



**Trinity Health**

Livonia, MI

**ADDENDUM**

**TRANSFORMING COMMUNITIES INITIATIVE**

**COMPENDIUM OF EVIDENCE-BASED STRATEGIES  
AND PROGRAMS FOR  
HEALTHY EATING AND ACTIVE LIVING**

**2015**

**TRINITY HEALTH**



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## INTRODUCTION

This compendium of evidence-based strategies and programs for healthy eating and active living may serve as a resource in preparing your grant application as well as during the planning and development phase of your proposed initiative. Please note, this is not an exhaustive list of potential programs Allegheny Franciscan Ministries would be willing to support, but rather a sampling of initiatives that have been tested through practice and research, and shown to be effective at promoting healthy eating and/or active living. In particular, programs and interventions focusing on low-income, racially and ethnically diverse populations, and/or women and children are highlighted.

Programs are listed by categories of over-arching, evidence-based, community strategies for promoting healthy lifestyles, including policy and environmental approaches, social marketing campaigns and promotions, health education, and multi-component interventions. For the purpose of this compendium, community-based interventions are defined as efforts directed to a group or population rather than individuals, and implemented in community settings rather than in a hospital or health care setting. Community settings include cities, towns, and neighborhoods; schools, preschools, and childcare facilities; community centers, agencies, and organizations; places of worship and faith-based organizations; and worksites. Interventions were generally not selected for inclusion if they involved the direct delivery of personal health care services or counseling to individuals.<sup>1</sup>

## METHODOLOGY AND EVIDENCE RATINGS

The intervention strategies and program examples included in this compendium were identified through an environmental scan and literature review of national reports, consensus recommendations, peer-reviewed literature, systematic reviews, and Internet-based clearinghouses/databases of evidence-based strategies and programs.

For each program example listed, an evidence rating of preliminary, moderate or strong is provided. However, it is important to note that application of these criteria are subject to interpretation. Therefore, evidence ratings should be used as a guide for assessing the potential impact of a program and not a definitive determination of its effectiveness. In addition to an evidence rating, a brief description of the intervention and its outcomes, along with the source and corresponding citation(s) are provided. Descriptions and outcomes for programs found through clearinghouses/databases and consensus documents are generally presented as they appear in the original clearinghouse listing or publication.

Overarching strategies and intervention components have not been rated according to CNCS evidence criteria. However, as applicable, evidence ratings and recommendations assigned to these strategies by other international and national organizations and clearinghouses of evidence-based programs are included and identified through the following notations:

<b>CDC-Rec</b>	Centers for Disease Control and Prevention (CDC) recommended strategy for obesity prevention*
<b>CG-Rec</b>	Community Guide – Recommended (the systematic review of available studies provides strong or sufficient evidence that the intervention is effective)**
<b>CG-IE</b>	Community Guide – Insufficient Evidence (Available studies do not provide sufficient evidence to determine if the intervention is, or is not, effective; this does not mean the intervention does not work, but that additional research is needed.)**

<sup>1</sup> The New York Academy of Medicine and Trust for America's Health. A Compendium of Proven Community-Based Prevention Programs, 2013 Edition. Available at: [http://healthyamericans.org/assets/files/Compendium\\_Report\\_1016\\_1131.pdf](http://healthyamericans.org/assets/files/Compendium_Report_1016_1131.pdf)

<b>DG-NA</b>	2015 Dietary Guidelines Advisory Committee – rating Not Assignable (A conclusion statement cannot be drawn due to a lack of evidence, or the availability of evidence that has serious methodological concerns.)***
<b>DG-LE</b>	2015 Dietary Guidelines Advisory Committee - Limited Evidence (The conclusion statement is substantiated by insufficient evidence; and the level of certainty is seriously restricted by limitations in the evidence, such as the amount of evidence available, inconsistencies in findings, or methodological or generalizability concerns; subject to change if new evidence emerges.)***
<b>DG-ME</b>	2015 Dietary Guidelines Advisory Committee - Moderate Evidence (The conclusion statement is substantiated by sufficient evidence, but the level of certainty is restricted by limitations in the current evidence, such as the amount of evidence available, inconsistencies in findings, or methodological or generalizability concerns; subject to change if new evidence emerges.)***
<b>DG-SE</b>	2015 Dietary Guidelines Advisory Committee - Strong Evidence (The conclusion statement is substantiated by a large, high quality, and/or consistent body of evidence that directly addresses the question. There is a high level of certainty that the conclusion is generalizable to the population of interest, and it is unlikely to change if new evidence emerges.)***
<b>PAG-Suf</b>	Physical Activity Guidelines Midcourse Report – Sufficient evidence (Consistent beneficial effects documented across studies and populations.)****
<b>PAG-Sug</b>	Physical Activity Guidelines Midcourse Report - Suggestive evidence (Reasonably consistent evidence of effect, but cannot make strong definitive conclusions.)****
<b>PAG-Emg</b>	Physical Activity Guidelines Midcourse Report – Emerging evidence (New data, currently being studied, but reviews specific to topic do not yet exist.)****
<b>WHO-EI</b>	World Health Organization – Effective Intervention (Interventions with a generally robust experimental design or sufficient sample size and with significant effects on specified outcome variables; would probably be applicable in other settings and demonstrated feasibility and sustainability.)*****
<b>WHO-MEI</b>	World Health Organization – Moderately Effective Intervention (Interventions lacked one or more of the critical components of Effective Interventions, but were sufficiently robust to warrant consideration for application in specific settings or groups and met some, if not all of the planned objectives.)*****
<b>WW-SS</b>	What Works for Health – Scientifically Supported (Strategy is most likely to make a difference. The strategy has been tested in many robust studies with consistently positive results.)*****
<b>WW-SE</b>	What Works for Health – Some Evidence (Strategy is likely to work, but further research is needed to confirm effects. The strategy has been tested more than once and results trend positive overall.)*****

\*Keener D, Goodman K, Lowry A, Zaro S, & Kettel Khan L. *Recommended community strategies and measurements to prevent obesity in the United States: Implementation and measurement guide*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2009. Available at:

[http://www.cdc.gov/obesity/downloads/community\\_strategies\\_guide.pdf](http://www.cdc.gov/obesity/downloads/community_strategies_guide.pdf)

\*\* The Guide to Community Preventive Services, available at: <http://www.thecommunityguide.org/>

\*\*\* Scientific Report of the 2015 Dietary Guidelines Advisory Committee available at:

<http://www.health.gov/dietaryguidelines/2015-scientific-report/>

\*\*\*\* Physical Activity Guidelines for Americans Midcourse Report Subcommittee of the President’s Council on Fitness, Sports & Nutrition. *Physical Activity Guidelines for Americans Midcourse Report: Strategies to Increase Physical Activity Among Youth*. Washington, DC: U.S. Department of Health and Human Services, 2012. Available at:

<http://www.health.gov/paguidelines/midcourse/pag-mid-course-report-final.pdf>

\*\*\*\*\* World Health Organization (WHO). *Interventions on Diet and Physical Activity: What Works: Summary Report*. Geneva, Switzerland: WHO, 2009. Available at: <http://www.who.int/dietphysicalactivity/summary-report-09.pdf>

\*\*\*\*\* County Health Rankings and Roadmaps, What Works for Health. <http://www.countyhealthrankings.org/roadmaps/what-works-for-health> (Filtered by Diet & Exercise)

# **EVIDENCE-BASED STRATEGIES AND PROGRAMS**

## POLICY AND ENVIRONMENTAL STRATEGIES

Policy and environmental strategies help create places, practices, and opportunities to support community members in engaging in healthy lifestyles. Environmental interventions are designed to create or modify structures and physical surroundings in ways that improve one’s capacity to make healthy eating and active living choices. Policy interventions are laws, regulations, standards, or guidelines that are put in place to help institutionalize healthy practices. Policy interventions may include implementation of organizational policies or public policies at the local, state or national levels. Policy and environmental strategies are important ways to focus on the social, economic, and structural factors that serve to create and or enable healthy living.<sup>2</sup>

### Healthy Eating/Nutrition

Intervention Components May Include:

- Increased availability, access, and affordability of healthy foods<sup>CDC-Rec</sup> (e.g., community gardens<sup>WW-SE</sup>, farmers’ markets<sup>CDC-Rec, DG-NA, WW-SE</sup>, grocery stores in underserved areas<sup>CDC-Rec</sup>, healthy foods in corner stores<sup>CDC-Rec, DG-LE, WW-SE</sup>, restaurants with healthy options, healthy vending machine options<sup>WW-SE</sup>, pricing strategies/competitive pricing/vouchers and coupons<sup>WW-SS, WHO-MEI</sup>, etc.).
- School breakfast<sup>WW-SS</sup> and lunch programs<sup>WW-SE</sup>
- Nutrition standards for school lunches and foods/beverages sold in schools<sup>WW-SE</sup>, school-based policies for healthy eating<sup>DG-SE & DG-LE(3)</sup>
- Workplace policies for foods sold in cafeteria and vending machines, or provided at meetings and catered events<sup>DG-ME</sup>
- Reduced access to unhealthy foods<sup>CDC-Rec</sup> (e.g., limit access to unhealthy foods sold in schools<sup>WW-SE</sup>, reduced advertising for unhealthy foods and beverages<sup>WW-Rec, CDC-Rec</sup>, institute smaller portion sizes in public venues<sup>CDC-Rec</sup>, discourage consumption of sugar-sweetened beverages<sup>CDC-Rec</sup>, etc.)
- Menu labeling<sup>WW-SE, DG-LE</sup> and point-of-purchase/decision prompts<sup>WW-SE, WHO-MEI</sup> in restaurants, food stores, vending machines, etc.
- Policies supporting breastfeeding<sup>CDC-Rec, WW-SS</sup> (e.g. workplace policies/public venues providing accommodations, space, privacy, and time for employees/patrons breastfeeding.)

Program Examples:

#### Community-Based

<b>Project</b>	Supermarket and farmers’ market subsidy for fruits and vegetables among low-income women in the Special Supplemental Nutrition Program for Women, Infants, and Children
<b>Evidence Rating</b>	Preliminary to Moderate
<b>Description</b>	Women who enrolled for postpartum services (n=602) at 3 Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) sites in Los Angeles were assigned to either an intervention (farmers' market or supermarket, both with redeemable food vouchers) or control condition (a minimal nonfood incentive). Participants at the 2 intervention sites were issued \$10 worth of vouchers per week, in \$1 units for the supermarket site and in \$2 units for the farmers’ market site, to buy produce of the participants’ choice. Vouchers were

<sup>2</sup> Missouri Department of Health and Senior Services. Community Health Improvement Resources. Nutrition: Environment and Policy. Available at: <http://health.mo.gov/data/InterventionMICA/Nutrition/index.html> Accessed: 7/6/15.

<sup>3</sup> Given a Strong Evidence rating for dietary intake and Limited Evidence rating for impact on weight status.

	<p>issued bimonthly and could be spent over the ensuing 2-month period. Control participants were provided with a set of coupons of lesser value (\$13 per month), redeemable for disposable diapers, in compensation for their time participating in interviews.</p> <p>The project was carried out for 6 months and participants' diets were followed for an additional 6 months. Participants were interviewed by trained WIC nutritionists, in English or Spanish according to participants' preference, 6 times in the 2 intervention sites and 4 times at the control site over a period of 14 months (at baseline, 2 months after baseline, end of 6-month intervention, and 6 months following the end of the intervention).</p>
<b>Results/Outcomes</b>	Intervention participants increased their consumption of fruits and vegetables and sustained the increase 6 months after the intervention ended (model adjusted $R^2=.13$ , $P<.001$ ). Farmers' market participants showed an increase of 1.4 servings per 4186 kJ (1000 kcal) of consumed food ( $P<.001$ ) from baseline to the end of intervention compared with controls, and supermarket participants showed an increase of 0.8 servings per 4186 kJ ( $P=.02$ ).
<b>Citation(s)</b>	Herman DR, Harrison GG, Afifi AA, Jenks E. Effect of a targeted subsidy on intake of fruits and vegetables among low-income women in the special supplemental nutrition program for women, infants, and children. <i>American Journal of Public Health</i> , 2008, 98(1):98-105.

<b>Project</b>	Baltimore Healthy Stores (BHS)
<b>Evidence Rating</b>	Preliminary to Moderate
<b>Description</b>	The Baltimore Healthy Stores initiative sought to increase the availability of healthy food options and promote healthy foods at the point of purchase. The intervention was implemented in nine food stores, including two supermarkets and seven corner stores, in a low-income, predominantly African American area of Baltimore City, with a comparison group of eight stores in another low-income area of the city. Participating supermarkets and corner stores stocked more nutritious foods and provided point-of-purchase promotions including signage for healthy choices. Interactive consumer taste tests were also conducted. Materials developed specifically for Korean American corner store owners were implemented as well. Themes of the initiative included: healthy breakfast, cooking at home, healthy snacks, healthy carry-out, and healthy beverages.
<b>Results/Outcomes</b>	Using pre- and post-assessments, the authors evaluated the impact of the program on 84 respondents sampled from the intervention and comparison areas. Adjusted multivariate regression analysis showed that the BHS program had a positive impact on healthfulness of food preparation methods and showed a trend toward improved intentions to make healthy food choices. Respondents in the intervention areas were significantly more likely to report purchasing promoted foods because of the presence of a BHS shelf label. Thus the store intervention trial showed positive impacts at the consumer level.
<b>Source(s)/Additional Information</b>	Missouri Department of Health and Senior Services. Community Health Improvement Resources. Nutrition: Evidence-Based Interventions/Environments and Policies: <a href="http://health.mo.gov/data/InterventionMICA/Nutrition/index.html">http://health.mo.gov/data/InterventionMICA/Nutrition/index.html</a>
<b>Citation(s)</b>	Gittelsohn J, Song HJ, Suratkar S, Kumar MB, Henry EG, Sharma S, Mattingly M, Anliker JA. An urban food store intervention positively affects food-related



	<p>psychosocial variables and food behaviors. <i>Health Education &amp; Behavior</i>, 2010, 37(3):390-402. doi: 10.1177/1090198109343886. Epub 2009 Nov 3.</p> <p>Gittelsohn J, Suratkar S, Song HJ, Sacher S, Rajan R, Rasooly IR, Bednarek E, Sharma S, Anliker JA. Process Evaluation of Baltimore Healthy Stores: A Pilot Health Intervention Program With Supermarkets and Corner Stores in Baltimore City. <i>Health Promotion Practice</i>, 2010, 11(5):723-32. doi: 10.1177/1524839908329118. Epub 2009 Jan 14.</p> <p>Song HJ, Gittelsohn J, Kim M, Suratkar S, Sharma S, Anliker J. A corner store intervention in a low-income urban community is associated with increased availability and sales of some healthy foods. <i>Public Health Nutrition</i>, 2009, 12(11). 2060-2067.</p>
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#### School-Based

<b>Project</b>	Boston Public Schools Snack and Beverage Policy
<b>Evidence Rating</b>	Preliminary to Moderate
<b>Description</b>	In 2004, the Boston School Committee implemented the Boston Public Schools Snack and Beverage Policy in an effort to improve nutrition and reduce obesity among youth. The resolution required that schools adhere to the Massachusetts à la Carte Food and Beverage Standards to Promote a Healthier School Environment published by Massachusetts Action for Healthy Kids. The Boston School Committee specifically targeted sugar-sweetened beverages, and thus banned the sale of soft drinks, sports drinks, and fruit drinks that are not 100% fruit or vegetable juice. The committee additionally imposed limitations on the serving sizes of other beverages, requiring schools to serve beverages (other than water or milk) in portions smaller than 12 oz.
<b>Results/Outcomes</b>	To determine whether high school students' consumption of sugar-sweetened beverages declined after the new policy was implemented, researchers performed a linear regression analysis on data from the 2004 and 2006 Boston Youth Surveys of students in grades 9 through 12 in Boston's public high schools. On average, Boston's public high school students reported daily consumption of 1.71 servings of sugar-sweetened beverages in 2004 and 1.38 servings in 2006. Regression analyses showed significant declines in consumption of soda (-0.16 servings), other sugar-sweetened beverages (-0.14 servings), and total sugar-sweetened beverages (-0.30 servings) between 2004 and 2006 (P < .001 for all). NHANES indicated no significant nationwide change in adolescents' consumption of sugar-sweetened beverages between 2003-2004 and 2005-2006.
<b>Source(s)/Additional Information</b>	Community Health Improvement Navigator - <a href="http://wwwn.cdc.gov/CHIdatabase/items/boston-public-schools-snack-and-beverage-policy">http://wwwn.cdc.gov/CHIdatabase/items/boston-public-schools-snack-and-beverage-policy</a>
<b>Citation(s)</b>	Cradock AL, McHugh A, Mont-Ferguson H, Grant L, Barrett JL, Wang YC, Gortmaker SL. Effect of school district policy change on consumption of sugar-sweetened beverages among high school students, Boston, Massachusetts, 2004-2006. <i>Preventing Chronic Disease</i> , 2011, 8(4):A74. Epub 2011 Jun 15.

<b>Project</b>	Michigan Healthy School Action Tools/School Nutrition Advances Kids Study
<b>Evidence Rating</b>	Moderate

<p><b>Description</b></p>	<p>The Michigan Healthy School Action Tools (HSAT) is an online self-assessment and action planning process for schools seeking to improve their health policies and practices. Schools use the tool to choose a topic area to address, such as healthy eating and nutrition; complete a number of questions about their school environment, education, practices, and policies; are given ideas for improvement; and develop an action plan based on their own assessment and desires. Because the tool is online, school personnel can access online resources aggregated on the website and easily share findings and action plans among themselves. The HSAT further offers technical assistance in the form of online training; guidance for objectively assessing aspects of the environment and for generating a summary report, topic-specific resources, and templates for follow-up publicity and communications; as well as access to state-level content experts and technical support. An updated version of the HSAT was launched in October 2014 (see <a href="http://www.mihealthtools.org/hsat">http:// www.mihealthtools.org/hsat</a>).</p> <p>The School Nutrition Advances Kids study, a 2-year quasi-experimental intervention with low-income middle schools, evaluated whether completing the HSAT with facilitator assistance and small grant funding resulted in (1) improvements in school nutrition practices and policies and (2) improvements in student dietary intake. A total of 65 low-income Michigan middle schools were randomized into four intervention groups: three intervention groups that participated in the HSAT process and a control group that was offered the HSAT intervention after the study was completed. Intervention schools were asked to convene a Coordinated School Health Team (CSHT) with representatives from various sectors of the school (e.g. administration, faculty, food service, health care, and students). The CSHT met with a trained facilitator to complete the HSAT healthy eating and nutrition topic area. After completing the assessment, CSHTs developed an action plan with SMART goals (Specific, Measurable, Attainable, Realistic, and Timely). Schools were asked to prioritize their goals and received \$1,000 to implement nutrition education or nutrition marketing activities in their action plans.</p>
<p><b>Results/Outcomes</b></p>	<p>Schools reported nutrition-related policies and practices/education using the School Environment and Policy Survey. Student dietary intake was assessed through the Block Youth Food Frequency Questionnaire. The questionnaire was completed by 1,176 seventh-grade students at baseline and in eighth grade (during intervention). Schools that completed the HSAT made significantly more nutrition practice/education changes than schools that did not complete the HSAT. Students in schools that completed the HSAT reported consuming significantly more fruit and fiber, and less cholesterol than students in the control schools.</p>
<p><b>Source(s)/Additional Information</b></p>	<p>The Michigan HSAT website: <a href="http://mihealthtools.org/hsat/">http://mihealthtools.org/hsat/</a></p>
<p><b>Citation(s)</b></p>	<p>Alaimo K, Oleksyk S, Golzynski D, Drzal N, Lucarelli J, Reznar M, Wen Y, Krabill Yoder K. The Michigan healthy school action tools process generates improvements in school nutrition policies and practices, and student dietary intake. <i>Health Promotion Practice</i>, 2015, 16(3):401-10. doi: 10.1177/1524839915573923. Epub 2015 Mar 2.</p>

<b>Project</b>	Changing Individuals' Purchase of Snacks (CHIPS) Study
<b>Evidence Rating</b>	Moderate
<b>Description</b>	The purpose of the CHIPS initiative was to increase purchases of low-fat snacks from vending machines through pricing and promotion strategies. Low-fat snacks were added to 55 vending machines in a convenience sample of 12 secondary schools and 12 worksites. Four pricing levels (equal price, 10% reduction, 25% reduction, 50% reduction) and 3 promotional conditions (none, low-fat label, low-fat label plus promotional sign) were crossed in a Latin square design. Approximately ten low-fat snack options were placed in each machine and positioned in two designated rows of the vending machine. Sales of low-fat vending snacks were measured continuously for the 12-month intervention.
<b>Results/Outcomes</b>	Price reductions of 10%, 25%, and 50% on low-fat snacks were associated with significant increases in low-fat snack sales; percentages of low-fat snack sales increased by 9%, 39%, and 93%, respectively. Promotion of low-fat snacks using labels and small signs had a small but significant independent positive effect on low-fat vending snack sales. Only the label plus sign condition produced significantly more sales than the no-label condition. Average profits per machine were not affected by the vending intervention.
<b>Source/Additional Information</b>	Missouri Department of Health and Senior Services. Community Health Improvement Resources. Nutrition: Evidence-Based Interventions/Multiple Strategies: <a href="http://health.mo.gov/data/InterventionMICA/Nutrition/index.html">http://health.mo.gov/data/InterventionMICA/Nutrition/index.html</a>
<b>Citation(s)</b>	French SA, Jeffery RW, Story M, Breitlow KK, Baxter JS, Hannan P, Snyder MP. Pricing and promotion effects on low-fat vending snack purchases: the CHIPS Study. <i>American Journal of Public Health</i> , 2001, 91(1): 112-117.

### Physical Activity/Active Living

#### Intervention Components May Include:

- Creation of or enhanced access to places for physical activity<sup>CDC-Rec, CG-Rec, DG-ME, PAG-Sug, WHO-EI, WW-SS</sup> (e.g. creating walking trails, bicycle paths, new or enhanced playgrounds/parks and play equipment, building exercise facilities, or providing access to existing facilities, joint-use agreements<sup>WW-SE</sup>, etc.)
- Community-scale urban design and land use policies – efforts to change the physical environment of several square miles or more in ways that support physical activity<sup>CDC-Rec, CG-Rec, DG-ME, PAG-Sug, WHO-EI, WW-SS</sup> (e.g., improve proximity to stores, worksites, schools, and recreational areas; increase continuity and connectivity of sidewalks, trails, and paths; enhanced aesthetic and safety of the physical environment; mix-use development policies and zoning regulations; etc.)
- Street-scale urban design and land use policies - efforts to change the physical environment of small geographic areas (e.g. a few blocks) in ways that support physical activity<sup>CDC-Rec, CG-Rec, DG-ME, PAG-Sug, WHO-EI, WW-SS</sup> (e.g. building codes, roadway design standards, Complete Streets policies, improved street lighting, increased safety of street crossing, use of traffic calming approaches, enhanced street landscaping, etc.).
- Transportation policies and practices promoting active transportation<sup>CDC-Rec, CG-IE, WHO-EI/MEI, WW-SS/SE</sup> (e.g., create or enhance bicycle lanes, increase safety of walking/biking, bicycle/pedestrian master plans<sup>WW-SE</sup>, Safe Routes to School and Walking School Bus programs<sup>WW-SS</sup>, etc.)
- Point-of-decision prompts (e.g., signage and prompts to encourage stair use)<sup>CG-Rec, WHO-EI, WW-SS</sup>
- School, pre-school, and child care policies promoting physical activity (e.g. require physical education classes in schools and physical activity in pre-schools/child care settings<sup>CDC-Rec, WHO-EI</sup>),

offer enhanced school-based physical education<sup>CDC-Rec, CG-Rec, DG-SE, PAG-Suf, WW-SS</sup>, implement physically active classrooms/classes that incorporate physical activity breaks<sup>DG-SE (as part of multi-component program), PAG-Suf (as part of multi-comp. program) PAG-Emg (as stand alone), WW-SS</sup>, offer after school sports or physical activity opportunities and extracurricular activities<sup>CDC-Rec, WW-SE</sup>, interventions to reduce sedentary screen-time<sup>CDC-Rec, CG-Rec, DG-SE, WHO-ME, WW-SS</sup>, etc.)

Program Examples:

Community-Based

<b>Project</b>	Partnership for an Active Community Environment (PACE)
<b>Evidence Rating</b>	Preliminary to Moderate
<b>Description</b>	The Partnership for an Active Community Environment (PACE) in New Orleans, Louisiana was an initiative to improve the built environment in ways that would facilitate physical activity. As part of their efforts, the PACE steering committee installed a six-block walking path and a school playground in a low-income African American neighborhood. Physical activity levels in the intervention neighborhood and two matched comparison neighborhoods were assessed before and after the intervention using surveys and direct observation.
<b>Results/Outcomes</b>	Among residents who were observed engaging in physical activity, 41% were moderately to vigorously active in the section of the intervention neighborhood with the path compared with 24% and 38% in the comparison neighborhoods without the path (difference statistically significant at $P < .001$ ). These outcomes suggests that changes to the built environment may increase neighborhood physical activity in low-income, African American neighborhoods.
<b>Source(s)/Additional Information</b>	CDC Community Health Improvement Navigator <a href="http://wwwn.cdc.gov/CHIdatabase/items/effect-of-changes-to-the-neighborhood-built-environment-on-physical-activity-in-a-low-income-african-american-neighborhood">http://wwwn.cdc.gov/CHIdatabase/items/effect-of-changes-to-the-neighborhood-built-environment-on-physical-activity-in-a-low-income-african-american-neighborhood</a>  The New York Academy of Medicine and Trust for America’s Health. A Compendium of Proven Community-Based Prevention Programs, 2013 Edition. Available at: <a href="http://healthyamericans.org/assets/files/Compendium_Report_1016_1131.pdf">http://healthyamericans.org/assets/files/Compendium_Report_1016_1131.pdf</a>
<b>Citation(s)</b>	Gustat J, Rice J, Parker KM, Becker AB, Farley TA. Effect of changes to the neighborhood built environment on physical activity in a low-income African American neighborhood. <i>Preventing Chronic Disease</i> , 2012, 9(2): E57.

<b>Project</b>	Neighborhood Traffic Calming Scheme in Scotland
<b>Evidence Rating</b>	Preliminary
<b>Description</b>	A traffic calming scheme was introduced in a small deprived neighborhood on the outskirts of Glasgow, Scotland. The traffic calming scheme was built in the main road bisecting a deprived urban housing area. The scheme comprised five sets of speed cushions (raised platforms on the road to slow car drivers), two zebra crossings with adjacent railings, and creation of parking bays.
<b>Results/Outcomes</b>	The health effects of the traffic calming scheme were measured through a prospective cohort study of a randomly selected sample of the local community using postal questionnaires and pedestrian counts on the affected road six months before and six months after the implementation of the scheme. The Short Form 36 version 2 was included in the questionnaire and summary measures of physical

	health (physical component summary) and mental health (mental component summary) calculated. Results showed that there were increases in observed pedestrian activity in the area after the introduction of the traffic calming scheme. Physical health improved significantly but mental health did not change. Overall, the study suggests that the introduction of a traffic calming scheme is associated with improvements in health and health related behaviors.
<b>Citation(s)</b>	Morrison DS, Thomson H, Petticrew M. Evaluation of the health effects of a neighbourhood traffic calming scheme. <i>Journal of Epidemiology and Community Health</i> , 2004, 58(10):837-40.

#### School Setting/Playgrounds

<b>Project</b>	Playground Markings and Physical Structures (UK)
<b>Evidence Rating</b>	Moderate
<b>Description</b>	The purpose of this initiative was to promote increases in children's physical activity levels during recess through playground redesign. Fifteen schools in areas of high deprivation in one large city in England each received £20,000 to redesign the playground environment based on the sporting playground zonal design. Playgrounds were divided into three specific color-coded areas: (a) a red sports area, (b) a blue multi-activity area and (c) a yellow quiet play zone. Markings in each play area were relevant to the physical activity behavior and social behaviors desired for each area. Schools also received physical structures such as soccer goal posts, basketball hoops and fencing around the red sports area and seating in the yellow quiet area. Eleven schools served as socioeconomic matched controls and did not receive any playground markings. Small pieces of sports equipment such as soccer balls, jump rope and tennis balls were available for use in all school playgrounds throughout the duration of the study. School teachers supervised morning and afternoon recess, while lunchtime assistants supervised lunch recess.
<b>Results/Outcomes</b>	Physical activity levels during recess were quantified using heart rate telemetry and accelerometry at baseline, 6 weeks and 6 months following the playground redesign intervention. Data were collected between July 2003 and January 2005 and analyzed using multilevel modeling. Statistically significant intervention effects were found across time for moderate-to-vigorous and vigorous physical activity assessed using both heart rate and accelerometry. The results suggest that a playground redesign utilizing multicolor playground markings and physical structures, is a suitable stimulus for increasing children's school recess physical activity levels.
<b>Citation(s)</b>	Ridgers ND, Stratton G, Fairclough SJ, Twisk JW. Long-term effects of a playground markings and physical structures on children's recess physical activity levels. <i>Preventive Medicine</i> , 2007, 44(5):393-7. Epub 2007 Feb 1.

#### Schools/Active Transportation

<b>Project</b>	Safe Routes to School Program
<b>Evidence Rating</b>	Preliminary to Moderate
<b>Description</b>	The purpose of Safe Routes to School is to create safe, convenient, and fun opportunities for children to walk and bike to and from school. Efforts involve making improvements to the built environment, such as constructing new bicycle lanes, pathways and sidewalks to facilitate active transportation as well as proving education, promotion and enforcement. Safe Routes to School programs

	are built on collaborative partnerships among many stakeholders that include educators, parent, students, elected officials, engineers, city planners, business and community leaders, health officials, and bicycle and pedestrian advocates. The goal of the initiative is to get more children bicycling and walking to school safely on a daily basis. However, built environment changes implemented through Safe Routes to School increases opportunities for physical activity for everyone.
<b>Results/Outcomes</b>	Individual Safe Routes to School (SRTS) programs have been evaluated by communities throughout the U.S. A recent publication assessed changes in rates of active school travel (AST) after implementation of SRTS projects at multiple sites across four states (Florida, Mississippi, Washington, and Wisconsin). Using a one-group pre- and post-test design, AST was measured as the percentage of students walking, bicycling, or using any AST mode. SRTS project characteristics were measured at the project, school, and school neighborhood levels. Statistically significant increases in AST were observed across projects in all four states. All AST modes increased from 12.9% to 17.6%; walking from 9.8% to 14.2%; and bicycling from 2.5% to 3.0%. Increases in rates of bicycling were highest in communities with the lowest rates of bicycling at baseline, suggesting that SRTS programs may be particularly effective at introducing bicycling to communities where cycling is rare.
<b>Source(s)/Additional Information</b>	Safe Routes: National Center for Safe Routes to School - <a href="http://www.saferoutesinfo.org/">http://www.saferoutesinfo.org/</a> Safe Routes to School National Partnership - <a href="http://saferoutespartnership.org/">http://saferoutespartnership.org/</a>
<b>Citation(s)</b>	Stewart O, Moudon AV, Claybrooke C. Multistate evaluation of safe routes to school programs. <i>American Journal of Health Promotion</i> , 2014, 28(3 Suppl):S89-96. doi: 10.4278/ajhp.130430-QUAN-210.

#### Community and Schools – Joint Use Agreements

<b>Project</b>	Joint Use Moving People to Play (JUMPP) - Joint Use Agreements
<b>Evidence Rating</b>	Preliminary
<b>Description</b>	A joint-use agreement is a contract or written agreement often between a school and a city or community entity outlining specific terms and conditions for shared use of school grounds and facilities to increase physical activity in the community. The Joint Use Moving People to Play (JUMPP) Task Force was formed in Los Angeles, CA to address the lack of physical activity opportunities by making system and environmental changes, such as entering into joint-use agreements with schools. A study was conducted to assess whether joint-use agreements would increase community members' use of school grounds outside of school hours. Trained observers conducted school site observations after joint-use agreements were implemented in 7 Los Angeles County school districts. All 7 districts had disproportionately high adult and child obesity rates, and all had executed a joint-use agreement between schools and community or government entities from January 2010 through December 2012. An adapted version of the System for Observing Play and Recreation in Communities (SOPARC) instrument was used to record the number, demographic characteristics, and physical activity levels of community members who used the joint-use school sites. Contextual information was also collected for each location, including the existence of physical activity programs at the site and the condition of exercise equipment.
<b>Results/Outcomes</b>	A total of 172 SOPARC observations and related environmental assessments

	were completed for 12 school sites. Observations made on 1,669 site users showed that most of them were Hispanic and nearly half were adults; three-quarters engaged in moderate to vigorous physical activity. Community member use of school sites was 16 times higher in joint-use schools that had physical activity programs than in schools without such programs. The study suggests that joint-use agreements are a promising strategy for increasing moderate to vigorous physical activity among adults and children in under-resourced communities. Providing physical activity programs may substantially increase after-hours use of school facilities by community members.
<b>Citation(s)</b>	Lafleur M, Gonzalez E, Schwarte L, Banthia R, Kuo T, Verderber J, Simon P. Increasing physical activity in under-resourced communities through school-based, joint-use agreements, Los Angeles County, 2010-2012. <i>Preventing Chronic Disease</i> , 2013, 10:E89. doi: 10.5888/pcd10.120270.

## SOCIAL MARKETING CAMPAIGNS AND PROMOTIONS

Social marketing campaigns and promotions are used to educate the public about the benefits of engaging in healthy lifestyles, such as consuming healthy and nutritious foods and engaging in physical activity.<sup>4</sup> Specifically, social marketing uses marketing principles, including the 4 P's—Product, Price, Place, and Promotion—to influence human behavior and community norms in order to improve health or benefit society.<sup>5</sup> Social marketing campaigns and health promotion strategies often use media (e.g., television, radio, newspapers, press releases, letters to the editor, billboards, etc.) and various other communication channels (e.g. posters, brochures, websites, social media, etc.) to distribute intervention messages to large numbers of people in various settings (e.g., schools, workplaces, communities, regions, states).<sup>4</sup> These strategies are designed to increase knowledge and awareness (e.g. about opportunities for healthy eating and active living), influence attitudes and beliefs (e.g., healthy eating and active living are important for health), promote behavior change (e.g. eat more fruits and vegetables, increase walking), and alter community norms (e.g., offer healthy options in restaurants, encourage active transportation such as walking or bicycling).<sup>4</sup>

### Intervention Components May Include:

- Health communication campaigns that include mass media and health-related product distribution<sup>CG-Rec</sup>, community-based activities<sup>WHO-EI</sup>, or associated with policies to address local environmental barriers to participation<sup>WHO-EI</sup>
- Stand-alone mass media campaigns promoting physical activity<sup>CG-IE</sup>, or intensive mass media campaigns using one simple message (e.g. increasing consumption of low-fat milk)<sup>WHO-MEI</sup>
- National "health brand" or logos to assist consumers to make healthy food choices<sup>WHO-MEI</sup>, and point-of-decision prompts for healthy food choices<sup>WW-SE</sup>
- Long-term, intensive mass media campaigns promoting healthy diets<sup>WHO-MEI</sup>
- Comprehensive, community-wide campaigns to increase physical activity<sup>CG-Rec</sup>

### Healthy Eating/Nutrition

<sup>4</sup> Missouri Department of Health and Senior Services. Community Health Improvement Resources. Nutrition: Campaigns and Promotions (<http://health.mo.gov/data/InterventionMICA/Nutrition/index.html>) and Physical Activity: Campaigns and Promotions (<http://health.mo.gov/data/InterventionMICA/PhysicalActivity/index.html>). Accessed 7/7/15.

<sup>5</sup> CDC, Gateway to Health Communication & Social Marketing Practice, What is Health Communications? Available at: <http://www.cdc.gov/healthcommunication/healthbasics/whatishc.html>. Accessed 7/7/15.

Program Examples:

<b>Project</b>	The 1% Or Less Campaign
<b>Evidence Rating</b>	Moderate
<b>Description</b>	The 1% Or Less Campaign is an intensive, mass media campaign built around one simple message, to promote the consumption of low-fat milk. The campaign was originally undertaken over a six-week period in Wheeling, West Virginia. The mass media component included paid advertising on television, radio, and newspapers. The advertisements used a health message appeal and encouraged a switch from whole or 2% milk to 1% or fat-free milk as an easy way to cut saturated fat intake and reduce the risk of heart disease. Community media events included: a kick-off press conference, a mid-campaign press conference that featured prominent local physicians; a press release announcing the mid-campaign results; two milk taste test events that stressed that low-fat milk tastes good; and a press conference at the end of the campaign. A campaign advisory board of 25 community leaders and local health professionals was formed to provide credibility for the campaign and guidance on implementing the campaign.
<b>Results/Outcomes</b>	The campaign was evaluated through a quasi-experimental, pre- and post-test design using a control community. Outcomes were measured through surveys and analysis of supermarket milk sales. Findings showed that survey participants in the intervention city were more likely to drink milk, drink low-fat milk and purchase milk at supermarkets than were respondents in the comparison community. The market share for low-fat milk increased from 29% of overall milk sales before the campaign to 46% of sales in the month after the campaign. Market shares for high-fat milk decreased in the intervention community from 71% of overall milk sales before the campaign to 54% and 58% in the months immediately after and 6 months after the campaign. In the intervention city, 34.1% of high-fat milk drinkers switched to low-fat milk, compared to 3.6% in the comparison city.
<b>Source(s)/Additional Information</b>	Missouri Department of Health and Senior Services. Community Health Improvement Resources. Nutrition: Evidence-Based Interventions/Campaigns and Promotions. <a href="http://health.mo.gov/data/InterventionMICA/Nutrition/index.html">http://health.mo.gov/data/InterventionMICA/Nutrition/index.html</a>  World Health Organization. <i>Interventions on Diet and Physical Activity: What Works: Summary Report</i> . Geneva, Switzerland: WHO, 2009. Available at: <a href="http://www.who.int/dietphysicalactivity/summary-report-09.pdf">http://www.who.int/dietphysicalactivity/summary-report-09.pdf</a>
<b>Citation(s)</b>	Reger B, Wootan MG, Booth-Butterfield S. Using mass media to promote healthy eating: A community-based demonstration project. <i>Preventive Medicine</i> , 1999, 29(5):414–421.

<b>Project</b>	California Latino 5 a Day Program
<b>Evidence Rating</b>	Preliminary to Moderate
<b>Description</b>	The California Latino 5 a Day Campaign utilizes media and community-based interventions to increase the fruit and vegetable consumption among Spanish-speaking Latino adults and their families. The program reaches Latinos through the top-rated Spanish speaking radio stations, television, and community-based approaches, such as billboard advertisements placed at Latino festivals, farmers markets, and neighborhood grocery stores. In addition, samples of healthy recipes



	from the cookbook called “Healthy Latino Recipes Made with Love” and educational brochures are distributed during community events and flea markets. The program’s website further provides useful information on healthy eating, tips on how to stay active, and resources on buying food through various food assistance programs. The initiative is facilitated by the California Department of Public Health and locally managed by regional agencies.
<b>Results/Outcomes</b>	To assess the effectiveness of the Latino 5 a Day social marketing campaign implemented in Fresno, California, 338 Latinos were surveyed. Riverside/San Bernardino served as comparison communities and 337 Latinos were surveyed. The exposed and unexposed groups were further divided into English and Spanish speaking groups according to which language they completed the surveys in. There was significant and positive success in changing awareness of the 5 a Day message within the exposed population ( $p < 0.01$ ). At the beginning of the study only 30.6% of the intervention population had intentions of eating healthier foods, in contrast at the end of the study the intervention group's intentions significantly increased to 45%. The exposed participants’ intentions to eat 5 or more servings of fruits and vegetables a day had significant and positive correlations within the intervention ( $p < 0.01$ ). Also, the Spanish-speaking Latinos in the intervention community experienced a significant increase from the baseline to follow up in the consumption of the number of vegetable servings ( $p < 0.01$ ) and combined fruit and vegetable servings ( $p < 0.01$ ). At the end of the four month study, the results modestly showed that community and language interaction positively influenced vegetable and fruit consumption in Spanish-speaking Latinos.
<b>Source(s)/Additional Information</b>	CDC Community Health Improvement Navigator - <a href="http://wwwn.cdc.gov/CHIdatabase/items/california-latino-5-a-day-program">http://wwwn.cdc.gov/CHIdatabase/items/california-latino-5-a-day-program</a>  Healthy Communities Institute - <a href="http://cdc.thehcn.net/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=3797">http://cdc.thehcn.net/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=3797</a>
<b>Citation(s)</b>	Backman DR and Gonzaga GC. Media, Festival, Farmers’/Flea Market, and Grocery Store Interventions Lead to Improve Fruit and Vegetable Consumption for California Latinos. California Department of Health Services. June 2003. Available at: <a href="http://www.cdph.ca.gov/programs/cpns/Pages/LatinoResearchandEvaluation.aspx">http://www.cdph.ca.gov/programs/cpns/Pages/LatinoResearchandEvaluation.aspx</a>  Full evaluation report available at: <a href="http://www.cdph.ca.gov/programs/cpns/Documents/Network-FV-LC-LatinoStudy12p.pdf">http://www.cdph.ca.gov/programs/cpns/Documents/Network-FV-LC-LatinoStudy12p.pdf</a>

### Active Living/Physical Activity

Program Examples:

<b>Project</b>	The VERBB Campaign
<b>Evidence Rating</b>	Moderate
<b>Description</b>	The VERB campaign is a multiethnic media campaign that combines paid advertisements with school and community promotions to increase and maintain physical activity among children aged 9 to 13 years. Launched in 2002 by the

	<p>Centers for Disease Control and Prevention, VERB used commercial marketing methods to advertise being physically active as cool, fun, and a chance to have a good time with friends. Paid advertising ran nationally from June 2002 through June 2003. Commercials aired on age-appropriate television and radio channels such as Cartoon Network, Nickelodeon, The WB, ABC Saturday Morning Disney, Disney Radio, Telemundo and BET. Print advertising was placed in youth publications such as Sports Illustrated for Kids, TIME for Kids, Teen People and Seventeen; and in parent publications such as Family Circle, Parent Magazine, Ebony, and Indian Country Today. Spanish and Asian in-language advertising and advertorials appeared in publications such as Korea Times, World Journal, and Los Padres. The campaign negotiated added-value opportunities for media partners (e.g., PSAs using television talent and properties; VERB sponsorships of popular kids' events). Community-based promotions were featured several times a year and included: "Longest Day of Play" and "Extra Hour for Extra Action" for which schools and organization were eligible to apply for mini grants to support physical activity. The campaign distributed custom materials to schools (e.g., book covers, day planners, lesson plans) and utilized school-based media (e.g., Weekly Reader, Channel One). The campaign participated in existing community and cultural events by hosting "active zones" for trying out new activities. Media partners sponsored contests and sweepstakes. Websites were created for youth, parents, partners and stakeholders.</p>
<b>Results/Outcomes</b>	<p>The VERB Campaign was evaluated through a prospective, longitudinal, quasi-experimental design study. A baseline survey was conducted in April to June 2002, before the launch of VERB advertising. Random-digit-dialing methods were used to survey a nationally representative sample of children and parents. The follow-up survey was repeated with the same cohort of children and parents in April to June 2003. The children's survey assessed participation in, attitudes toward, beliefs about physical activity and awareness of VERB. The parent survey measured attitudes and beliefs about physical activity for children, participation in physical activity with their children, confidence in influencing their children's involvement in physical activity and awareness of VERB. After 1 year, 74% of children surveyed were aware of the VERB campaign. The VERB campaign was successful in impacting free-time physical activity for subgroups of children 9 to 13 years of age. The average 9- to 10-year old aware of the campaign engaged in 34% more free-time physical activity sessions per week than did 9- to 10-year-old youth who were unaware of the campaign. As children's level of VERB awareness was incrementally higher, the children engaged in incrementally more free-time physical activity sessions.</p>
<b>Source(s)/Additional Information</b>	<p>Missouri Department of Health and Senior Services. Community Health Improvement Resources. Physical Activity: Evidence-Based Interventions/Campaigns and Promotions.  <a href="http://health.mo.gov/data/InterventionMICA/PhysicalActivity/index.html">http://health.mo.gov/data/InterventionMICA/PhysicalActivity/index.html</a></p> <p>CDC Youth Media Campaign Website: <a href="http://www.cdc.gov/youthcampaign/">http://www.cdc.gov/youthcampaign/</a></p>
<b>Citation(s)</b>	<p>Wong F, Huhman M, Heitzler C, Asbury L, Bretthauer-Mueller R, McCarthy S, Londe P. VERB™ — a social marketing campaign to increase physical activity among youth. <i>Preventing Chronic Disease</i>, 2004, 1(3):A10. Epub 2004 Jun 15.</p> <p>Huhman M, Heitzler C, Wong F. The Verb campaign logic model: a tool for planning and evaluation. <i>Preventing Chronic Disease</i>, 2004, 1(3): 1-6.</p>

	Huhman M, Potter LC, Wong FL, Banspach SW, Duke JC, Heitzler CD. Effects of a Mass Media Campaign to Increase Physical Activity Among Children: Year-1 Results of the VERB Campaign. <i>Pediatrics</i> , 2005, 116(2):277-284.
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<b>Project</b>	Wheeling Walks and West Virginia (WV) Walks (replication with expanded reach)
<b>Evidence Rating</b>	Moderate
<b>Description</b>	<p>Wheeling Walks was a social marketing campaign that used paid advertising, public relations, and community-based activities to promote 30 minutes or more of daily moderate-intensity walking. Components of the campaign included: newspaper, television, and radio ads; weekly press conferences and campaign events; distribution of "Worksite Wellness Walking Challenge" campaign packets; a website site with information about the overall campaign and upcoming walking events; distribution of physician "prescription pads" for walking 30 minutes nearly every day; presentations about walking and physical activity given by trained local health professionals to community members at worksites and meetings of civic organizations; and inclusion of intervention messages in church bulletins or at worship services.</p> <p>WV Walks replicated the Wheeling Walks community-wide campaign methodology to promote physical activity. This social marketing intervention promoted walking among insufficiently active 40- to 65-year-olds in north-central West Virginia. The intervention included participatory planning, an 8-week mass media-based campaign, and policy and environmental activities.</p>
<b>Results/Outcomes</b>	<p>Wheeling Walks was evaluated through a quasi-experimental study. Behavior observation showed a 23% increase in number of walkers in the intervention community versus no change in the comparison community; 32% of the population in the intervention community reported walking at least 30 minutes at least five times per week versus 18% in the comparison community.</p> <p>WV Walks (replication with expanded reach) was evaluated through pre and post random-digit-dial cohort telephone surveys conducted at baseline and immediately post-campaign in intervention and comparison regions. The campaign resulted in maximal message awareness in north-central WV, and demonstrated a significant increase in walking behavior represented by an absolute shift of 12% of the target population from insufficiently active to active (greater than or equal to 30 minutes, 5 days per week), versus the comparison community (adjusted odds ratio 1.82, CI: 1.05-3.17). Policy and environmental changes were also evident. This replication study suggests that the initial effects observed in the Wheeling Walks intervention are generalizable to other similar rural communities.</p>
<b>Source(s)/Additional Information</b>	<p>CDC Community Health Improvement Navigator - <a href="http://wwwn.cdc.gov/CHIdatabase/items/wv-walks-replication-with-expanded-reach">http://wwwn.cdc.gov/CHIdatabase/items/wv-walks-replication-with-expanded-reach</a></p> <p>The New York Academy of Medicine and Trust for America's Health. A Compendium of Proven Community-Based Prevention Programs, 2013 Edition. Available at:</p>

	<a href="http://healthyamericans.org/assets/files/Compendium_Report_1016_1131.pdf">http://healthyamericans.org/assets/files/Compendium_Report_1016_1131.pdf</a> Missouri Department of Health and Senior Services. Community Health Improvement Resources. Physical Activity: Evidence-Based Interventions/Campaigns and Promotions. <a href="http://health.mo.gov/data/InterventionMICA/PhysicalActivity/index.html">http://health.mo.gov/data/InterventionMICA/PhysicalActivity/index.html</a>
<b>Citation(s)</b>	<p>Reger-Nash B, Bauman A, Cooper L, Chey T, Simon KJ, Brann M, and Leyden KM. WV Walks: replication with expanded reach. <i>Journal of Physical Activity &amp; Health</i>, 2008, 5 (1): 19-27.</p> <p>Reger BL, Cooper L, Booth-Butterfield S, Smith H, Bauman A, Wootan M, Middlestadt S, Marcus B, Greer F. Wheeling Walks: a community campaign using paid media to encourage walking among sedentary older adults. <i>Preventive Medicine</i>, 2002, 35(3): 285-92.</p>

Healthy Eating and Active Living Combined/Obesity Prevention

Program Examples:

<b>Project</b>	5-4-3-2-1 Campaign
<b>Evidence Rating</b>	Moderate
<b>Description</b>	<p>The Consortium to Lower Obesity in Chicago Children and its partners developed the 5-4-3-2-1 Go! social marketing initiative to improve family food choices and increase the use of community physical activity resources. The campaign is based on healthful eating and active living messages for children: Consume 5 or more fruits and vegetables, 4 servings of water, and 3 servings of low-fat dairy a day; spend no more than 2 hours watching television or in similar sedentary behavior, and engage in at least 1 hour of physical activity per day. Promotional efforts consist primarily of community-based messaging, outreach, and an extensive partnership network to promote action to reduce childhood obesity risks. Campaign objectives include raising awareness of the local opportunities and community-based services available to promote healthful lifestyles, driving intent to participate in activities that promote healthy lifestyles, and increasing year-round involvement in health promoting activities. The strategy behind 5-4-3-2-1 Go! involves disseminating a healthful lifestyles brand that: (1) uses a name and logo that spreads the message: “Eating right and being healthful is as easy as 5-4-3-2-1 Go!”; (2) communicates positive messages that resonate across different ethnic communities; (3) uses high school volunteers—“Go! Teams”—to serve as community ambassadors; (4) “comes to life” at programs and events and through earned news media coverage; (5) enjoys support of key civic and community leaders; (6) rewards youth and adult involvement; (7) optimizes awareness and participation by becoming part of as many current neighborhood and citywide programs as possible; and (8) builds on local community pride.</p>
<b>Results/Outcomes</b>	<p>To determine the effects of the 5-4-3-2-1 Go! community social marketing campaign on obesity risk factors, Evans et al. (2011) examined the effects of brief counseling based on the campaign messages on the 5 targeted behaviors and exposure to the community-based intervention. Researchers randomly assigned 524 parents of 3- to 7-year-old children to receive 5-4-3-2-1 Go! counseling or not. Parents were surveyed about 5-4-3-2-1 Go! behaviors and perceptions of children's behaviors at baseline and one year later. There was a significant</p>

	increase in servings of vegetables consumed per day between baseline and follow-up (0.33 to 1.16 servings, P<.0001). Dairy consumption increased in each of the 3 measured variables: milk (1.01 to 1.62, P=.0010), cheese (1.02 to 1.49, P<.0001), and yogurt (.021 to 1.11, P<.0001). Screen time such as TV viewing (3 hours per day or more) was generally high at baseline and did not change during the study. Physical activity (PA) was generally below the recommended daily levels at baseline, but vigorous PA in the past 7 days did increase significantly (1.74 to 2.43, P<.0001). Parents who received 5-4-3-2-1 Go! counseling consumed more fruits and vegetables at follow-up (OR 1.749, [95% CI: 1.01-3.059]). In addition, parental exposure to messaging at children's school events was associated with higher water consumption (6.879, [1.954-24.212]).
<b>Source(s)/Additional Information</b>	Consortium to Lower Obesity in Chicago Children (CLOCC) Website: <a href="http://www.clocc.net/our-focus-areas/health-promotion-and-public-education/5-4-3-2-1-go/">http://www.clocc.net/our-focus-areas/health-promotion-and-public-education/5-4-3-2-1-go/</a>  Health Places Chicago: <a href="http://www.healthypaceschicago.org/54321Go-DataBrief_HealthyPlaces.pdf">http://www.healthypaceschicago.org/54321Go-DataBrief_HealthyPlaces.pdf</a>
<b>Citation(s)</b>	Evans WD, Christoffel KK, Necheles J, Becker AB, Snider J. Outcomes of the 5-4-3-2-1 Go! Childhood obesity community trial. <i>American Journal of Health Behavior</i> , 2011, 35(2):189-98.  Evans WD, Necheles J, Longjohn M, Christoffel KK. The 5-4-3-2-1 go! Intervention: social marketing strategies for nutrition. <i>Journal of Nutrition Education and Behavior</i> , 2007, 39(2 Suppl):S55-9.  Evans WD, Wallace J, Snider J. The 5-4-3-2-1 go! Brand to promote nutrition and physical activity: a case of positive behavior change but negative change in beliefs. <i>Journal of Health Communication</i> , 2015, 20(5):512-20. doi: 10.1080/10810730.2014.989344. Epub 2015 Mar 20.

## HEALTH EDUCATION

Health education strategies are used to increase physical activity and/or consumption of nutritious foods by enhancing knowledge and skills, as well as influencing attitudes and beliefs about nutrition and physical activity. These interventions often involve providing information, teaching skills, enhancing self-efficacy, addressing barriers, or some combination of the above. Health education can occur in various settings including schools, community centers, WIC clinics, recreational facilities, food stores, worksites, churches/places of worship, and other community locations. Health education initiatives should be culturally sensitive, involve family and friends, and incorporate the individual's or group's readiness to change behavior, as appropriate.<sup>6</sup>

### Healthy Eating/Nutrition

Intervention Components May Include:

- School- and classroom-based nutrition education programs<sup>DG-ME, WW-SE</sup>
- Taste testing fruits and vegetables<sup>WW-SE</sup>

<sup>6</sup> Missouri Department of Health and Senior Services. Community Health Improvement Resources. Nutrition: Individual Education and Group Education (<http://health.mo.gov/data/InterventionMICA/Nutrition/index.html>), and Physical Activity: Individual Education and Group Education (<http://health.mo.gov/data/InterventionMICA/PhysicalActivity/index.html>). Accessed 7/7/15.

- Supermarket tours and on-site nutrition education programs to support the purchase of healthy foods<sup>WHO-MEI</sup>
- Nutrition education programs that target low-income/low literacy populations<sup>WHO-MEI</sup>
- Newsletters, brochures and other self-help education materials
- Family-based social support (programs that include joint or separate education sessions on health, goal-setting, problem-solving, etc.)
- Worksite and faith-based nutrition education programs.

Program Examples:

Worksite Setting

<b>Project</b>	5 A Day Peer Education Program
<b>Evidence Rating</b>	Moderate
<b>Description</b>	The 5 A Day Peer Education program utilizes peer educators and their social networks to deliver nutrition education to co-workers in the workplace. Trained peer educators promote the 5-A-Day message using their own informal methods of communicating and modeling dietary change, presenting their co-workers with a monthly booklet of information to help them make a transition to a healthier diet, and sharing gifts and incentives with their co-workers to remind and support them in dietary change efforts. Distributed materials contain culturally and regionally appropriate nutrition information for Anglo and Mexican diets to influence knowledge, attitudes, stages of change, skills, and barriers for eating fruits and vegetables. The tested program was delivered over a nine-month period among lower socioeconomic, multicultural labor and trades employees in Arizona. Peer educators attended a 16-hour training program held over an eight-week period, and eight 2-hour in-service sessions over the course of the program. The peer educators spent approximately two hours each week with co-workers to discuss eating fruits and vegetables as part of a healthy diet.
<b>Results/Outcomes</b>	The program was evaluated through a randomized control study in which ninety-three informal social networks, or "cliques" with 1007 employees were randomly assigned to receive the 5 A Day Peer Education program delivered in the context of a formal work-site nutrition program (experimental), or the General 5 A Day worksite nutrition education program (control). Outcomes measures were collected at baseline, post-test, and at a 6-month follow-up. Results indicated that employees receiving the peer education program increased their total daily servings of fruits and vegetables compared to employees in the control arm by 1.01 servings. At 6-month follow up, and according to the 24-hour intake recall measure, total daily servings of fruits and vegetables remained higher for employees in the peer education program compared to employees in the control arm. Six-month follow-up also showed that employees in the peer education arm increased their awareness of the 5-A-Day program, knowledge of the 5-A-Day concept and the number of daily servings considered appropriate, and their positive attitudes toward fruit and vegetable intake compared to employees in the control arm.
<b>Source(s)/Additional Information</b>	National Cancer Institute's Research-Tested Intervention Programs (RTIPs) - <a href="http://rtips.cancer.gov/rtips/programDetails.do?programId=230912#content">http://rtips.cancer.gov/rtips/programDetails.do?programId=230912#content</a>
<b>Citation(s)</b>	Buller DB, Morrill C, Taren D, Aickin M, Sennott-Miller L, Buller MK, Larkey L, Alatorre C, Wentzel TM. Randomized Trial Testing the Effect of Peer Education at Increasing Fruit and Vegetable Intake. <i>Journal of the National</i>

*Cancer Institute*, 1999, 91(17), 1491-1499.

School-Based (Elementary)

<b>Project</b>	The Nutrition Detectives Program
<b>Evidence Rating</b>	Moderate
<b>Description</b>	Nutrition Detectives (ND) provides elementary schools with a low-cost, non-invasive curriculum designed to educate students about nutrition and make a positive impact on their health with minimal burden to the normal school curriculum. The education program teaches students how to understand food labels based on “5 clues,” detect marketing deception, and how to select the healthier food option. ND offers a colorful and attractive curriculum that can be implemented at any public school because it uses minimal resources (e.g., time and person-power) and is therefore less invasive to the school’s mandatory curriculum. The program can be downloaded online and is available in different platforms: 1) a DVD of program developer, Dr. David Katz, giving the lessons or 2) a power point slideshow for a school-based facilitator. Each lesson is followed by activities for students to apply their knowledge. These activities are designed to be child-friendly by using colorful graphics, animal characters and condensing of nutrition knowledge into absorbable sound bites. There are a total of 5 mini lessons with each teachable in 40-60 minutes and they are all available free of charge provided the instructor gives due credit to Katz.
<b>Results/Outcomes</b>	Nutrition Detectives (ND) was evaluated by a group-randomized, controlled evaluation in five schools in the Independence School District in Independence, Missouri during the 2007-2008 school year. The intervention group (n=628) and control (n=552) were matched based on grade level, gender and age. Baseline and follow-up data were collected from students in grades 2-4 and their parents (parents were introduced to the program through written materials sent home and at school functions). Data collected included gender, grade, age, weight, height, BMI, dietary intake and nutrition knowledge. The study found a significant difference between nutrition knowledge in the intervention versus control group with regard to score on the nutrition knowledge quiz (p<0.01). Third grade intervention students showed the most improvement in nutrition knowledge compared to the control (p<0.01). Parents of children in the intervention group also showed an increase in nutrition knowledge compared to parents in the control group (p<0.01). Total caloric, sodium, and total sugar intake decreased non-significantly among students in the intervention group (p > .05). BMI did not change over the short duration of the study.
<b>Source(s)/Additional Information</b>	CDC Community Health Improvement Navigator - <a href="http://wwwn.cdc.gov/CHIdatabase/items/the-nutrition-detectives-program">http://wwwn.cdc.gov/CHIdatabase/items/the-nutrition-detectives-program</a>  Healthy Communities Institute - <a href="http://cdc.thehcn.net/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=3801">http://cdc.thehcn.net/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=3801</a>
<b>Citation(s)</b>	Katz DL, Katz CS, Treu JA, Reynolds J, Njike V, Walker J, Smith E, Michael J. Teaching healthful food choices to elementary school students and their parents: the Nutrition Detectives™ program. <i>Journal of School Health</i> , 2011, 81(1):21-8. doi: 10.1111/j.1746-1561.2010.00553.x.

Child Care and School-Based

<b>Project</b>	Supplemental Nutrition Assistance Program Education Interventions
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	<p>(SNAP-ED) Interventions in Child Care and School Settings:</p> <ul style="list-style-type: none"> <li>• Eat Well Play Hard in Child Care Settings (EWPHCCS)</li> <li>• Building and Strengthening Iowa Community Support (BASICS) for Nutrition and Physical Activity Program</li> <li>• BASICS Plus (Multi-component program, combining BASICS education program with social marketing campaign).</li> </ul>
<b>Evidence Rating</b>	Preliminary to Moderate
<b>Description</b>	<p><u>Eat Well Play Hard in Child Care Settings (EWPHCCS)</u>  EWPHCCS is a nutrition education program implemented by the New York State Department of Health in 26 counties and 4 New York City boroughs to preschool-age children attending centers participating in the Child and Adult Care Food Program (CACFP) (with at least 50% of children eligible for free or reduced-price meals) and their parents or caregivers. Intervention components included 1) Six classroom lessons (30 minutes each) for children (taught by registered dietitians -- RDs); 2) Six lessons (60 minutes each) for parents and caregivers taught by RDs; 3) Lessons for center staff members taught by RDs; and 4) take-home materials and activities.</p> <p><u>Building and Strengthening Iowa Community Support (BASICS) for Nutrition and Physical Activity Program</u>  The BASICS program was implemented by the Iowa Nutrition Network (Council Bluffs and Waterloo, Iowa) among third graders attending schools with at least 50% of children eligible for free or reduced-price meals, and their parents or caregivers. Intervention components included 1) Eight classroom lessons (average of 30 minutes each) taught by nutrition educators 2) Four classroom lessons (average of 54 minutes each) taught by the classroom teacher, and 3) Take-home materials and activities.</p> <p><u>BASICS Plus</u>  BASICS Plus was also implemented by Iowa Nutrition Network (Des Moines, Iowa) among third graders attending schools with at least 50% of children eligible for free or reduced-price meals, and their parents or caregivers. The BASICS Plus intervention consisted of the same components as the BASICS intervention, plus additional components: a social marketing campaign promoting fruits and vegetables and low-fat milk, and a family activity night for children and their parents or caregivers.</p>
<b>Results/Outcomes</b>	<p><u>Eat Well Play Hard in Child Care Settings (EWPHCCS)</u>  EWPHCC was evaluated through an experimental (randomized control) design in 24 child care centers (12 intervention and 12 control sites). The study found that the program had a statistically significant impact on children's daily at-home consumption of vegetables. These changes resulted in a net increase of 0.12 mean cups of vegetables consumed by children in the intervention group relative to the control group (<math>p &lt; .05</math>). Additionally, EWPHCCS had a significant effect from baseline to follow-up on the proportion of children who used fat-free or low-fat milk during the prior week from 36.5% to 41.0% (model adjusted) compared with a decrease from 36.3% to 33.2% in the control group (<math>p &lt; .05</math>). These observed changes suggest that children in the intervention group were about 39% more likely than children in the control group to use fat-free or low-fat milk (odds ratio [OR] = 1.39, <math>p &lt; .05</math>).</p>



	<p><u>BASICS and BASICS Plus</u></p> <p>BASICS and BASICS Plus were evaluated using a quasi-experimental design. Twenty-two schools (11 intervention and 11 control, non-random assignment) participated in the study (the same control group was used for both the BASICS and BASICS Plus interventions). In elementary school settings, both BASICS and BASICS Plus showed significant results. Compared with the comparison group (model adjusted), the BASICS intervention increased fruit and vegetable (F/V) consumption combined by 0.24 cup (<math>p &lt; .05</math>) and consumption of fruits alone by 0.16 cups (<math>p &lt; .05</math>). Similarly, compared with the comparison group (model adjusted), the BASICS Plus intervention increased F/V consumption by 0.31 cup (<math>p &lt; .01</math>). BASICS Plus also increased consumption of fruits by 0.17 cups (<math>p &lt; .05</math>) and increased consumption of vegetables by 0.13 (<math>p &lt; .05</math>). Additionally, children in families exposed to BASICS Plus were more likely to use fat-free or low-fat milk rather than whole/reduced-fat milk than children exposed only to the BASICS intervention and children in the comparison group (34% OR = 1.34, <math>p &lt; .05</math>; and 32% OR = 1.32, <math>p &lt; .05</math>, respectively). Both the BASICS and the BASICS Plus interventions achieved a significant change, versus the comparison group, in willingness to try new fruits. Compared with the comparison group, BASICS increased the number of days on which children ate more than one kind of fruit, and BASICS Plus increased the number of days on which children ate more than one kind of vegetable.</p>
<b>Source(s)/Additional Information</b>	<p>For more information on EWPCCS:  <a href="http://www.health.ny.gov/prevention/nutrition/cacfp/ewphccs.htm">www.health.ny.gov/prevention/nutrition/cacfp/ewphccs.htm</a>  For more information on BASIC and BASIC Plus:  <a href="http://www.idph.state.ia.us/INN/PickABetterSnack.aspx">http://www.idph.state.ia.us/INN/PickABetterSnack.aspx</a></p>
<b>Citation(s)</b>	<p>Williams PA, Cates SC, Blitstein JL, Hersey JC, Kosa KM, Long VA, Singh A, Berman D. Evaluating the Impact of Six Supplemental Nutrition Assistance Program Education Interventions on Children's At-Home Diets. <i>Health Education &amp; Behavior</i>, 2015, 42(3):329-338. DOI: 10.1177/1090198114558589</p>

Community/School-Based (Vocational and General Education Degree)

<b>Project</b>	The Stanford Nutrition Action Program (SNAP)
<b>Evidence Rating</b>	Preliminary to Moderate
<b>Description</b>	<p>SNAP consists of a 6-week classroom-based intervention (90 minutes per session) followed by a 12-week maintenance intervention. Classroom lessons cover the major sources of dietary fat, the food guide pyramid, food label reading, and low-fat eating when away from home. Central to the lessons is the link between low-fat eating and the prevention of heart disease. Participants engage in small- and large-group activities, interactive discussions, skill-building tasks, food tastings, and demonstrations. Many practical shopping and cooking tips are included. Lessons are made to be culturally appropriate and materials are designed for English speaking adults with low literacy skills (2-5 grade reading level). The 12-week maintenance intervention includes participant contact by telephone or by mail every 2 weeks, and provides support and encouragement to continue a low-fat diet.</p>
<b>Results/Outcomes</b>	<p>A randomized design was used to compare the effectiveness of two classroom-based nutrition curricula on lowering dietary fat intake. Twenty-four vocational training and general education degree classes were matched in pairs for class size and type of class. One of each pair was allocated randomly to receive either the</p>

	<p>newly developed curriculum that focused primarily on lowering dietary fat intake (SNAP) or an existing curriculum, also designed for low-income populations, which focused on general nutrition. Participants (n=351) of the study were primarily young, Hispanic women (58%) who were born in the United States and of Mexican heritage. Additionally, 20% were White, 10% were Asian, and 12% were classified as "Other". Food frequency and nutrition-related data, body mass index, and capillary blood cholesterol were collected at baseline and at two post-intervention follow-ups. The SNAP classes showed significantly greater net improvements in nutrition knowledge (+7.7), attitudes (/0.2), and self-efficacy (-0.2) than the general nutrition classes; they also showed significantly greater reductions in the percentage of calories from total (-2.3%) and saturated (-0.9%) fat. There were no significant differences in body mass index or blood cholesterol. All positive intervention effects were maintained for 3 months post-intervention.</p>
<b>Source(s)/Additional Information</b>	<p>National Cancer Institute, Research-Tested Intervention Programs - <a href="http://rtips.cancer.gov/rtips/programDetails.do?programId=279387">http://rtips.cancer.gov/rtips/programDetails.do?programId=279387</a></p> <p>Missouri Department of Health and Senior Services. Community Health Improvement Resources. Physical Activity: Evidence-Based Interventions/Group Education: <a href="http://health.mo.gov/data/InterventionMICA/Nutrition/index.html">http://health.mo.gov/data/InterventionMICA/Nutrition/index.html</a></p>
<b>Citation(s)</b>	<p>Howard-Pitney B, Winkleby MA, Albright CL, Bruce B, Fortmann SP. The Stanford Nutrition Action Program: A dietary fat intervention for low-literacy adults. <i>American Journal of Public Health</i>, 1997, 87(12), 1971-1976.</p> <p>Winkleby MA, Howard-Pitney B, Albright CA, Bruce B, Kraemer HC, and Fortmann SP. Predicting achievement of a low-fat diet: A nutrition intervention for adults with low literacy skills. <i>Preventive Medicine</i>, 1997, 26, 874-882.</p>

#### Community-Based (WIC)

<b>Project</b>	Maryland WIC 5-A-Day Promotion Program
<b>Evidence Rating</b>	Moderate
<b>Description</b>	<p>The purpose of the Maryland WIC 5-A-Day program was to encourage participants to increase their consumption of fruits and vegetables. The initiative consisted of both group and individual education. Peer educators led three 45-minute group nutrition education sessions over a 6-month period. Meetings took place immediately before the bi-monthly voucher distribution days and childcare was provided. Session focused on self-assessment, value of eating fruits/vegetables, personal goal setting, identifying and overcoming perceived barriers, and maintenance. All sessions included a food demonstration. In addition, participants received printed material based on a photo-novella, a booklet with a storyline and pictures, which served as a guidebook for writing thoughts about fruits and vegetables, setting goals, and identifying and overcoming barriers. Clue cards were also provided to stimulate conversation about fruits and vegetables. Each clue card posed a question related to a specific behavior they were promoting. The cards were mailed to the participants and participants were asked to write their response on the back of the card and bring it to the next education session. Mailed letters were tailored to pregnancy status, baseline stage of change, attendance at nutrition sessions and individual goals. Participants also received a child's activity book focusing on fruits and vegetables, a videotape with kids singing about fruits and vegetables and a</p>

	refrigerator magnet with the logo. Calendar reminder sheets were also provided.
<b>Results/Outcomes</b>	The program was evaluated at 16 WIC program sites in Baltimore City and 6 Maryland counties over a 2-year period using a randomized crossover design. Participants were surveyed at baseline, 2 months post intervention, and 1 year later. Two months post intervention, mean daily consumption had increased by 0.56 +/- 0.11 servings in intervention participants and 0.13 +/- 0.07 servings in control participants (P = .002). Intervention participants also showed greater changes in stages of change, knowledge, attitudes, and self-efficacy. Changes in consumption were closely related to number of nutrition sessions attended, baseline stage of change, race, and education. One year later, mean consumption had increased by an additional 0.27 servings in both intervention and control participants.
<b>Source(s)/Additional Information</b>	Missouri Department of Health and Senior Services. Community Health Improvement Resources. Nutrition: Evidence-Based Interventions/Group Education: <a href="http://health.mo.gov/data/InterventionMICA/Nutrition/index.html">http://health.mo.gov/data/InterventionMICA/Nutrition/index.html</a>
<b>Citation(s)</b>	Havas S, Anliker J, Damron D, Langenberg P, Ballesteros M, Feldman R. Final results of the Maryland WIC 5-A-Day Promotion Program. <i>American Journal of Public Health</i> , 1998, 88(8):1161-7.

### Active Living/Physical Activity

Intervention Components May Include:

- Enhanced school-based physical education that includes modified curriculum and lesson changes that increase the amount of time students engage in moderate-to-vigorous physical activity<sup>CDC-Rec, CG-Rec, DG-SE, PAG-Suf, WW-SS</sup>
- Interventions that aim to reduce recreational sedentary screen time among children<sup>CDC-Rec, CG-Rec, DG-SE, WHO-MEI, WW-SS</sup>
- Social support interventions in community settings (building, strengthening, and maintaining social networks that provide supportive relationships for behavior change--e.g., setting up a buddy system, making contracts with others to complete specified levels of physical activity, or setting up walking groups)<sup>CG-Rec, WHO-EI, WW-SS</sup>
- Family-based social support (programs that include joint or separate education sessions on health, goal-setting, problem-solving, incorporating physical activity into family life, etc.)<sup>CG-IE, DG-NA</sup>

Program Examples:

#### School-Based (Elementary)

<b>Project</b>	Activity Bursts in the Classroom (ABC) Fitness Program
<b>Evidence Rating</b>	Preliminary to Moderate
<b>Description</b>	Activity Bursts in the Classroom (ABC) Fitness Program is a classroom-based physical activity program for elementary school children that aims to promote a healthy lifestyle and reduce obesity among students and their families. The program combines brief bursts of classroom-based activity with parental education and community involvement. Bursts of activity are conducted during downtime in the classroom, with a goal of 30 minutes of activity a day. Each

	activity burst has three components: warm up, core activity, and cool down. Warm up includes stretching or light aerobic activity, the core activity includes strength or aerobic activity, and the cool down consists of stretching or low-intensity activity. Teachers are given freedom to choose the activities appropriate for their classroom.
<b>Results/Outcomes</b>	Three schools in the Independence School District in Independence, Missouri, were assigned to receive the ABC (Activity Bursts in the Classroom) for Fitness program, and 2 comparable schools served as controls. Students in grades 2-4 in schools that received the intervention (n=655) were compared to students in grades 2-4 in schools who did not receive the intervention (n=559). Students participating in the ABC Fitness Program showed a greater improvement in physical fitness than did the control group on measures of abdominal strength (P <0.001), upper-body strength (P <0.001), and trunk extensor (P <0.001). The intervention group had a greater reduction in medication use for asthma (P=0.03), medication use for attention-deficit hyperactivity disorder (P=0.07), and either medication use combined (P=0.005) at follow-up compared with the control group.
<b>Source(s)/Additional Information</b>	CDC Community Health Improvement Navigator - <a href="http://wwwn.cdc.gov/CHIdatabase/items/activity-bursts-in-the-classroom-abc-fitness-program">http://wwwn.cdc.gov/CHIdatabase/items/activity-bursts-in-the-classroom-abc-fitness-program</a>  Healthy Communities Institute - <a href="http://cdc.thehcn.net/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=3616">http://cdc.thehcn.net/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=3616</a>
<b>Citation(s)</b>	Katz DL, Cushman D, Reynolds J, Njike V, Treu JA, Walker J, Smith E, Katz C. Putting physical activity where it fits in the school day: preliminary results of the ABC (Activity Bursts in the Classroom) for fitness program. <i>Preventing Chronic Disease</i> , 2010, 7(4):A82. Epub 2010 Jun 15.

<b>Project</b>	Sports, Play, and Active Recreation for Kids (SPARK)
<b>Evidence Rating</b>	Moderate
<b>Description</b>	The SPARK program is designed to promote high levels of physical activity among students in physical education (PE) classes and outside of school. First developed for and evaluated with fourth and fifth graders, with some third graders participating via split classes, SPARK has since expanded to include multiple curricula for pre-kindergarten through high school. The original program consisted of a PE component and a self-management component. The PE component included 10 in-school health-fitness related activity units (such as aerobic dance, aerobic games, walking/jogging, and jump rope) and 9 skill-fitness activity units (such as basketball, Frisbee, and soccer). The recommended frequency of PE classes was 3 days per week, 30 minutes per session. The self-management component was a classroom-based program that promoted behavioral change skills to help children increase the amount of regular physical activity they engaged in away from school. It included self-monitoring, goal setting, stimulus control, self-reinforcement, self-instruction, and problem-solving techniques. Self-management was taught in weekly, 30-minute sessions, guided by scripted curricula. Homework and monthly newsletters were intended to stimulate parent-child interaction and support for physical activity.
<b>Results/Outcomes</b>	Seven elementary schools participated in the SPARK evaluation study. Schools

	<p>were stratified into two groups by the percentage of minority students and one school within each stratum randomly assigned to each of three experimental conditions: specialist-led SPARK, teacher-led SPARK, or usual PE control. The specialist-led condition included three certified PE specialists. Students in both the specialist-led condition and the teacher-led condition participated in significantly more minutes of moderate to vigorous physical activity per week (<math>p &lt; .001</math>) and expended significantly more calories during PE each week at post-test (<math>p &lt; .001</math>) compared to control students. Students in both intervention conditions participated in more frequent PE classes per week at post-test compared to students in the control condition (<math>p &lt; .001</math>). Students in the specialist-led condition spent more minutes per week in PE class at post-test compared to students in the teacher-led condition, who in turn spent more minutes per week compared to students in the control condition (<math>p &lt; .001</math>).</p>
<b>Source(s)/Additional Information</b>	<p>National Cancer Institute, Research-Tested Intervention Programs – <a href="http://rtips.cancer.gov/rtips/programDetails.do?programId=201624">http://rtips.cancer.gov/rtips/programDetails.do?programId=201624</a></p> <p>Missouri Department of Health and Senior Services. Community Health Improvement Resources. Physical Activity: Evidence-Based Interventions/Group Education: <a href="http://health.mo.gov/data/InterventionMICA/PhysicalActivity/index.html">http://health.mo.gov/data/InterventionMICA/PhysicalActivity/index.html</a></p>
<b>Citation(s)</b>	<p>McKenzie TL, Sallis JF, Kolody B, and Faucette FN. Long-term effects of a physical education curriculum and staff development program: SPARK. <i>Research Quarterly for Exercise &amp; Sport</i>, 1997, 68(4): 280-91.</p> <p>Sallis JF, McKenzie TL, Alcaraz JE, Kolody B, Faucette N, Hovell MF. The Effects of a 2-Year Physical Education Program (SPARK) on Physical Activity and Fitness in Elementary School Students. <i>American Journal of Public Health</i>, 1997, 87(8), 1328-1334.</p>

<b>Project</b>	Take 10!
<b>Evidence Rating</b>	Moderate to Strong
<b>Description</b>	<p>TAKE 10! Aims to reduce sedentary behavior during the elementary school day and to increase structured minutes of physical activity (PA) in the classroom. Designed by Physical Activity and Nutrition (PAN) Program of the International Life Sciences Institute (ILSI) Research Foundation, the TAKE 10! curriculum includes lessons and activities to get students moving without sacrificing time dedicated to academic learning. This is achieved by engaging students in PA while reinforcing specific learning objectives in math, reading, language arts, science, social studies, and general health. The first version of TAKE 10! was created in 1999 to promote structured, 10-minute activities in the elementary classroom. The program has since undergone several revisions. The current curriculum kit contains approximately 35 activity cards with clearly defined physical activities and learning objectives, 50 worksheets designed to reinforce learning objectives presented in the activity cards, three tracking posters, stickers to track activities and reward students, teacher resources to enhance implementation, student health knowledge assessments to measure knowledge mastery (topics: general health, PA, and nutrition), and a teacher implementation questionnaire. New materials on energy balance and nutrition, as well as a subset of Spanish-language materials have been added in recent years.</p>
<b>Results/Outcomes</b>	Kibbe et al. (2011) conducted a review of journal articles, abstracts, and reports

	on the TAKE 10! program in order to summarize the impact of TAKE 10! on student health and other outcomes. The review found that teachers are willing and able to implement classroom-based PA integrated with grade-specific lessons (4.2 days/wk). Children participating in the TAKE 10! program experienced higher PA levels (13%>), reduced time-off-task (20.5%), and improved reading, math, spelling and composite scores ( $p<0.01$ ). Furthermore, students achieved moderate energy expenditure levels (6.16 to 6.42 METs) and studies suggest that BMI may be positively impacted (decreases in BMI z score over 2 years [ $P<0.01$ ]).
<b>Source(s)/Additional Information</b>	For more information: <a href="http://www.take10.net/">http://www.take10.net/</a>
<b>Citation(s)</b>	Kibbe DL, Hackett J, Hurley M, McFarland A, Schubert KG, Schultz A, Harris S. Ten Years of TAKE 10!®: Integrating physical activity with academic concepts in elementary school classrooms. <i>Preventive Medicine</i> , 2011, 52(Suppl 1):S43-50. doi: 10.1016/j.ypmed.2011.01.025. Epub 2011 Jan 31.  Tsai PY, Boonpleng W, McElmurry BJ, Park CG, McCreary L. Lessons learned in using TAKE 10! With Hispanic children. <i>Journal of School Nursing</i> , 2009, 25(2):163A172.

#### After-School Setting

<b>Project</b>	Medical College of Georgia FitKid Project
<b>Evidence Rating</b>	Moderate
<b>Description</b>	The FitKid Project was designed to fill after school time of youth from low-socioeconomic-status families with moderate-to-vigorous physical activity (MVPA). The 2 hour after-school program emphasizes enjoyment and improvement in games and sport activities. Program components consist of the following: 1) Forty minutes of academic enrichment during which students receive assistance with their homework and engage in academic enrichment activities, 2) a healthy snack that follows U.S. Department of Agriculture guidelines and 3) A physical activity period that provides 20 minutes of warm-up and skills instruction, 40 minutes of continuous MVPA, and 10 minutes of calisthenics and cool-down. To obtain the 40-minute MVPA, students engage in modified tag games and ball games that keep participants moving continuously. The program was offered 5 days a week over an 8 month period and transportation was provided.
<b>Results/Outcomes</b>	To evaluate the program, eighteen elementary schools were randomly assigned to either intervention or control conditions. Study participants were assessed for body composition, cardiovascular fitness, blood pressure, total cholesterol, and high-density lipoprotein-cholesterol. Compared with the control subjects and after controlling for race, sex, free/reduced price lunch status, and school-level covariates, youths in the intervention group showed a relative reduction of percentage body fat [-0.76 (95% confidence interval (CI), -1.42, -0.09)], a greater relative gain in bone mineral density [0.008 (95% CI, 0.001, 0.005)], and a greater relative reduction in heart rate response to the step test [-4.4 (95% CI, -8.2, 0.6)]. The other outcomes showed non-significant trends in favor of the intervention subjects.
<b>Source(s)/Additional Information</b>	Missouri Department of Health and Senior Services. Community Health Improvement Resources. Physical Activity: Evidence-Based Interventions/Group Education:

	<a href="http://health.mo.gov/data/InterventionMICA/PhysicalActivity/index.html">http://health.mo.gov/data/InterventionMICA/PhysicalActivity/index.html</a>
<b>Citation(s)</b>	Yin Z, Gutin B, Johnson MH, Hanes J Jr, Moore JB, Cavnar M, Thornburg J, Moore D, Barbeau P. An environmental approach to obesity prevention in children: Medical College of Georgia FitKid Project year 1 results. <i>Obesity Research</i> , 2005, 13(12):2153-61.

Healthy Eating and Active Living Combined/Obesity Prevention

These interventions address both healthy eating and physical activity as part of the educational program. Intervention components may include some combination of the healthy eating and active living intervention components outlined above.

Program Examples:

School-Based

<b>Project</b>	Planet Health
<b>Evidence Rating</b>	Moderate
<b>Description</b>	Planet Health is a school-based, interdisciplinary intervention designed to reduced childhood obesity among middle school students by decreasing television viewing and consumption of high-fat foods, and increasing fruit and vegetable intake and moderate-to-vigorous physical activity. Intervention materials are infused into language arts, math, science, social studies, and physical education classes, using grade-level and subject appropriate skills and competencies. The Planet Health curriculum consists of a total of 32 core lessons/themes addressed in classes with 1 lesson per subject with 16 lessons administered in each year. There is an additional lesson developed around a 2-week campaign to reduce television viewing in households called “Power Down”. Materials consist of teacher resources; behavioral and learning objectives; procedure, extension, or homework activities; and student resources and handouts. Planet Health increases the efficiency of program delivery by using classroom teachers with minimal health education training to implement the materials. The program enhances its effectiveness by involving multiple classes and frequent use of different approaches to learning.
<b>Results/Outcomes</b>	Planet Health was evaluated through a randomized control trial in which ten schools from 4 communities were matched and then randomly assigned the intervention (n=5) or the control (n=5) groups. Results include the following: <ul style="list-style-type: none"> <li>• Significant decrease in obesity among girls in the intervention schools versus girls in the control schools (p=0.03). (There was no significant change in obesity for boys.). African American girls had the greatest reduction in obesity (p=0.007).</li> <li>• Significantly reduced television time among girls (-0.58 hours, p=0.001) and boys (-0.40 hours, p&lt;0.001) when compared to controls.</li> <li>• Among girls, each hour of reduction in television viewing predicted reduced obesity prevalence (odds ratio, 0.85; 95% confidence interval, 0.75-0.97; P = .02).</li> <li>• Less of an increase in estimated energy intake among girls in the intervention schools versus the controls (p=0.05).</li> <li>• Significant increase in fruit and vegetable consumption among girls in the</li> </ul>

	intervention schools (p=0.003) when compared with controls.
<b>Source(s)/Additional Information</b>	<p>CDC Community Health Improvement Navigator - <a href="http://wwwn.cdc.gov/CHIdatabase/items/planet-health">http://wwwn.cdc.gov/CHIdatabase/items/planet-health</a></p> <p>Healthy Communities Institute: <a href="http://cdc.thehcn.net/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=3802">http://cdc.thehcn.net/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=3802</a></p> <p>National Cancer Institute, Research-Tested Intervention Programs – <a href="http://rtips.cancer.gov/rtips/programDetails.do?programId=215102">http://rtips.cancer.gov/rtips/programDetails.do?programId=215102</a></p>
<b>Citation(s)</b>	<p>Gortmaker SL, Peterson K, Wiecha J, Sobol AM, Dixit S, Fox MK, Laird N. Reducing Obesity via a School-Based Interdisciplinary Intervention Among Youth: Planet Health. <i>Archives of Pediatric and Adolescent Medicine</i>, 1999, 153(4), 409-418.</p> <p>Wang LY, Yang Q, Lowry R, Wechsler H. Economic analysis of a school-based obesity prevention program. <i>Obesity Research</i>, 2003, 11:1313–24.</p> <p>Wiecha JL, El Ayadi AM, Fuemmeler BF, Carter JE, Handler S, Johnson S, Strunk N, Korzec-Ramirez D, Gortmaker SL. Diffusion of an integrated health education program in an urban school system: Planet Health. <i>Journal of Pediatric Psychology</i>, 2004, 29:467–74.</p>

#### Pre-School-Based

<b>Project</b>	Hip-Hop to Health Jr.
<b>Evidence Rating</b>	Moderate
<b>Description</b>	<p>Hip-Hop to Health Jr. is a culturally proficient dietary and physical activity intervention for pre-school children. The intervention consists of a 14-week (40 minutes, three times weekly) healthy eating and exercise program. Lesson plans incorporate two major components: (1) a 20-minute lesson that introduces a healthy eating or exercise concept with an activity and (2) 20 minutes of ongoing physical activity. The 20-minute lessons and activities often involve the use of colorful, friendly, handheld puppets that represent the food groups of the food pyramid. For the physical activity component, the teacher leads children in a 5-minute warm-up, 10 minutes of aerobic activity, and a 5-minute cool down. In addition to the child curriculum, parents receive weekly newsletters with information that mirrors the children’s curriculum. Each newsletter has a section on healthy eating and a section on healthy exercise. The newsletters also include a brief homework assignment that reinforces concepts presented in program.</p>
<b>Results/Outcomes</b>	<p>Hip-Hop to Health Jr. was evaluated through a randomized controlled trial in 12 Head Start preschool programs in Chicago, Illinois. Intervention children had significantly smaller increases in BMI compared with control children at 1-year and 2-year follow-ups [year 1: 0.06 vs 0.59 kg/m<sup>2</sup>; difference -0.53 kg/m<sup>2</sup> (95% CI -0.91 to -0.14), P = .01; year 2: 0.54 vs 1.08 kg/m<sup>2</sup>; difference -0.54 kg/m<sup>2</sup> (95% CI -0.98 to -0.10), P = .02; adjusted for baseline age and BMI]. Intervention children also consumed less calories from saturated fats compared with control children at 1-year follow-up (11.6% vs 12.8%, P = .002). The study suggests that Hip-Hop to Health Jr. was effective in reducing subsequent increases in BMI in preschool children and represents a promising approach to preventing overweight among minority children in the preschool years.</p>
<b>Source(s)/Additional</b>	Missouri Department of Health and Senior Services. Community Health



<b>Information</b>	Improvement Resources. Physical Activity: Evidence-Based Interventions/Group Education: <a href="http://health.mo.gov/data/InterventionMICA/PhysicalActivity/index.html">http://health.mo.gov/data/InterventionMICA/PhysicalActivity/index.html</a>
<b>Citation(s)</b>	Fitzgibbon ML, Stolley MR, Schiffer L, Van Horn L, KauferChristoffel K, Dyer A. Two-year follow-up results for Hip-Hop to Health Jr.: a randomized controlled trial for overweight prevention in preschool minority children. <i>Journal of Pediatrics</i> , 2005, 146(5):618-25.

<b>Project</b>	Wellness, Academics & You (WAY)
<b>Evidence Rating</b>	Moderate
<b>Description</b>	Wellness, Academics & You (WAY) is a multidisciplinary elementary school-based intervention that aims to decrease obesity by increasing fruit and vegetable consumption and physical activity. The program is designed to be integrated throughout the school year and includes activities that engage students in multidisciplinary activities in language arts, mathematics, science, and health content. Lessons build students' academic skills while developing their health attitudes, behavioral intent, and ultimately behavior. The program includes a 10-minute aerobic exercise routine each day during class time. Students also keep a personal daily journal recording notes, personal reflection, physical activity, and food choices. Other program resources include: a teacher guidebook with activities and resources, an interactive DVD and DVD player, a box of supplies and equipment to support activities, printed reference materials and a large-format reference book on the human body, nutrition resources from 5-A-Day the Color Way and the Produce for Better Health Foundation, student home reference materials, and resources from national programs.
<b>Results/Outcomes</b>	WAY was evaluated among 1,013 students in fourth and fifth grades from 69 classes in four states. Intervention and comparison classes were randomly selected at each school. Surveys were administered and BMI was calculated for baseline and post-data points. The study found significant positive shifts ( $p = 0.01$ ) in BMI in the intervention group compared with the comparison group. Notable increases in the consumption of fruits and vegetables and increased physical activity levels were also reported in the intervention group.
<b>Source(s)/Additional Information</b>	Missouri Department of Health and Senior Services. Community Health Improvement Resources. Nutrition: Evidence-Based Interventions/Group Education: <a href="http://health.mo.gov/data/InterventionMICA/Nutrition/index.html">http://health.mo.gov/data/InterventionMICA/Nutrition/index.html</a>
<b>Citation(s)</b>	Spiegel SA, Foulk D. Reducing overweight through a multidisciplinary school-based intervention. <i>Obesity</i> (Silver Spring), 2006, 14(1):88-96.

#### Community-Based

<b>Project</b>	Fruit, Vegetable, and Physical Activity Toolbox for Community Educators (Toolbox)
<b>Evidence Rating</b>	Preliminary to Moderate
<b>Description</b>	The Fruit, Vegetable, and Physical Activity Toolbox for Community Educators (Toolbox) is a kit for community educators with educational lessons and supporting materials designed to change nutrition and physical activity knowledge, attitudes, and behavior among low-income adults currently or potentially eligible for the Supplemental Nutrition Assistance Program (SNAP). Originally developed for Spanish- and English-speaking audiences, the Toolbox was later revised and tailored for African American audiences. In all, the Toolbox

	<p>includes 14 lessons, 20 handouts, and 7 additional resource materials. The lessons address knowledge, attitudes, benefits and barriers, self-efficacy, empowerment and advocacy, and goal setting around healthy eating and active living. Text is written in layman's terms for clear understanding and ease of delivery. Lessons are designed to be conducted by multiple users such as health educators, lay health workers, or other qualified staff at community organizations.</p> <p>The revised Toolbox was evaluated among low-income African American women. Participants attended 6 free, 1-hour nutrition and physical activity education classes that were conducted 1 time per week over a 6-week period. The 6 lessons included 3 nutrition lessons, 2 physical activity lessons, and 1 community empowerment lesson, which were representative of the overall Toolbox. Lessons were supported by culturally appropriate, tailored resource materials and handouts that the participants could take home after each class.</p>
<b>Results/Outcomes</b>	<p>The study utilized a quasi-experimental design with treatment and control groups. Lessons were delivered by health educators over a 6-week period in community-based organizations. Control group members completed a pre- and post-survey, but did not receive any Toolbox lessons. Women in the treatment group reported significant changes in 9 measures of attitude, compared to 1 measure in the control group, as well as 12 measures of confidence and 5 measures of empowerment for which the control group showed no changes. Compared to those in the control group, women in the treatment group were also more likely to make behavioral changes to meet recommendations for fruit and vegetable consumption and physical activity. The findings suggest that Toolbox lessons were effective at increasing participants' knowledge, attitudes, self-efficacy, empowerment, and reported fruit and vegetable- and physical activity-related behaviors.</p>
<b>Citation(s)</b>	<p>Backman D, Scruggs V, Atiedu AA, Bowie S, Bye L, Dennis A, Hall M, Ossa A, Wertlieb S, Foerster SB. Using a Toolbox of tailored educational lessons to improve fruit, vegetable, and physical activity behaviors among African American women in California. <i>Journal of Nutrition Education and Behavior</i>, 2011, 43(4 Suppl 2):S75-85. doi: 10.1016/j.jneb.2011.02.004.</p>

## MULTI-COMPONENT INTERVENTIONS

Multi-component interventions addressing healthy eating, active living, and/or obesity prevention include a combination of policy, environmental, social marketing, health promotion, education, and behavior change strategies and activities, such as those outlined above.<sup>7,8</sup> Multi-component programs may be implemented in a variety of settings including communities, schools, preschools/child care, places of worship/faith-based organizations, and worksites. Generally, multi-component interventions that involve community members and participants in program planning and implementation and are adapted to the local context are found to be the most effective.<sup>8</sup>

<sup>7</sup> What Works for Health, Multi-Component Obesity Prevention Interventions.

<http://www.countyhealthrankings.org/policies/multi-component-obesity-prevention-interventions> Accessed 7/7/15.

<sup>8</sup> World Health Organization (WHO). *Interventions on Diet and Physical Activity: What Works: Summary Report*. Geneva, Switzerland: WHO, 2009. Available at: <http://www.who.int/dietphysicalactivity/summary-report-09.pdf>. Accessed 7/7/15.

Healthy Eating/Nutrition

Multi-component nutrition interventions that have been found to be effective include:

- Multi-component school-based nutrition education and healthy eating programs<sup>DG-ME, WW-SE</sup>
- Multi-component worksite-based approaches and policies promoting healthy eating<sup>DG-ME, WHI-EI</sup>
- Culturally appropriate and multi-component diet interventions that are planned and implemented in collaboration with religious leaders and congregational members<sup>WHO-EI</sup>

Program Examples:

School Setting

<b>Project</b>	5-a-Day Power Plus
<b>Evidence Rating</b>	Moderate
<b>Description</b>	<p>5-a-Day Power Plus is a school-based, multi-component intervention aimed at increasing fruit and vegetable consumption among fourth- and fifth-grade students. The program seeks to increase fruit and vegetable consumption by affecting behavior change in the school, the home, and the community environment. Components of the program include: 1) behavioral curricula for fourth and fifth grade students, 2) parental involvement/education, 3) school food service changes, and 4) industry involvement and support. Designed for school delivery, the program also incorporates elements of learning, including reading, writing, math, oral presentation, and goal setting.</p> <p>The program was tested among twenty low-income, ethnically diverse, inner-city elementary schools in St. Paul, Minnesota. Participating schools were matched and then randomly assigned to either the 5-a-Day Power Plus program or to a control group. Fourth- and fifth-grade students in the intervention schools received an 8-week curriculum which included sixteen 40-45-minute classroom sessions that incorporated skill building and problem solving activities, snack preparation, and taste testing. The parental/family component involved information/activity packets (4th grade) and snack packs (5th grade) to prepare at home. School food service changes included point-of-purchase promotion of fruits and vegetables, enhancement of the attractiveness of fruits and vegetables, increasing the variety and choice of fruits and vegetables in the cafeteria, and providing additional fruit and vegetable options on days when baked desserts are served. Industry support was provided by the recruitment of local food industries to donate food and educational materials, and give presentations to the intervention schools.</p>
<b>Results/Outcomes</b>	<p>Outcomes were measured through lunchroom observations and 24-hour food recalls, parent telephone surveys, and a health behavior questionnaire. Lunchroom observations showed that intervention students consumed more combined fruits and vegetables (.47 servings) and fruit (.30 servings) at lunch than control students. Girls in intervention schools also increased lunchtime consumption of vegetables compared to girls in control schools. Based on 24-hour recall, intervention students consumed more fruits daily and consumed less fat than control students. Based on self-report, intervention students perceived more teacher support for eating fruits and vegetables, had greater perceived need to eat fruits and vegetables, more often reported requesting fruits and vegetables, and consumed more daily servings of fruits and vegetables than students in the control group.</p>
<b>Source(s)/Additional</b>	National Cancer Institute’s Research-Tested Intervention Programs (RTIPs) --

<b>Information</b>	<a href="http://rtips.cancer.gov/rtips/programDetails.do?programId=209461">http://rtips.cancer.gov/rtips/programDetails.do?programId=209461</a>
<b>Citation(s)</b>	Perry CL, Bishop DB, Taylor G, Murray DM, Warren Mays R, Dudovitz BS, Smyth M, Story M. Changing Fruit and Vegetable Consumption among Children: The 5-a-Day Power Plus Program in St. Paul, Minnesota. <i>American Journal of Public Health</i> , 1998, 88(4), 603-609.

#### Worksite Setting

<b>Project</b>	Working Well Trial
<b>Evidence Rating</b>	Moderate to Strong
<b>Description</b>	The Working Well Trial was a 2-year initiative that aimed to improve access to healthy food, nutritional information and social norms at work regarding dietary choice. The program was implemented with employees from manufacturing, communication, public service, and utilities organizations (primarily white and blue collar). Components of the intervention included: 1) Environment and policy changes including making healthy food choices more available and accessible through worksite cafeterias, vending machines, and workplace events; 2) Campaigns and promotions such as worksite-wide taste tests, healthy recipe contests, and nutrition contests (e.g. "Name the Fruits and Vegetables"); and 3) Education and behavior modification, such as self-assessment tools (e.g., Rate Your Plate), nutrition goal-setting, etc. Specific program activities were developed and implemented by an advisory board consisting of members from all levels of the organization.
<b>Results/Outcomes</b>	The Working Well Trial was tested through a randomized matched pair design among 111 worksites (n=28,000 employees). The intervention had a significant impact on the normative environments at the worksites in terms of perceived co-worker support and management concern. Informants at intervention sites were almost twice as likely to report improvements in the nutrition environment, such as access to healthy foods and nutritional information at work. There were significant but small differences observed for nutrition in intervention sites, including a net reduction in the percentage of energy obtained from fat consumption of 0.37 percentage points (P = .033), a net increase in fiber densities of 0.13 g/1000 kcal (P = .056), and an average increase in fruit and vegetable intake of 0.18 servings per day (P = .0001)
<b>Source/Additional Information</b>	Missouri Department of Health and Senior Services. Community Health Improvement Resources. Physical Activity: Evidence-Based Interventions/Multiple Strategies: <a href="http://health.mo.gov/data/InterventionMICA/Nutrition/index.html">http://health.mo.gov/data/InterventionMICA/Nutrition/index.html</a>
<b>Citation(s)</b>	Sorensen G, Thompson B, Glanz K, Feng Z, Kinne S, DiClemente C, Emmons K, Heimendinger J, Probart C, Lichtenstein E. Worksite-based cancer prevention: Primary results from the Working Well Trial. <i>American Journal of Public Health</i> , 1996, 86:939-947.  Sorensen G, Stoddard A, Hunt MK, Hebert JR, Ockene JK, Avrunin JS, Himmelstein J, Hammond SK. The effects of a health promotion-health protection intervention on behavior change: the WellWorks Study. <i>American Journal of Public Health</i> , 1998, 88:11, 1685-1690.  Biener L, Glanz K, McLerran D, Sorensen G, Thompson B, Basen-Engquist K, Linnan L, Varnes J. Impact of the Working Well Trial on the worksite smoking and nutrition environment. <i>Health Education &amp; Behavior</i> , 1999, 26(4):478-94.

	Heimendinger JZ, Feng Z, Emmons K, Stoddard A, Kinne S, Biener L, Sorensen G, Abrams D, Varnes J, and Boutwell B. The Working Well Trial: baseline dietary and smoking behaviors of employees and related worksite characteristics. The Working Well Research Group. <i>Preventive Medicine</i> , 1995, 24(2): 180-93.
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<b>Project</b>	Treatwell 5-a-day
<b>Evidence Rating</b>	Moderate
<b>Description</b>	Treatwell 5-a-day is a multi-component program promoting healthy dietary habits. Components include: 1) Exposure to national 5-a-day media campaigns; 2) Promotion of the National Cancer Institute's Cancer Information Service Hot Line; 3) A 1-hour general nutrition presentation and taste test; 4) Creation of an employee advisory board to develop and implement the programs; 5) A kick-off event; 6) The Eat well 5-a-Day discussion series, which consists of ten 30-minute sessions on purchasing and preparing healthful meals; 7) At least one educational campaign each year implemented over 3-5 weeks; 8) Increased availability of fruits and vegetables at the workplace; and 9) Family activities that include a learn-at-home program (Fit-in-5), newsletters and other mailings, and an annual family festival.
<b>Results/Outcomes</b>	The intervention was tested among 22 worksites, which were randomly assigned to one of three groups: 1) a minimal intervention control group (components 1-3 above), 2) a worksite intervention (components 1-6 above), and 3) a worksite-plus-family intervention (components 1-7 above). Workplaces that included the family component were the most successful and recorded a 19% increase in fruit and vegetable consumption in the intervention group, compared to 7% in the workplace-only group (p=.02). The control group reported no significant change in their consumption.
<b>Source(s)/Additional Information</b>	Missouri Department of Health and Senior Services. Community Health Improvement Resources. Nutrition: Evidence-Based Interventions/Campaigns and Promotions. <a href="http://health.mo.gov/data/InterventionMICA/Nutrition/index.html">http://health.mo.gov/data/InterventionMICA/Nutrition/index.html</a>  National Cancer Institute. Research-Tested Intervention Programs (RTIPs). The Treatwell 5-a-Day Program. <a href="http://rtips.cancer.gov/rtips/programDetails.do?programId=173315">http://rtips.cancer.gov/rtips/programDetails.do?programId=173315</a>  World Health Organization. <i>Interventions on Diet and Physical Activity: What Works: Summary Report</i> . Available at: <a href="http://www.who.int/dietphysicalactivity/summary-report-09.pdf">http://www.who.int/dietphysicalactivity/summary-report-09.pdf</a>
<b>Citation(s)</b>	Hunt MK, Lederman R, Stoddard A, Potter S, Phillips J, Sorensen G. Process tracking results from the Treatwell 5-a-Day Worksite Study. <i>American Journal of Health Promotion</i> , 2000, 14(3):179–187.  Hunt MK, Lederman R, Potter S, Stoddard A, Sorensen G. Results of Employee Involvement in Planning and Implementing the Treatwell 5-a-Day Work-Site Study. <i>Health Education &amp; Behavior</i> , 2000, 27(2), 223-231.  Sorensen G, Stoddard A, Peterson K, Cohen N, Hunt MK, Stein E, Palombo R, Lederman R. Increasing fruit and vegetable consumption through worksites and families in the Treatwell 5-a-day study. <i>American Journal of Public Health</i> , 1999, 89(1):54–60.

	<p>Sorensen G, Hunt MK, Cohen N, Stoddard A, Stein E, Phillips J, Baker F, Combe C, Hebert J, Palombo R. Worksite and Family Education for Dietary Change: The Treatwell 5-a-Day Program. <i>Health Education Research</i>, 1998, 13(4), 577-591.</p> <p>Sorensen G, Stoddard AM, LaMontagne AD, Emmons K, Hunt MK, Youngstrom R, McLellan D, Christiani DC. A Comprehensive Worksite Cancer Prevention Intervention: Behavior Change Results from a Randomized Controlled Trial. <i>Cancer Causes &amp; Control</i>, 2002, 13, 493-502.</p>
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Faith-Based

<b>Project</b>	Black Churches United for Better Health
<b>Evidence Rating</b>	Moderate
<b>Description</b>	<p>Black Churches United for Better Health is a faith-based, culturally appropriate, multi-component intervention designed to increase fruit and vegetable consumption. Based on an ecological framework, the program includes activities at the individual, social network, and community levels and addresses predisposing, enabling, and reinforcing factors. Awareness raising activities include tailored bulletins and printed materials; monthly promotional packets with brochures, posters, banners, idea sheets, and bulletin inserts; and materials designed to promote locally grown produce, such as recipe cards, coupons and farmer's market posters. Activities to increase fruit and vegetable access include gardening, education sessions, cookbook and recipe tasting, and policies for serving more fruits and vegetables at church functions. Activities to increase social and environmental support include the provision of lay health advisors and pastoral supports, the creation of Nutrition Action Teams, grocer and vendor involvement, and church-initiated activities such as 5-a-day Sunday, Gospel-fests and youth-oriented events.</p>
<b>Results/Outcomes</b>	<p>The intervention was tested in 50 predominantly Black churches within 10 rural counties in eastern North Carolina. Churches were randomly assigned, by county, to receive either the intervention or delayed intervention. All active members (those attending at least once per month) were included in the study (N = 3,737). At 2-year follow-up, intervention participants consumed 0.85 more servings of fruits and vegetables per day than participants in the control group. There was also an increase in the percent of intervention participants who consumed 5 servings of fruits and vegetables per day (23% at baseline; 33% at 2-year follow-up), whereas there was a decrease in control participants meeting this guideline (23% at baseline; 21% at 2-year follow-up).</p>
<b>Source(s)/Additional Information</b>	<p>National Cancer Institute's Research-Tested Intervention Programs (RTIPs) -- <a href="http://rtips.cancer.gov/rtips/programDetails.do?programId=203202">http://rtips.cancer.gov/rtips/programDetails.do?programId=203202</a></p> <p>Missouri Department of Health and Senior Services. Community Health Improvement Resources. Nutrition: Evidence-Based Interventions/Multiple Strategies: <a href="http://health.mo.gov/data/InterventionMICA/Nutrition/index.html">http://health.mo.gov/data/InterventionMICA/Nutrition/index.html</a></p> <p>World Health Organization. <i>Interventions on Diet and Physical Activity: What Works: Summary Report</i>. Available at: <a href="http://www.who.int/dietphysicalactivity/summary-report-09.pdf">http://www.who.int/dietphysicalactivity/summary-report-09.pdf</a></p>
<b>Citation(s)</b>	<p>Campbell MK, Demark-Wahnefried W, Symons M, Kalsbeek WD, Dodds J, Cowan A, Jackson B, Motsinger B, Hoben K, Lashley J, Demissie S, McClelland JW. Fruit and vegetable consumption and prevention of cancer: the Black Churches United for Better Health project. <i>American Journal of Public Health</i>,</p>

	<p>1999, 89(9):1390–1396.</p> <p>Campbell MK, Motsinger BM, Ingram A, Jewell D, Makarushka C, Beatty B, Dodds J, McClelland J, Demissie S, Demark-Wahnefried W. The North Carolina Black Churches United for Better Health Project: intervention and process evaluation. <i>Health Education &amp; Behavior</i>, 2000, 27(2):241–253.</p> <p>Campbell MK, Symons M, Demark-Wahnefried W, Polhamus B, Bernhardt JM, McClelland JW, Washington C. Stages of change and psychosocial correlates of fruit and vegetable consumption among rural African-American church members. <i>American Journal of Health Promotion</i>, 1998, 12(3):185–191.</p>
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Community-Based

<b>Project</b>	Baltimore Healthy Eating Zones
<b>Evidence Rating</b>	Moderate
<b>Description</b>	<p>Baltimore Health Eating Zones was an 8-month, multilevel nutrition intervention trial targeting youth in Baltimore City. The program sought to increase the availability of healthy foods in local stores and promote consumption of these foods through a variety of educational promotions and activities at participating recreation centers, corner stores, and carryout restaurants. Venues were incentivized to stock additional healthier, affordable foods. Availability of healthy foods was reinforced by intervention activities, such as taste tests, cooking demonstrations, giveaways, shelf labels, point-of-purchase health communication materials (e.g., posters and flyers), and nutrition education at recreation centers. The program was implemented in five phases, with each phase focusing on a single aspect of healthful eating: healthful beverages, healthful breakfast, cooking at home/healthful lunch, healthful snacks, and selecting more healthful options at carryout restaurants. In addition, youth peer educators were recruited from each intervention recreation center and trained by interventionists to assist in health promotions.</p>
<b>Results/Outcomes</b>	<p>The impact of the intervention was assessed through a clustered randomized study in which 7 recreation centers and 21 corner stores received the intervention and 7 additional recreation centers served as comparison. Two hundred forty-two youth-caregiver dyads residing in low-income areas of Baltimore City were recruited from recreation centers and surveyed about food-related psychosocial indicators, healthful food purchasing and preparation methods, and anthropometric measures (height and weight). Results showed that the intervention was associated with reductions in youth body mass index percentile (<math>p = .04</math>). In subgroup analyses among overweight and obese girls, body mass index for age percentile decreased significantly in girls assigned to the intervention group (<math>p = .03</math>) and in girls with high exposure to the intervention (<math>p = .013</math>), as opposed to those in comparison or lower exposure groups. In addition, intervention youth significantly improved food-related outcome expectancies (<math>p = .02</math>) and knowledge (<math>p &lt; .001</math>). These findings suggest that the Baltimore Healthy Eating Zones multilevel intervention had a modest impact in reducing overweight or obesity among already overweight low-income African American youth living in an environment where healthful foods are less available.</p>
<b>Citation(s)</b>	Shin A, Surkan PJ, Coutinho AJ, Suratkar SR, Campbell RK, Rowan M,

	Sharma S, Dennisuk LA, Karlsen M, Gass A, Gittelsohn J. Impact of Baltimore Healthy Eating Zones: an environmental intervention to improve diet among African American youth. <i>Health Education &amp; Behavior</i> , 2015, 42(1 Suppl):97S-105S. doi: 10.1177/1090198115571362.
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<b>Project</b>	Navajo Healthy Stores
<b>Evidence Rating</b>	Moderate
<b>Description</b>	Navajo Healthy Stores was a 14-month intervention trial implemented with the Navajo Nation that sought to increase availability of healthier foods in local food stores and to promote these foods at the point of purchase and through community media. Six intervention phases were conducted, with each phase lasting 6–10 weeks. The intervention was carried out by local nutritionists and health workers who were fluent in both English and Navajo and had experience in delivering nutrition interventions in the Navajo Nation. In each region, the main grocery store and a few smaller stores housed the intervention. Each interventionist was assigned 1–2 stores and conducted a 1–2 hour interactive session at each store 2–4 times per month. Interactive sessions included healthy cooking demonstrations, taste-testing, promotional giveaways, and responding to questions from store customers. Interventionists also worked with food stores to stock healthier foods and set up media materials (e.g., educational displays, posters, and shelf labels). Radio announcements of key messages were recorded and played regularly in both Navajo and English.
<b>Results/Outcomes</b>	The program was tested in 10 store regions, half of which were randomized to intervention and half to comparison. The evaluation used a pre-post sample of systematically sampled adult Navajo consumers (baseline, n = 276; post-intervention, n = 145). Intervention and control groups comparisons revealed that only body mass index (BMI) showed a trend toward impact of the intervention (P = 0.06). However, greater exposure to the intervention was associated with significantly reduced BMI (P ≤ 0.05) and improved healthy food intentions (P ≤ 0.01), healthy cooking methods (P ≤ 0.05), and healthy food getting (P ≤ 0.01). With increasing exposure, the odds of improving overweight or obese status was 5.02 (95% CI: 1.48, 16.99; P ≤ 0.01) times the odds of maintaining or worsening overweight or obese status. Thus the intervention was associated with reduced overweight/obesity and improved obesity-related psychosocial and behavioral factors among those persons most exposed to the intervention.
<b>Citation(s)</b>	Gittelsohn J, Kim EM, He S, Pardilla M. A food store-based environmental intervention is associated with reduced BMI and improved psychosocial factors and food-related behaviors on the Navajo nation. <i>Journal of Nutrition</i> , 2013, 143(9):1494-500. doi: 10.3945/jn.112.165266. Epub 2013 Jul 17.

### Active Living/Physical Activity

Multi-component physical activity interventions that have been found to be effective include:

- School-based, multi-component physical activity interventions (including those that combine many of the strategies above – e.g. enhanced PE, classroom activity breaks, active transportation, after school activity space and equipment, build behavioral skills, etc.)<sup>DG-SE, PAG-Suf, WHO-EI</sup>



- Preschool/childcare-based, multi-component physical activity programs (e.g., provide portable play equipment, provide staff training in structured PA sessions, integrate PA in teaching and learning activities, increase outdoor play time)<sup>DG-ME, PAG-Sug</sup>
- Multi-component workplace supports for active commuting; may include physical infrastructure (e.g., bicycle parking or cyclist showers), educational or social support programs (e.g., workplace travel plans, walking groups, or walk/bike to work campaigns), or financial incentives (e.g., free bicycle parking and fees for car parking)<sup>WW-SE</sup>

Program Examples:

School-Based

<b>Project</b>	Lifestyle Education for Activity Program (LEAP)
<b>Evidence Rating</b>	Moderate
<b>Description</b>	The Lifestyle Education for Activity Program (LEAP) is a multi-component, physical activity intervention designed to change the instructional program and school environment to support increased physical activity among high school girls. LEAP involves 6 components: Physical Education (PE) classes, health education, school environment, school health services, faculty/staff promotion, and family/community involvement. The program includes gender-specific activities for girls that are designed enhance physical activity self-efficacy and enjoyment, teach the physical and behavioral skills needed to adopt and maintain an active lifestyle, and involve girls in moderate to vigorous physical activity during 50% or more of PE class time.
<b>Results/Outcomes</b>	The program was evaluated through a group-randomized controlled field trial conducted at 24 high schools. A school-based sample of 2744 girls (48.7% African American, 46.7% White) participated in a measurement protocol when they were in eighth and then ninth grade. At follow-up, 45% of girls in the intervention schools and 36% of girls in the control schools reported vigorous physical activity during an average of 1 or more 30-minute time blocks per day over a 3-day period. No difference in BMI was noted. Findings suggest that a comprehensive school-based intervention can increase regular participation in vigorous physical activity among high-school girls.
<b>Source(s)/Additional Information</b>	Missouri Department of Health and Senior Services. Community Health Improvement Resources. Physical Activity: Evidence-Based Interventions/Multiple Strategies: <a href="http://health.mo.gov/data/InterventionMICA/PhysicalActivity/index.html">http://health.mo.gov/data/InterventionMICA/PhysicalActivity/index.html</a>  Resources and materials for LEAP are available at <a href="http://www.sph.sc.edu/usc_cparg/leap/index.html">http://www.sph.sc.edu/usc_cparg/leap/index.html</a>
<b>Citation(s)</b>	Pate RR, Ward DS, Saunders RP, Felton G, Dishman RK, Dowda M. Promotion of physical activity among high-school girls: a randomized controlled trial. <i>American Journal of Public Health</i> , 2005, 95(9):1582-7.

Worksite

<b>Project</b>	Move to Improve
<b>Evidence Rating</b>	Moderate
<b>Description</b>	Move to Improve was a 12-week workplace intervention designed to increase leisure-time physical activity. The program was implemented in partnership with

	the Building Better Health program of The Home Depot, Inc., which provides health promotion programs to Home Depot employees. The Move to Improve intervention consisted of two primary components: 1) Goal setting, which included both personal goals and team goals for achieving specific, yet realistic and attainable goals for reaching recommended levels of physical activity; and 2) Organizational action, which encompassed four features – senior management endorsement and support, joint employee-management steering committees, group and organizational goals and incentives for participation, and environmental prompts that encouraged physical activity and illustrated opportunities to be active.
<b>Results/Outcomes</b>	The program was evaluated through a group-randomized study among a multi-racial/ethnic sample of 1442 employees at 16 Home Depot worksites throughout the U.S. Worksites were paired based on number of employees and nature of work, and each paired site randomized to receive the Move to Improve program or a health education control condition (consisting of a health risk appraisal and monthly newsletters). Results showed that intervention participants had greater increases in moderate and vigorous physical activity and walking compared to control participants (p<.01, p<.05, and p<.01 respectively). In addition, the percent of participants meeting Healthy People 2010 recommendations for engaging in moderate or vigorous physical activity increased from 31% to 51% in the intervention group, whereas it remained near 25% for control participants.
<b>Citation(s)</b>	Dishman RK, DeJoy DM, Wilson MG, Vandenberg RJ. Move to Improve: A randomized workplace trial to increase physical activity. <i>American Journal of Preventive Medicine</i> , 2009, 36(2):133-41. doi: 10.1016/j.amepre.2008.09.038.

### Healthy Eating and Active Living Combined/Obesity Prevention

Multi-component healthy eating and active living interventions that have been found to be effective include:

- Multi-component obesity prevention interventions (e.g. may include a combination of educational, environmental, and behavioral activities such as: nutrition education, aerobic/strength training and exercise sessions, environmental supports, etc.)<sup>WHO-EI, WW-SS</sup>
- School-based, multi-component programs promoting nutrition and physical activity<sup>CG-IE, DG-ME, WHO-EI</sup>; and school-based obesity prevention and control programs<sup>CG-IE, WW-SS</sup>
- Nutrition and physical activity, and obesity prevention interventions in preschool and child care settings<sup>DG-ME, WW-SS</sup>
- Worksite obesity prevention and control programs<sup>CG-Rec, DG-ME, WHO-EI, WW-SS</sup>
- Culturally appropriate interventions targeting weight loss, healthy dietary habits and increased physical activity<sup>WHO-MEI</sup>
- Combined diet and physical activity promotion programs for people at increased risk of type 2 diabetes<sup>CG-Rec</sup>
- Efforts that encourage/increase support for breastfeeding (breast feeding promotion programs) as a strategy to reduce obesity<sup>CDC-Rec, WW-SS</sup>

Program Examples:

#### School-Based

<b>Project</b>	Coordinated Approach to Child Health (CATCH)
<b>Evidence Rating</b>	Strong

<p><b>Description</b></p>	<p>The Coordinated Approach to Child Health (CATCH) is a comprehensive, multi-component program designed to increase physical activity and encourage healthy food choices while preventing tobacco use in children from kindergarten through 8th grade. The program is delivered by teachers and after-school coordinators in schools and after-school programs, and incorporates family and community involvement. Components of CATCH include 1) Go For Health curriculum, which teaches students how to identify, practice, and adopt healthy eating habits and engage in physical activity through hands-on lessons and activities that encourage behavior change; 2) A physical education component that consists of specific high energy activities designed to keep kids moving while also having fun; 3) The Eat Smart component, which involves school food service personnel in coordinating healthy messages in the school and preparing healthier meals; 4) A family component, which invites families to visit the school and engage in the CATCH lessons with their children in order to increase parents' awareness and knowledge about nutrition and physical activity; and in turn, motivate them to improve the home environment and initiate their own behavior change; and 5) Homework assignments, which students are required to complete with family members outside of school. CATCH is also delivered in after-school and summer enrichment programs, thus extending its reach beyond the school and into the rest of the community.</p>
<p><b>Results/Outcomes</b></p>	<p>CATCH was evaluated through a randomized control trial involving schools from four states (California, Louisiana, Minnesota, and Texas). Schools were randomized to either intervention (56 schools) or control conditions (40 schools). Schools in the control group received the usual health curriculum, PE, and food service programs. Students were followed in a 3-year longitudinal study. Results were as follows:</p> <ul style="list-style-type: none"> <li>• At first follow-up, the percentage of energy intake from total fat from school lunches was reduced in the intervention schools compared to control schools (<math>p &lt; 0.001</math>).</li> <li>• At first follow-up and at the school level, time spent in moderate-to-vigorous and vigorous activity during PE class increased in intervention schools compared to control schools (<math>p &lt; 0.02</math>). At the individual level, students in the intervention groups reported more daily vigorous activity than control students (<math>p &lt; 0.003</math>). At 3-year follow-up, these gains diminished slightly; however, compared to the control students, intervention students still reported more daily rigorous activity (<math>p &lt; 0.001</math>).</li> <li>• At first follow-up and at the individual level, fat intake was reduced by 2.4% among students in intervention schools compared to 0.3% for students in control schools (<math>p &lt; .001</math>). At 3-year follow-up these between group differentials were maintained.</li> <li>• At 3-year follow-up, intervention students continued to have increased dietary knowledge and intentions, compared to control students.</li> </ul> <p>CATCH has been implemented in 7,500 schools and after-school programs in 19 states around the country and in Canada.</p>
<p><b>Source(s)/Additional Information</b></p>	<p>CDC Community Health Improvement Navigator - <a href="http://wwwn.cdc.gov/CHI/database/items/coordinated-approach-to-child-health-catch">http://wwwn.cdc.gov/CHI/database/items/coordinated-approach-to-child-health-catch</a></p> <p>Healthy Communities Institute -</p>

	<p><a href="http://cdc.thehcn.net/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=3612">http://cdc.thehcn.net/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=3612</a></p> <p>National Cancer Institute, Research-Tested Intervention Programs - <a href="http://rtips.cancer.gov/rtips/programDetails.do?programId=175413">http://rtips.cancer.gov/rtips/programDetails.do?programId=175413</a></p> <p>World Health Organization. <i>Interventions on Diet and Physical Activity: What Works: Summary Report</i>. Available at: <a href="http://www.who.int/dietphysicalactivity/summary-report-09.pdf">http://www.who.int/dietphysicalactivity/summary-report-09.pdf</a></p>
<b>Citation(s)</b>	<p>Lytle LA, Stone EJ, Nichaman MZ, Perry CL, Montgomery DH, Nicklas TA, Zive MM, Mitchell P, Dwyer JT, Ebzery MK, Evans MA, Galanti TP. Changes in Nutrient Intakes of Elementary School Children Following a School-Based Intervention: Results from the CATCH Study. <i>Preventive Medicine</i>, 1996, 25, 465-477.</p> <p>Nader PR, Stone EJ, Lytle LA, Perry CL, Osganian SK, Kelder S, Webber LS, Elder JP, Montgomery D, Feldman HA, Wu M, Johnson C, Parcel GS, Luepker RV. Three-year maintenance of improved diet and physical activity: the CATCH cohort. Child and Adolescent Trial for Cardiovascular Health. <i>Archives of Pediatric &amp; Adolescent Medicine</i>, 1999, 153(7):695-704.</p>

<b>Project</b>	The HEALTHY Study
<b>Evidence Rating</b>	Strong
<b>Description</b>	<p>The HEALTHY Study was a multicomponent, school-based program addressing risk factors for diabetes among middle school-aged children whose race or ethnic group and socioeconomic status placed them at high risk for obesity and type 2 diabetes. The intervention included 4 components: 1) A nutrition component, aimed at improving the nutritional quality of food and beverages offered in school as well as promoting healthy food options through messaging, cafeteria-based educational events, taste tests, and food service staff training; 2) A physical education (PE) component, which involved supplying lesson plans and equipment, training PE teachers, and providing PE assistants to advise teachers in order to increase the time students spent in moderate-to-vigorous physical activity; 3) A behavioral component, which involved classroom activities and dissemination of family materials (e.g., newsletters, take-home packets) in order to increase knowledge, enhance decision-making skills, and support youth in accomplishing goals; and 4) A social marketing/communications component aimed at enhancing and promoting changes through messages, images, events, and activities. The program was facilitated by members of the HEALTHY Study group, as well as school administrators, teachers, food service staff, PE teachers, and trained student peer communicators.</p>
<b>Results/Outcomes</b>	<p>The program was evaluated through a randomized controlled trial administered among 42 middle schools across the US. Schools were randomly assigned to either the intervention (21 schools) or assessment only (control, 21 schools). A total of 4603 students participated (54.2% Hispanic and 18.0% black). At the beginning of 6th grade and the end of 8th grade, students were assessed for body-mass index (BMI), waist circumference, and fasting glucose and insulin levels. Over the course of the study period, there was a decrease in the primary outcome--the combined prevalence of overweight and obesity--in both the intervention and control schools, with no significant difference between the school groups.</p>

	However, significant differences were observed in the intervention over the control school in terms of secondary outcomes, which included obesity (BMI $\geq$ 95th percentile), percentage of students with waist circumference at or above the 90th percentile, fasting insulin levels (P = 0.04 for all comparisons), and prevalence of obesity (P = 0.05). It is noted that these reductions in secondary outcomes may reduce the risk of type-2 diabetes.
<b>Source(s)/Additional Information</b>	CDC Health Improvement Navigator - <a href="http://wwwn.cdc.gov/CHIdatabase/items/the-healthy-study">http://wwwn.cdc.gov/CHIdatabase/items/the-healthy-study</a>  Healthy Communities Institute - <a href="http://cdc.thehcn.net/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=3783">http://cdc.thehcn.net/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=3783</a>
<b>Citation(s)</b>	Foster GD, Linder B, Baranowski T, Cooper DM, Goldberg L, Harrell JS, Kaufman F, Marcus MD, Treviño RP, Hirst K. A school-based intervention for diabetes risk reduction. HEALTHY Study Group. <i>New England Journal of Medicine</i> , 2010, 363(5):443-53. doi: 10.1056/NEJMoa1001933. Epub 2010 Jun 27.

#### School and Community

<b>Project</b>	Shape Up Somerville
<b>Evidence Rating</b>	Moderate
<b>Description</b>	Shape Up Somerville started as community-based, comprehensive intervention designed to prevent obesity in culturally diverse, high-risk, early-elementary (grades 1-3) school children in Somerville, Massachusetts. Overarching strategies included increasing physical activity options and availability of healthful foods within the school, after-school, home, and community environments. Activities to promote healthy food choices and physical activity were developed by the Shape Up team comprised of individuals from multiple sectors of the community. Components of the program included improved nutrition in schools, a school health curriculum, an after-school curriculum, parent and community outreach, collaboration with community restaurants, school nurse education, and a safe routes to school program. The Shape Up Somerville approach has been expanded to a city-wide effort benefiting all community residents.
<b>Results/Outcomes</b>	The original Shape Up Somerville intervention was evaluated through a non-randomized controlled trial involving three culturally diverse urban cities in Massachusetts—Somerville (the intervention community), and two socio-demographically-matched control communities. After one year, BMI z-scores in the intervention community decreased by -0.1005 (p = 0.001, 95% confidence interval, -0.1151 to -0.0859) compared with children in the control communities (after controlling for baseline covariates). This translates to an average reduction of one pound of weight gain over eight months for an 8-year-old child, which on a population level, would result in large numbers of children moving out of the overweight category and reducing their risk for chronic disease later in life.
<b>Source(s)/Additional Information</b>	CDC Community Health Improvement Navigator: <a href="http://wwwn.cdc.gov/CHIdatabase/items/a-community-intervention-reduces-bmi-z-score-in-children-shape-up-somerville-first-year-results">http://wwwn.cdc.gov/CHIdatabase/items/a-community-intervention-reduces-bmi-z-score-in-children-shape-up-somerville-first-year-results</a>  Missouri Department of Health and Senior Services. Community Health Improvement Resources. Nutrition: Evidence-Based Interventions/Multiple Strategies. <a href="http://health.mo.gov/data/InterventionMICA/Nutrition/index.html">http://health.mo.gov/data/InterventionMICA/Nutrition/index.html</a>

	<p>The New York Academy of Medicine and Trust for America's Health. A Compendium of Proven Community-Based Prevention Programs, 2013 Edition. Available at:  <a href="http://healthyamericans.org/assets/files/Compendium_Report_1016_1131.pdf">http://healthyamericans.org/assets/files/Compendium_Report_1016_1131.pdf</a></p> <p>Additional program information and resources:  <a href="http://www.nutrition.tufts.edu/index.php?q=research/shapeup-somerville">http://www.nutrition.tufts.edu/index.php?q=research/shapeup-somerville</a></p> <p>Information on Somerville's community-wide initiative:  <a href="http://www.somervillema.gov/departments/health/sus">http://www.somervillema.gov/departments/health/sus</a></p>
<b>Citation(s)</b>	Economos CD, Hyatt RR, Goldberg JP, Must A, Naumova EN, Collins JJ, and Nelson ME. A community intervention reduces BMI z-score in children: Shape Up Somerville first year results. <i>Obesity</i> (Silver Spring, Md.), 2007, 15 (5): 1325-36.

#### Faith-Based

<b>Project</b>	Project Joy
<b>Evidence Rating</b>	Moderate
<b>Description</b>	<p>Project Joy is a culturally appropriate and multi-component intervention that targeted African American women aged 40 years or older. The intervention, which took place over one year, aimed at fostering a healthy lifestyle through group diet education, physical activity sessions and spiritual strategies. Intervention components were based on a community action and social marketing model developed originally by the Health and Religion Project of the Pawtucket Heart Health Program. Lay church leaders were involved in implementing the program along with health educators.</p>
<b>Results/Outcomes</b>	<p>A total of 529 women from 16 churches enrolled in the program and were assigned to either the Project Joy program or a comparison group that received self-help materials. Intervention participants exhibited significant improvements in body weight (-1.1 lbs), waist circumference (-0.66 inches), systolic blood pressure (-1.6 mmHg), dietary energy (-117 kcal), dietary total fat (-8 g), and sodium intake (-145 mg). The self-help group did not. In the intervention group, women in the top decile for weight loss at one year had even larger, clinically meaningful changes in risk outcomes (-19.8 lbs).</p>
<b>Source(s)/Additional Information</b>	<p>World Health Organization. <i>Interventions on Diet and Physical Activity: What Works: Summary Report</i>. Available at:  <a href="http://www.who.int/dietphysicalactivity/summary-report-09.pdf">http://www.who.int/dietphysicalactivity/summary-report-09.pdf</a></p>
<b>Citation(s)</b>	Yanek LR, Becker DM, Moy TF, Gittelsohn J, Koffman DM. Project Joy: Faith based cardiovascular health promotion for African American women. <i>Public Health Reports</i> , 2001, 116(Suppl. 1):68-81.

#### Community-Based/Multi-Setting

<b>Project</b>	Charlotte REACH 2010
<b>Evidence Rating</b>	Preliminary to Moderate
<b>Description</b>	<p>Charlotte REACH 2010 addressed three health behaviors that are risk factors for diabetes and heart disease: fruit &amp; vegetable consumption, physical activity, and cigarette smoking. The project was implemented between 2001 and 2005 in a predominantly African American, economically disadvantaged community in Charlotte, North Carolina. The initiative was led by a community coalition comprised of the county health department, a community health center, and other</p>

	<p>service providers. Lay health advisors, who were well-trusted individuals in the community, acted as health advocates for the community and were a key component of the project. They were trained and advised by a team of health education specialists to develop programs such as walking groups, smoking cessation classes, and religion-based nutrition programs. In addition, several projects were aimed at creating environmental and policy changes in the community, including a farmers' market, a diabetes registry, a culturally specific mass media campaign, and communicating with political leaders on smoking cessation legislation.</p>
<b>Results/Outcomes</b>	<p>The impact of the program on health behaviors was assessed through randomized telephone surveys conducted annually among a cross-section of community residents. Survey results were compared with African Americans' responses from a statewide survey. Analysis of survey data showed that at baseline (in 2000), fruit and vegetable consumption among the local and statewide groups were similar, but by 2005 program participants were more likely than statewide African American respondents to eat at least five servings of fruits and vegetables each day (<math>p &lt; 0.001</math>). In terms of physical activity, program participants classified as physically inactive decreased between 2000 and 2005, while the statewide rate increased. There were also significant decreases in physical inactivity between 2000 and 2005 among women (<math>p = 0.02</math>), college graduates (<math>p = 0.01</math>), and respondents aged 35 to 54 years (<math>p = 0.01</math>). In comparison, there was an increase in physical inactivity in statewide survey respondents age 35 to 54 years during the same time period (<math>p = 0.02</math>). Smoking rates decreased across both the intervention and statewide sample populations, but only the decline among female program participants reached statistical significance (<math>p = 0.03</math>).</p>
<b>Source(s)/Additional Information</b>	<p>CDC Health Improvement Navigator Description - <a href="http://wwwn.cdc.gov/CHIdatabase/items/charlotte-reach-2010">http://wwwn.cdc.gov/CHIdatabase/items/charlotte-reach-2010</a></p> <p>Healthy Communities Institute - <a href="http://cdc.thehcn.net/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=3897">http://cdc.thehcn.net/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=3897</a></p>
<b>Citation(s)</b>	<p>Plescia M, Herrick H, Chavis L. Improving health behaviors in an African American community: the Charlotte Racial and Ethnic Approaches to Community Health project. <i>American Journal of Public Health</i>, 2008, 98(9):1678-84. doi: 10.2105/AJPH.2007.125062. Epub 2008 Jul 16.</p>

<b>Project</b>	Change the Future WV (Communities Putting Prevention to Work program)
<b>Evidence Rating</b>	Preliminary
<b>Description</b>	<p>Change The Future WV emphasizes improving access to healthy food options and safe environments for physical activity to create healthier communities in the Mid-Ohio Valley. Funded by the CDC Communities Putting Prevention to Work initiative, the program ultimately seeks to reduce obesity and obesity-related chronic diseases by implementing policy, systems, and environmental change strategies. Through Change The Future WV, multiple community and school-based interventions have been implemented including 1) the Fresh Fruit and Vegetable Snack Program, which provides fruit and vegetable snacks during regular school hours to help increase access to healthy foods and introduced youth to a wide variety of fruits and vegetables; 2) a public awareness initiative entitled, Making the Healthy Choice the Easy Choice, which utilizes print,</p>

	<p>television, radio, as well as outdoor advertising (e.g., billboards) to encourage residents to adopt healthy behaviors; 3) partnerships with area grocery stores, which have converted at least one checkout aisle to a healthy checkout where healthy foods and physical activity toys replaced unhealthy items; 4) a farmer's market effort designed to increase the number of markets, hours open per week, and number of vendors accepting Electronic Benefit Transfer (EBT)/debit cards; and 5) policy and environmental interventions to increase physical activity, such as placing physical education teachers and an education coordinator in middle and high schools, and working with community partners and low-income residents to develop a master plan that places a strong emphasis on improving existing trails.</p>
<b>Results/Outcomes</b>	<p>The public awareness campaign has reached more than 133,000 people. Officials have noted that the average number of students per school who participate in daily physical education has increased by approximately 23% since the initiative began. Furthermore, the master plan to increase physical activity was adopted by five of the six counties in the Mid-Ohio Valley by May 2012, and trails are being developed for better public access.</p>
<b>Source(s)/Additional Information</b>	<p>For more information:  Change the Future WV website:  <a href="http://www.changethefuture.wv.gov/Pages/default.aspx">http://www.changethefuture.wv.gov/Pages/default.aspx</a>  CDC Community Profile:  <a href="http://www.cdc.gov/nccdphp/dch/programs/CommunitiesPuttingPreventiontoWork/communities/profiles/obesity-wv_midohiovalley.htm">http://www.cdc.gov/nccdphp/dch/programs/CommunitiesPuttingPreventiontoWork/communities/profiles/obesity-wv_midohiovalley.htm</a></p>
<b>Citation(s)</b>	<p>Miami Matters Promising Practices Website:  <a href="http://www.miamidadematters.org/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=30107">http://www.miamidadematters.org/index.php?module=promisepractice&amp;controller=index&amp;action=view&amp;pid=30107</a></p>



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