improvement Plan, or school wellness policy, to address the quality and quantity of physical education offered.
- Require school districts and schools to report the findings of their assessment to parents and members of the community through typical communication channels such as websites, school newsletters, school board reports, and presentations.
- Support the hiring of a physical education coordinator at the state level to provide resources and offer support to school districts across the state, and support the hiring of a physical education coordinator in the school district to provide support to physical educators in the school district.

- Provide regular professional development opportunities to physical education teachers that are specific to their field and require teachers to keep current on emerging technologies, model programs, and improved teaching methods.
- Require physical education teachers to be highly-qualified* and certified (as per state requirements).
- Add requirements for fitness, cognitive, and affective assessment in physical education that are based on student improvement and knowledge gain. Student assessments should be aligned with state/national physical education standards and the written physical education curriculum.
- Assure that physical education programs have appropriate equipment and adequate facilities. Require class size consistent with other subject areas.
- Disallow automatic waivers or substitutions for physical education. Disallow the ability of states and school districts to assign or withhold physical activity as punishment.
- Disallow waivers for students with disabilities, but rather allow modifications or adaptations that allow physical education courses to meet the needs of disabled students.
- Disallow students to opt out of physical education to prepare for other classes or standardized tests.

Conclusion

The American Cancer Society Cancer Action Network, the American Diabetes Association, and the American Heart Association will continue to support robust, more frequent physical education in schools. By addressing the quality, quantity and intensity of physical education across the country—the educational component as well as the amount of activity and time spent—policymakers, decision makers, and teachers will maximize children’s potential for a lifetime of physical activity, health and wellness.

References

¹ Eyre H, Kahn R, Robertson RM, Clark NG, Doyle C, Hong Y, Gansler T, Glynn T, Smith RA, Taubert K, Thun MJ. Preventing cancer, cardiovascular disease, and diabetes: a common agenda for the American Cancer Society, the American Diabetes Association, and the American Heart Association. *Circulation* 2004 Jun 29;109(25):3244-55.

² U.S. Department of Health and Human Services. *2008 Physical Activity Guidelines for Americans*. Available at <http://www.health.gov/paguidelines/>.

³ Kushi LH, Doyle C, McCullough M, et al. American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention: Reducing the Risk of Cancer With Healthy Food Choices and Physical Activity. *CA Cancer J Clin* 2012; 62:30-67.

⁴ Pate, RR, et. al. Promoting physical activity in children and youth: a leadership role for schools:. *Circulation* 2006; 114: 1214-1224.

⁵ Institute of Medicine. *Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation*, Released May 8, 2012. Summary of Recommendations. Available at: http://www.iom.edu/~media/Files/Report%20Files/2012/APOP/APOP_insert.pdf Accessed: June 19, 2012.

⁶ Centers for Disease Control and Prevention. *Childhood Obesity Facts*. Available at <http://www.cdc.gov/healthyyouth/obesity/facts.htm> Accessed: August 1, 2012.

* “Highly-qualified” is defined by the No Child Left Behind Act as fully certified and/or licensed by the state, holding at least a bachelor's degree from a four-year institution, and demonstrating competence in each core academic subject area in which the teacher teaches.

-
- ⁷ United States Government Accountability Office. K-12 Education: School-based physical education and sports programs. February 2012. <http://www.gao.gov/assets/590/588944.pdf>.
- ⁸ CDC.School Health Policies and Programs Study (SHPPS) 2006. *Journal of School Health*. 2007; 27(8).
- ⁹ Eaton, DK, Kann L., et al., Youth Risk Behavior Surveillance 2011.Surveillance Summaries. *MMWR*. June 8, 2012. 61(SS04); 1-162.
- ¹⁰ United States Government Accountability Office Report. School based physical education and sports programs. February 2012. GAO-12-350.
- ¹¹ Chriqui JF, Schneider L, Chaloupka FJ, et al. School District Wellness Policies: Evaluating Progress and Potential for Improving Children's Health Three Years After the Federal Mandate, School Years 2006-07, 2007-08, and 2008-09. Vol. 2. Chicago, IL: Bridging the Gap Program, 2010. Available at http://www.bridgingthegapresearch.org/_asset/r08bgt/WP_2010_report.pdf.
- ¹² Ibid.
- ¹³ National Association for Sport and Physical Education. Public Attitudes toward Physical Education: Are Schools Providing What the Public Wants? A Survey Conducted by Opinion Research Corporation International of Princeton, NJ, for the National Association for Sport and Physical Education. 2003. Available at http://www.aahperd.org/naspe/publications/teachingTools/upload/survey_public.pdf.
- ¹⁴ National Association for Sport and Physical Education. (2009). Physical education trends in our nation's schools: A survey of practicing K-12 physical education teachers. Port Washington, NY: Roslow Research Group. Available at <http://www.aahperd.org/naspe/about/announcements/upload/PE-Trends-Report.pdf>.
- ¹⁵ Le Masurier, G. and Corbin, B. (2006). Top 10 reasons for quality physical education. *The Journal of Physical Education, Recreation & Dance*, 77(6). Reston, VA: American Alliance for Health, Physical Education, Recreation and Dance.
- ¹⁶ Brown T, Summerbell C. Systematic review of school-based interventions that focus on changing dietary intake and physical activity levels to prevent childhood obesity: an update to the obesity guidance produced by the National Institute for Health and Clinical Excellence. *Obesity reviews : an official journal of the International Association for the Study of Obesity*. 2009;10:110-141
- ¹⁷ Kriemler S, Zahner L, Schindler C, Meyer U, Hartmann T, Hebestreit H, Brunner-La Rocca HP, van Mechelen W, Puder JJ. Effect of school based physical activity programme (KISS) on fitness and adiposity in primary schoolchildren: cluster randomised controlled trial. *BMJ*. 2010;340:c785.
- ¹⁸ Harris KC, Kuramoto LK, Schulzer M, Retallack JE. Effect of school-based physical activity interventions on body mass index in children: a meta-analysis. *CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne*. 2009;180:719-726.
- ¹⁹ Jago R, McMurray RG, Bassin S, Pyle L, Bruecker S, Jakicic JM, Moe E, Murray T, Volpe SL. Modifying middle school physical education: piloting strategies to increase physical activity. *Pediatric Exercise Science*. 2009;21:171-185.
- ²⁰ Jansen W, Borsboom G, Meima A, Zwanenburg EJ, Mackenbach JP, Raat H, Brug J. Effectiveness of a primary school-based intervention to reduce overweight. *International journal of pediatric obesity : IJPO : an official journal of the International Association for the Study of Obesity*. 2011;6:e70-77.
- ²¹ McKenzie, T. L., Sallis, J. F., & Rosengard, P. Beyond the stucco tower: Design, development, and dissemination of the SPARK physical education programs. *Quest*, 2009: 61, 114-127.
- ²² Kahn EB, Ramsey LT, Brownson RC, Heath GW, Howze EH, Powell KE, Stone EJ, Rajab MW, Corso P. The effectiveness of interventions to increase physical activity: A systematic review. *American Journal of Preventive Medicine* May 2002; 22(4):73-107
- ²³ Sanchez-Vaznaugh E, Sanchez BN, Rosas LG, Baek J, Eqrter S. Physical education policy compliance and children's physical fitness. *American Journal of Preventive Medicine*. Volume 42, Issue 5 , Pages 452-459, May 2012.
- ²⁴ Meyer, AA, Kundt, G, Lenschow, U, Schuff-Werner, P, Kienast W. Improvement of early vascular changes and cardiovascular risk factors in obese children after a six-month exercise program. *J Am Coll Cardiol*, 2006; 48:1865-1870, (Published online 16 October 2006).
- ²⁵ Datar A, Sturm R. Physical education in elementary school and body mass index: Evidence from the early childhood longitudinal study. *American Journal of Public Health*. Sept. 2004; 94,9.
- ²⁶ Department of Health and Human Services. Physical Activity Guidelines for Americans. 2008. <http://www.health.gov/paguidelines/>
- ²⁷Shore SM, Sachs ML, Lidicker JR, et. al. Decreased scholastic achievement in overweight middle school students. *Obesity* 2008;16,1535–1538.

-
- ²⁸ Geier AB, et. al. The Relationship Between Relative Weight and School Attendance. *Obesity* 2007. 15:2157-2161.
- ²⁹ Centers for Disease Control and Prevention. The Association Between School-Based Physical Activity, Including Physical Education, and Academic Performance Atlanta, GA: U.S. Department of Health and Human Services; 2010
- ³⁰ Singh A. et al., Physical activity and performance at school. *Arch Pediatr Adolesc Med.* 2012;166(1):49-55.
- ³¹ Coe DP, et. al. Effect of physical education and activity levels on academic achievement in children. *Medicine & Science in Sports & Exercise* 2006;38:1515-1519.
- ³² Castelli DM, et. al. Physical fitness and academic achievement in third- and fifth-grade students. *Journal of Sport & Exercise Physiology* 2007; 29:239-252.
- ³³ Active Living Research, A National Program of the Robert Wood Johnson Foundation. Active Education: Physical Education, Physical Activity and Academic Performance. Research Brief. Fall 2007. Available online at <http://www.activelivingresearch.org/resource/research/summaries>.
- ³⁴ Sallis, JF, McKenzie, TL, Kolody, B., Lewis, M., Marshall, S., Rosengard P. Effects of Health-Related Physical Education on Academic Achievement: SPARK. *Research Quarterly for Exercise and Sport.* 1999. Vol. 70, No.2, pp. 127-134.
- ³⁵ Kodama S., et al., Cardiorespiratory Fitness as a Quantitative Predictor of All-Cause Mortality and Cardiovascular Events in Healthy Men and Women. *JAMA.* 2009;301(19):2024-2035.
- ³⁶ Bouchard C & Shephard R (1994) Physical activity, fitness and health: the model and key concepts. In: Bouchard C, Shephard R, Stephens T (eds) Physical activity, fitness and health. International proceedings and consensus statement. Human Kinetics, Champaign, IL, p 77–88.
- Shephard R, Stephens T (eds) Physical activity, fitness and health. International proceedings and consensus statement. Human Kinetics, Champaign, IL, p 77–88.
- ³⁷ Baranowski, T., Bar-Or, O., Blair, S., Corbin, C., Dowda, M., Freedson, R., Pate, R., Plowman, S., Sallis, J., Saunders, R., Seefeldt, V., Siedentop, D., Simons-Morton, B., Spain, C., Tappe, M., & Ward D. Guidelines for school and community programs to promote lifelong physical activity among young people. *Morbidity and Mortality Weekly Report* 50, 1997; RR-6: 1-36.
- ³⁸ National Association for Sport and Physical Education. Comprehensive school physical activity programs [Position statement]. Reston, VA: Author. 2008. Available at <http://www.aahperd.org/naspe/standards/upload/Comprehensive-School-Physical-Activity-Programs2-2008.pdf>
- ³⁹ National Association of Sport and Physical Education. Is it Physical Education or Physical Activity? Available at <http://www.aahperd.org/naspe/publications/teachingTools/PAvsPE.cfm?renderforprint=1>. Accessed August 1, 2012.
- ⁴⁰ Active Living Research. Increasing Physical Activity Through Recess. Research Brief. January 2012. Available at http://www.activelivingresearch.org/files/ALR_Brief_Recess.pdf
- ⁴¹ Mahar MT. Impact of Short Bouts of Physical Activity on Attention-to-Task in Elementary School Children. *Prev Med* 2011; 52 (Suppl 1): S60-64.
- ⁴² Hillman CH, Pontifex MB Raine LB et al. The Effect of Acute Treadmill Walking on Cognitive Control and Academic Achievement in Preadolescent Children. *Neuroscience* 2009; 159(3): 1044-1054.
- ⁴³ Mathematica Policy Research, John W. Gardner Center for Youth and their Communities, and Robert Wood Johnson Foundation. Findings from a Randomized Experiment of Playworks: Selected Results from Cohort 1. April 2012. Available at <http://www.rwjf.org/files/research/playworksbrief2012.pdf>.
- ⁴⁴ President's Council on Fitness, Sports, and Nutrition. General Fit Facts and Tips. Available at <http://www.fitness.gov/resources-and-grants/fit-facts-and-tips/general-fit-facts/>. Accessed: August 1, 2012.
- ⁴⁵ Institute of Medicine. Accelerating Progress in Obesity Prevention. Solving the Weight of the Nation. May 8, 2012. <http://iom.edu/Reports/2012/Accelerating-Progress-in-Obesity-Prevention.aspx>.



FACT SHEET

Physical Education in Schools - Both Quality and Quantity are Important

Overview

About one in six children and adolescents ages six to 19 are obese.¹ As these children grow older, they have a much greater risk than their healthy weight peers of developing and dying from chronic diseases in adulthood.² One important way to stop this rise in childhood obesity and future chronic disease risk is to support the establishment of lifelong physical activity habits through quality physical education programs and regular physical activity opportunities in our nation's schools.

Thus, ACS CAN, ADA and AHA advocate for more frequent, quality physical education in all K-12 schools. Physical education teaches students the basics of physical literacy and how to integrate exercise into their lives. It also provides time for regular physical activity in schools, which with increased intensity leads to improved fitness. Regular physical activity is associated with a healthier, longer life and with a lower risk of heart disease, high blood pressure, diabetes, obesity, and some cancers.²

PE in school and sedentary lifestyles

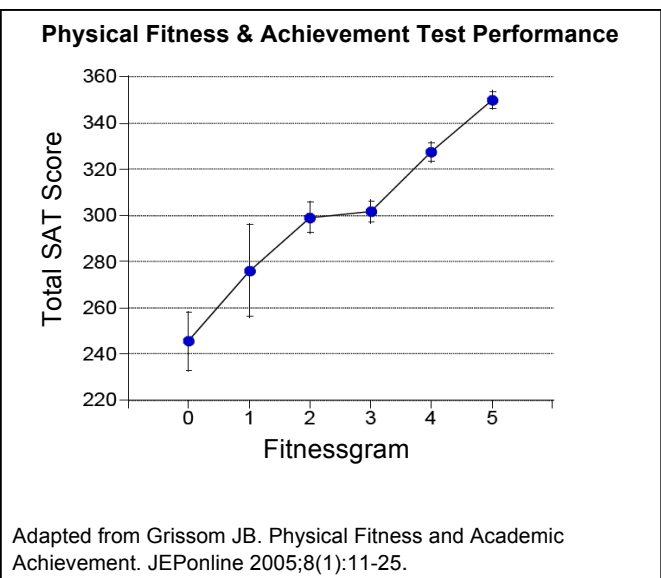
Many youth are increasingly sedentary throughout their day, meeting neither physical education nor national physical activity recommendations. Moreover, physical education in schools has been decreasing in recent years due to budgetary cut backs and competing academic demands.^{3,4} A recent report showed that many schools are still offering junk foods and sodas and not providing adequate time for physical activity.⁵ The following are some important facts to consider:

- Children's physical activity levels drop dramatically between the ages of 9 and 15.⁶
- Only 3.8% of elementary, 7.9% of middle, and 2.1% of high schools provide daily physical education or its equivalent for the entire school year.⁷ Twenty-two percent of schools do not require students to take any physical education at all.⁸
- Nationwide, only 51.8% of high school students attend at least some physical education (PE) classes and 31.5% of those students have daily physical education.⁹
- Only 6% of elementary school students and 2% of middle and high school students are in a district with a wellness policy that adheres to the recommended weekly amounts of physical education.¹⁰

Benefits of increased fitness

In a systematic review of physical education programs that increased the amount of time that students were physically active, students' aerobic and physical fitness increased.^{11,12} The benefits of modifying the school physical education curricula are experienced across diverse racial, ethnic, and socioeconomic groups, among boys and girls, elementary- and high-school students, and in urban and rural settings.¹³ A six-month exercise program among obese children and adolescents reduced body mass index, diabetes risk factors and low-degree inflammation and demonstrated that regular exercise can restore blood vessel function and improve cardiovascular risk factors.¹⁴ Evidence from the Early Childhood Longitudinal Study showed that physical education programs do have an impact on improving risk factors in young overweight girls.¹⁵ Other research suggests that regular participation in physical education classes helps reduce obesity in low-income teenagers who are disproportionately affected by the childhood obesity epidemic.¹⁶

Physical fitness can have a positive impact on cognitive ability, avoiding tobacco use, and reducing insomnia, depression, and anxiety.⁸ Physically fit children have higher scholastic achievement, better classroom behavior, greater ability to focus, and less absenteeism than their unfit counterparts.^{17,18,19} Several large-scale studies found improvements in students' academic performance and cognitive ability with increased time spent in physical education.²⁰



PE quantity and quality recommendations

ACS CAN, ADA, AHA and many other national groups recommend 150 minutes of physical education each week for children in elementary school and 225 minutes per week for middle school and high school. At least 50 percent of physical education class time should be spent in moderate to vigorous physical activity. Additionally, high schools should make physical education a graduation requirement. A high quality physical education program should enhance the physical, mental, and social/emotional development of every child and incorporate fitness education and assessment to help children understand, improve and/or maintain their physical well-being.²¹

Action plan for physical education

We recommend the following strategies to improve physical education in our nation's schools:

- Require all school districts to develop and implement a planned, K-12 sequential physical education curriculum that adheres to national and state standards for health and physical education.
- Require school districts and schools to complete comprehensive self-assessments of their physical education programs using existing tools.
- Require school districts and schools to report the findings of their assessment to parents and members of the community.
- Support the hiring of a physical education coordinator at the state level to provide resources and offer support to school districts across the state, and support the hiring of a physical education coordinator in the school district to provide support to physical educators in the school district.
- Provide regular professional development opportunities to physical education teachers that are specific to their field.
- Require physical education teachers to be highly-qualified and certified (as per state requirements).
- Add requirements for fitness, cognitive, and affective assessment in physical education that are based on student improvement and knowledge gain.
- Assure that physical education programs have appropriate equipment and adequate facilities. Require class size consistent with other subject areas.
- Disallow automatic waivers or substitutions for physical education.
- Disallow students to opt out of physical education to prepare for other classes or standardized tests.
- Disallow the ability of states and school districts to assign or withhold physical activity as punishment.

School-based physical activity

We join numerous other national public health organizations in recommending that all school-age children accumulate at least 60 minutes per day of physical activity and avoid prolonged periods of inactivity. Any moderate-to-vigorous physical activity lasting at least 10 minutes provides health benefits.²² Thus, classroom-based physical activity, recess, walking or biking to school, and before and after school physical activity should supplement, but not substitute for, physical activity provided through physical education.²³

¹Ogden CL, Carroll MD, Kit BK, and Flegal KM. Prevalence of Obesity and Trends in Body Mass Index Among US Children and Adolescents, 1999-2010. *JAMA* 2012; 307(5).

²Eyre H, Kahn R, Robertson RM, Clark NG, Doyle C, Hong Y, Gansler T, Glynn T, Smith RA, Taubert K, Thun MJ. Preventing cancer, cardiovascular disease, and diabetes. *Circulation* 2004 Jun 29;109(25):3244-55.

³United States Government Accountability Office. K-12 Education: School-based physical education and sports programs. February 2012. <http://www.gao.gov/assets/590/588944.pdf>.

⁴McMurrer J. Instructional Time in Elementary Schools: A Closer Look at Changes for Specific Subjects. Wash DC: Center on Education Policy, 2008.

⁵Turner L, Chaloupka FJ, Chriqui JF and Sandoval A. School Policies and Practices to Improve Health and Prevent Obesity: National Elementary School Survey Results. 2010. www.rwjf.org/pr/product.jsp?id=73923

⁶Nader PR, Bradley RH, Houts RM, et. al. Moderate to vigorous physical activity from 9 to 15 years. *JAMA*. 2008;300(3):295-305.

⁷CDC. School Health Policies and Programs Study (SHPPS) 2006. *Journal of School Health*. 2007; 27(8).

⁸U.S. Department of Health and Human Services. 2008 *Physical Activity Guidelines for Americans*. Available at <http://www.health.gov/paguidelines/>.

⁹Eaton, DK, Kann L., et al., Youth Risk Behavior Surveillance 2011. Surveillance Summaries. *MMWR*. June 8, 2012. 61(SS04); 1-162.

¹⁰Chriqui JF, Schneider L, Chaloupka FJ, et al. School District Wellness Policies: Evaluating Progress and Potential for Improving Children's Health Three Years After the Federal Mandate, School Years 2006-07, 2007-08, and 2008-09. Vol. 2. Chicago, IL: Bridging the Gap Program, 2010. Available at http://www.bridgingthegapresearch.org/_asset/r08bgt/WP_2010_report.pdf.

¹¹Kahn EB, Ramsey LT, Brownson RC, Heath GW, Howze EH, Powell KE, Stone EJ, Rajab MW, Corso P. The effectiveness of interventions to increase physical activity: A systematic review. *American Journal of Preventive Medicine* May 2002; 22(4):73-107

¹²Sanchez-Vaznaugh E, Sanchez BN, Rosas LG, Baek J, Eqrter S. Physical education policy compliance and children's physical fitness. *American Journal of Preventive Medicine*. Volume 42, Issue 5, Pages 452-459, May 2012.

¹³McKenzie, T. L., Sallis, J. F., & Rosengard, P. Beyond the stucco tower: Design, development, and dissemination of the SPARK physical education programs. *Quest*, 2009; 61, 114-127.

¹⁴Meyer, AA, Kundt, G, Lenschow, U, Schuff-Werner, P, Kienast W. Improvement of early vascular changes and cardiovascular risk factors in obese children after a six-month exercise program. *J Am Coll Cardiol*, 2006; 48:1865-1870.

¹⁵Datar A, Sturm R. Physical education in elementary school and body mass index: Evidence from the early childhood longitudinal study. *American Journal of Public Health*. Sept. 2004; 94,9.

¹⁶Madsen KA, et al., Physical activity opportunities associated with fitness and weight status among adolescents in low-income communities. *Arch Pediatr Adolesc Med*. 2009; 163(11):1014-1021.

¹⁷Shore SM, Sachs ML, Lidicker JR, et. al. Decreased scholastic achievement in overweight middle school students. *Obesity* 2008;16,1535-1538.

¹⁸Geier AB, et. al. The Relationship Between Relative Weight and School Attendance. *Obesity* 2007. 15:2157-2161.

¹⁹Centers for Disease Control and Prevention. The Association Between School-Based Physical Activity, Including Physical Education, and Academic Performance U.S. Department of Health and Human Services; 2010

²⁰Active Living Research, A National Program of the Robert Wood Johnson Foundation. Active Education: Physical Education, Physical Activity and Academic Performance. Research Brief. Fall 2007. Available online at <http://www.activelivingresearch.org/resourcesearch/summaries>.

²¹National Association of Sport and Physical Education. Is it Physical Education or Physical Activity? Available at <http://www.aahperd.org/naspe/publications/teachingTools/PAvsPE.cfm?renderforprint=1>. Accessed August 1, 2012.

²²President's Council on Fitness, Sports, and Nutrition. General Fit Facts and Tips. Available at <http://www.fitness.gov/resources-and-grants/fit-facts-and-tips/general-fit-facts/>. Accessed: August 1, 2012.

²³National Association of Sport and Physical Education. Comprehensive school physical activity programs. Reston, VA. 2008. Available at <http://www.aahperd.org/naspe/standards/upload/Comprehensive-School-Physical-Activity-Programs2-2008.pdf>



Physical Education in Schools - Both Quality and Quantity are Important

About one out of six children and adolescents ages six to 19 are obese.¹ As these children grow older, they have a much greater risk than their healthy weight peers of developing and dying from chronic diseases in adulthood.² One important way to stop this rise in childhood obesity and future chronic disease risk is by establishing lifelong physical activity habits with strong physical education (PE) programs and regular physical activity opportunities in our nation's schools, both during and outside of the regular school day.

Physical education is the cornerstone of increasing the overall quantity of physical activity in schools. Furthermore, it teaches students the basics of physical literacy and how to integrate exercise into their lives in order to establish a lifetime of healthy living. Quality physical education will engage students in health-promoting physical activity for at least half of PE class time and should be supplemented, but not replaced, by additional school-based physical activity.



In general, as children increase the intensity and duration of their physical activity, their physical fitness will increase. A higher level of physical fitness is associated with lower all-cause mortality, risk of coronary heart disease, and risk factors for cardiovascular disease, whereas a low level of fitness is associated with obesity, high blood pressure, several types of cancer, diabetes, osteoporosis, and depression.³ Physically-fit children have higher scholastic achievement, better classroom behavior, greater ability to focus, and less absenteeism than their unfit counterparts.^{4,5,6} Several large-scale studies found improvements in students' academic performance and cognitive ability with increased time spent in physical education.⁷

Physical education policy should prioritize quality while, simultaneously and/or subsequently, increasing the amount of time physical education is offered in schools. A high quality physical education program should enhance the physical, mental, and social/emotional development of every child, increase the amount of time students are active, and incorporate fitness education and assessment to help children understand, improve and/or maintain their physical well-being.⁸

In addition to quality physical education, other opportunities exist to increase the level of physical activity at school, including classroom-based physical activity, recess, walking or biking to school, and before and after school sports and physical activity programs. Increasing other school-based physical activity should not be an excuse to cut or substitute for the quantity of physical education. Physical activity must be moderate to vigorous and occur for at least 10 minutes to provide health benefits.⁹ We recommend that school-age children, including those with disabilities, accumulate at least 60 minutes per day of physical activity and avoid prolonged periods of inactivity. To help achieve this goal, all school districts should provide all students with 150 minutes per week of physical education in elementary schools and 225 minutes per week in middle schools and high

schools. At least 50% of PE time should be moderate to vigorous physical activity. A complete list of key policy recommendations is provided on the reverse side of this document.

Specific Policy Recommendations:

Legislation and/or regulation to promote physical education should:

- Require all school districts to develop and implement a planned, K-12 sequential physical education curriculum that adheres to national and state standards for health and physical education.
- Require school districts to provide all students with 150 minutes per week of physical education in elementary schools and 225 minutes per week in middle schools and high schools. At least 50% of PE time should be moderate to vigorous physical activity.
- Require physical education credit(s) for graduation from high school with appropriate accommodations and considerations for children with disabilities and medical conditions.
- Encourage school districts and schools to provide school-age children with numerous opportunities to accumulate at least 60 minutes per day of physical activity and avoid prolonged periods of inactivity.
- Require school districts and schools to complete comprehensive self-assessments of their physical education programs using existing tools.
- Require school districts and schools to report the findings of their assessment to parents and members of the community through typical communication channels such as websites, school newsletters, school board reports, and presentations.
- Support the hiring of a physical education coordinator at the state level to provide resources and offer support to school districts across the state, and support the hiring of a physical education coordinator in the school district to provide support to physical educators in the school district.
- Provide regular professional development opportunities to physical education teachers.
- Require physical education teachers to be highly-qualified as defined by the No Child Left Behind Act and certified (as per state requirements).
- Add requirements for fitness, cognitive, and affective assessment in physical education that are based on student improvement and knowledge gain. Student assessments should be aligned with state/national physical education standards and the written physical education curriculum.
- Assure that physical education programs have appropriate equipment and adequate facilities. Require class size consistent with other subject areas.
- Disallow automatic waivers or substitutions for physical education. Disallow the ability of states and school districts to assign or withhold physical activity as punishment.
- Disallow waivers for students with disabilities, but rather allow modifications or adaptations that allow physical education courses to meet the needs of disabled students.
- Disallow students to opt out of physical education to prepare for other classes or standardized tests.

¹Roger, V., et al., Heart disease and stroke statistics—2012 update: a report from the American Heart Association. *Circulation* 2011; December 16, 2011.

²Baker JL, Olsen LW, Sorensen T, Childhood body mass index and the risk of coronary heart disease in adulthood. *New Engl J Med*; 2007.357(23):2329-2337.

³Kodama S., et al., Cardiorespiratory Fitness as a Quantitative Predictor of All-Cause Mortality and Cardiovascular Events in Healthy Men and Women. *JAMA*. 2009;301(19):2024-2035.

⁴Shore SM, Sachs ML, Lidicker JR, et. al. Decreased scholastic achievement in overweight middle school students. *Obesity* 2008;16,1535–1538.

⁵Geier AB, et. al. The Relationship Between Relative Weight and School Attendance. *Obesity* 2007. 15:2157-2161.

⁶Centers for Disease Control and Prevention. The Association Between School-Based Physical Activity, Including Physical Education, and Academic Performance U.S. Department of Health and Human Services; 2010

⁷Active Living Research, A National Program of the Robert Wood Johnson Foundation. Active Education: Physical Education, Physical Activity and Academic Performance. Research Brief. Fall 2007. Available online at <http://www.activelivingresearch.org/resource/research/summaries>.

⁸National Association of Sport and Physical Education. Is it Physical Education or Physical Activity? Available at <http://www.aahperd.org/naspe/publications/teachingTools/PAvsPE.cfm?renderforprint=1>. Accessed August 1, 2012.

⁹President's Council on Fitness, Sports, and Nutrition. General Fit Facts and Tips. Available at <http://www.fitness.gov/resources-and-grants/fit-facts-and-tips/general-fit-facts/>. Accessed: August 1, 2012.