



July 2008

L.A. HEALTH *Trends*



CHILDHOOD OBESITY: TIPPING THE BALANCE TOWARD HEALTHY, ACTIVE CHILDREN

Since the Los Angeles County (LAC) Department of Public Health began tracking childhood obesity rates in the county using data from the California Department of Education's Physical Fitness Testing Program, LAC has seen an alarmingly rapid increase in the percentage of school children in the 5th, 7th, and 9th grades who are obese.¹ However, after increasing steadily from 18.9% in 1999 to

23.3% in 2005, the most recent data show that the percentage of obese children in LAC has stabilized over the last 2 years (Table 1, Figure 1). The leveling of the trend appears consistent across student gender, grade level, and racial/ethnic groups, though the percentage of children who are obese remains unacceptably high, at 22.9%, with an additional 19.4% children who are overweight.

TABLE 1 Prevalence of Obese School Children, Los Angeles County, 1999-2007*

	1999(%)	2001(%)	2002(%)	2003(%)	2004(%)	2005(%)	2006(%)	2007(%)
Los Angeles County	18.9	20.4	20.9	21.9	22.2	23.3	23.0	22.9
Gender								
Female	16.5	17.4	17.7	18.5	18.7	19.7	19.3	19.5
Male	21.3	23.4	24.0	25.2	25.7	26.7	26.5	26.1
Grade								
Grade 05	22.6	24.3	24.2	25.7	25.9	27.4	26.7	26.4
Grade 07	18.3	19.7	20.4	21.5	21.5	22.4	22.5	22.7
Grade 09	13.8	15.6	16.4	17.4	18.1	19.1	19.0	19.2
Race/Ethnicity								
White, Non-Hispanic	12.3	12.9	13.1	13.3	13.3	13.8	13.1	12.8
Hispanic or Latino	22.9	25.0	25.6	26.4	26.8	27.9	27.5	27.4
Black, Non-Hispanic	16.7	19.1	18.9	19.7	21.0	21.4	21.8	21.6
Asian	10.2	11.8	12.0	12.8	12.4	13.1	12.2	12.1
Pacific Islander	24.1	19.5	17.9	18.5	33.6	37.5	36.3	34.9
American Indian/Alaska Native	17.7	17.7	20.6	22.0	20.8	26.4	22.3	24.4
Service Planning Area								
Antelope Valley	13.9	16.0	17.4	17.7	19.1	20.1	21.2	21.1
San Fernando	16.9	18.2	17.8	19.2	20.2	20.9	20.4	20.4
San Gabriel	16.9	19.3	20.8	20.9	21.0	22.1	20.9	20.9
Metro	20.5	23.3	24.2	25.0	25.6	26.1	26.0	26.0
West	15.1	17.0	16.1	19.1	16.9	17.6	16.5	16.6
South	23.0	25.2	25.2	26.8	26.8	29.0	29.5	28.9
East	21.8	23.5	24.2	24.5	25.2	26.5	26.1	26.0
South Bay	17.5	19.0	19.4	21.1	21.1	21.7	21.6	21.3

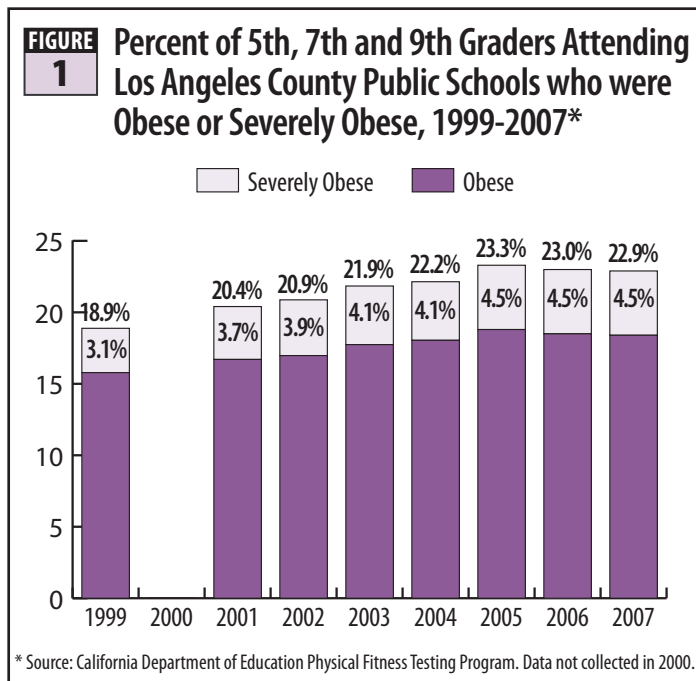
* Data Source: California Department of Education Physical Fitness Testing Program. Data not collected in 2000. Includes 5th, 7th and 9th graders attending LAC public schools.

1. Body Mass Index (BMI) categories were determined using CDC growth charts to obtain gender-specific BMI-for-age percentile rankings. Children with a gender-specific BMI-for-age \geq the 95th percentile were defined as being 'Obese', children with BMI-for-age \geq the 99th percentile

were defined as being 'Severely Obese', and children with BMI-for-age within the 85th to <95th percentile were defined as being 'Overweight'. Not all researchers use the same terms for these percentile categories.

Significant disparities in childhood obesity persist (Table 1)

- Obesity prevalence is higher among boys than girls, with 1 in 4 boys and 1 in 5 girls falling into the obese category.
- Obesity prevalence is higher at lower grade levels, with 26.4% of children in the 5th grade being obese compared to 19.2% of children in the 9th grade. This is after accounting for normal differences in growth patterns as children grow older.
- Obesity prevalence varies markedly by racial/ethnic group and is highest among Pacific Islanders (34.9%) and Hispanics (27.4%).
- The prevalence of childhood obesity varies geographically. It is highest in the South Service Planning Area (SPA) (28.9%) and lowest in the West SPA (16.6%).
- The percent of children who are severely obese¹ increased from 3.1% in 1999 to 4.5% in 2007. (Figure 1)



What is being done to address the epidemic of childhood obesity?

This recent leveling in obesity rates has also been observed nationally,² and in the state of Arkansas. While it is yet unclear what factors may contribute most to the flattening in the trend, diverse groups from multiple sectors of society have mobilized around this issue. Many recent efforts have been directed toward raising public awareness; and activities such as regional mass media campaigns

appear to have helped focus public attention on the epidemic of childhood obesity.

Locally, several additional factors may be contributing to the leveling. In January, 2002, the LAC Board of Supervisors established a Task Force on Children and Youth Physical Fitness which made several key recommendations that the Department of Public Health, in collaboration with community partners, has put into action. These recommendations include working with schools to implement improved nutrition standards and increasing student physical activity levels, both during and after school. Local school districts, such as the Los Angeles Unified School District, have already made major changes in school nutrition policies and programs, such as banning sales of unhealthy beverages like sodas on campus, and implementing improved food and beverage nutrition standards. Statewide, two landmark bills were passed in 2005; SB 12, which banned the sale of junk food in schools, became effective in 2007, and SB 965, which bans the sale of sodas in schools will come into full effect in 2009. The City of Los Angeles also adopted a Child Nutrition Policy in February 2005, targeting pre-school and school-aged children who participate in City-sponsored programs.

Why are childhood obesity rates still so high?

Although some progress is being made, obesity rates still remain unacceptably high. A child's risk for obesity is influenced by the physical and social environments in which he or she lives and plays. For example, a child's risk for developing obesity is affected by:

- the food environment at home, at school, and in the neighborhood
- the amount of time he/she spends in sedentary activities vs. being physically active
- his/her access to safe places to play
- whether or not he/she lives in an economically distressed neighborhood

The Food Environment

Food advertising on TV and in schools, increased consumption of snack foods and high calorie soft drinks and other sweetened beverages, larger portion sizes, and more meals eaten away from home have all been identified as likely contributors to excess calorie intake among children and

2. Ogden CL, Carroll MD, Flegal KM. High Body Mass Index for Age Among US Children and Adolescents, 2003-2006. *JAMA* 2008; 299:2401-5.

adolescents.³ One study estimates that children are exposed to more than 30,000 TV ads per year, and that half of all advertising on children's shows is for food.⁴ Brand exposure has been shown to influence taste preferences in children as young as 3-5 years of age.⁵ In addition, an estimated 65% of public schools in LAC have at least one fast food restaurant within easy walking distance of the school.⁶ The 2005 Los Angeles County Health Survey (LACHS) found that 21% of children ages 2-5 years, 26% of children ages 6-11 years, and 29% of adolescents (ages 12 to 17 years) ate fast food in the past day.

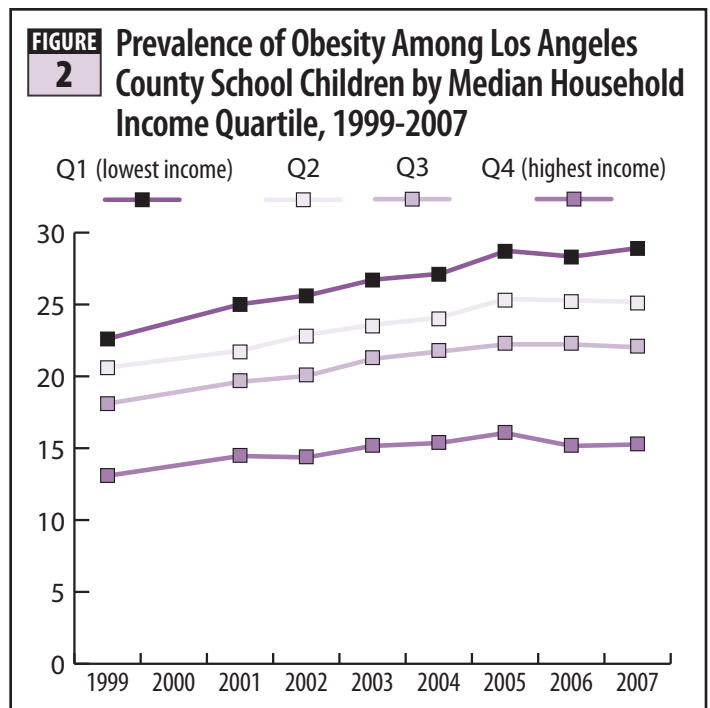
Lack of physical activity

Our dependence on vehicles, coupled with a media-oriented society, has promoted a generation of children who are less active and fit, with fewer children walking to school⁷ and more children spending significant time watching TV, videos, DVDs, and using computers and the internet.⁸ In LAC, approximately 29% of children watch an average of 3 or more hours of TV per day. Nationally, a recent study found that 8-18 year olds spend an average of 6.5 hours a day with personal use media.⁹ Furthermore, participation in daily high school physical education classes has declined significantly;¹⁰ and a recent report showed that more than half of the school districts assessed by the California Department of Education failed to meet the state mandated elementary school requirement of 200 minutes of physical education every ten days.¹¹

Lack of access to parks, playgrounds, and safe places to play

Access to safe places to play, especially outdoor recreation areas, is associated with being more physically active.¹² Unfortunately, in LA County, nearly 1.7 million children do not live within walking distance of a park or other open space,¹³ and 17% of parents report their children lack access to a

3. Institute of Medicine. *Preventing Childhood Obesity-Health in the Balance*. The National Academies Press, Washington, DC; 2005.
 4. Kaiser Family Foundation. *Food for Thought: Television Food Advertising to Children in the United States*, March 2007.
 5. Robinson TN, et al. *Effects of Fast Food Branding on Young Children's Taste Preferences*. *Arch Pediatr Adolesc Med* 2007;161:792-7.
 6. Simon PA, Kwan D, Angelescu A, Shih, M, Fielding, JE. *Proximity of Fast Food Restaurants to Schools: Do Neighborhood Income and Type of School Matter?* *Prev Med* 2008. Mar 10. [Epub ahead of print].
 7. *Barriers to children walking to or from school--United States, 2004*. *MMWR Morb Mortal Wkly Rep* 2005; 54:949-52.
 8. Nelson MC, Neumark-Stzainer D; Hannan PJ; Sivard JR, and Story M. *Longitudinal and secular trends in physical activity and sedentary behavior during adolescence*. *Pediatrics* 2006; 118:e1627-34.
 9. Rideout VJ, Roberts DF, Foehr UG. *Generation M: Media in the lives of 8-18 year olds*. Menlo Park, CA: The Henry J. Kaiser Family Foundation; 2005.



safe place to play (2005 LACHS).

Childhood Obesity and Neighborhood Income

Finally, studies have demonstrated a clear association between lower income neighborhoods and childhood obesity.¹⁴ In Los Angeles County, a marked disparity in childhood obesity rates has been found among children attending schools located in poorer areas compared to children attending schools in more affluent areas.¹⁵ Schools located on census tracts falling into the poorest median household income quartile had nearly double the obesity rate of schools located in the most affluent areas in 2007 (28.9% vs. 15.3%, Figure 2). This may be because healthy foods are less available in lower income areas,¹⁶ as are recreational facilities and outdoor places to play.¹⁴ Also, there may be greater concerns about safety in economically disadvantaged neighborhoods which make it less likely for children to engage in outdoor play. Studies have shown that children living in neighborhoods perceived to be less safe are more likely to be obese.¹⁷

10. Lowry R, Brener N, Lee S, et al. *Participation in high school physical education - United States, 1991-2003*. *MMWR Morb Mortal Wkly Rep* 2004; 53:844-7.
 11. *Dropping the Ball*. California Center for Public Health Advocacy. June 2006. <http://www.publichealthadvocacy.org/droppingtheball.html>
 12. Cohen DA, et al. *Contribution of Public Parks to Physical Activity*. *Am J Public Health* 2007;97:509-14.
 13. *Trust for Public Land. No Place to Play*. November 2004.
 14. Gordon-Larsen P, Nelson MC, Page P, Popkin BM. *Inequality in the built environment underlies key health disparities in physical activity and obesity*. *Pediatrics*. Feb 2006; 117:417-24.
 15. Los Angeles County Department of Public Health, Office of Health Assessment and Epidemiology. *Preventing Childhood Obesity: the need to create healthy places*. A Cities and Communities Report. October 2007.
 16. *Designed for Disease: The Link Between Local Food Environments and Obesity and Diabetes*. California Center for Public Health Advocacy, PolicyLink, and the UCLA Center for Health Policy Research. April 2008.

Why are we so worried about childhood obesity?

Obesity is associated with many serious health consequences during childhood (Table 2).¹⁸ In addition, obese children are at higher risk for developing weight-related health problems in adulthood and are developing these problems at younger ages. Some conditions which were previously considered adult illnesses, such as type 2 diabetes and high blood pressure, are already becoming more common among children. Obesity in children leads to obesity in adults, with an estimated 70-80% of obese adolescents likely to become overweight or obese adults.¹⁹

TABLE 2 Conditions Related to Childhood Obesity

Asthma	Sleep Apnea
High Cholesterol	Orthopedic Problems
High Blood Pressure	Depression
Heart Disease	Low Self-Esteem
Type 2 Diabetes	Social Stigmatization
Fatty Liver	Negative Body Image

The Bottom Line

Although the percentage of school children who are overweight or obese is still at epidemic levels in Los Angeles County, the recent flattening of the trend is encouraging. It suggests that some of our ongoing efforts to educate the public and to create healthier environments may be starting to pay off. Childhood obesity is a serious concern to all - an issue which jeopardizes the present and future physical and mental well-being of our children. Increased attention and sustained efforts are needed not just to halt the obesity trend, but to reverse it. This will require continued vigorous efforts to create physical environments, as well as social and economic conditions, that promote healthy diets and physical activity among children and their families.

17. Lumeng JC, Appugliese D, Cabral HJ, Bradley RH, Zuckerman B. Neighborhood safety and overweight status in children. *Arch Pediatr Adolesc Med* 2006;160:25-31.

18. Dietz WH. Health Consequences of Obesity in Youth: Childhood Predictors of Adult Disease. *Pediatrics* 1998; 101:518-25.

19. Guo SS, Wu W, Cumlea WC, Roche AF. Predicting overweight and obesity in adulthood from body mass index values in adolescence. *Am J Clin Nutr* 2002; 76:653-8.

Recommendations for Action

What individuals and families can do

- Children should get at least 60 minutes of moderate physical activity every day. Actively support and encourage your children to be physically active. Plan activities the entire family enjoys doing together, such as walking, swimming, biking, or other outdoor activities
- Limit TV watching and video games to less than 2 hours a day and do not allow TV's in children's bedrooms
- Start every day with a healthy breakfast and eat meals with your kids
- Eat 2 cups of fruits, 2 ½ cups of vegetables, and at least 3 ounces of whole grain every day
- Reduce your family's intake of sodas and other sugar-sweetened beverages

What schools can do

- Comply with state mandated physical activity requirements
- Implement and comply with state-mandated minimum school nutrition standards and food policies (e.g. SB 12 and 965)
- Place a cap of 45 students or fewer on physical education class size and include instruction on the health benefits of being physically active
- Eliminate advertising for non-nutritious foods and beverages in schools, and the use of non-nutritious foods in fundraising, incentives, and other promotional programs
- Work with city officials to establish safe routes to school, and establish school policies that encourage walking or biking to school
- Allow school recreational facilities to be available for after-hours use by children and their families

What cities, communities, and businesses can do

- Provide facilities such as parks, playgrounds, or indoor recreation centers where children can play
- Promote physical activity programs in the community, especially those that target high-risk youth and ethnic minority groups
- Make fresh, locally-grown food more readily available through farmers markets and local grocery stores
- Advocate for federal policies (e.g. Federal Farm Bill) that subsidize and incentivize the availability of more nutritionally beneficial crops and foods
- Support restrictions on food advertising to children
- Require that healthy and affordable food options be provided by retail businesses such as grocery stores, restaurants, and entertainment venues
- Promote menu labeling and the availability of nutrition information to consumers at point of purchase



Los Angeles County
Department of Public Health
313 N Figueroa Street Room 127
Los Angeles, CA 90012
213.240.7785

Presorted
Standard
U.S. Postage
PAID
Los Angeles, CA
Permit No. 33

In this issue:

Childhood Obesity: Tipping the balance toward healthy, active children

L. A. County Board of Supervisors

Gloria Molina, First District
Yvonne Brathwaite Burke, Second District
Zev Yaroslavsky, Third District
Don Knabe, Fourth District
Michael D. Antonovich, Fifth District

L. A. County Department of Public Health

Jonathan Fielding, MD, MPH
Director and Health Officer
Jonathan E. Freedman
Chief Deputy
Paul Simon, MD, MPH
Director, Division of Chronic Disease
and Injury Prevention

Office of Health Assessment & Epidemiology

Frank Sorvillo, PHD, Acting Director, Health Assessment and Epidemiology
Susie Baldwin, MD, MPH, Chief, Health Assessment Unit
Margaret Shih, MD, PhD, Chief, Epidemiology Unit

Epidemiology Unit Staff:

Aida Angelescu, MS;
Heena Hameed, MPH; Alex Ho, MD, MPH; Mike Jackson, MBA, MPH;
David Kwan, MPH; Sanaa Shabbir; Arpine Shakhbandaryan, MPH.