

NUTRITION SUBCOMMITTEE REPORT
 Seattle Public Schools
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 July 13, 2004

“...The poverty of any family is likely to be most serious at the very time when the children most need nurture, when they are most dependent, and when they are obtaining the only education which they are ever to receive. Guidance and supervision of the parents are impossible because they must work; the nurture is insufficient because there are too many hungry mouths to feed; **learning is difficult because hungry stomachs and languid bodies and thin blood are not able to feed the brain. The lack of learning among so many poor children is certainly due, to an important extent, to this cause.** There must be thousands -very likely sixty or seventy thousand children-in New York City alone who often arrive at school hungry and unfitted to do well the work required. **It is utter folly, from the point of view of learning, to have a compulsory school law which compels children, in that weak physical and mental state which results from poverty, to drag themselves to school and to sit at their desks, day in and day out, for several years, learning little or nothing.** If it is a matter of principle in democratic America that every child shall be given a certain amount of instruction, let us render it possible for them to receive it, as monarchical countries have done, by making full and adequate provision for the physical needs of the children who come from the homes of poverty.”

--Robert Hunter, *Poverty*, 1904
 (Emphasis added)

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Summary of Policy Recommendations

One key to improving student achievement and reducing disproportionality is student nutrition. To improve child nutrition, our focus is on **increasing participation in the school meal program** while **decreasing student access to unhealthful foods and beverages** at school during the school day:

- Prohibit sale of food sold in competition with the school meal programs until after the last lunch period
- Establish nutritional standards for all food and beverages served and sold in schools during the (extended) school day
- Improve the quality, variety, and appeal of food offered in the school meal program
- Improve the dining experience to increase intake and reduce plate waste
- End implied endorsement of soda companies and other promotion of unhealthful foods and beverages
- Ensure access to safe, appealing drinking water free of charge

BACKGROUND

Student Malnutrition

Today, many students are coming to school undernourished from food-insecure households. According to US Department of Agriculture data, Washington State has the fifth highest rate of hunger in the nation. Food Lifeline, a nonprofit food distribution center in Western Washington, describes the impacts of hunger: “Children who are hungry may be less attentive, independent, and curious. Many hungry children have difficulty concentrating; therefore their reading ability and verbal and motor skills suffer. Children who are hungry also often experience headaches, fatigue, frequent colds, and other illnesses that may cause them to be less physically active”.

Paradoxically, over-nutrition may be an equally serious problem for Seattle’s school children. The Centers for Disease Control reports that the percentage of young people who are overweight has more than doubled in the last 20 years. Of children and adolescents aged 6–19 years, 15%—about 9 million young people—are considered overweight. Three times more children are obese than 30 years ago. Today, students’ diets are too high in saturated fat, sodium and sugar, and are too low in fruits, vegetables, whole grains, calcium, and fiber. The CDC notes, in fact, that “only 21% of young people eat the recommended five or more servings of fruit and vegetables each day”. The sharp rise in obesity numbers for children cannot be due to genetics—research points to environmental factors, including food at school.

The following chart from the Center for Science in the Public Interest is based on national, multi-year studies of Americans’ eating habits and health sponsored by the United States government:

Overweight and Obesity in the United States*
(percent of U.S. population)

	Adults	Children ages 6-11		Adolescents NHANES I, II: ages 12-17; NHANES III: ages 12-19	
		Boys	Girls	Boys	Girls
NHES I (1960-62)	43	5	5	5	5
NHANES I (1971-74)	46	6	4	5	7
NHANES II (1976-80)	46	8	7	5	6
NHANES III (1988-94)	61	12	11	11	10

* Figures for children are for obesity. Figures for adults are for overweight and obesity combined.

Implications

We are in the midst of a major health crisis-- People who are overweight are at increased risk for heart disease, high blood pressure, diabetes, asthma, arthritis-related disabilities, and some types of cancers. Last year, 400,000 Americans died of obesity-related illnesses. According to Eric Bost, undersecretary for the U.S. Dept. of Agriculture's Food and Nutrition Service, overweight people can expect to live three years less than fit people: "It's all because we eat too much and don't get enough activity," he said. "And it is not getting better. It's getting worse. It's killing us."

The following chart from CSPI shows the severity of the problem:

Leading Contributors to Premature Death

Diet and Physical Inactivity	310,000-580,000
Tobacco	260,000-470,000
Alcohol	70,000-110,000
Microbial Agents	90,000
Toxic Agents	60,000-110,000
Firearms	35,000
Sexual Behavior	30,000
Motor Vehicles	25,000
Drug Use	20,000

Hunger and obesity are two sides of the same coin. In either case, through underconsuming or overconsuming, too many Seattle students are malnourished, which affects their overall health, and thus behavior and learning. Nutrition is related to academic performance directly (mental alertness, curiosity, attention, memory) and indirectly (absenteeism, tardiness, classroom behavior) (see Appendix).

Research shows that children most likely to suffer from poor nutrition tend to be from high-poverty or working poor households. In Seattle, many of these children are children of color. **If we are serious about closing the achievement gap, it makes sense to ensure that our students are eating well at school, particularly those who cannot depend on having enough nutritious food outside school.**

Policy Development

Sources

In arriving at our policy recommendations, we looked at research on student health and learning and the role of nutrition as a factor in student health. We also looked at resolutions taken by state and national organizations and policies of other school districts and states, as well as best practices and nationally recognized standards regarding each of our subtopics (see resource list and selected references, below).

Issues

Some of the issues which surfaced during our discussions included:

- Making nutritious food appealing and appealing food nutritious
- Delinking the funding stream from nutrition
- Role and responsibility of district food professionals vs. other staff (e.g., activity directors, club advisors, etc.)
- Constraints on principals in adjusting meal and snack schedules
- Facilities constraints on type of food preparation
- Overt vs. covert messages regarding food and beverages
- Recommendations vs. mandates

Criteria

We looked for solutions which would result in more students eating appropriate amounts of more healthful food while at school, realizing such choices involve access, taste, familiarity, personal preferences, learned behavior, adequate time, appropriate facilities, and affordability. **Based on our research and the opinions of our outside experts, we believe that Seattle students in all grades will consume healthful foods when the conditions are right, and that establishing these conditions is feasible and practical in the Seattle School District right now.**

Options

During the course of policy development, we considered a number of options, including:

a) Nutritional guidelines for elementary students but not for secondary students

PRO: This would be much more palatable to secondary students and staff.

CON: This assumes that middle and high school students cannot learn to change eating patterns at school and learn to make healthy choices

DECISION: Other districts have successfully banned sodas and junk food at all levels and we believe SPS can do so, as well.

b) Nutritional guidelines for certain portions of the school day only (e.g. during lunch)

PRO: This requires less adjustment for groups currently doing fundraising by selling junk food.

CON: This sends a mixed message that poor nutrition is acceptable.

DECISION: Other districts have set guidelines that pertain to the entire school day, and we believe SPS can do so, as well.

c) Set nutritional guidelines but continue to allow various groups to sell food as fundraisers throughout the day

PRO: This requires less adjustment on the part of the student and parent groups.

CON: This undermines the school breakfast and lunch program, which is the only source of nutritious, well-balanced meals for students

DECISION: Keep food sales before and during lunch within the purview of the school food services in order to increase participation in the school meal programs.

d) Allow each school to set their own policies regarding food and beverages

PRO: This allows local autonomy and education of each school community

CON: The epidemic in child obesity and related diseases calls for urgency. Most school staff do not have training in nutrition and educating each school community will take time.

DECISION: Establish clear, district-wide policies based on current research and best practices right now, and then work with building staff to educate staff, parents and students.

e) Continue with the exclusive Coke contract but require nutritional standards on the products available in the vending machines.

PRO: This requires less adjustment on the part of ASBs who depend on Coke revenues for fundraising

CON: Any exclusive arrangement with a soft drink company constitutes an implied endorsement of a for-profit company. The Coke revenue comes in exchange for the right to 'brand' Seattle public school students. Revenues are being generated from the sale of unhealthful products.

DECISION: Prohibit exclusive contracts. Generic vending machines which sell a variety of healthful beverages from various companies would be allowed.

Fiscal Impacts

Because the school meal program is currently asked to generate revenue to the general fund, sales of competitive foods and beverages undermine the participation rates in the school meal program and thus undermine the program's capacity to provide higher quality food to students.

Seattle schools currently allow school groups to promote junk food and sodas as a means of raising funds. The Coca-Cola contract brought in \$340,000 last year which helped fund student activities (essentially a tax equivalent to \$17 per secondary student). But these short-term revenues do not come close to the real costs to society. According to a recent study published in *Obesity Research*, the estimated annual medical cost of obesity and overweight in the United States is about \$117 billion in 2003 dollars. In Washington State, obesity and overweight are costing our health care system \$1.3 billion each year.

Other districts and schools have succeeded in replacing unhealthful foods and beverages with no loss in revenue and in some cases, with a gain in revenue (see Appendix).

Evaluation of Effectiveness

We recommend that the district appoint a small (4-6 member) nutrition advisory committee to support the implementation of these policies and to offer ongoing consultation on a volunteer basis for district and school staff. It is hoped that district staff, college interns, outside agencies, and/or community members will be able to track the effects of these policies during the next five years. Measures might include:

- Participation rates in school meal programs
- Student (customer) satisfaction surveys
- Parent (indirect customer) satisfaction surveys
- Frequency and types of health problems on School Nurse logs
- Frequency and types of mental health/behavioral problems on counselor logs
- Incidence of student behavior infractions
- Teacher surveys of students' classroom behavior, attention span, memory etc.
- Test scores
- Grades
- Absenteeism and tardiness rates
- Graduation/Drop-Out rates

Challenges and Next Steps

- Educating principals, school staff, parents and students about policy changes
 - Work with health educators and PASS, SEA, PTA, and ASB
- Identifying alternative fundraising sources for student and parent groups
 - Work with DECA and student activity advisors to identify feasible alternative sources of fundraising
- Improving appeal of nutritious foods and beverages
 - Work with local food and nutrition professionals; involve students in taste tests; work with families of English language learners to develop a wider variety of food offerings
- Marketing healthy food to students and staff
 - Work with DECA to design promotional campaigns; take advantage of national resources; work with student nutrition interns from local colleges

APPENDIX A: RESOURCES

Center for Science in the Public Interest (CSPI)

<http://cspinet.org/nutritionpolicy/index.html>

Centers for Disease Control and Prevention (CDC)

http://www.cdc.gov/nccdphp/aag/aag_dnpa.htm

Children's Alliance

<http://www.childrensalliance.org/>

Citizens' Campaign for Commercial-Free Schools (CCCS)

<http://www.scn.org/cccs/>

Commercial Alert

<http://www.commercialalert.org/>

Food and Nutrition Information Center (USDA)

http://www.nal.usda.gov/fnic/pubs_and_db.html

Food Lifeline

<http://www.foodlifeline.org/hunger/>

Food Research and Action Center (FRAC)

http://www.frac.org/html/all_about_frac/about_index.html

National Alliance for Nutrition and Activity (NANA)

<http://cspinet.org/nutritionpolicy/nana.html#policy>

Northwest Obesity Prevention Project (NOPP)

<http://depts.washington.edu/obesity/>

Poverty and Race Research Action Council (PRRAC)

http://www.prrac.org/full_text.php?text_id=952&item_id=8636&newsletter_id=0&header=Food%20/%20Nutrition%20/%20Hunger

Public Health—Seattle & King County

<http://www.metrokc.gov/health/steps/index.htm>

Society for Nutrition Education (SNE)

<http://www.sne.org/>

U.W. Center for Public Health Nutrition (CPHN)

<http://depts.washington.edu/uwcphn/>

Washington State Public Health Association

<http://www.wspha.org/>

For more information

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APPENDIX B: NUTRITION SUBCOMMITTEE ROSTER

Shelley Curtis RD, MPH Committee Chair Nutrition Outreach and Food Policy Manager, Children's Alliance	Samara Hoag, School Nurse Madison Middle School	Kathy Park, Pediatrician Lorena Shih, Pediatrician
	Sandra Vanderven, Health Teacher Hamilton Middle School	Jennifer Obermiller, Parent
Brita Butler-Wall, Ph.D. Seattle School Board	Carol Johnson, Director Child Nutrition Services	Terri Weller, Parent Alison Leber, Parent
Carole Bryant, IUOE Local 609 Food Service Manager, ret.	Anita Finch RD, Dietitian Seattle School District	Brigit McShane, Principal Daniel Bagley
Joanne Binkley, IUOE Local 609 Food Service Manager	Daniel Melin, Student Hamilton Middle School	David Dockendorff, Principal Pathfinder
	Solomon Simone, Student Hamilton Middle School	

APPENDIX C: RESOURCE PEOPLE ROSTER*

National

Sarah Borrón, Policy Analyst
Community Food Security Coalition

William H. Dietz M.D., Ph.D.
Centers for Disease Control and Prevention

Andy Fisher
Community Food Security Coalition

Claudia Malloy
Center for Science in the Public Interest

Gary Ruskin
Commercial Alert

Kari M. Augustyn MSW
Education and Outreach Coordinator
National Eating Disorders Association

Washington State

Chip Halverson
Washington Education Association

Sharon Lerman, WSU
Food \$ense

Mark Musick
Cascade Harvest Coalition

Henning Sehmsdorf, Ph.D.
Farmer/Educator

John Stokes
Citizens' Campaign for Commercial-Free Schools

Elected Officials

Dana Twight
State Board of Education

Sen. Jeanne Kohl-Welles
36th Legislative District

Richard Conlin
Seattle City Councilmember
Vice-Chair of the Board of the Health

Tom Rasmussen
Seattle City Council

Health Care/Medical

Alonzo Plough
Director, Public Health—Seattle & King County

Valentina Warner MD
Family practice physician

Elinor A. Graham, MD MPH
Pediatrician
Harborview Medical Center

Susan Gins MS
Washington State Dept. of Health

Patricia Manuele RD MPH
Public Health-Seattle & King County

Donna Johnson RD
Public Health-Seattle & King County

Frances Popstojanovic-Holmstrom
Vice President
American Cancer Society

Benjamin Danielson MD
Pediatrician/Medical Director
Odessa Brown Children's Clinic

Paula M. Brady, Virginia Mason
Sr. Director, Fund Development and Community Relations
Virginia Mason Foundation

Kirsten Wysen MHSA
Public Health-Seattle & King County

Academics

Phil Bereano, Professor
University of Washington

Richard Brandon, Ph.D.
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Don Comstock, Ph.D.
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Caroline McNaughton Tittel MPH, RD
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Mary Anne Mercer, DrPH
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Keven Mosley-Koehler
Group Health Community Foundation

Lorraine Runyon MN, ARNP

University of Washington School of Nursing

Community

Mary Joe DeBeck
Resource Rescue

Lee Harper, Lettuce Link
Fremont Public Association

Heather Gibbons
Pacific Science Center

James Owenby
Seattle Housing Authority

Laureen Mar
Community Member

Jon Rowley
Community Member

Karen Toler MA
Student support specialist

Jeanne Higgins ED
Girls on the Run

Carol Eisenberg CPNP, ARNP

Maria McDaniel
Deloitte & Touche Services LP

Kathleen Morley
Deloitte & Touche Services LP

Kathleen Edwards Ph.D.
Bowman-Edwards & Associates

Gwen Hanson MD
South Health Solutions

Moira Fitzpatrick, Ph.D. FICPP
Integrative Health Partners

Marie Zaner Debell, BSRN

Seattle District Staff

Jill Lewis,
Health Services

Caroline Stemshorn,
Health Services

Pamela Hillard,
Health Education

Seattle School Staff

Gerrit Kischner, Assistant Principal
TOPS at Seward School

David Milford, Substitute Teacher

Sandra Polzin RN, BSN

Marcia Ventura, Teacher
Concord Elementary

Geri Hamai, Former Principal

Seattle School Parents

Bob Goldberg, Parent
AS-1 School

Dan Carasciolo, Parent

Catherine Costello, Parent
Orca K-8

Christal Wood, Parent

David Yao, Parent

Local Business

Elizabeth Bertani, Larry's Markets

Goldie Caughlan, PCC
Washington Food Systems Alliance
Farm-to-Cafeteria Group

Karen Jurgensen, Chef
Chef's Collaborative

Scott Rice
Farm Program Manager
Pike Place Market

***Included on email list and/or participated in meetings and discussions**

APPENDIX D: HISTORY OF FOOD IN SCHOOLS

1790 American-born Benjamin Thompson (Count Rumford) develops program for teaching and feeding hungry, vagrant children in Germany, and later England, Scotland, France, and Switzerland and develops equipment for mass feeding programs.

1912 PTA sponsors hot lunches in many schools. Other community organizations also start food programs for children. PTA and others lobby state and federal government to provide nutritious, affordable food at school.

1946 U.S. Congress passes the National School Lunch Act, thereby establishing school lunch programs in order to safeguard the health and well being of the nation's children. "The educational features of a properly chosen diet served at school should not be under-emphasized. Not only is the child taught what a good diet consists of, but his parents and family likewise are indirectly instructed."

1966 Congress passes the Child Nutrition Act "In recognition of the demonstrated relationship between food and good nutrition and the capacity of children to develop and learn..." This extends the previous act, including a special milk program, and adds a school breakfast program.

1992 The US Dept. of Agriculture (USDA) adopts the official Food Pyramid, with breads and cereals representing the base of a healthy diet, and the smallest segment of one's diet, consisting of fats, oils and sweets.

2001 The Seattle School District adopts a policy on Advertising and Commercial Activities, which prohibits most types of advertising in schools, including on vending machines. The District receives a national award of \$5,000 from Commercial Alert, based on the advocacy work of the local Citizens' Campaign for Commercial-Free Schools.

2003 The Seattle School District renews an exclusive pouring rights contract with Coca-Cola but places some restrictions on their access by middle school students and requires that 1/3 of all vending slots be reserved for sales of relatively healthy beverages.

2004 USDA establishes Team Nutrition, with the goal is of improving children's lifelong eating and physical activity habits by using the principles of the Dietary Guidelines for Americans and the Food Guide Pyramid. Team Nutrition is implemented through training for food service professionals, nutrition education for children and parents, and involves school administrators and community partners.

2004 Washington State Legislature passes SB 5436, which requires all school districts to develop policies relating to competitive foods by 2005, based on a model policy to be created by representatives of OSPI, WEA, PTA, the Children's Alliance, and other groups. Seattle Sen. Jeanne Kohl-Welles is the prime sponsor.

2004 The National Food Services Association names Seattle School District Food Services Director Carol Johnson as Food Services Director of the Year.

2004 Congress passes the Child Nutrition and WIC Reauthorization Act of 2004, which expands the availability of nutritious meals and snacks to more children in school, in outside school hours programs, and in child care; and improves the quality of food in schools by simplifying the paperwork involved. This Act creates new ways to improve the nutrition environment in schools by establishing local Wellness Councils and by funding efforts to provide technical assistance and best practices to schools and states.

APPENDIX E: SELECTED REFERENCES

Diet, breakfast, and academic performance in children. R.E. Kleinman, et al. *Annals of Nutrition Metabolism*, 46(1): 24-30. 2002.

NAL Call Number: RM214.N8 Abstract: The objective of this study is to determine whether nutrient intake and academic and psychosocial functioning improve after the start of a universal-free school breakfast program (USBP). Information was gathered from 97 inner city students prior to the start of a USBP and again after the program had been in place for 6 months. Students who had total energy intakes of <50% of the recommended daily allowance (RDA) and/or 2 or more micronutrients of <50% of RDA were considered to be at nutritional risk. Prior to the USBP, 33% of all study children were classified as being at nutritional risk. Children who were at nutritional risk had significantly poorer attendance, punctuality, and grades at school, more behavior problems, and were less likely to eat breakfast at school than children who were not at nutritional risk. Six months after the start of the free school breakfast programs, students who decreased their nutritional risk showed significantly greater: improvements in attendance and school breakfast participation, decreases in hunger, and improvements in math grades and behavior than children who did not decrease their nutritional risk. Participation in a school breakfast program enhanced daily nutrient intake and improvements in nutrient intake were associated with significant improvements in student academic performance and psychosocial functioning and decreases in hunger.

Food insufficiency and American school-aged children's cognitive, academic, and psychosocial development. K. Alaimo, C.M. Olson, and E.A. Frongillo Jr. *Pediatrics*, 108(1): 44-53. 2001.

NAL Call Number: RJ1-P42

Abstract: This study investigates associations between food insufficiency and cognitive, academic, and psychosocial outcomes for US children and teenagers ages 6 to 11 and 12 to 16 years. Data from the Third National Health and Nutrition Examination Survey (NHANES III) were analyzed. Children were classified as food-insufficient if the family respondent reported that his or her family sometimes or often did not get enough food to eat. Regression analyses were conducted to test for associations between food insufficiency and cognitive, academic, and psychosocial measures in general and then within lower-risk and higher-risk groups. Regression coefficients and odds ratios for food insufficiency are reported, adjusted for poverty status and other potential confounding factors. After adjusting for confounding variables, 6- to 11-year-old food-insufficient children had significantly lower arithmetic scores and were more likely to have repeated a grade, have seen a psychologist, and have had difficulty getting along with other children. Food-insufficient teenagers were more likely to have seen a psychologist, have been suspended from school, and have had difficulty getting along with other children. Further analyses divided children into lower-risk and higher-risk groups. The associations between food insufficiency and children's outcomes varied by level of risk. The results demonstrate that negative academic and psychosocial outcomes are associated with family-level food insufficiency and provide support for public health efforts to increase the food security of American families.

Food insufficiency exists in the United States: results from the third National Health and Nutrition Examination Survey (NHANES III)

K Alaimo, RR Briefel, EA Frongillo Jr and CM Olson

National Center for Health Statistics, Center for Disease Control and Prevention, Hyattsville, Md., USA. ka22@cornell.edu

OBJECTIVES: The purpose of this study was to estimate the prevalence of food insufficiency in the United States and to examine sociodemographic characteristics related to food insufficiency. METHODS: Data were analyzed from the third National Health and Nutrition Examination Survey, a cross-sectional representative sample of the civilian noninstitutionalized population living in households. Individuals were classified as "food insufficient" if a family respondent reported that

the family sometimes or often did not get enough food to eat. RESULTS: From 1988 through 1994, the overall prevalence of food insufficiency was 4.1% and was primarily related to poverty status. In the low-income population, food insufficiency was positively associated with being Mexican American, being under the age of 60, having a family head who had not completed high school, participating in the Food Stamp Program, and not having health insurance. It was not related to family type or employment status of the family head. Over half of food-insufficient individuals lived in employed families. CONCLUSIONS: Food insufficiency is not limited to very low-income persons, specific racial/ethnic groups, family types, or the unemployed. Understanding food insufficiency is critical to formulating nutrition programs and policies

Food Research and Action Center (FRAC) — Community Childhood Hunger Identification Project: A Survey of Childhood Hunger in the United States

Approximately four million American children under age 12 go hungry and about 9.6 million more are at risk of hunger according to estimates based on the results of a comprehensive study on childhood hunger in the United States released in 1995 — the Community Childhood Hunger Identification Project (CCHIP). This estimate means that 29 percent of children under age 12 in the United States live in families that must cope with hunger or the risk of hunger during some part of one or more months of the year. The CCHIP study was a precursor for the USDA/Census Bureau hunger measure, and acted as a model for the hunger survey that was developed by these two government agencies.

Hunger in children in the United States: potential behavioral and emotional correlates. R.E. Kleinman. *Pediatrics*, 101(1): E3. 1998.

NAL Call Number: RJ1-P42

Description: Results from a recent series of surveys from 9 states and the District of Columbia by the Community Childhood Hunger Identification Project (CCHIP) provide an estimate that 4 million American children experience prolonged periodic food insufficiency and hunger each year, 8% of the children under the age of 12 in this country. The same studies show that an additional 10 million children are at risk for hunger. The current study examined the relationship between hunger as defined by the CCHIP measure (food insufficiency attributable to constrained resources) and variables reflecting the psychosocial functioning of low income, school aged children. The study group included 328 parents and children from a CCHIP study of families with at least 1 child under the age of 12 years living in the city of Pittsburgh and the surrounding Allegheny County. A two stage area probability sampling design with standard cluster techniques was used. All parents whose child was between the ages of 6 and 12 years at the time of interview were asked to complete a Pediatric Symptom Checklist, a brief parent report questionnaire that assesses children's emotional and behavioral symptoms. Hunger status was defined by parent responses to the standard 8 food insufficiency questions from the CCHIP survey that are used to classify households and children as "hungry," "at risk for hunger," or "not hungry." In an area probability sample of low income families, those defined as hungry on the CCHIP measure were significantly more likely to have clinical levels of psychosocial dysfunction on the Pediatric Symptom Checklist than children defined as at risk for hunger or not hungry. Analysis of individual items and factor scores on the Pediatric Symptom Checklist showed that virtually all behavioral, emotional, and academic problems were more prevalent in hungry children, but that aggression and anxiety had the strongest degree of association with experiences of hunger. Children from families that report multiple experiences of food insufficiency and hunger are more likely to show behavioral, emotional, and academic problems on a standardized measure of psychosocial dysfunction than children from the same low income communities whose families do not report experiences of hunger. Although causality cannot be determined from a cross sectional design, the strength of these findings suggests the importance of greater awareness on the part of health care providers and public health officials of the role of food insufficiency and hunger in the lives of poor children.

Overweight and Obesity in King County.

Public Health—Seattle & King County Data Watch. 2002.

The percentage of King County residents who are overweight or obese has risen rapidly over the last 15 years. By 2001, one in every two King County adults was either overweight or obese. Obesity increases the risk of developing diabetes, hypertension (high blood pressure) and heart disease. After smoking, excessive weight-for-height is the second leading cause of preventable death.

Position of the American Dietetic Association: Child and adolescent food and nutrition programs.

J. Stang, C.T. Bayerl. *Journal of the American Dietetic Association*, 103(7): 887-93. 2003.

NAL Call Number: 389.8 Am34

Web site: http://www.eatright.org/Public/GovernmentAffairs/92_17504.cfm

Description: This paper explains the American Dietetic Association's stance on Child and Adolescent nutrition programs. The Association's position is that all children and adolescents, regardless of age; gender; socioeconomic status; racial, ethnic, or linguistic diversity; or health status should have access to food and nutrition programs that ensure the availability of a safe and adequate food supply that promotes optimal physical, cognitive, and social growth and development. Appropriate food and nutrition programs include food assistance and meal programs, nutrition education initiatives, nutrition screening and assessment followed by appropriate nutrition intervention, and anticipatory guidance to promote optimal nutrition status. Malnutrition has been linked to delayed physical, psychosocial, and cognitive development and is now recognized as a major contributor to the growing problem of overweight and obesity in the child and adolescent population

APPENDIX F: SELECTED NEWS ITEMS

Healthy Vending Machines Introduced Nationwide

("Even vending food gets better for you," USA Today, July 6, 2004)

Vending machines selling such healthy choices as fresh melon and berry fruit cups, turkey and reduced-fat cheese wraps, granola bars, and water will be installed nationwide, announced Canteen Vending Services, one of North America's largest vending machine operators. Healthy choice machines will be installed in 11 cities, including New York, Chicago, Boston, and San Francisco, with plans to install machines in dozens more cities over the next five years. The move responds to consumer demand. Some communities now require by law that vending machines provide more nutritious snacks and beverages. In workplaces as well, the hotbed of vending sales, companies are pushing for better nutrition in machines. [Click here](#) for the full article.
http://www.usatoday.com/money/industries/food/2004-07-06-vending_x.htm

Oregon: Nutrition Education Served with Lunch

("Children gain lessons they can lunch on," Oregon Live, July 7, 2004)

Nutrition education is being offered to children with their free summer lunch in thirteen schools of the Beaverton School District. The nutrition program is a new collaborative effort between the school district and the Oregon State University Extension Food and Nutrition Education Programs. Students get lessons and recipes for making things like tacos, fruit salads, tuna turnovers, fruit smoothies, and vegetable burritos. The education program also emphasizes buying fresh locally grown produce. Some parents, impressed with the program's success, have expressed interest in incorporating it into the regular school curriculum. Marueen Quinn, an OSU Extension Service nutrition expert remarks that, "They all work together...It takes a village to make a burrito." [Click here](#) for the full article.
http://www.oregonlive.com/news/oregonian/jerry_boone/index.ssf?/base/metro_west_news/108920268046160.xml

APPENDIX G: STATE COMPETITIVE FOODS POLICIES

Updated by USDA
September 2002

STATE	POLICY
Alabama	The sale of foods of minimal nutritional value during meal service times will continue to be prohibited. Schools are required to restrict student access to concession, extra sales, vending and fundraisers that are in direct competition with the Child Nutrition Program during meal services anywhere on campus. If income from such sales occurs, the revenue is required to be deposited into the Child Nutrition account.
Alaska	USDA Regulations
Arizona	USDA Regulations
Arkansas	USDA Regulations
California	<p>The law currently in effect, requires that 50% of the items, other than foods reimbursed under federal law, offered for sale each school day at any school site by any entity or organization during regular school hours be selected from a prescribed list of foods.</p> <p>In 2002, a new law (SB 19) was passed. The law will become operative Jan. 2004 if funds are appropriated in Budget Act of 2003 for the purpose of increasing State meal reimbursements by ten cents for all meals served, including paid, free, and reduced price meals. Establishes nutrition standards at elementary schools:</p> <ol style="list-style-type: none"> 1) The only food that may be sold to pupils during breakfast and lunch periods is food that is sold as a full meal. Fruit, non-fried vegetables, legumes, beverages, dairy products, or grain products may be sold as individual food items if they meet the following nutrition standards: <ul style="list-style-type: none"> - Not more than 35% total calories from fat (excluding nuts and seeds) - Not more than 10% total calories from saturated fat - Not more than 35% total weight from sugar (excluding fruits and vegetables) 2) The only beverages that can be sold are water, milk, and juice that is at least 50% fruit juice with no added sweeteners. 3) Foods sold as part of fundraising are exempted from the above standards if sold off campus or one-half hour after the end of the school day. <p>In Middle Schools:</p> <ol style="list-style-type: none"> 1) No carbonated beverage allowed from ½ hour before school to end of the last lunch period. <p>In High Schools:</p> <ol style="list-style-type: none"> 1) The above standards will only be implemented in 10 or more school sites that are awarded a two-year grant.
Colorado	No competitive foods offered on campus from ½ hour prior to until ½ hour after the last regular breakfast or lunch. This may be waived for mechanically-vended beverages in senior high. Federal regulations for FMNV cannot be waived for any grade level.
Connecticut	No extra food items anywhere on campus from ½ hour before and after any state

	or federally subsidized milk or food service program. Extra foods means tea (including iced tea), coffee, soft drinks, and candy. Income from sales of any foods served on campus during this time must accrue to the food service account.
Delaware	USDA Regulations. (Has recommended policies.)
District of Columbia	USDA Regulations
Florida	No competitive foods in elementary schools. No competitive foods sold until one hour after last lunch period in secondary schools. However, in high schools, the sale of carbonated beverages is allowed at all times if a 100% fruit juice is sold at each location where the carbonated beverages are sold. The location cannot be where breakfast or lunch are served or eaten. 100/% juice may be sold all times during the day at any location.
Georgia	No foods of minimal nutritional value in elementary school until last lunch group is scheduled to return to class. In other schools, no foods of minimum nutritional value in dining, serving or kitchen areas during mealtime.
Guam	
Hawaii	The sale of food in all elementary and secondary schools shall be limited to the School Breakfast Program, School Lunch Program and approved cafeteria supplementary food items. Schools shall not permit anywhere on campus the sale of the other foods from the beginning of the school day to the ending of the school day except certain beverages through vending machines. These beverages may not be sold during meal serving periods. (At least one machine shall vend bottled water. Coffee and coffee-based beverages are not allowed.) Vending machines on elementary campuses should not be accessible to students.
Idaho	USDA Regulations
Illinois	No competitive foods in elementary schools during regular breakfast and lunch periods. Competitive foods include all confections, candy, potato chips, carbonated beverages, fruit drinks containing less than 50% pure fruit juice, tea, coffee, and any other foods or beverages designated as such by the State Board of Education. Income from sale of all food and beverages provided in any dining or serving area during the designated breakfast and lunch periods shall accrue to the food service account.
Indiana	USDA Regulations
Iowa	USDA Regulations
Kansas	USDA Regulations
Kentucky	No competitive foods on campus until ½ hour after last lunch period.
Louisiana	Competitive foods are allowed in Grade K-6 before the end of the last lunch period and in Grades 7-12 before the last 10 minutes of each lunch period only if income accrued to the school foodservice account and expended only for Child Nutrition Program purposes. A la carte meal service is prohibited. However, extra items may be sold only to those who have received a complete meal and the items must meet component requirements as defined by Enhanced Food-based Menu regulations. The only exceptions are milkshakes, yogurt, frozen yogurt, ice

	cream, and ice milk. Full-strength juice, milk, and bottled water (unflavored with no additives) may be sold at any time during the day to anyone, whether or not they have purchased a meal.
Maine	Only the School Foodservice Program can sell food/beverages (that exceed the 5% minimal nutritional value per 100 calories rule) on campus during the school day and profits must accrue to the foodservice program. However, local school boards may establish, by policy, a process whereby a school or approved student organization is allowed to benefit from the sale of such foods and beverages.
Mariana Islands	
Maryland	No foods of minimal nutritional value until the end of the last lunch period.
Massachusetts	USDA Regulations
Michigan	USDA Regulations
Minnesota	USDA Regulations
Mississippi	No food is to be sold on campus for one hour before breakfast or lunch and until the end of either serving period. School Foodservice shall sell only those foods that are components of the approved Federal meal patterns being served (or milk products). With the exception of milk products, a student may purchase the individual components of the meal only if the full meal also is being purchased.
Missouri	USDA Regulations
Montana	USDA Regulations
Nebraska	No competitive foods anywhere on campus from ½ hour before until ½ hour after breakfast or lunch.
Nevada	USDA Regulations
New Hampshire	USDA Regulations
New Jersey	No food of minimal nutritional value on campus until the end of the last lunch period. Funds from sale of foods and beverages during the hours of operation of the school lunch and breakfast programs must accrue to the foodservice account.
New Mexico	USDA Regulations
New York	From the beginning of the school day until the end of the last scheduled meal period, no sweetened soda water, no chewing gum, no candy including hard candy, jellies, gums, marshmallow candies, fondant, licorice, spun candy and candy coated popcorn, and no water ices except those which contain fruit or fruit juices, shall be sold in any public school within the State.
North Carolina	Competitive food sales are allowed in the lunchroom or its general environs if the profits accrue to school foodservice and used solely for the school meal programs. Schools may sell extra food items after the established lunch hour is over, only with the approval of the local board of education. Local board approval is also needed to sell soft drinks to students so long as soft drinks are not sold during the lunch period, at elementary schools, or contrary to the requirements of

	the National School Lunch Program. A la carte foods may not include food of minimum nutritional value.
North Dakota	USDA Regulations
Ohio	USDA Regulations
Oklahoma	USDA Regulations
Oregon	USDA Regulations
Pennsylvania	USDA Regulations
Puerto Rico	
Rhode Island	USDA Regulations
Samoa	
South Carolina	USDA Regulations
South Dakota	USDA Regulations
Tennessee	USDA Regulations
Texas	USDA Regulations
Utah	USDA Regulations
Vermont	USDA Regulations
Virginia	Any food or beverage sold (including a la carte) in Virginia schools from 6:00 a.m. until the end of breakfast period, and during the lunch period, must meet the following nutrition standard. The foods and beverages sold must either be a recognized component of the food based meal pattern or must contain 5% of the Daily Value, per serving or per 100 calories, of at least one of these eight essential nutrients: iron, calcium, protein, vitamin A, vitamin C, niacin, thiamine, or riboflavin. The money from the sale of food or drink during the protected time periods must accrue to the school nutrition program account. Iced or hot coffee or tea may not be sold to students; non-carbonated water may be sold.
Virgin Islands	USDA Regulations
Washington	USDA Regulations
West Virginia	No foods of minimal nutritional value may be served or sold to students during the instructional day, except that county boards may permit the sale of soft drinks in county high schools except during breakfast and lunch periods. Revenues accrue to the principal for purchase of school supplies and to the faculty senate for allocation. The state has nutritional standards for foods served in schools during the day including: <ol style="list-style-type: none"> 1) no foods containing 40% or more sugar by weight, 2) any juice or juice product must contain a minimum of 20% real juice, and 3) all "other" foods shall reflect the Dietary Guidelines for fat by limiting the number of fat grams to not more than 8 per one ounce serving, or meet the USDA standard for a lunch component. Only meal components may be sold as a la carte for breakfast, and only fluid milk, milkshakes and bottled water (100% natural spring water containing no additives) may be served as a la carte items for lunch.
Wisconsin	USDA Regulations

Federal Regulations Definitions:

Competitive Foods: Means any foods sold in competition with the Program to children in food service areas during the lunch periods.

Food of Minimal Nutritional Value (FMNV) means:

- (i) In the case of artificially sweetened foods, a food which provides less than five percent of the Reference Daily intakes (RDI) for each of eight specified nutrients per serving; and
- (ii) In the case of all other foods, a food which provides less than five percent of the RDI of each of eight specified nutrients per serving.

The eight nutrients to be assessed for this purpose are - protein, vitamin A, vitamin C, niacin, riboflavin, thiamine, calcium, and iron. The categories of FMNV include: soda water, water ices, chewing gum, certain candies, hard candy, jellies and gums, marshmallow candies, fondant, licorice, spun candy, and candy coated popcorn.

Schools and School Districts That Have Improved School Foods and Beverages and Not Lost Revenue

California

Aptos Middle School PTSA

San Francisco

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Aptos Middle School, known as the city's most diverse middle school, recently made the decision to provide healthier school foods and beverages. Parents and staff proposed a pilot project to San Francisco's superintendent, Arlene Ackerman, who readily agreed. The move was undertaken after it was noticed that a number of children were making lunch entirely out of soda and chips. Some of the new healthier options offered at lunch include: fresh deli sandwiches, sushi, pasta, salads, homemade soups, and fajitas. Gone are Slim Jims, nachos, pre-packaged burritos, taco pockets, mega-cheeseburgers, French fries, hot wings, and oversized pizza, along with soda and chips. Teachers have commented on the improvement in students' behavior and academic performance. Meanwhile, the school food service was pleased to report that shortly after the changes were made, revenues increased and they were more than \$6,000 in the black at the end of the year. The Physical Education Department similarly reported that replacing soda with healthier choices in the locker room vending machines has resulted in an increase in revenue.

Folsom Cordova Unified School District

Sacramento County

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Before Al Schieder stepped in as the new food service director, district schools relied on high-fat and sugar-laden fast foods, frozen snacks items, and vending machines to feed students, the food services department was operating in the red, and few kids who were eligible for the free and reduced cost lunch participated. Now, the district no longer offers junk food, soda, and a la carte sales in the cafeteria. They not only improved the nutritional quality of foods, they are operating in the black, and have increased participation by students in the USDA school meal programs. They did all this by adopting a new philosophy that not only focuses on children's health and improved food service, but also tries to be more inclusive. Gone are the days when low-income students felt embarrassed and stigmatized by having to line up for their free and reduced cost meals while other students could choose burgers, French fries, and pizza. Now, a variety of meals are served that meet the USDA nutrition standards, including: salads, lower fat pizza, sandwiches, pasta, wraps, rice and noodle bowls, and sushi. And students pay by punching in their student ID numbers, so no one has to know if or how much a student is paying for his or her lunch.

Monroe High School

Los Angeles

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The wide array of healthful food and beverage selections now available at Monroe High School did not happen overnight. More than two years ago, the school had difficulty working within its existing beverage contract to eliminate sodas and other sugary beverages. The following year, with a new vendor, they stocked beverage vending machines with water, 100% juices, and sports drinks and eliminated low-nutrition foods with help from a grant sponsored by the California Departments of Education and Food and Agriculture. A marketing specialist was brought in to aid in the transition. Student nutrition advocates, the "Food Crew," taste tested new products that meet the SB 19 nutrition standards to identify options that taste great. They successfully worked to have a salad bar added to the cafeteria. Their switch to healthier options initially resulted in a dip in sales; however, once the students became involved with marketing healthier foods, sales returned to and surpassed previous levels. Teachers report that students are more focused in class and behavior has significantly improved, with a 74% reduction in violent suspensions and a 24% reduction in all suspensions since before the change in school foods and beverages.

Venice High School

Los Angeles

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A California state grant helped Venice High School eliminate unhealthy snack and beverage sales on campus. After one year, snack sales in the student store were up by over \$1,000 per month compared to the same time the previous year. Two years after the changes, snack sales per month had roughly doubled (\$6,100 in May 2002 compared with \$12,000 in March 2004). The initiative was spearheaded several years ago by a group of students concerned about their school's food selections. With the help of health teacher Jackie Domac, the students became nutrition advocates and began working on strengthening the school's food policy. The school vending machines now offer a variety of waters, 100% juices and soy milk, as well as a variety of healthy snacks including granola and cereal bars. The students also raise significant funds with fundraisers that do not undermine children's health, such as a celebrity basketball game, car washes, and holiday gift wrapping. The positive response among students to the changes may be, in part, attributed to the school taking the students' food preferences into consideration and including them in the process.

Vista High School

San Diego County

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In the past, Vista High School depended on the sale of low-nutrition snacks sold in privately-owned vending machines to support many of its programs. Now the school sells healthier foods and makes double the money from their own vending machines. The change was spearheaded by Enid Hohn, the director of child nutrition services for Vista Schools. Faced with the need to raise additional money, while at the same time knowing she would have to do it by selling more junk food to students, Hohn proposed that the district buy its own machines and stock them with healthier items. Despite reservations on the part of the superintendent, Hohn was told to go ahead. Student taste tests were conducted to

determine what would sell. The result: items such as granola bars, Oriental snack mix, Caesar salads, and tuna are sold in the vending machines. Soda is still available, but costs more than juice, milk, or water. The machines gross \$25,000 a month and average \$6,000 a month in profit.

Kentucky

Fayette County Public Schools

Fayette County

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The school district renegotiated its vending contract to shift the proportion of healthy options from 21% to 72% of the beverage vending options. Beverages designated as "healthy" include water, 100% juice, and sports drinks. Nutritional criteria were set for healthy snacks, and the percentage of snacks meeting these criteria was increased from 1% to 40% in the new contract. Healthier beverages and snacks will be priced lower than other beverages and snacks. Since the changes took effect, first quarter revenues were up \$4,000 from the same time the previous year. Elementary schools in the district have been and will continue to be free of vending machines.

Maine

Old Orchard Beach Schools

Old Orchard Beach

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State tobacco settlement funds helped make it possible for Old Orchard Beach Schools to develop their Nutrition Team, consisting of members from food service, physical education, administration, and a school nurse. The team implemented Tulane University's CATCH nutrition education curriculum and wrote school vending policies that led to the removal of sodas and junk foods, and replaced them with water, 100% fruit juices, and healthier snack options. The vending machine signage was changed to advertise water instead of soda pop. The vendors were very cooperative in making the changes, and vending revenues have remained the same. Students have also taken an active role by writing their own nutrition policies, such as policies regarding foods served for classroom parties.

School Union 106

Robbinston, Calais, Alexander, Baring Plantation, Crawford

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Profits from the vending machines at Union 106 schools pay for Student Council programs. Because of this, the Student Council played a major role in changing the vending practices. The change began when the Assistant Project Director for St. Croix Valley Healthy Communities and the School Health Coordinator made a presentation to the Council at a meeting. They offered the Council healthy snacks and drinks and gave the students examples of schools across the country that have been successful at changing vending. The Student Council was very resistant to the change; at one point the faculty director of the Council approached the School Board asking to keep the machines on all day, filled with junk food. The Wellness Team and the School Health Advisory Council met with the Student Council again, armed with healthy snacks and 100% juice, to plead their case once more, agreeing to organize and conduct fundraisers for the council should there be a decline in revenues. The principal offered to add a request in the next budget for the Student Council and offered to leave the vending machines on all day if they were filled

with healthy drinks and snacks. The School Health Coordinator had the press attend the next Student Council meeting, where the Council agreed to remove soda from the vending machines. The story was front page news the next day. All schools in Union 106 have removed soda and low-nutrition snacks from their machines, and the high school student council has reported an increase in revenue from some machines, and some machines have had no change in revenue.

Massachusetts

Shrewsbury School District

Shrewsbury

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The Shrewsbury school foodservice is serving up healthier options to students as it takes steps to phase out junk foods. The cafeterias are making improvements such as replacing fried items with healthier fresh food offerings. The la carte selections no longer include fatty chips, but instead yogurt, bagels, fresh fruit, 100% juices, and milk are offered. The snack bar in the High School, which still sells candy and low-nutrition snacks, is now closed during lunch periods. As a result, sales in the cafeteria increased by \$400 per week.

Minnesota

North Community High School

Minneapolis

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Faced with alarming statistics about childhood overweight and obesity rates, Assistant Principal Bryan Bass of North Community High School re-evaluated the school's beverage vending practices. With the support of the administrative team, he contacted the district's Coca-Cola representative, who was willing to work with the school to provide healthier choices. As a result, the school increased the number of vending machines from four to 16, stocked 13 machines with water or 100% juice, two with sports drinks, and one with soda (which has limited hours of sale). They also instituted competitive pricing, selling water for \$0.75, sports drinks and 100% juices for \$1.00, and soda and fruit drinks for \$1.25. The water machines were strategically placed in high traffic-areas and students were allowed to drink water in the classroom. Today, soda sales are down, but vending profits have increased by almost \$4,000 a year and the total number of cases of beverages sold has more than doubled from the previous school year, with water being the best seller.

Mississippi

McComb School District

McComb

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In an effort to encourage students and staff to make healthier choices, the McComb School District has been working to implement new nutrition policies. In the elementary classrooms, junk foods can no longer be used to reward student performance. The district also has stopped using low-nutrition foods as fundraisers; instead, students now sell items such as candles, coupon books, and wrapping paper. The new vending policy prohibits all vending to elementary students, and allows for the sale of water, 100% juices, low-fat milk, and low-sugar sports drinks. Coca-Cola logos that had previously been on school vending machines have been replaced by pictures of water and 100% juices. Although the

students have never had access to snack vending machines, the faculty snack machine has replaced its junk foods with healthier options. The high school reports that there has been no loss in revenue and that students will purchase what is provided in the machines.

Montana

Whitefish Middle School

Whitefish

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Whitefish Middle School switched from pop and candy to 100% fruit juice, water, and healthy snacks. It happened through the collaboration of the Montana Behavioral Initiative (MBI) (a program to develop better more positive interaction between schools and communities), students, and Team Nutrition (a USDA program to encourage students to make healthier food choices). According to Anderson, before the switch, student behavior immediately after lunch used to result in disciplinary action of six to eight kids a day. Since the switch, there are only one to two disciplinary actions per week. As for revenue, Principal Anderson said that there has been a decline in the gross but not in the net. The school has recently purchased its own cold vending machine to sell bagels, low-fat milk, and yogurt.

Pennsylvania

Sayre Middle School and South Philadelphia High School

Philadelphia

Sayre Middle School and South Philadelphia High School in Philadelphia changed their vending machines' beverage contents to remove sports drinks (sodas were already banned) and include only 100% juice, 25% juice, and water. Average monthly revenue from the machines did not decrease (see table).

Vending Machine Revenues in Philadelphia Schools (average sales per month)

	Prior to change in beverages	After change in beverages
Sayre Middle School	\$304	\$333
South Philadelphia High School	\$653	\$667

For more information, contact Dr. Margo Wootan or Joy Johanson of the Center for Science in the Public Interest at 202-777-8351.