Multicomponent Interventions to Increase Availability of Healthier Foods and Beverages in Schools

Summary Evidence Table – Economic Systematic Review

Study Information	Study and Population Characteristics	Trial Name Intervention & Comparison	Effectiveness	Intervention Cost	Healthcare Cost Averted Productivity Loss Averted	Economic Summary Measure
Author (Year): Anderson et al. (2005) **Design:** Cluster RCT. **Economic Method:** Intervention Cost **Funding:** Food Standards Agency of the UK **Monetary Conversions:** Index year assumed 2000 in U.K. pounds	**Location:** Dundee, Scotland, U.K. **School Type:** Junior schools Schools paired and 2 schools each randomly assigned to treatment and control. **Population** Children 6-7 years and 10-11 years **Sample Size:** intervention 511 students from 2 schools Control 464 students from 2 schools. Cognitive and attitude assessment 69 in intervention and 66 in control. Food diaries 64 intervention and 65 in control.	**Intervention:** Increased fruit and vegetable in school meal and 'tuck shops' Tasting opportunities Posters and quizzes Point of purchase marketing Newsletters for students and parents Information sessions in assemblies, training sessions, class presentations. Activities included reading and writing on topic. **Comparison:** Control schools assumed to have no intervention.	Intervention versus control Cognition and attitude towards fruit and vegetable. Food and nutrient intake based on 3-day food diary at baseline and end of intervention. Intervention children tasted more fruit and vegetable than control. Conception of 'healthy' changed significantly for intervention. Hedonic scale showed decreased preference for high fat and high sugar for intervention group. Intervention group chose fewer high fat and sugar items in top 5 categories. No change noted for control.	Cost per student per year 2.04 Cost per school over 9 months: 378 (for capital and development) 13.50 (consumables) Plus cost of staff time, for which no value provided. **Component Included in Cost:** NR **Components not included in cost:** Did not include staff time. **Source of Data:** NR	**Healthcare cost:** NR **Productivity:** NR **Other Economic Costs:** NR	**No summary economic measures** **Limitations** Short 9 month intervention. No assessment of staff time cost.

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	Time Horizon: Intervention from Oct 1999 to June 2000. Length 9 months.		Fruit intake increased for intervention versus control. No change in vegetable intake. No difference in macronutrient intake.			
Author (Year): Mobley et al. (2012) **Design:** RCT **Economic Method:** Intervention Cost **Funding:** NIDDK/NIH grant numbers U01-DK61230, U01-DK61249, U01-DK61231, and U01-DK61223 **Monetary Conversions:** Index year 2008 in U.S. dollars.	**Location:** Houston, TX; Portland, OR; Philadelphia, PA; Irvine, CA; Chapel Hill, NC; Pittsburgh, PA; San Antonio, TX **School Type:** Grades 6 through 8 **Population** Middle school students **Sample Size:** Intervention 4603 students from 21 schools Control From 21 schools. Count not reported. **Demographics:** Free National School Lunch Program (NSLP)	**Intervention:** Primary prevention of diabetes through school diet and physical activity. The present study evaluates the diet component, one of 4 components (diet, physical activity, knowledge, and marketing). Targeted National School Lunch and Breakfast Programs and A la Carte to improve nutrition content of what students actually selected. **Components:** Research dietitian at each school Trained food service manager and staff Coordinated goal achievement 5 Goals Lower fat content Increase fruits and vegetables	Intervention versus control Proportion with BMI => 85th percentile (overweight or obese): No difference Blood glucose: No difference Nutrition data for items selected by students or sold to students collected from food service documents, 20 days at baseline and 20 days end of study. Converted to nutrition content based on standardized system.	$3000 per school per year given to each school's food service department **Component Included in Cost:** NR **Source of Data:** Funding per school foodservice department per year to defray cost and losses.	**Healthcare cost:** NR **Productivity:** NR **Other Economic Costs:** NR	**No summary economic measures** **Limitations** 4-part intervention with only diet component analyzed. Cost of dietitian and other resources not included.

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	eligible 73% to 82% Free National School Breakfast Program (NSBP) eligible 81% to 89% **Time Horizon:** Intervention length 3 years. Fall 2006 to Spring 2009.	Eliminate milk-fat, sugary drinks, 100% fruit juice. Increase high-fiber foods. **Comparison:** Control schools with no change in food preparation	For National School Lunch Program, Success in reducing fat, portion size, sugared drinks, and high fat milk. No difference in fiber and fruits/vegetables. For National School Breakfast Program, success in reducing fat. No difference in other goals. For a la carte, successful removal and replacement of high fat, high sugar items.			
Author (Year): Probart et al. (2006) **Design:** Survey **Economic Method:** Revenues from a la carte and vending machines and predictors of sales. **Funding:** Pennsylvania Department of Health through CDC Grant/Cooperative	**Location:** Statewide, PA **School Type:** High Schools **Population** Survey addressed to school foodservice directors from 271 high schools representative of the State. **Sample Size:**	**No intervention.** Mail plus internet survey to determine factors predictive of competitive food sales and school lunch participation. 3 mail reminders were sent, obtaining an 84% response. Competitive foods defined as those purchases from a la carte and vending machines.	Mean daily participation in school lunch predicted inversely by size of enrollment, positively by percent on free or reduced price lunch program, positively by prohibitions on outside bought local fast food in cafeteria.	Mean a la carte sales of $691 per day per school ($241 can be reimbursable and $450 likely did not meet criteria for reimbursement). School receiving part of revenues from competitive foods positively associated with number of machines.	**Healthcare cost:** NR **Productivity:** NR **Other Economic Costs:** NR	**No summary economic measures**

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Agreement # U58/CCU319314 **Monetary Conversions:** Assumed index year 2004 in U.S. dollars	228 surveys completed (84%) **Demographics:** Representative survey of high school foodservice directors in PA, USA. **Time Horizon:** No dates provided. Assumed survey occurred in 2004.	Constructed dependent variables included sales from a la carte, number of vending machines per enrolled student, and mean school lunch participation rate. **Components:** Assessed a la carte, school lunch participation, vending machines availability, prohibitions on outside fast food, nutrition content of vended foods, promoted beverages. **Comparison:** NA	Predictors of a la carte sales % students eligible for reduced-price lunch inversely related Earlier start for lunch positively related Vending Machines per school: Mean number of machines per school was 5.9 Machines owned by soft-drink company positively associated with number of machines.	Number of less nutritious foods offered positively associated with number of machines. **Source of Data:** Survey responses from foodservice directors		

NR, not reported
RCT, randomized controlled trial