INTERVENTION TABLE 13

Point-of-Purchase Prompts for Nutrition

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
United States						
Schwartz (2007) Connecticut	Verbal prompts at the point of purchase for fruit and juice ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Group randomized trial ***DURATION:*** 1 school year ***SAMPLE SIZE:*** 646 students (309 exposed, 337 unexposed) from 2 schools (1 intervention, 1 control) ***PRIMARY OUTCOME:*** Dietary consumption ***MEASURES:*** Direct observation of fruit and juice consumption during lunch ***DATA COLLECTION:*** During 2 days, several months apart, parent volunteers observed fruit consumption in the cafeteria in the intervention and control schools. Observers were instructed to casually observe what children were eating without initiating conversation. For each child that purchased lunch, the observers recorded whether or not the child took fruit or juice, whether or not the fruit or juice was consumed, and if consumed whether or not the fruit or juice was fully or partially consumed. ***LIMITATIONS:*** Inter-rater reliability was not tested between the observers; parents may not have been objective in their observations; parents may have been aware of the study hypotheses; small sample size; few participants qualified for the free or reduced lunch	5-10 year olds 11% racial/ethnic populations; fewer than 10% of students were eligible for free or reduced price lunch (intervention population) ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** All children purchasing school lunches were exposed to the intervention. The food service director reported that on average 50% of children buy lunch at each of the two schools.	***LEAD AGENCY:*** The school district ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ADAPTATION:*** Not reported ***ADOPTION:*** The school district's Healthy Advisory Committee originated the idea for the intervention. ***IMPLEMENTATION:*** Cafeteria workers provided verbal prompts ("Would you like fruit or juice?") while children were standing in front of the fruit; if children indicated no, then no further prompts were given. In control schools, no changes were made (the same fruit and juice options remained available) but no verbal prompts were given. ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** The researcher visited the intervention school and spoke with the cafeteria workers to verify that the intervention had been successfully implemented.	***RESOURCES:*** 1. Schools 2. School personnel (including school administrators, superintendent, cafeteria workers) ***FUNDING:*** Not reported ***STRATEGIES:*** Not reported	***NUTRITION:*** *Day 1* 1. At the intervention school, 76% of those who purchased a school lunch took a piece of fruit (45% in the control school), 21% took a carton of juice (20% in the control school), and 3 children stated that they did not want to take either (35% in the control school). 2. Students at the intervention school were nearly four times as likely to take fruit than students at the control school (OR=3.96, CI 2.2-7.0), but they were not more likely to take juice (OR=1.0, CI 0.5-2.0). 3. Among the children who took fruit, 70% at the intervention and 69% at the control schools ate it, and among those who took juice, 64% at the intervention and 58% at the control schools drank it. 4. The likelihood of eating fruit among children in the intervention school was three and half times that of children in the control school (OR=3.5, CI 2.0-6.2), and the likelihood of drinking juice was similar (OR=1.1, CI 0.6-2.5). *Day 2* 5. Children in the intervention school were nearly twice as likely to take fruit (OR=1.9, CI 1.1-3.3) and juice (OR=2.1, CI 1.2-3.8) than children in the control school. Children in the intervention school were twice as likely to eat fruit (OR=2.3, CI 1.3-4.2) or drink juice (OR=2.9, CI 1.5-5.5) than children in the control school.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Blom-Hoffman (2008) Massachusetts	Fruit and vegetable (F&V) posters located at the point-of-purchase area in school cafeterias ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* 1. School-wide fruit and vegetable of the day announcements 2. Classroom fruit and vegetable of the day posters 3. Dole CD-ROM used in classrooms to provide role modeling from animated characters 4. Lunch aides provided stickers to students "caught" eating fruit and vegetables 5. Six take-home activity books and assignments (to provide parents with consistent, simple messages and provide context for parents and children to discuss information through shared book reading)	***DESIGN:*** Group randomized trial ***DURATION:*** Winter 2006 through Spring 2008 ***SAMPLE SIZE:*** 297 kindergarten and first-grade students from 4 schools (2 intervention, 2 control) ***PRIMARY OUTCOME:*** Environment change (process evaluation only-logs and direct observation) ***MEASURES:*** No impact or outcome measures (process evaluation only) ***DATA COLLECTION:*** No impact or outcome data collection (process evaluation only) ***LIMITATIONS:*** Not reported	Urban 5-10 year olds Intervention group: 94% received free or reduced price lunch, 97% racial/ ethnic populations Control group: 88% received free or reduced price lunch, 96% racial/ ethnic populations ***ELIGIBILITY:*** The 4 elementary schools used in the study were chosen because they were hosting the Athletes in Service (AIS) physical education program. ***EXPOSURE/ PARTICIPATION:*** All children in the kindergarten and first-grade classes received the entire intervention. All children in the elementary schools were exposed to the point-of-purchase posters and school-wide announcements.	***LEAD AGENCY:*** Research team and school staff ***THEORY/FRAMEWORK:*** Social Learning Theory ***EVIDENCE-BASED:*** This study builds off previous nutrition-focused school initiatives such as the National 5-A-Day program and Planet Health ***REPLICATION/ADAPTATION:*** Not reported ***ADOPTION:*** Not reported ***IMPLEMENTATION:*** Researchers from Northeastern University designed the intervention. School staff members were the primary implementers of the program. The principal or an athlete made the morning fruit and vegetable announcements. Lunch aides passed out stickers to students "caught" eating fruit and vegetables. Classroom teachers presented the CD-ROM and passed out the family activities. ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** 1. Direct observation - doctoral students observed the degree to which lunch aides gave stickers to students (contingent on F&V consumption during school lunch), and recorded whether the cafeteria poster reflected the fruit and/or vegetable of the day. 2. Daily logs – doctoral students examined daily logs for the daily fruit and vegetable of the day announcement. 3. CD-ROM Checklist – computer teachers were asked to check off the sections of the CD-ROM modules that the children were exposed to and to report their observations of the children's reactions to the CD-ROM. 4. Intervention Rating Profile – adapted versions of the profile were used to assess program acceptability. Teacher and lunch aide perceptions of the appropriateness of the program/ procedures, importance of outcomes, and unintentional side effects were assessed.	***RESOURCES:*** 1. Dole CD-ROM 2. Posters 3. Activity books 4. Stickers 5. Children's books ***FUNDING:*** This project (design, implementation and evaluation) was funded by a 5-year grant from the National Institutes of Health. ***STRATEGIES:*** Not reported	***PROCESS EVALUATION RESULTS ONLY ENVIRONMENTAL CHANGE:*** 1. Overall integrity for lunchtime procedures was high, ranging from 75% to 100% compliance. 2. Morning announcements occurred on most school days (91% of monitored days). 3. Students were exposed to, on average, 3 songs, 6 fruit and vegetable characters, and 3 cooking videos during year 1 from CD-ROM activities (teachers reported that, on average, students paid very good attention and seemed to enjoy the CD-ROM program) ***UNINTENDED BENEFITS:*** 4. Teachers reported that the program made them more aware of their own fruit and vegetable consumption (mean= 4.85, SD=1.63) and helped them eat more fruit and vegetables (mean= 4.69, SD=1.60).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Perry, Bishop (2004) Minnesota	Addition of verbal prompt in the school lunch line ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. School policy to increase fruit and vegetable consumption by adding an additional serving of fruit and/or vegetable in the lunch line and school snack cart *Complex:* 1. 2 week kick-off campaign featuring life size fruit and vegetable characters on posters in cafeteria. 2. Monthly samplings of fruits and vegetables 3. Annual challenge week competition encouraging students to eat 3 servings of fruits and/ or vegetables per day during lunch. 4. Theater production regarding fruit and vegetable consumption	***DESIGN:*** Group randomized trial ***DURATION:*** 2 years ***SAMPLE SIZE:*** 1,168 students in grades 1-4 in 26 elementary schools (13 intervention, 13 control) ***PRIMARY OUTCOME:*** Fruit and vegetable consumption ***MEASURES:*** Direct observation (number of fruits and vegetables consumed by students during lunch) ***DATA COLLECTION:*** Trained observers watched the students from a distance in the cafeteria and recorded all items eaten at lunch and their portion size. The lunch observations were processed using the Nutrition Data System. ***LIMITATIONS:*** Possible cross-school contamination as all schools shared same food sources and lunch menus; during the second year of the intervention, juice was added to menu for all schools in the district, reducing the potential to observe intervention-control differences at the end of the second year	5-10 year olds ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** 26 schools from one large school district in the Twin Cities metropolitan area of Minnesota were exposed to the intervention (13 intervention, 13 delayed-intervention).	***LEAD AGENCY:*** Research team ***THEORY/FRAMEWORK:*** Social cognitive theory and a health behavioral planning model that emphasizes changes in social-environmental factors ***EVIDENCE-BASED:*** The study builds off of previous multi-component interventions focused on increasing fruit and vegetable consumption in youth, but seeks to focus largely on an environmental component ***REPLICATION/ADAPTATION:*** The study was adapted from the 5-A-Day Power Plus Program in St. Paul, MN ***ADOPTION:*** Not reported ***IMPLEMENTATION:*** Research team developed the intervention, trained the school food staff (1-day training sessions), worked with school staff to increase the quality/ quantity of fruits and vegetables served and visited weekly to support/organize events. Monthly meetings were held during the 1st school year with the cook managers from each intervention school to discuss and share implementation issues and new ideas. The meetings were quarterly during the second year. ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Direct observations of the lunchroom, lunch line, food cart and food service staff behavior (number of fruits and vegetables students could choose on lunch line, appeal of fruits and vegetables served, verbal encouragement of food service staff, number of fruits and vegetables on snack cart). Trained observers conducted 320 observations throughout the second year of the intervention.	***RESOURCES:*** 1. Funding for fruits and vegetables and monthly samplings 2. Posters 3. Prizes for winners of "challenge week" 4. Personnel to train food service and cook managers 5. Theater production resources 6. Funds to organize final special event ***FUNDING:*** National Cancer Institute ***STRATEGIES:*** Not reported	***NUTRITION:*** 1. Verbal encouragement by food service staff in the lunch line was significantly associated with fruit and vegetable consumption (no potatoes, no juice) at follow-up (R2=0.40; regression coefficient= 0.64, p=0.001), fruit and vegetable consumption (no potatoes) at follow-up (R2= 0.26; regression coefficient= 0.52, p=0.007), fruit consumption (no juice) at follow-up (R2= 0.24; regression coefficient= 0.49, p=0.011) and increased consumption of fruits and vegetables (no potatoes, no juice) from baseline to follow-up (regression coefficient= 0.34). 2. Number of fruits and vegetables on the snack cart was associated with increased fruit and vegetable consumption from baseline to follow-up (R2=0.45; regression coefficient= 0.53, p=0.001). ***OTHER:*** 3. Intervention schools had greater verbal encouragement from food service staff than control schools (42% of observations vs. 11% of observations, p=0.01) and more fruits and vegetables that students could choose (mean= 4.37 vs. mean= 3.89, p<0.01).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Horgen, Brownell (2002) Location not reported	Point of purchase messages identifying healthy food choices in restaurants ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Prices of healthy food lowered by 20%-30% in restaurants *Complex:* Not reported	***DESIGN:*** Quasi-experimental, time series study ***DURATION:*** 14 weeks ***SAMPLE SIZE:*** Not reported ***PRIMARY OUTCOME:*** Food purchases ***MEASURES:*** 1. Sales records ***DATA COLLECTION:*** Sales collected and monitored in three phases: Period 1: Initial baseline Period 2: Price reduction (3 wks) Period 3: Interim baseline Period 4: Point of purchase messages Period 5: Point of purchase messages + price reduction Period 6: Final baseline ***LIMITATIONS:*** Unable to track overall caloric and fat consumption (e.g., patrons may have compensated for healthier choices with less healthier choices later); increased sales of target items may have decreased sales of other, less healthy foods or patrons simply purchased more; study design precluded counterbalancing for intervention order effects (health information was expected to have a more lasting impact than price decreases)	Urban (~250,000 people in the city) Caucasian Upper-middle-class ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Approximately 225-275 customers patronized the restaurant daily. The restaurant served a varying clientele but did have a substantial base of regular (i.e., weekly) customers.	***LEAD AGENCY:*** Restaurant and the research team ***THEORY/ FRAMEWORK:*** Point of purchase messages guided by Health Belief Model and Matching Model, where choice = ratio of consumption values times inverse of delay ratio; interval between food choice and eating is short; satisfaction prevails over distal goal of good health. ***ADOPTION:*** Not reported ***EVIDENCE-BASED:*** Previous studies have shown that price changes can affect purchase of healthy foods. ***REPLICATION/ ADAPTATION:*** Not reported ***IMPLEMENTATION:*** Research team developed point of purchase messages and trained restaurant staff. Restaurant staff reduced prices for target items and monitored sales. ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** 1. Point of purchase messages and related materials 2. Funds to compensate restaurant for the price reductions 3. Personnel to train restaurant staff ***FUNDING:*** Not reported ***STRATEGIES:*** Not reported	***FOOD PURCHASES:*** 1. For target items, the effect size of period on sales was 0.39, indicating that variability in sales attributable to period was 39%. For control items, 6% of the variability in sales was attributable to period [the sales by period interaction was significant ($F(5,796)=10.69$, $p<0.001$]. 2. Sales of target items varied based on intervention period ($F(5, 398)=22.98$, $p<0.001$). Sales increased during intervention periods and decreased during baseline periods. 3. The price decrease intervention significantly increased sales for each target food item above the initial baseline: chicken sandwich [from mean= 1.81 (SD=1.36) to 12.90 (SD=5.71), $p<0.0001$], chicken salad [from mean= 2.71 (SD=2.17) to 6.24 (SD=2.43), $p<0.0001$], soup cup (from mean= 6.71 (SD=3.20) to 15.24 (SD=5.23), $p<0.0001$) and soup bowl (from mean= 3.24 (SD=1.95) to 8.33 (SD=4.15), $p<0.0001$). 4. Average sales of all food items during period 3 were lower than those during period 2; differences were significant for the chicken salad and chicken sandwich, $p<0.0001$. 5. Mean sales of all items rose during period 4 from period 3 levels, but none of the increases were significant. However, the increases in sales of the target chicken sandwich ($p<0.05$), soup cup ($p<0.01$) and soup bowl ($p<0.01$) were significantly higher than period 1 sales. 6. During period 5, sales of the chicken sandwich and chicken salad were significantly higher than period 1 ($p<0.0001$ and $p<0.05$, respectively) and period 3 ($p<0.0001$ for both), but not period 4. Soup cup and soup bowl sales were significantly higher than period 1 sales ($p<0.0001$) but not period 3 or 4. 7. Average sales of all items decreased in period 6, and were not significantly different than sales during period 1 (except for soup cup sales, $p<0.05$). 8. Sales of target items during period 2 were significantly higher than those during period 4 for the chicken sandwich ($p<0.001$) and the chicken salad ($p<0.05$). For all foods, sales were higher during the price reduction than the point of purchase message period. 9. Sales during period 4 were consistently the lowest of sales during any intervention period.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
French, Jeffery (2001) Minnesota	Three levels of promotional signage examined: 1. No signs 2. Signs labeling low-fat snacks 3. Signs labeling low-fat snacks combined with signs placed on vending machines encouraging a low-fat snack choice. ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Pricing strategies examined on low fat snacks from 55 vending machines in high schools and worksites. Four levels of pricing utilized: 1. Equal price 2. 10% price reduction 3. 25% price reduction 4. 50% price reduction *Complex:* Not reported	***DESIGN:*** Time series study ***DURATION:*** 12 months ***SAMPLE SIZE:*** The sample consisted of 55 vending machines placed in 12 secondary schools and 12 worksites. Each study site had 1 to 5 vending machines. ***PRIMARY OUTCOME:*** Vending machine sales ***MEASURES:*** Sales data ***DATA COLLECTION:*** Sales data were recorded continuously throughout the intervention. Manual inventory counts were performed by vending route drivers each time the machine was serviced. The sales data were entered into a database at the vending company's central office. The dependent variable was average sales per site per experimental period (averaged across all machines at a given site). These data were considered in 3 ways: (1) proportion of low-fat snack items, (2) absolute number of low-fat snack items, and (3) net profits (food sales minus whole-sale cost to the vendor). Total product volume was also examined to determine whether the intervention affected overall sales volume. ***LIMITATIONS:*** Data was missing from 2 site-treatment condition combinations (out of 288), and this problem was addressed via regression imputation; the problem of empty slots (time delay between a slot's emptying and a driver's refilling the machine) may have limited the size of the observed effects on sales; and relatively short time period for each treatment condition	Adults 14-18 year olds ***ELIGIBILITY:*** Convenience sample of sites selected for demographic and geographic diversity. ***EXPOSURE/ PARTICIPATION:*** Anyone using vending machines were potentially exposed to the intervention.	***LEAD AGENCY:*** The research team from the University of Minnesota, Minneapolis. ***THEORY/FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Other studies have shown that vending machines are a good source for nutrition interventions for pricing and promotion strategies. ***REPLICATION/ADAPTATION:*** Not reported ***ADOPTION:*** Not reported ***IMPLEMENTATION:*** The research team planned the intervention and worked with vending route drivers to set up the vending machines at the beginning of each treatment period. Each treatment condition was implemented at each of the sites in a randomly assigned sequence. Vending route drivers and supervisors were trained by study staff on the study protocol 2 weeks before the intervention and at the midpoint of the study. ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Study staff conducted weekly site visits to each school and worksite to provide information about the fidelity of implementation.	***RESOURCES:*** 1. Vending machines 2. Promotional signage 3. Vending route drivers 4. Low-fat snacks ***FUNDING:*** The study was funded by the National Institutes of Health. ***STRATEGIES:*** Not reported	***FOOD SALES:*** 1. Price reduction was significantly associated with percentage of low-fat snack sales ($F=156.89$, $p<0.001$). Price reductions of 50%, 25%, and 10% were associated with increases in low-fat snack sales of 93%, 39%, and 9%, respectively. 2. The total number of low-fat snack sales was significantly different by each price reduction condition ($F=96.98$, $p<0.001$), but the low-fat snack sales in the 10% price reduction did not differ significantly from the equal price condition. 3. Price reductions of 25% and 50% were associated with significant increases in the absolute number of low-fat snacks sold relative to the equal price and 10% price reduction conditions ($p<0.05$). 4. The total number of low-fat snacks sold differed significantly between the 25% and 50% price reduction conditions (post hoc comparisons ($p<0.05$). 5. There was a significant interaction between setting (school or worksite) and price reduction ($F=13.9$, $p<0.0001$). The size of the increase in the number of low-fat snack sales in the 50% price reduction condition was slightly larger at schools than worksites. 6. Promotion of low-fat snacks was significantly and independently associated with greater low-fat snack sales ($F=3.48$, $p<0.04$). 7. The percentages of low-fat snack sold in the no-label, label-only, and label-plus-sign conditions were 14.3, 14.5, and 15.4, respectively. Only the label-plus-sign condition differed significantly from the no-label condition. Total number of low-fat snack sales did not differ significantly by promotion condition, but the label-plus-sign condition differed significantly from the no-label condition ($p<0.05$).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Curran, Gittelsohn (2005); Vastine, Gittelsohn, (2005) Arizona	Apache Health Stores (AHS) intervention – Shelf labels and posters promoted the availability of healthy foods in reservation food stores increasing availability of healthy foods in stores on the White Mountain and San Carlos Apache reservations Six intervention phases: Phase 1 consume healthier snacks; Phase 2 consume cereals lower in sugar and higher in fiber; Phase 3 use cooking spray; Phase 4 choose pork and beans instead of regular chili; Phase 5 choose water over soda or diet soda over regular soda; Phase 6 eat fruits and vegetables for snacks ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* 1. Cooking demonstrations and taste tests held 2-4 times at each intervention store 2. Mass media strategies with newspaper cartoons & radio announcements	***DESIGN:*** Non-randomized trial ***DURATION:*** July 2003 - June 2004 ***SAMPLE SIZE:*** 11 stores on 2 reservations (6 additional stores served as comparisons located outside the reservation area) ***PRIMARY OUTCOME:*** Fidelity of implementation ***MEASURES:*** No impact or outcome measures (formative and process evaluation only) ***DATA COLLECTION:*** No impact or outcome data collection (process evaluation only) ***LIMITATIONS:*** The financial state of the White Mountain Apache tribe had an impact on the stores, prohibiting them from ordering new food items during some phases of the intervention.	100% American Indian Approximately 21,500 people live on the 2 reservations ***ELIGIBILITY:*** Informed consent required ***EXPOSURE/ PARTICIPATION:*** Patrons living close to or choosing to shop at the stores were exposed to the intervention.	***LEAD AGENCY:*** Apache Healthy Stores staff ***THEORY/FRAMEWORK:*** Social Cognitive Theory and social marketing ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ADAPTATION:*** Not reported ***ADOPTION:*** Not reported ***IMPLEMENTATION:*** The intervention was largely implemented by an interventionist and supporting staff person, including a full-time process evaluator. The full cooperation of the community (stores, newspaper, and radio station) was necessary in order to implement many phases of the intervention. A list of foods to promote during each phase was given to the store managers. ***FORMATIVE EVALUATION:*** 1. The 6-month formative evaluation phase focused on understanding shopping habits and identifying store management practices. A general intervention plan was presented to stakeholders and gathered suggestions for successful implementation. 2. In-depth interviews were conducted with community leaders (n=13). Interviews with store customers (a representative sample) addressed food shopping habits (n=15). Interviews with management and staff of both large (n=6) and small (n=10) stores were conducted to learn more about store management procedures. 3. Food purchasing frequency and data on food preparation methods were collected through a customer survey administered to 33 shoppers/ food preparers. 4. Twenty-four hour dietary recalls were administered (n=47). 5. A two-day training was conducted with representatives from tribal health organizations, a large-store manager, and project staff to provide results of the formative evaluation. ***PROCESS EVALUATION:*** 1. A store visit evaluation form was completed 2-4 times per phase per intervention store and evaluated the availability of the promoted foods, shelf labeling, presence and visibility of promotional materials, and customer receipt of flyers. *(continued next page)*	***RESOURCES:*** 1. New foods for the store food promotion program 2. Promotional materials 3. Cooking demonstrations and taste test materials ***FUNDING:*** The study was financially supported by the Isadore and Gladys Foundation and the United States Department of Agriculture. The National Diabetes Prevention Center of Gallup, NM contributed additional funding. ***STRATEGIES:*** Not reported	***PROCESS EVALUATION RESULTS ONLY – ENVIRONMENTAL CHANGE:*** 1. At the store (institutional) level, the AHS intervention was implemented with a high level of reach. All 11 stores participated. 2. The intervention achieved a moderate to high level of fidelity (which improved from one phase to the next) in terms of promoting food availability, appropriate shelf labeling, and the presence of posters and educational displays. 3. The availability of the minimum standard of promoted foods was 78%. Excluding phase 6, the availability of all possible and minimum standard promoted food items increased from 31 to 100% and 71 to 100%, respectively. 4. Shelf labels were beneath the appropriate food items 91% of the time. Posters were present and visible 82% of the time. From phases 2-4, educational displays were present in the stores 73% of the time. 5. At the mass media (community) level, the AHS intervention was implemented with a low to moderate degree of fidelity and dose. Newspaper cartoons appeared at least once per phase 58% of the time and the radio announcement appeared only 42% of the time. 6. At the customer (individual) level, the AHS intervention was implemented with a high reach and dose. Satisfaction scores for the cooking demonstrations and taste tests were high.

(Continued from previous study)						
				2. Mass media logs were completed once per phase on each reservation and evaluated fidelity and dose of the audio and visual communication materials. 3. Cooking demonstration and taste test observation were completed during each phase of the intervention and evaluated fidelity, reach and dose of the demonstrations and taste tests. 4. Participants were asked to complete a self-administered survey after cooking demonstrations and taste tests.		

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
International						
Steenhuis, Van Assema (2004) Netherlands	Availability of shelf-labels identifying low-fat food choices in supermarkets (9 low-fat food product categories labeled in stores) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* 1. Educational program including posters with information about the program, a brochure about healthy eating, recipe cards, and a self-help manual. Optional elements included badges for store personnel, a healthy nutrition contest and order-separator bars at the cash register.	***DESIGN:*** Group randomized trial ***DURATION:*** 6 months ***SAMPLE SIZE:*** 2,203 clients in 13 supermarkets assigned to 3 different experimental conditions: 1. No intervention control 2. Educational program without shelf-labeling 3. Education program with shelf labeling ***PRIMARY OUTCOME:*** Dietary consumption ***MEASUREMENTS:*** 1. Questionnaire (food frequency list, body mass index, attitude, social support, self-efficacy, socio-demographics, household size, cooking for the household regularly or not, following a specific diet). Food frequency list used to measure fat intake previously validated (correlation of 0.7 with a 7-day diet record). ***DATA COLLECTION:*** Respondents were asked to fill out a questionnaire one month before, 2 months after, and 6 months after the start of the intervention. The food frequency list consisted of 35 questions covering 19 categories of food items, and respondents were asked how frequently they consumed the food items. ***LIMITATIONS:*** This study only measured total fat intake and did not account for variables like sales during assessment; a relatively small number of supermarkets were included in the study	Adults Mean age=46 years 80% Female ***ELIGIBILITY:*** Respondents had to be regular clients of the supermarket (i.e., at least once a week). The main inclusion criteria for supermarkets were that they had to have a minimum number of 700 customers a day and no labeling program conducted in the last 2 years. ***EXPOSURE/ PARTICIPATION:*** All residents living close to or choosing to visit the supermarkets were exposed to the intervention.	***LEAD AGENCY:*** Researchers from Open University, Maastricht University, and the University of Hawaii. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ADAPTATION:*** Not reported ***ADOPTION:*** Not reported ***IMPLEMENTATION:*** Participating supermarkets displayed the intervention components including the shelf labels and educational material. ***FORMATIVE EVALUATION:*** The shelf-labeling and education components were based on the outcomes of a preliminary study that analyzed conditions for program development and implementation and were pretested among managers of supermarkets and consumers. ***PROCESS EVALUATION:*** During the intervention period, the research team regularly visited the experimental sites to ensure optimal implementation of the program.	***RESOURCES:*** 1. Posters 2. Brochures 3. Recipes 4. Self-help manual 5. Badges for supermarket staff 6. Materials for healthy nutrition contest 7. Order-separator bars 8. Shelf labels 9. Supermarkets ***FUNDING:*** Not reported ***STRATEGIES:*** Not reported	***NUTRITION:*** 1. Using the supermarkets as the unit of analysis (n=13), mean fat consumption decreased 0.4 fat points in the education plus labeling group and 0.3 points in the educational only and control groups at first posttest (2 months after the start of the intervention). Analyses of covariance did not show a significant difference between groups at first posttest, correcting for baseline consumption ($p>0.64$ for all). 2. Regression analyses with the individual as the unit of analysis (n=2,203) revealed no significant difference between the groups with respect to the first posttest, correcting for baseline consumption ($p>0.53$). 3. Looking at results after the second posttest (6 months after the start of the intervention), mean fat intake was 19.4 (education plus labeling group), 20.0 (education only group) and 19.3 (control group). Both the analyses with individuals and supermarkets as the unit of analysis did not show a significant difference between the groups with respect to fat intake at the second posttest ($p>0.28$ for all). ***OTHER:*** 4. No significant differences were found between intervention groups on posttest scores for attitudes, social influences, and self-efficacy, corrected for baseline scores, with both individuals and supermarkets as the unit of analysis ($p>0.15$ for all). 5. More than half of the respondents reported that they had looked at their own fat consumption level as a result of the intervention (52% in the education plus labeling group and 60% in the education only group), and almost half of the respondents reported their intention to follow one or more suggestions given in the program (40% in the education plus labeling group and 45% in the education only group). No significant differences existed between the two intervention groups.

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