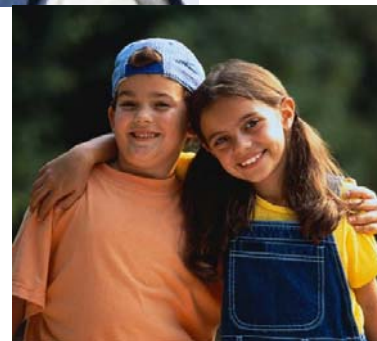


Duval County Evidence Based Policy Development For the Prevention of Childhood Obesity



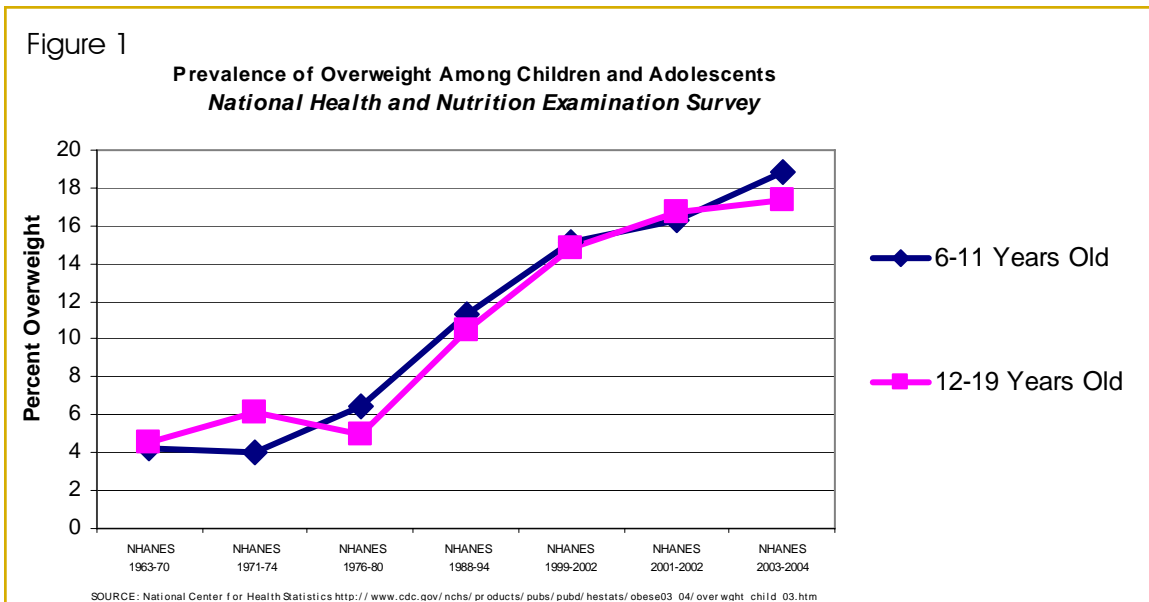
Submitted by Jacksonville's
Childhood Obesity Prevention Policy
Development Workgroup

May 2006

Inside:	
The Problem	2
Monitoring	4
Nutrition	4
Physical Activity	6
The Process	8
Members	9
References	10-11

The Problem

Increases in overweight and declining physical fitness are threats to children's health both nationally and locally. The 2003-2004 National Health and Nutrition Examination Survey (NHANES) shows that approximately 17 percent of children in the United States ages 6-19 are overweight. Figure 1 shows that from 1963-1970 to 2003-2004 the percent of children ages 6-11 who are overweight has quadrupled. For adolescents (age 12-19), rates have more than tripled during the same period.



NHANES is a scientific survey of a sample of the US population in which height and weight measurements were part of a set of body measurements. Children are considered overweight when their body mass index (BMI) values are at or above the 95th percentile of the sex-specific BMI growth charts.

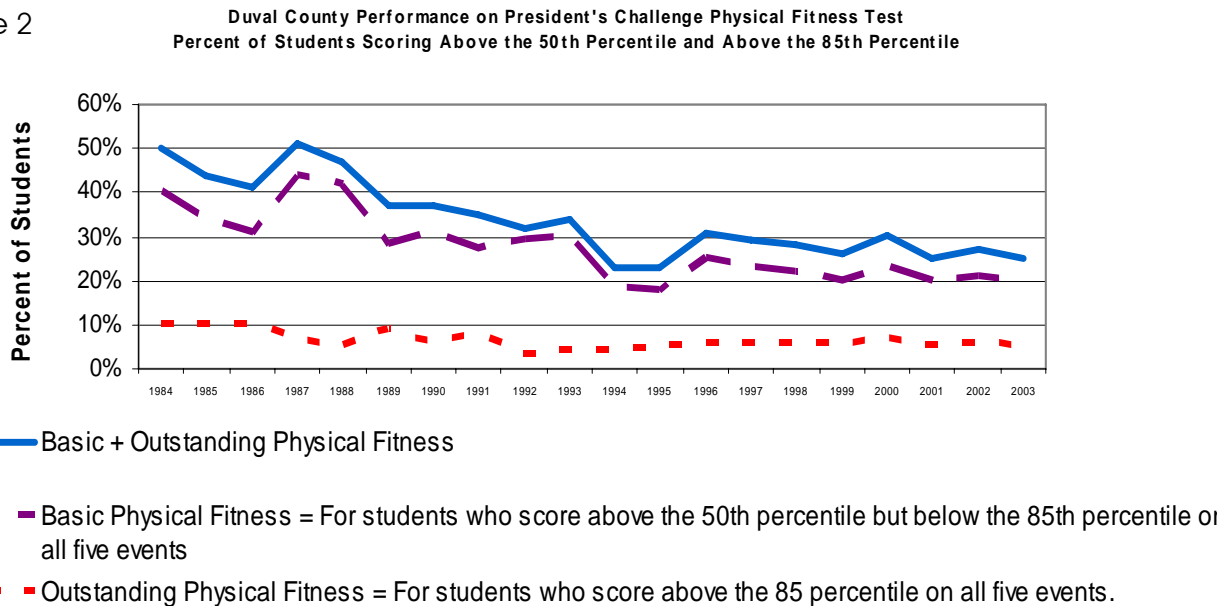
The financial costs of obesity to the local community in terms of health care costs and other indirect costs, such as time away from work, are significant. Total costs of overweight and obesity were estimated at \$357 million in 2003 for Duval County.

Overweight is a major risk factor for chronic diseases, including cardiovascular disease, hypertension, type 2 diabetes, and some cancers. And children who are overweight are more likely to be overweight in adulthood.



Over the past 20 years, the results of the President's Challenge Physical Fitness Test have shown a steady decline in the physical fitness of the children in Duval County. Figure 2 represents boys and girls in grades 3-12 who scored at or above the 50th percentile (based on the 1985 School Population Fitness Survey) in all five events of the President's Fitness Challenge. The percentage of children with outstanding fitness has remained relatively constant, while the percentage of children who achieve basic fitness has been declining. Overall, physical fitness in the county has declined to less than 50% to 30% of students who meet the minimum standards of basic physical fitness.

Figure 2



Policy Recommendations

The primary focus of this report is on the prevention of childhood obesity due to the growing epidemic of childhood obesity,^{1 2} the impact of obesity on chronic disease, the effect of obesity on quality of life and lifespan,^{3 4 5 6 7} the lack of evidence for effective long-term treatment of obesity,^{8 9 10 11 12} and the overwhelming cost per patient for obesity-associated diseases.^{13 14 15 16 17 18}

These recommendations provide guidance for local community and professional organizations, schools and government entities to develop policy based on sound scientific research and evidence-based interventions proven to prevent childhood obesity. The following policy statement on childhood obesity prevention represents the work of this coalition.

The evidence has shown that multiple factors contribute to childhood obesity, such as poor nutrition and excess calories,^{19 20 21} lack of regular physical activity and increased sedentary behaviors,^{22 23} and lack of appropriate urban planning that results in increased urban sprawl and decreased physical activity. This group recommends a holistic approach to obesity prevention in children using evidence-based interventions that have demonstrated success in eliciting obesity-prevention behaviors in the areas of nutrition, physical activity, and environmental policies.²⁴

Childhood Obesity Prevention Policy Development Workgroup Recommendations

Monitoring

1. Tracking the effectiveness of obesity prevention interventions and increasing awareness of the link between elevated BMI in children and adult obesity can be achieved by monitoring BMI in children aged 2 and above on an annual basis. ^{3 27}

Specifically we recommend that the:

- Duval County Medical Society, Northeast Florida Medical Society and the Northeast Florida Pediatric Society encourage private physicians to track BMI percentiles of their patients at all visits as an indicator for being overweight.
- Duval County Health Department collaborates with elementary and middle schools to monitor BMI in children on an annual basis with the results to be reported to the school board annually.

Nutrition

2. Breastfeeding exclusively through 6 months-of-age and continued through 12 months or longer decreases rates of obesity and enhances performance on tests of cognitive development. ^{28 29 30 31 32 33 34 35 36 37 38 39}

Specifically we recommend that the:

- Duval County Medical Society, Northeast Florida Medical Society and the Northeast Florida Pediatric Society collaborate with the Duval County Health Department to encourage hospitals, physicians, nurses, and registered dietitians to provide educational programs to mothers and family members, coupled with professional and peer support services (i.e. WIC, La Leche League) to increase rates of breastfeeding. ^{40 41}
 - Duval County Medical Society, Northeast Florida Medical Society and the Northeast Florida Pediatric Society collaborate with child advocacy groups to encourage hospitals to create a baby-friendly environment through staff and environmental supports, such as rooming-in, encouraging early maternal contact, and limiting the routine access to formula except in those situations where breastfeeding is not possible or desired. ^{42 43 44 45 46 47}
 - Duval County Health Department, the Jacksonville Chamber of Commerce, and the Mayor's Office develop a city-wide lactation support program for local businesses to encourage and educate employers on breastfeeding. ^{48 49}
3. Increasing the availability, promotion, and selection of nutrient dense foods and beverages, including whole grains, fruits, and vegetables; as well as reducing the availability of high calorie, nutrient poor foods and beverages in schools, provided throughout the day by vending machines, a la carte items, fund raisers, or other sales, promotes the purchase and consumption of healthful foods. ^{50 51 52 53 54}

Specifically we recommend that the:

- Duval County School Board adopts policies that restrict soda and candy sales in school. ^{55 56 57}
 - Duval County School Board adopts policies that make healthy foods affordable and accessible. ⁵³
4. Children who eat breakfast daily are less likely to be obese and more likely to have improved academic performance. ^{58 59 60 61 62 63 64 65 66 67}

Specifically we recommend that the:

- Duval County School Board adopts policies that make affordable, healthy breakfasts available in schools every morning.



5. As parents are key change agents in children’s behaviors, coordinating community education programs that target parents is an effective strategy to improve children’s healthful eating and portion control. ^{9 68 8 69 70 71 72}

Specifically we recommend that the:

- Duval County Medical Society, Northeast Florida Medical Society and the Northeast Florida Pediatric Society encourage the role of physicians in educating parents about being models for healthful eating.
- Jacksonville Dietetic Association encourages Registered Dietitians in all settings to increase delivery of nutrition education regarding healthful eating for children and adults.
- Academic institutions in Jacksonville work with community groups to design evidence-based adult and child nutrition programs, evaluate the efficacy, and publicize the results.

6. The built environment is a contributing factor to the accessibility to healthy foods. ^{73 74 75 76}

Specifically we recommend that the:

- The City of Jacksonville collaborates with the Duval County Health Department to encourage incentives that improve access to healthy food retailers in urban areas of Jacksonville as a strategy to establish an equitable distribution of healthful food retailers throughout Jacksonville.

7. There is a need for further study on interventions that successfully improve children’s consumption of healthful foods. ^{77 22 25}

Specifically we recommend that the:

- Duval County Health Department works with the University of North Florida, Jacksonville University, and University of Florida/Jacksonville to design evidence-based child and adult nutrition programs, evaluate their efficacy, and publicize the results.

Based on the results of the 2003 Florida Youth Risk Behavior Survey, only 20.7% of students in grades 9-12 ate five or more servings of fruits and vegetables per day. When comparing boys to girls, 23.3 percent of boys consumed five or more servings, while only 18.1 percent of females did. These numbers are a significant reduction from the survey conducted in 1999.

Table 1 YOUTH RISK BEHAVIOR SURVEY 2003			
PERCENTAGE OF STUDENTS WHO ATE FIVE OR MORE SERVINGS OF FRUITS AND VEGETABLES PER DAY DURING THE PAST SEVEN DAYS			
	Total	Female	Male
2003	20.7	18.1	23.3
2001	20.3	17.8	22.6
1999	26.3	22.5	29.8

Florida Youth Risk Behavior Survey 2003
<http://www.doh.state.fl.us/family/obesity/documents/YRBS2003.pdf>



Physical Activity

8. Increasing the quantity of moderate to vigorous physical activity in physical education classes in local schools will increase physical fitness in children and also lead to improved academic performance. ^{78 79 80 81 21 82 59 83}

Specifically we recommend that the:

- The Duval County School Board facilitates the provision of 150 minutes of instructional physical education per week for elementary school students throughout the school year. ⁸⁴
 - The Duval County School Board facilitates the provision of 225 minutes of instructional physical education per week for middle/high school students throughout the school year. ⁸⁴
 - The Duval County School Board encourages physical education programs that allow all students to be moderately to vigorously active for at least 50% of the time in physical education classes. ⁸⁵
9. In addition to structured physical education, providing opportunities for safe, unstructured physical activity time with capable adult supervision will encourage children to be more physically active at school. ^{84 86 87}

Specifically we recommend that the:

- Duval County School Board establishes policies which provide opportunities for supervised, unstructured physical activity time, such as recess (for 20 minutes a day), with space and physical environments that facilitate physical activity. ^{88 89}
- Duval County School Board offers healthful physical activity opportunities before and/or after school for all students.
- Duval County School Board discourages withholding physical activity opportunities and using physical activity as a form of punishment.

Based on the results of the 2003 Florida Youth Risk Behavior Survey, only 45.6% of students in grades 9-12 attended a PE class at least once during an average school week. Boys were more likely to report attendance in a PE class than girls. These numbers have increased slightly since the 1999 survey.

Table 2 YOUTH RISK BEHAVIOR SURVEY			
PERCENTAGE OF STUDENTS WHO ATTENDED PHYSICAL EDUCATION (PE) CLASS ONE OR MORE DAYS DURING AN AVERAGE SCHOOL WEEK			
	Total	Female	Male
2003	45.6	39.3	51.9
2001	41.6	33.7	49.3

Florida Youth Risk Behavior Survey 2003 <http://www.doh.state.fl.us/family/obesity/documents/YRBS2003.pdf>

10. Children are more likely to remain physically active through their lifetime if they are taught skills, knowledge and values to remain physically active at an early age.^{90 91 3}

Specifically we recommend that the:

- Duval County School Board enforces policies which mandate all physical education staff possess professional certification (State of FL Dept. of Education) for teaching physical education in schools^{79 92 93} and require that all physical education classes are taught by these state-certified physical education teachers.

11. As parents are key change agents in children's behaviors, coordinating community education programs that target parents is an effective strategy to improve children's regular physical activity and reduce sedentary behavior.^{3 69 70 72 94 95}

Specifically we recommend that the:

- Physicians encourage parents to limit children's television viewing and video game playing ("screen time") to no more than 2 hours a day.^{3 95 96 97 98 99}

12. The built environment is a contributing factor to the degree to which people are physically active.

Specifically we recommend that the:

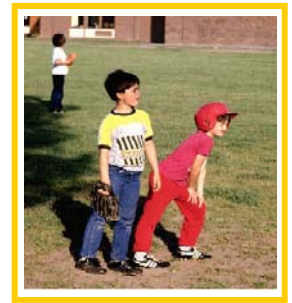
- Duval County Health Department collaborates with the City of Jacksonville to make it an urban planning priority to provide access to safe and secure places where families can be active.^{30 78 100}
- Duval County Health Department and the City of Jacksonville work together to develop urban planning and environmental policies or examine zoning ordinances that increase the development of mixed-use land areas and reduce urban sprawl,²⁴ making communities more "walkable."¹⁰⁰
- Duval County Health Department and the City of Jacksonville work together to adopt codes and provide for physical construction of safe walking and bicycle paths as a means of accessing stores, recreation, schools and other daily conveniences.¹⁰¹
- The City of Jacksonville and Community Youth Organizations work together to support youth based physical activity programs.

13. There is a need for further study on interventions that successfully improve children's physical activity.^{22 25 77}

Specifically we recommend that the:

- Duval County Health Department works with the University of North Florida, Jacksonville University, and University of Florida/Jacksonville to design evidence-based child and adult physical activity programs, evaluate their efficacy, and publicize the results.





The Process

Public health policy development is a critical component of assuring community health. The Institute of Medicine considers policy development to be a core public health function. Healthy People 2010 has identified numerous public health problems that warrant policy interventions. However, local health departments have generally neglected this critical, core public health function. To implement evidence-based public policy development in Jacksonville, the Duval County Health Department has identified major community health problems that can benefit from evidence-based public policy interventions. One of those health problems is childhood obesity. This report describes the policy development process and recommendations for addressing childhood obesity in Jacksonville. The organizing framework that guided the process was:

- Convening a core work group (the policy development workgroup),
- Generating agreement on the processes to be used,
- Providing staff to sustain the process,
- Publishing and disseminating the findings.

In January 2005, the Healthy Jacksonville Childhood Obesity Coalition and the Duval County Health Department convened a group of professionals to examine policy affecting childhood obesity. Each group member, serving as a volunteer, represented various disciplines, including nutrition, physical education, pediatrics, chronic disease and public health policy research. The members also were affiliated with a variety of local Jacksonville institutions, including the Nemours Children's Clinic, the University of North Florida, the University of Florida, the Duval County Public Schools, Head Start, Childhood Obesity Coalition and the Duval County Health Department.

This group met every 5-6 weeks for one year to discuss planning and processes for policy development, as well as to share and review scientific literature related to childhood obesity prevention. The 9-member group met seven times over a 12-month period. There were five meetings between support staff and various group members (that did not convene the whole group) to refine specific policy statements and get further input. It was important to ensure the involvement and support of key community stakeholders. Advocacy for adoption and implementation of the policy recommendations becomes the responsibility of the members and their associated organizations.

The Duval County Health Department's Institute for Health, Policy, and Evaluation Research (HPER) provided staff support for the policy development process. Over 100 scientific articles were selected from the medical and public health national journal data bases. These were reviewed and evaluated for scientific evidence and relevance to obesity and fitness policies. The key tasks accomplished through this process were:

- Review national and local research and data related to the obesity and overweight in children,
- Interpret research and data findings related to prevention of childhood obesity,
- Translate knowledge into policy statements for preventing local childhood obesity,
- Recommend policies to local officials for prevention of childhood obesity.

Childhood Obesity Prevention Policy Development Workgroup

Chaired by:

Donald George, MD
Chief, Division of Gastroenterology and Nutrition
Nemours Children's Clinic - Jacksonville
807 Children's Way
Jacksonville, FL 32207
dgeorge@nemours.org

Jeffrey Goldhagen, MD, MPH
Co-chair
Chief, Community Pediatrics
University of Florida Health Science Center—
Jacksonville
jeffrey.goldhagen@jax.ufl.edu

Committee Members include:

Catherine Christie, PhD, RD, LD/N, FADA
Director of Nutrition Programs and MSH/Dietetic
Internship
University of North Florida
Department of Public Health, College of Health
cchristi@unf.edu
President, Florida Dietetic Association

Allan Sander, PhD
Professor of Physical Education
University of North Florida
Division of Curriculum and Instruction
asander@unf.edu

Judy Hitzing
District Physical Education Resource Teacher,
Duval County Public Schools
hitzingj@educationcentral.org

Julia A. Watkins, M.P.H., Ph.D.
Assistant Professor
University of North Florida
Department of Public Health, College of Health
jwatkins@unf.edu

Helen D. Jackson, PhD, MS, RD, LD/N
Director, Community Nutrition Services
Duval County Health Department
helen_jackson@doh.state.fl.us

Staffed by:

Susan Collini, MPH
Center for Policy Research
Institute for Health, Policy and Evaluation Research
Duval County Health Department
susan_collini@doh.state.fl.us

Tim Lawther, MPH, MA
Director, Chronic Disease Prevention &
Health Promotion
Duval County Health Department
timothy_lawther@doh.state.fl.us

Report Submitted by:

Duval County Childhood
Obesity Prevention Policy
Development Workgroup

William C. Livingood, PhD
Director, Institute for Health, Policy &
Evaluation Research
Duval County Health Department
william_livingood@doh.state.fl.us



Resources

- ¹ World Health Organization. Obesity: Preventing and Managing the Global Epidemic. World Health Organization Technical Support Series No. 894. Geneva, Switzerland: World Health Organization; 2000.
- ² Deckelbaum RJ and Williams CL. *Childhood Obesity: The Health Issue* Obesity Research Vol. 9, Suppl 4, November 2001
- ³ Goran, M. *Metabolic precursors and effects of obesity in children: a decade of progress 1990-1999*. The American Journal of Clinical Nutrition. Volume 73, Issue 2, February 2001, Pg 158-171.
- ⁴ Dietz WH. Health consequences of obesity in youth: childhood predictors of adult disease. *Pediatrics*. 1998;101(Suppl3):518-525. Available online at <http://pediatrics.aappublications.org/cgi/reprint/101/3/S1/518.pdf>. Accessed Feb. 4, 2005.
- ⁵ Gilliland FD, Berhane K, et al. *Obesity and the risk of newly diagnosed asthma in school-age children*. *Am J Epidemiol*. 2003;158:406-415.
- ⁶ Freedman DS, Dietz WH, Srinivasan SR, Berenson GS. *The relation of overweight to cardiovascular risk factors among children and adolescents: the Bogalusa heart study*. *Pediatrics*. 1999;103(6):1175-1182.
- ⁷ Strauss RS. *Childhood obesity and self-esteem*. *Pediatrics*. 2000;105(1):1-5. Available at <http://www.pediatrics.org/cgi/content/full/105/1/e15> Accessed February 5, 2005.
- ⁸ Campbell K, O'Meara S, Kelly S, Summerbell C. *Interventions for Preventing Obesity in Children*. The Cochrane Database of Systematic Reviews 2002, Issue 2
- ⁹ Epstein LH, Valoski A, Wing RR, McCurley J. *Ten-year follow-up of behavioral family-based treatment for obese children*. *JAMA*. 1990;264:2519-2523
- ¹⁰ Wadden TA, Foster GD, Letizia KA. *One-year behavioral treatment of obesity: comparison of moderate and severe caloric restriction and the effects of weight maintenance therapy*. *J Consult Clin Psychol*. 1994;62:165-171
- ¹¹ Gill T. *Key Issues in the Prevention of Obesity*. *Br. Med. Bull* 1997;53:359-388.
- ¹² Hill JO, Peters JC. *Environmental contributions to the obesity epidemic* *Science*, May 29, 1998 v280 n5368 p1371(4)
- ¹³ Richards EP. *Innovative legal tools to prevent obesity*. American Society of Law & Medicine, Inc. Winter 2004 v32 i4 pS59(3) 2004
- ¹⁴ Thorpe KE, Florence CS, Howard DH, Joski P. *The Rising Prevalence Of Treated Disease: Effects On Private Health Insurance Spending*. Health Affairs Web Exclusive June 27, 2005.
- ¹⁵ Wang G, Dietz WH. *Economic burden of obesity in youths aged 6 to 17 years: 1979-1999*. *Pediatrics*. 2002;109(5): e81-89.
- ¹⁶ Kelder SH, Perry CL, Klepp K-I, Lytle LA. *Longitudinal tracking of adolescent smoking, physical activity and food choice behaviors*. *Am J Public Health*. 1994;84:1121-1126.
- ¹⁷ Lytle LA, Seifert S, Freenstein J, McGovern P. *How do children's eating patterns and food choices change over time? Results from a cohort study*. *Am J Health Promot*. 2000;14:222-228.
- ¹⁸ Anonymous. *Guidelines for School Health Programs to Promote Lifelong Healthy Eating* The Journal of School Health; Jan 1997; 67, 1 ProQuest Medical Library
- ¹⁹ Eilbert WK, Barry M, Bialek R, Garufi M, Maiese D, Gebbie K, et al. *Public health expenditures: Developing estimates for improved policy making*. *Journal of Public Health Management and Practice*. 1997; 3(3):1-9.
- ²⁰ Margolis HL, Parker AE, Eng E. Who speaks for public health agencies: Assessing the core functions in local health departments. *Journal of Public Health Management and Practice*. 1999; 5(3):47-53.
- ²¹ U.S. Department of Health and Human Services. *Healthy People 2010: Understanding and Improving Health*. 2nd ed. Washington, DC: U.S. Government Printing Office, November 2000.
- ²² Jeffery RW. *Public health strategies for obesity treatment and prevention*. *Am J Health Behavior* 2001;25:252-259
- ²³ Kubik MY, Lytle LA, Hannan PJ, et al. *The association of the school food environment with dietary behaviors of young adolescents*. *Am J Public Health*. 2003;93(7):1168-1173.
- ²⁴ Koplan JP, Liverman CT, Kraak VA, Eds. *Committee on Prevention of Obesity in Children and Youth Preventing Childhood Obesity: Health in the Balance*. National Academies Press. Washington, DC. 2005
- ²⁵ Crawford D. *Population Strategies to Prevent Obesity*. *BMJ* 2002;325:728-729.
- ²⁶ Lopez R. *Urban Sprawl and Risk for Being Overweight or Obese* The American Journal of Public Health, Sept. 2004 v94 i9 p1574(6)
- ²⁷ Whitlock EP, Williams SB, Gold R, Smith PR, Shipman SA. *Screening and Interventions for Childhood Overweight. Evidence Synthesis No. 36* (Prepared by the Oregon Evidence-based Practice Center under contract no. 290-02-0024). Rockville, MD: Agency for Healthcare Research and Quality. 2005. Available at: www.ahrq.gov/clinic/uspstfix.htm
- ²⁸ American Dietetic Association. *Position of the American Dietetic Association: Promoting and Supporting Breastfeeding*. *J Am Diet Assoc*. 2005;105:810-818.
- ²⁹ Fisher JO, Birch LL, Smiciklas-Wright H, Picciano MF. *Breastfeeding through the first year predicts maternal control in feeding and subsequent toddler energy intakes*. *J Am Diet Assoc*. 2000;100:641-646.
- ³⁰ American Academy of Pediatrics Policy Statement: *Breastfeeding and the Use of Human Milk*. *Pediatrics* Vol.115 No.2 February 2005.
- ³¹ Bener A, Denic S, Galadari S. *Longer breastfeeding and protection against childhood leukemia and lymphomas*. *Eur J Cancer*. 2001;37: 234-238
- ³² Armstrong J, Reilly JJ, Child Health Information Team. *Breastfeeding and lowering the risk of childhood obesity*. *Lancet*. 2002;359:2003-2004
- ³³ Dewey KG, Heinig MJ, Nommsen LA, Pearson JM, Lonnerdal B. *Breast-fed infants are leaner than formula-fed infants at 1 year of age: the DARLING study*. *Am J Clin Nutr*. 1993;57:140-145
- ³⁴ Arenz S, Ruckerl R, Koletzko B, Von Kries R. *Breast-feeding and childhood obesity—a systematic review*. *Int J Obes Relat Metab Disord*. 2004;28:1247-1256
- ³⁵ Grummer-Strawn LM, Mei Z. *Does breastfeeding protect against pediatric overweight? Analysis of longitudinal data from the Centers for Disease Control and Prevention Pediatric Nutrition Surveillance System*. *Pediatrics*. 2004;113(2). Available at: www.pediatrics.org/cgi/content/full/113/2/e81
- ³⁶ Stettler N, Zemel BS, Kumanyika S, Stallings VA. *Infant weight gain and childhood overweight status in a multicenter, cohort study*. *Pediatrics*. 2002;109:194-199
- ³⁷ Gillman MW, Rifas-Shiman SL, Camargo CA, et al. *Risk of overweight among adolescents who were breastfed as infants*. *JAMA*. 2001;285: 2461-2467
- ³⁸ Toschke AM, Vignerova J, Lhotska L, Osancova K, Koletzko B, von Kries R. *Overweight and obesity in 6- to 14-year old Czech children in 1991: protective effect of breast-feeding*. *J Pediatr*. 2002;141: 764-769
- ³⁹ American Academy of Pediatrics, Committee on Nutrition. *Prevention of pediatric overweight and obesity*. *Pediatrics*. 2003;112:424-430
- ⁴⁰ Guise JM, Palda V., Westhoff, C., Chan B., Helfand M., Lieu TA. *The Effectiveness of Primary Care-Based Interventions to Promote Breastfeeding: Systematic Evidence Review and meta-Analysis for the US Preventive Services Task Force*. *Annals of Family Medicine* Vol.1, No.2 July/Aug 2003.
- ⁴¹ Sikorski J, Renfrew MJ, Pindoria S, Wade A. *Support for breastfeeding mothers: a systematic review*. *Paediatric and Perinatal Epidemiology* 2003 17:4 407.
- ⁴² Winikoff B, Myers D, Laukaran VH, Stone R. *Overcoming obstacles to breastfeeding in a large municipal hospital: applications of lessons learned*. *Pediatrics* 1987;80(3):423-3.
- ⁴³ De Chateau P, Wiberg B. *Long-term effect on mother—infant behaviour of extra contact during the first hour post partum. A follow-up at three months*. *Acta Paediatr Scand* 1977;66:145-51.
- ⁴⁴ Salariya E, Easton P, Cater J. *Duration of breastfeeding after early initiation and frequent feeding*. *Lancet* 1978;2:1141-3.
- ⁴⁵ Thomson M, Hartssock T, Larson C. *The importance of immediate postnatal contact: its effect on breastfeeding*. *Can Fam Physician* 1979;25:1374-8.
- ⁴⁶ Taylor PM, Maloni JA, Taylor FH, Campbell SB. *Extra early mother—infant contact and duration of breast-feeding*. *Acta Paediatr Scand Suppl* 1985;316:15-22.
- ⁴⁷ Dewey KG, Heinig MJ, Nommsen LA, Pearson JM, Lonnerdal B. *Growth of breast fed and formula fed infants from 0-18 months: the DARLING study*. *Pediatrics* 1991; 89: 1035-1041
- ⁴⁸ Zinn B. *Supporting the employed breastfeeding mother*. *J Midwifery Womens Health* 2000;45:216-26.
- ⁴⁹ Frederick, IB, Auerback KG. *Maternal-infant separation and breastfeeding. The return to work or school*. *J Reprod Med*. 1985;30:523-526.
- ⁵⁰ Anonymous. *Guidelines for School Health Programs to Promote Lifelong Healthy Eating*. The Journal of School Health; Jan 1997; 67, 1 ProQuest Medical Library
- ⁵¹ French SA, Story M, Fulkerson JA, Hannan P. *An Environmental Intervention to Promote Lower-Fat Food Choices in Secondary Schools: Outcomes of the TACOS Study*. *Amer J of Pub Hlth* September 2005 94(9) 1507-12
- ⁵² French S., Jeffery, RW, Story M. *Pricing and Promotion Effects on Low-Fat Vending Snack Purchases: The CHIPS Study*. *Am J Public Health*. 2001;91:112-117.
- ⁵³ French SA. *Public Health Strategies for Dietary Change: Schools and Workplaces*. The Journal of Nutrition. Bethesda: Apr 2005. Vol.135, Iss.4; pg.910-12.

- ⁵⁴ Mercer SL, Green LW, Rosenthal AC, et al. *Possible Lessons from the Tobacco Experience for Obesity Control*. *Am J Clin Nutr* 2003; 77 (suppl):1073S-82S
- ⁵⁵ Welsh JA, Cogswell ME, Rogers S, Rockett H, Mei Z, Grummer-Strawn LM. *Overweight among low-income preschool children associated with the consumption of sweet drinks: Missouri, 1999-2002*. *Pediatrics*. 2005;115(2):223-229.
- ⁵⁶ James J, Thomas P, Cavan D, Kerr D. *Preventing childhood obesity by reducing consumption of carbonated drinks: cluster randomized controlled trial*. *British Medical Journal*. 2004;328:1237-1241.
- ⁵⁷ Ludwig DS, Peterson KE, Gortmaker SL. *Relation between consumption of sugar-sweetened drinks childhood obesity: a prospective, observational analysis*. *Lancet* 2001; 357: 505-08
- ⁵⁸ Rampersaud GC, Pereira MA, Girard BL, Adams J, Metz J. *Breakfast Habits, Nutritional Status, Body Weight, and Academic Performance in Children and Adolescents*. *Journal of the American Dietetic Association* Vol.105:5 2005
- ⁵⁹ Sigea-Riz AM, Popkin BM, Carson T. *Trends in breakfast consumption for children in the United States from 1965-1991*. *Am J Clin Nutr*. 1998;67 (suppl):748S-756S.
- ⁶⁰ Keski-Rohkonen A, Kaprio J, Rissanen A, Virkkunen M, Rose RJ. *Breakfast skipping and health-compromising behaviors in adolescents and adults*. *Eur J Clin Nutr*. 2003;57:842-853.
- ⁶¹ Sjoberg A, Hallberg L, Högglund D, Hulthen L. *Meal pattern, food choice, nutrient intake and lifestyle factors in The Goteborg Adolescence Study*. *Eur J Clin Nutr*. 2003;57:1569-1578.
- ⁶² Wolfe WS, Campbell CC, Frongillo EA Jr, Haas JD, Melnik TA. *Overweight schoolchildren in New York State: Prevalence and characteristics*. *Am J Public Health*. 1994;84:807-813.
- ⁶³ Meyers AF, Sampson AE, Weitzman M, Rogers BL, Kayne H. *School Breakfast Program and school performance*. *Am J Dis Child*. 1989;143:1234-1239.
- ⁶⁴ Boey C, Omar A, Phillips J. *Correlation among academic performance, recurrent abdominal pain and other factors in year-6 urban primary-school children in Malaysia*. *J Pediatric Child Health*. 2003;39:352-357.
- ⁶⁵ Murphy JM, Pagano ME, Nachmani J, Sperling P, Kane S, Kleinman RE. *The relationship of school breakfast to psychosocial and academic functioning: Cross-sectional and longitudinal observations in an inner-city school sample*. *Arch Pediatr Adolesc Med*. 1998;152:899-907.
- ⁶⁶ Kleinman RE, Hall S, Green H, Korzex-Ramirez D, Patton K, Pagano ME, Murphy JM. *Diet, breakfast and academic performance in children*. *Ann Nutr Metab*. 2002;46(suppl 1):24-30.
- ⁶⁷ Kim H-Y, Frongillo E, Han S-S, Oh S-Y, Kim W-K, Jang Y-A, Won H-S, Lee H-S, Kim S-H. *Academic performance of Korean children is associated with dietary behaviours and physical status*. *Asia Pac J Clin Nutr*. 2003; 12:186-192.
- ⁶⁸ Hill JO, Wyatt HR, Peters JC. *Modifying the Environment to Reverse Obesity*. *Environmental Health Perspectives*. Research Triangle Park: 2005. pg. 108-115.
- ⁶⁹ Luepker RV, Perry CL, McKinlay SM, Nader PR, Parcel GS, Stone EJ, Webber LS, Elder JP, Feldman HA, Johnson CC, Kelder SH, Wu M. *Outcomes of a field trial to improve children's dietary patterns and physical activity*. *The Child and Adolescent Trial for Cardiovascular Health*. CATCH collaborative group. *JAMA* (1996) 275: 768-776 .
- ⁷⁰ Haire-Joshu D, Nanney MS. *Prevention of Overweight and Obesity in Children: Influences on the Food Environment* *The Diabetes Educator* Vol 28, No. 3, May/June 2002
- ⁷¹ Kmietowicz Z. *Parents key to reducing overweight in children*. *British Medical Journal*. 2003;327:832i. Available at <http://bmj.bmjournals.com/cgi/content/full/327/7419/832-i?maxtoshow=HITS=10&hits> . Accessed January 3, 2005.
- ⁷² Perry CL, Luepker RV, Murray DM, et al. *Parent involvement with children's health promotion: the Minnesota Home Team*. *Am J Public Health* 1988;78:1156-60.
- ⁷³ Nord M. *Household Food Security in the United States, 2002*. Economic Research Service, United States Department of Agriculture. Available at <http://www.ers.usda.gov/publications/fanrr21>.
- ⁷⁴ *The Contextual Effect of the Local Food Environment on Residents' Diets: The Atherosclerosis Risk in Communities Study*. *Am J Pub Hlth*: Vol. 92, No. 11, 1761 – 1766 (Nov. 2002).
- ⁷⁵ Center on Hunger and Poverty. *The Consequences of Hunger and Food Insecurity for Children: Evidence from Recent Scientific Studies*. June 2002 10.
- ⁷⁶ The Partnership for New Communities. *Chain Reaction: Income, Race, and Access to Chicago's Major Player Grocers*. October 2005
- ⁷⁷ Koplan JP, Dietz WH *Caloric Imbalance and Public Health Policy*. *JAMA*, October 27, 1999. Vol 282, No. 16
- ⁷⁸ Kahn EB, Ramsey LT, Brownson RC, Gregory et al. *Effectiveness of Interventions to Increase Physical Activity* *Am J Prev Med* 2002;22(4S) 0749-3797
- ⁷⁹ Fairclough S, Stratton G. *Physical education makes you fit and healthy. Physical education's contribution to young people's physical activity levels*. *Health Education Research Theory & Practice* Vol.20 no.1 2005 Pages 14–23 14 July 2004.
- ⁸⁰ Strong WB, Malina RM, Blimkie CJR, Daniels ST, et al. *Evidence Based Physical Activity for School-Age Youth*. *The Journal of Pediatrics*, June 2005.
- ⁸¹ Centers for Disease Control and Prevention *Ten Strategies for Promoting Physical Activity, Healthy Eating, and a Tobacco-Free Lifestyle Through School Health Programs in Safer-Healthier-People*. 2003 Available at: http://www.cdc.gov/healthyyouth/publications/pdf/ten_strategies.pdf
- ⁸² CDC *School Health Index* Available at: <http://www.cdc.gov/HealthyYouth/SHI/paper.htm>
- ⁸³ Datar A, Sturm R, Magnabosco JL. *Childhood Overweight and Academic Performance: National Study of Kindergartners and First-Graders*. *Obesity Research* Vol. 12 No. 1 January 2004.
- ⁸⁴ National Association for Sport and Physical Education *Moving into the future: National standards for physical education (2nd ed.)* Reston, VA.
- ⁸⁵ Centers for Disease Control and Prevention. *Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People*. *MMWR* March 07, 1997 46(RR-6);1-36.
- ⁸⁶ Florida Education Standards Commission *Subject Matter Content Standards for Florida's Teachers*. Tallahassee: Florida DOE 2000.
- ⁸⁷ Florida Department of Education. *Sunshine State Standards for K-12 Health & Physical Education*. Tallahassee. 1996.
- ⁸⁸ The Council on Physical Education for Children (COPEC). *Appropriate Practices for Elementary School Physical Education – A Position Statement of the National Association for Sport and Physical Education*. NASPE Publications, 2000. <http://www.aahperd.org/naspe/peappropriatepractice/Appropriate%20Practices%20for%20ES%20PE.pdf>
- ⁸⁹ Sallis JF, Conway TL, Prochaska JJ, McKenzie TL, Marshall SJ, Brown M. *The association of school environments with youth physical activity* *Am J Public Health* 2001;91:618-620
- ⁹⁰ Centers for Disease Control and Prevention *School Health Policies and Programs 2000: Fact Sheet Physical Education and Activity*. 2000. Available at: <http://www.cdc.gov/HealthyYouth/shpps/factsheets/pdf/pe.pdf>
- ⁹¹ The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity. http://www.surgeongeneral.gov/topics/obesity/calltoaction/fact_vision.htm
- ⁹² Fairclough S, Stratton G. *Physical education makes you fit and healthy'. Physical education's contribution to young people's physical activity levels*. *Health Education Research Theory & Practice* Vol.20 no.1 2005 Pages 14–23 14 July 2004.
- ⁹³ Holt-Hale SA, Parker M. *Appropriate Practices for Elementary School Physical Education – A Position Statement of the National Association for Sport and Physical Education*. <http://www.aahperd.org/naspe/peappropriatepractice/Appropriate%20Practices%20for%20ES%20PE.pdf>
- ⁹⁴ Saakslahti A, Numminen P, Salo P, Tuominen J, Helenius H. *Effects of a Three-Year Intervention on Children's Physical Activity from Age 4 to 7*. *Pediatric Exercise Science*, 16(2). May 2004.
- ⁹⁵ Ford BS, McDonald TE, Owens AS, Robinson TN. *Primary care interventions to reduce television viewing in African-American children*. *American Journal of Preventive Medicine* (2002) 22: 106-109.
- ⁹⁶ Baker S., Barlow S., Cochran W., Fuchs G., Klish W., Krebs N., Strauss R., Tershakovec A., Udall J. *Overweight Children and Adolescents: A Clinical Report of the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition* *Journal of Pediatric Gastroenterology and Nutrition*, 40:533-543 May 2005.
- ⁹⁷ Epstein LH, Valoski AM, Vara LS, et al. *Effects of decreasing sedentary behaviors and increasing activity on weight change in obese children*. *Health Psychol* 1995;14:1-7
- ⁹⁸ Epstein LH, Paluch RA, Gordy CC, Dorn J. *Decreasing sedentary behaviors in treating pediatric obesity*. *Arch Pediatr Adol Med* 2000;154:220-6.
- ⁹⁹ Robinson TN. *Reducing children's television viewing to prevent obesity: a randomized controlled trial*. *JAMA* 1999;282:1561-7.
- ¹⁰⁰ Saelens BE, Sallis JK, Frank LD. *Environmental correlates of walking and cycling: findings from the transportation, urban design and planning literatures*. *Ann Behav Med* 2003;25:80-91.
- ¹⁰¹ Transportation Research Board. *Does the Built Environment Influence Physical Activity? Examining the Evidence*. Institute of Medicine of the National Academies Washington, DC. 2005



www.DCHD.net

For additional copies
go to DCHD.net or call
630-3233.



**Healthy
Jacksonville**
A Healthy People 2010 Initiative

www.HealthyJacksonville.com
