

DELAWARE CHILDREN ARE INCREASING THEIR PHYSICAL ACTIVITY



Introduction

The Delaware Survey of Children's Health (DSCH), sponsored by Nemours, is a surveillance instrument, administered by telephone, with results from more than 3,000 households with children ages birth to 17. The DSCH, which was administered in 2006, 2008 and 2011, provides data on trends in children's weight status, and healthy behaviors such as consumption of healthy foods, physical activity levels and use of media. Additionally, the survey gauges parental understanding of a child's weight.

Data from the 2011 DSCH reveal that 40 percent of Delaware children ages 2-17 are overweight or obese. This figure is unchanged in terms of statistical significance since the first sampling of the population in 2006. Physical activity is among those healthy behaviors that can lower a child's risk of becoming overweight or obese. This brief highlights DSCH data on trends in Delaware children's physical activity.



The brief utilizes data from the DSCH's section on physical activity, which includes questions on:

- children's participation in sports and community programs that incorporate physical activity;
- number of minutes per day that children are physically active on weekdays and weekends;
- number of days per week that children are engaged in moderate-to-vigorous physical activity* for at least one hour;
- parents' encouragement of and participation in physical activity; and
- presence of a physical impairment that limits a child's physical activity.

* Moderate- to-vigorous intensity physical activity is defined as any kind of physical activity that increases children's heart rates and makes them breathe hard some of the time.

Importance of Physical Activity

The 2008 Physical Activity Guidelines for Americans recommend that children and adolescents ages 6-17 get 60 minutes or more of physical activity daily with most of the 60 minutes being either moderate- or vigorous-intensity aerobic physical activity. Children should engage in vigorous-intensity physical activity on at least three days of the week, plus muscle- and bone-strengthening physical activity on at least three days of the week.¹ Similarly, the National Association for Sport and Physical Education has established guidelines for children ages birth to 5, specifying that both toddlers (ages 12-36 months) and preschoolers (ages 3-5) should engage in at least 60 minutes and up to several hours per day of unstructured physical activity.² Consistent with these guidelines, Nemours recommends as part of the *5-2-1-Almost None* healthy lifestyle message that children ages 2-17 get at least "1" hour of physical activity every day.

Most children and youth who participate in at least 60 minutes of moderate-to-vigorous physical activity on a daily basis gain health and fitness benefits.³ Physically active children have higher levels of cardiorespiratory endurance and muscular strength, compared to inactive children.⁴ The health benefits of physical activity for children and youth include reduced body fatness, better cardiovascular and metabolic disease risk profiles, improved bone health, and decreased symptoms of anxiety and depression.⁵ Children who grow up in families that are physically active are more likely to continue being physically active into adulthood than their peers raised in families that have more sedentary lifestyles.⁶ Maintaining a healthy weight during childhood is important. Research has shown that overweight children are more likely to become overweight adults, particularly when they have a higher Body Mass Index (BMI) or a parent who is obese.^{7,8,9}



Statistically significant increases in children’s physical activity were also observed among some population subgroups:

- An increasing percentage of young children and adolescents are participating in moderate-to-vigorous physical activity. Almost two-thirds (62.6 percent) of children ages 2-5 participated in one hour or more of moderate-to-vigorous physical activity seven days a week in 2011, up from a little over half (53.2 percent) in 2008. The percentage of adolescents meeting the recommendation of one hour or more seven days a week increased from 26.9 percent in 2008 to 33.3 percent in 2011. (The increase among children ages 6-11 was not statistically significant.)
- The percentage of non-Hispanic white children meeting the physical activity recommendation increased from 38.8 percent to 49.5 percent between 2008 and 2011.
- A higher percentage of children in Kent and Sussex counties engaged in moderate-to-vigorous physical activity in 2011, compared to three years earlier. The increase among Kent County children was from 39.7 percent to 46.6 percent; Sussex County children’s increase was from 43.7 percent to 51.7 percent. (The increase among New Castle County children was not statistically significant.)

Children’s Physical Activity Has Increased Since 2008

Data from DSCH show that 44.8 percent of Delaware children ages 2-17 were engaged in moderate-to-vigorous physical activity for at least one hour seven days a week in 2011. This is encouraging as it represents a statistically significant increase from data reported in the previous administration of the survey in 2008. At that time, 38.9 percent of Delaware children ages 2-17 participated in at least one hour of moderate-to-vigorous physical activity every day of the week.

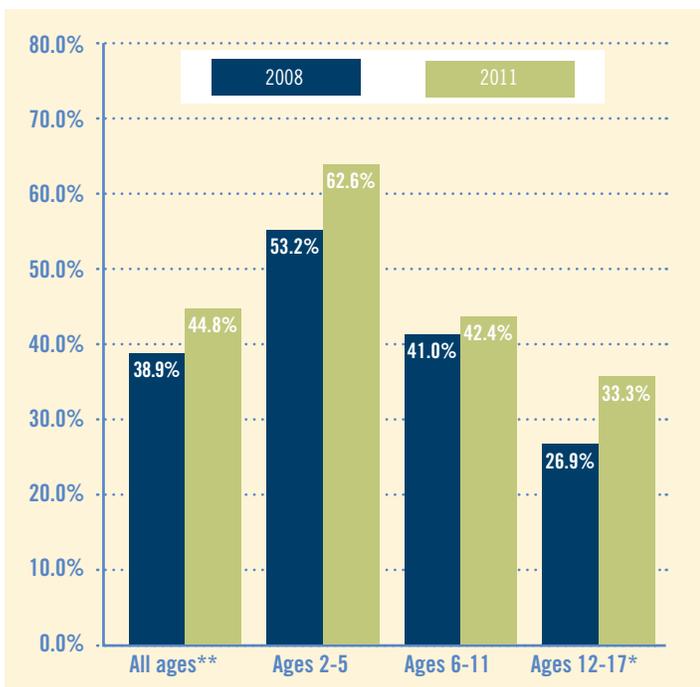


Figure 1. Percentage of children having at least 1 hour of moderate-to-vigorous physical activity each day by age group, 2008 and 2011

Note: * $p < .05$; ** $p < .01$

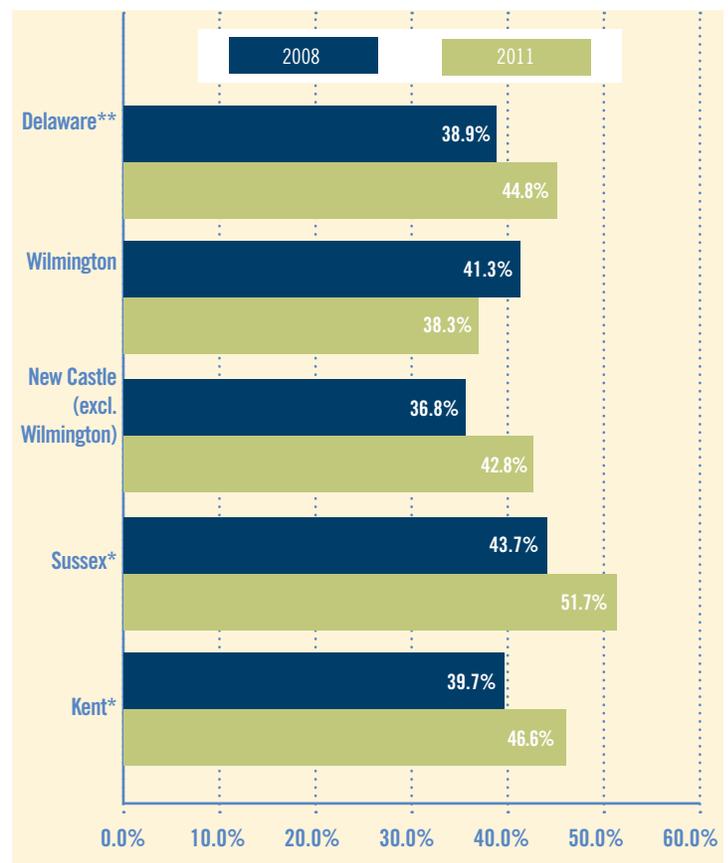


Figure 2. Percentage of children having at least 1 hour of moderate-to-vigorous physical activity each day by location, 2008 and 2011

Note: * $p < .05$; ** $p < .01$



Differences in Physical Activity by Race, Gender and Age

While the overall finding from the 2011 DSCH is that 44.8 percent of Delaware children ages 2-17 were physically active for at least one hour seven days a week, there are statistically significant differences in rates of physical activity by race, gender and age.

A higher percentage of non-Hispanic white children (49.5 percent) met the recommendation in 2011 compared to Hispanic (44.3 percent) and non-Hispanic black children (33.5 percent).

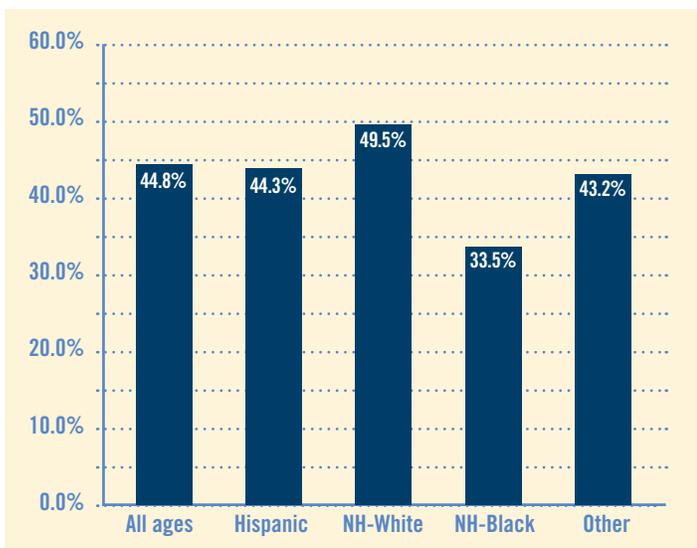


Figure 3. Percentage of children having at least 1 hour of moderate-to-vigorous physical activity each day by race/ethnicity, 2011

In addition, 48.4 percent of males participated in one hour or more of physical activity every day, compared to 41.1 percent of females.

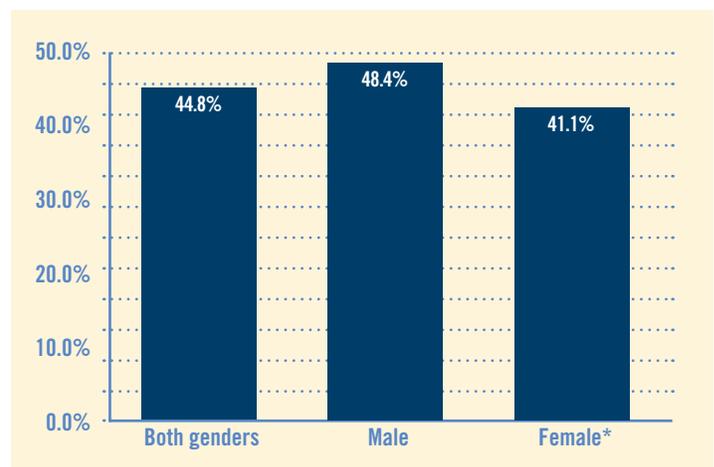


Figure 4. Percentage of children having at least 1 hour of moderate-to-vigorous physical activity each day by gender, 2011
Note: *p<.05

DSCH data show that the percentage of children who participated in at least one hour of moderate-to-vigorous physical activity seven days a week decreased as age increased, after controlling for socio-demographic characteristics.[†] The declining percentages of children meeting the physical activity recommendation for each successive age group were 62.6 percent for children ages 2-5; 42.4 percent for children ages 6-11; and 33.3 percent for adolescents ages 12-17. Among children ages 6-17, the subgroup for whom the 2008 Physical Activity Guidelines for Americans apply, the figure is just 38.2 percent. The lower physical activity rates among school-aged children in comparison to those of children ages 2-5 account for the difference between this figure and the overall rate of 44.8 percent.

[†] Socio-demographic characteristics included in the analysis are: gender, age and race/ethnicity of the child, geographic location, household income and highest education completed in the household.

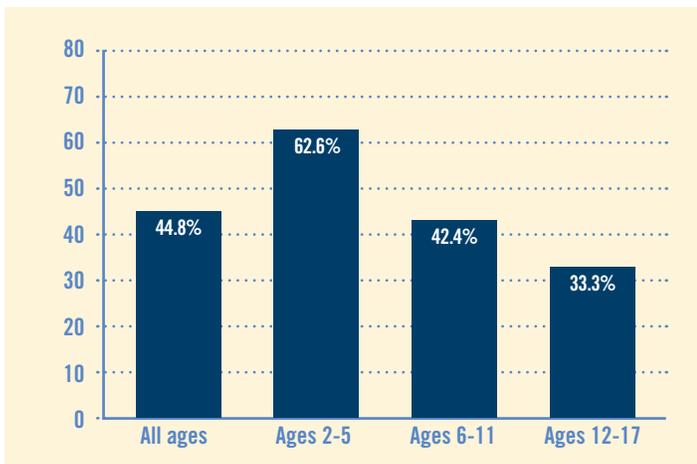


Figure 5. Percentage of children having at least 1 hour of moderate-to-vigorous physical activity each day by age group, 2011

DSCH findings on physical activity among adolescents in Delaware are similar to national data. The DSCH found that 54.5 percent of Delaware adolescents ages 11-16 were physically active for one hour or more at least five days per week. Recent national data show that just over half (51.7 percent) of youth ages 11-16 in the U.S. are physically active on five or more days per week.¹⁰ However, differences in survey methods should be considered when comparing these findings; the national study findings are based on youth self-reported data, whereas the DSCH is based on parent-reported data. Geographic location, children’s weight status, family income level and highest education level in the household made no significant difference on children meeting the physical activity guidelines.

Parents Influence Their Children’s Physical Activity

The DSCH offers encouraging findings on the impact parents can have on their children’s physical activity. The DSCH includes questions to gauge parents’ participation in physical activity along with their children; parents’ encouragement of daily physical activity; parents’ efforts to make sure their children get sufficient physical activity; and parents’ own participation in moderate-to-vigorous physical activity.

The data show parents who encourage and model physical activity can have a positive impact on the physical activity of their children. All four variables measuring parental attitudes and behaviors were significantly associated with children’s likelihood of meeting the physical activity recommendation, even after controlling for socio-demographic characteristics. This finding is consistent with multiple studies that have shown a positive relationship between parental encouragement of physical activity and adolescents’ time spent engaged in physical activity and organized sports.^{11, 12} Additionally, it aligns with the results of a recent study that showed moderate-to-vigorous physical activity of parents and children were significantly correlated.¹³ These findings led the researchers to conclude that focusing on improving physical activity among the whole family, including both parents, holds promise for increasing childhood physical activity.

Participation in Structured Activities Is Not Necessarily the Answer

Results from DSCH indicate that the majority of Delaware children participated in extracurricular activities that involved physical activity during the previous year: 61.6 percent of the children ages 3-17 participated on sports teams or took sports lessons after school or on weekends, and 59.4 percent of children ages 2-17 participated in community programs or classes involving physical activity.

However, these pursuits did not necessarily translate into attainment of the recommendation to be physically active for one hour or more seven days a week. There was no significant association between children’s participation in structured activities and meeting the physical activity recommendation, after controlling for socio-demographic variables. The data show that children participating in sports engage in more days of physical activity, when compared to children not in sports. This finding was marginally significant.[‡] This association was not present for children participating in community programs and classes that involved physical activity.

[‡] Significance levels between $p=.05$ and $p=.10$ are considered marginally significant.

Children's Neighborhoods Support Physical Activity

The DSCH includes questions on the availability and accessibility of neighborhood recreation amenities, such as walking and biking trails and shared use paths; parks and playgrounds; sports fields, basketball courts and other areas for sports; and recreation centers or schools that can be used for public recreation activities. Other questions address neighborhood safety and walkability. These questions provide data that show how the built environment may influence children's physical activity levels.

In Delaware, as in other states across the nation, certain patterns of land use, such as neighborhoods constructed without sidewalks, parks or playgrounds, can act as a barrier to physical activity for children and adults. This can leave children without safe, close-to-home recreation opportunities. Without safe places to play nearby, children often choose solitary indoor activities like watching television or playing video games.¹⁴ In addition to being socially isolating, sedentary activities such as these are strongly associated with childhood overweight and obesity.¹⁵ Research has demonstrated that nearby recreation options can impact children's physical activity. Parks provide spaces for children to engage in outdoor play, which is associated with higher levels of physical activity.¹⁶ A study of more than 1,500 teenage girls found they achieved 35 more minutes of physical activity per week for each park within one half mile of their homes.¹⁷

Findings from DSCH also suggest that certain neighborhood recreation amenities are associated with whether or not children meet the physical activity recommendations. The data show that 46.3 percent of children who could easily get to a park or playground met the physical activity recommendation, compared to 38.7 percent of those who could not easily get to either. Similarly, 46.9 percent of children who could easily get to a sports field, basketball court or other area for sports met the recommendation, compared to 38.1 percent of children who could not. Availability and access to walking and biking trails and shared use paths, and recreation centers or schools with facilities open to the public were not significantly associated with children's attainment of the physical activity recommendation.^{18,19}



Children who could easily get to a park or playground were 1.5 times more likely than their peers without access to be physically active for one hour or more seven days a week. Children who could easily get to a sports field, basketball court or area for sports were 1.7 times more likely than their peers without access to meet the physical activity recommendation.

Conclusion

Overall, DSCH findings on physical activity are encouraging, as they depict increased physical activity levels among Delaware children from those reported in 2008. Additionally, the survey sheds light on those factors that can influence children's attainment of the recommendation to be physically active for one hour or more daily. Parents' role-modeling physical activity and children having access to neighborhood recreation facilities are among those factors that are positively associated with physical activity. This data brief highlights differences in levels of physical activity among population subgroups in order to identify those children who need to increase their participation. Nemours hopes that the data analyses contained in this data brief and subsequent publications will prove useful to decision-makers interested in promoting healthy behaviors and a healthy weight among Delaware children.





References

1. 2008 Physical Activity Guidelines for Americans Summary. U.S. Department of Health and Human Services website. <http://www.health.gov/paguidelines/guidelines/Summary.aspx>. Updated October 16, 2008. Accessed July 2, 2013.
2. *Active Start: A Statement of Physical Activity Guidelines for Children from Birth to Age 5*. 2nd ed. Reston, VA: National Association for Sport and Physical Education; 2009.
3. Janssen I, LeBlanc A. Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. *Int J Behav Nutr Phys Act*. 2010;7:40.
4. Ibid.
5. Physical Activity Guidelines Advisory Committee. *Physical Activity Guidelines Advisory Committee Report, 2008*. Washington, DC: U.S. Department of Health and Human Services; 2008.
6. Biddle S, Gorely T, Stensel DJ. Health-enhancing physical and sedentary behavior in children and adolescents. *Jnl of Sport Sciences*. 2004; 22(8):679-701.
7. Biro FM, Wien M. Childhood obesity and adult morbidities. *Am J Clin Nutr*. 2010;91:1499S-1505S.
8. Magarey AM, Daniels LA, Boulton TJ, Cockington RA. Predicting obesity in early adulthood from childhood and parental obesity. *Int J Obes Relat Metab Disord*. 2003;27(4):505-513.
9. Whitaker RC, Wright JA, Pepe MS, Seidel KD, Dietz WH. Predicting obesity in young adulthood from childhood and parental obesity. *N Eng J Med*. 1997;337(13):869-873.
10. Iannotti RJ, Wang J. Patterns of physical activity, sedentary behavior, and diet in U.S. adolescents. *Intl of Adolescent Health*. 2013;53(2):280-286.
11. Bauer KW, Nelson MC, Boutelle KN, Neumark-Sztainer D. Parental influences on adolescents' physical activity and sedentary behavior: longitudinal findings from project eat-ii. *J Behav Nutr Phys Act*. 2008;5:12.
12. Ibid.
13. Fuemmeler BF, Anderson CB, Masse LC. Parent-child relationship of directly measured physical activity. *Intl J Behav Nutr Phys Act*. 2011;8:17.
14. Lumeng JC, Appugliese D, Cabral HJ, Bradley RH, Zuckerman B. Neighborhood safety and overweight status in children. *Arch Pediatr Adolesc Med*. 2006;160(1):25-31.
15. Ibid.
16. Lee V, Mikkelsen L, Srikantharajah J, Cohen L. *Strategies for Enhancing the Built Environment to Support Healthy Eating and Active Living*. Healthy Eating and Active Living Convergence Partnership, Prepared by Prevention Institute. 2008. <http://www.preventioninstitute.org/component/jlibrary/article/id-60/127.html>. Accessed October 27, 2013.
17. Cohen DA, Ashwood JS, Scott MM, et al. Public parks and physical activity among adolescent girls. *Pediatrics*. 2006;118(5):e1381-1389.
18. Prins RG, Mohnen SM, van Lenthe FJ, Brug J, Oenema A, et al. Are neighborhood social capital and availability of sports facilities related to sports participation among Dutch adolescents? *Intl J Behav Nutr Phys Act*. 2012;9:90. <http://www.ijbnpa.org/content/9/1/90>. Accessed October 27, 2013.
19. Franzini L, Taylor W, Elliott MN, et al. Neighborhood characteristics favorable to outdoor physical activity: disparities by socioeconomic and racial/ethnic composition. *Health & Place*. 2010;16:267-274.

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