

## Summertime and Weight Gain

More and more children in the United States are obese—and overweight children tend to become overweight or obese adults, leading to a host of health problems. Many people blame schools, but research shows the opposite. In fact, children gain weight three times faster during the summer months, gaining as much weight during the summer as they do during the entire school year, even though the summertime is three times shorter. We spoke to Ohio State University statistician Paul von Hippel about the research, what we can learn from it, and what it means for children and society as a whole.



### What led you and your colleagues to study childhood obesity?

The United States has three times more overweight children than it did 20 years ago. A lot of people blame the schools—school lunches, school vending machines, school exercise programs. In this study, we looked at whether the schools were really the problem.

### What did you find?

Children gain weight two or three times faster during summer vacation than during the school year. So it looks like the schools aren't the problem after all, or at least not a big part of the problem. Children would weigh a lot more if it weren't for the time that they spend in school.

### What method did you use to conduct your research?

We used survey data to look at weight gain in a sample of 5,000 children in 300 schools. If schools were the source of the problem, we would have expected to find that children gain weight more quickly during the school year than during summer vacation. But we found just the opposite.

### Isn't it normal for kids to gain weight?

Absolutely. But a lot of them are gaining too quickly, and most of that excess weight gain is taking place during the summer.

### What is going on during the summer that makes it such a dangerous time for weight gain?

The data don't provide much detail on kids' home lives, but if you have some Tom Sawyer idea that kids are climbing trees all summer and only eat when called to dinner, that doesn't square with the fact that they're gaining weight so quickly. The other stereotype—that kids are watching TV, playing video games, and eating chips out of a bag—may be closer to the truth, at least for kids who are overweight.

### What are the implications of this research?

For years, the public debate over childhood obesity has focused on what schools are doing wrong, and how we can fix them. This study shifts the focus to what schools are doing right, and what we can learn from schools to improve kids' lives.

### What are schools doing right?

As I'm talking to you, at 2:30 on a Friday afternoon, we can be pretty confident children are in school and they haven't eaten much since lunchtime. During the summertime, there are no such guarantees. Schools provide a structured environment where children are constantly supervised, have limited opportunities to eat, and get physical exercise at least a few times a week.

### What might the consequences be if we do nothing?

The rate of obesity will continue to rise unless we shape behavior, which is easier to do earlier rather than later on.

#### DID YOU KNOW?

- Children gain body mass index (BMI) nearly twice as fast during the summer as during the school year (von Hippel, Powell, Downey, and Rowland, 2007).
- Black and Hispanic children, and children who are already overweight, experience healthier BMI gain during the school year. (von Hippel et al., 2007).
- According to the Food Research Action Council, only 1 in 5 children in 2006 who received free or reduced price meals during the previous school year did so during the summer (2007).

### Can summer learning programs help?

It makes sense that the right kinds of summer programs will help if they provide structure, limit opportunities to eat, schedule time for exercise, and make sure children aren't unsupervised for long stretches of the day.

If parents are home during the day, they can also provide more structure. Speaking for myself, I lost 10 pounds when my mother sent me to summer camp at age 9. I said it was because of the lousy food, but realistically, it was because I was playing tennis and swimming instead of eating between meals.

### You also found some differences between kids of different races.

Yes, that's not a new finding. We've known for years that certain ethnic groups—Hispanics and African-Americans—are more prone to obesity. What's new in our study is the finding that those at-risk ethnic groups are the ones that benefit the most from school. School does more to restrain the weight gain of at-risk groups than it does for other children. But that finding isn't limited to black and Hispanic children. If you look at overweight white or Asian children, you find that they, too, gain weight much more slowly during the school year than during the summer months.

### What are the next steps?

I think we need a public health campaign, similar to the anti-smoking campaign, to change out-of-school behavior and get kids to eat healthier during the summer. I also think that the research community needs to shift their focus away from schools to what kids are doing outside of school that is making them gain weight so quickly.

### Any final words?

I'd like to thank my co-authors at Indiana University and Ohio State University: Brian Powell, Doug Downey, and Nicholas Rowland. I'd also like to thank the Department of Education for collecting the data and the National Institute of Child Health and Development for funding the study. We'd know a lot less about children's health if it weren't for government-funded research.

#### WHAT CAN PROGRAM PROVIDERS DO?

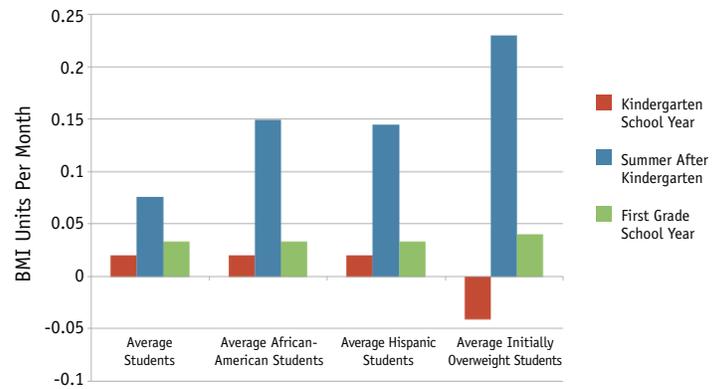
- Provide structured activities
- Provide nutritious food and nutrition education
- Engage youth in a variety of physical activities, including exercise

#### PRINCIPLES IN PRACTICE—ENERGY EXPRESS

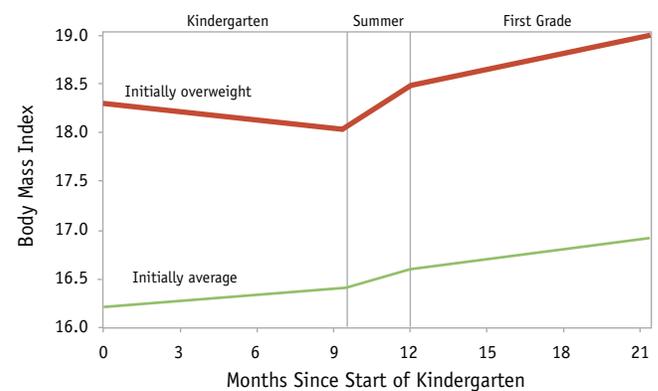
- Energy Express is a six-week summer program promoting the school success of children living in rural and low-income communities across West Virginia.
- At Energy Express, AmeriCorps members serve as mentors and children share breakfast and lunch served family style.
- Every day includes learning activities, physical exercise and nutritionally balanced meals.

Learn more at: [www.energyexpress.wvu.edu](http://www.energyexpress.wvu.edu)

#### Change in BMI Across Groups<sup>1</sup>



#### Change in BMI Since Start of Kindergarten<sup>2</sup>



<sup>1</sup>Created from data in "The effect of school on overweight in childhood: Gains in body mass index during the school year and during summer vacation," by Paul T. von Hippel, Brian Powell, Douglas B. Downey, and Nicholas J. Rowland, 2007

<sup>2</sup>American Journal of Public Health, 97, p.700. Copyright 2007 by the American Public Health Association. Reprinted with the permission of the authors.



Statistician Paul von Hippel enjoying a summer learning experience in Alaska.

#### REFERENCES

Food Research Action Council. (2007, July). Hunger doesn't take a vacation: Summer nutrition status report 2007. Washington, DC: Author.

von Hippel, P. T., Powell, B., Downey, D.B., & Rowland, N. (2007). "The effect of school on overweight in childhood: Gains in children's body mass index during the school year and during summer vacation." *American Journal of Public Health, 97*(4), 796-802.

[www.summerlearning.org](http://www.summerlearning.org)

800 Wyman Park Drive, Suite 110  
Baltimore, MD 21211-2837

