CHOICES NATIONAL ACTION KIT:

Fast-Food Restaurant Calorie Labeling (2018) Strategy Report

CHOICES uses cost-effectiveness analysis to compare the costs and outcomes of different policies and programs promoting improved nutrition or increased physical activity in schools, early care and education and out-of-school settings, communities, and clinics. This strategy report describes the projected national population reach, impact on health and health equity, implementation costs, and cost-effectiveness for an effective strategy to improve child health. This information can help inform decision-making around promoting healthy weight. To explore and compare additional strategies, visit the CHOICES National Action Kit at www.choicesproject.org/actionkit.

TABLE OF CONTENTS

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Contact the CHOICES Project: choicesproject@hsph.harvard.edu

STRATEGY PROFILE

Describes the estimated benefits, activities, resources, and leadership needed to implement a strategy to improve child health. This information can be useful for planning and prioritization purposes.

Require fast-food chain restaurants with 20 or more locations nationally to list calories for standard menu items on in-store and drive-thru menu boards along with succinct statements concerning suggested daily caloric intake (implemented in 2018).

WHAT POPULATION BENEFITS?

All youth and adults ages 2 years and older.

WHAT ARE THE ESTIMATED BENEFITS?

Relative to not implementing the strategy

Decrease daily energy intake and, in turn, promote healthy weight.

✓ **Decrease daily energy intake**

✓ **Prevent cases of obesity**

✓ **Projected to be cost-saving**

More details available on the CHOICES National Action Kit at choicesproject.org/actionkit

Continued on the next page

WHAT ACTIVITIES AND RESOURCES ARE NEEDED?

Activities	Resources	Who Leads?
Manage rollout of restaurant calorie menu labeling and communicate policy change to restaurant chains	• Time of Food and Drug Administration to manage rollout	Food and Drug Administration
Review rule requirements	• Time of legal analyst to review rule requirements	Restaurant chain
Analyze nutrient content for each standard menu item	• Cost of analyzing menu items by entering recipes in a nutrition database	Restaurant chain
Replace menus and menu boards to comply with policy	• Cost of designing new menus (if applicable) • Cost of menu and menu board replacement	Restaurant chain
Monitor compliance with menu labeling policy	• Time of public health department inspectors to monitor compliance	Local public health department

- See our resource library for relevant peer-reviewed publications, research reports, & briefs at choicesproject.org/resource-library
- Learn more about the evidence for the strategy Fast-food restaurant calorie labeling (2018) in the CHOICES peer-reviewed publication:
  Dupuis et al. 2024 *Am J Prev Med*

Adapted from CHOICES Strategy Profile: Fast-Food Restaurant Calorie Labeling (2018). CHOICES Project Team at the Harvard T.H. Chan School of Public Health, Boston, MA; September 2023.

NATIONAL RESULTS

Projected national population reach, impact on health behaviors and prevention of excess weight gain, implementation costs, and cost-effectiveness of the strategy. These national results may help inform your organization's decision-making around promoting healthy weight.

DESCRIPTION	***Strategy has been implemented nationally*** Require fast-food chain restaurants to list calories for standard items on menu boards along with suggested total daily caloric intake (implemented in 2018)

OUTCOME	**Mean** (95% UI)*
BEHAVIOR CHANGE PER PERSON *Change in health behavior per person in the first year*	**801 fewer fast-food calories** (792; 811) *Fewer calories from fast-food per year*
COST PER PERSON *Average annualized cost per person to implement the strategy over the model period*	**$0.09†** ($0.09; $0.09) See Cost Results
POPULATION REACH *Reach over the model period*	**349,000,000** (348,000,000; 350,000,000)
OBESITY PREVENTED *Cases of obesity prevented in the final year*	**550,000** (518,000; 586,000)
CHILD OBESITY PREVENTED *Cases of child obesity prevented in the final year*	**41,500** (33,700; 50,800)
HEALTH EQUITY IMPACT *Impact on obesity-related health equity in the final year*	***Not likely to improve health equity by race, ethnicity, & income*** See Health Equity Indicators
QUALITY-ADJUSTED LIFE YEARS (QALYS) GAINED *Quality-adjusted life years (QALYs) gained (totals over the model period)*	**267,000** (251,000; 283,000)
OBESITY YEARS PREVENTED *Years with obesity prevented (totals over the model period)*	**3,940,000** (3,740,000; 4,140,000)
HEALTH CARE COSTS SAVED PER $1 INVESTED *Total health care costs saved per total intervention costs over the model period*	**$22.60** ($21.90; $23.30) *Cost-saving*
COST PER QALY GAINED *Net cost per quality-adjusted life year (QALY) gained (totals over the model period)*	***Cost-saving*** >99% likelihood

Projections for the model period 2018-2027 (10 years, inclusive of the start and end years).
Costs are in 2019 dollars and discounted at 3% annually.
*Results displayed are the mean and 95% uncertainty interval (UI). CHOICES calculates 95% uncertainty intervals by running the model 1,000 times and reporting the range (95% of estimates, centered on the mean) of projected outcomes that account for uncertainty from data sources and population projections.
†The cost per person estimate differs from the estimate of $0.10 reported in Dupuis et al. 2024 *Am J Prev Med*, which was based on the cost per first year population reach instead of the 10-year population reach.

✓ Explore our User Guide for more information about the CHOICES National Action Kit at choicesproject.org/action-kit-user-guide
✓ Learn more about CHOICES Methods at choicesproject.org/methods
✓ Find definitions of each modeled outcome in the Glossary (p.12) at choicesproject.org/action-kit-glossary

COST RESULTS

Describes the estimated costs by activity and payer needed to implement a strategy to improve child health nationally. This information can be useful for planning and prioritization purposes.

This report includes cost estimates for the implementation of fast-food restaurant calorie labeling in the United States beginning in 2018. Costs are estimated from a societal perspective, meaning costs needed to implement the strategy are included regardless of who pays or whether the costs are budgetary or opportunity costs.

Average Annual Strategy Implementation Cost by Activity and Payer

Activity	Resources	Cost per Person†	Payer	Percent of Total Cost
Manage rollout of restaurant calorie menu labeling and communicate policy change to restaurant chains	• Time of Food and Drug Administration to manage rollout	$0.001	Federal government	1%
Review rule requirements	• Time of legal analyst to review rule requirements	<$0.001	Restaurant industry	<1%
Analyze nutrient content for each standard menu item	• Cost of analyzing menu items by entering recipes in a nutrition database	$0.01	Restaurant industry	9%
Replace menus and menu boards to comply with policy	• Cost of designing new menus (if applicable) • Cost of menu and menu board replacement	$0.06	Restaurant industry	71%
Monitor compliance with menu labeling policy	• Time of public health department inspectors to monitor compliance	$0.02	Local government	19%
TOTAL	--	**$0.09**	--	**100%**

Costs are in 2019 dollars and discounted at 3% per year. Sums may not equal total due to rounding.
†Average annualized cost per person to implement the strategy over the model period 2018–2027 (10 years). Cost per person estimates differ from those reported in Dupuis et al. 2024 *Am J Prev Med*, which were based on the cost per first year population reach instead of the 10-year population reach.

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Average Annual Strategy Implementation Cost by Payer and Cost Type			
	Cost per Person†		
Payer	**All Costs (% of Total)**	**Budgetary Costs (% of All Costs by Payer)**	**Opportunity Costs (% of All Costs by Payer)**
Federal government	$0.001 (1%)	$0.00 (0%)	$0.001 (100%)
State government	--	--	--
Local government	$0.02 (19%)	$0.00 (0%)	$0.02 (100%)
School district	--	--	--
School	--	--	--
Family/Individual	--	--	--
Industry	$0.07 (80%)	$0.06 (86%)	$0.01 (14%)
Nonprofit	--	--	--
Health care	--	--	--
TOTAL	**$0.09 (100%)**	**$0.06 (69%)**	**$0.03 (31%)**

Costs are in 2019 dollars and discounted at 3% per year. Sums may not equal total due to rounding.
†Average annualized cost per person to implement the strategy over the model period 2018–2027 (10 years). Cost per person estimates differ from those reported in Dupuis et al. 2024 *Am J Prev Med*, which were based on the cost per first year population reach instead of the 10-year population reach.

→ To compare the costs and impacts of strategies, use the CHOICES National Action Kit comparison builder. The strategy implementation cost tables included in this report may provide information useful for planning purposes.

DEFINITIONS

All costs include budgetary and opportunity costs.

Budgetary costs refer to the actual financial costs incurred.

Opportunity costs refer to the value of what you have to give up in order to choose something else. For example, if an annual professional development training for bullying prevention is replaced with a training for active physical education, there is no budgetary impact, but costs for teachers to attend the training are considered an opportunity cost. The opportunity cost of their time is included in a cost analysis from a societal perspective.

HEALTH EQUITY INDICATORS

Describes the projected impact of implementing a strategy nationally on health equity by race, ethnicity, and income.

Every person deserves access to healthy foods and drinks and opportunities to be physically active, which can help them grow up and live at a healthy weight. However, obesity levels vary by race, ethnicity, and income. Nationally, current and future projected obesity levels are highest among Black or African American and Hispanic or Latino race/ethnicity groups and populations with low household incomes.[1] These disparities are driven by many forces, including commercial determinants leading to increased intake of highly processed and marketed foods and drinks, as well as structural racism and social and economic determinants of health.[2-4] Effective policy and programmatic strategies promoting improved nutrition and increased physical activity can reduce health disparities and improve health equity.

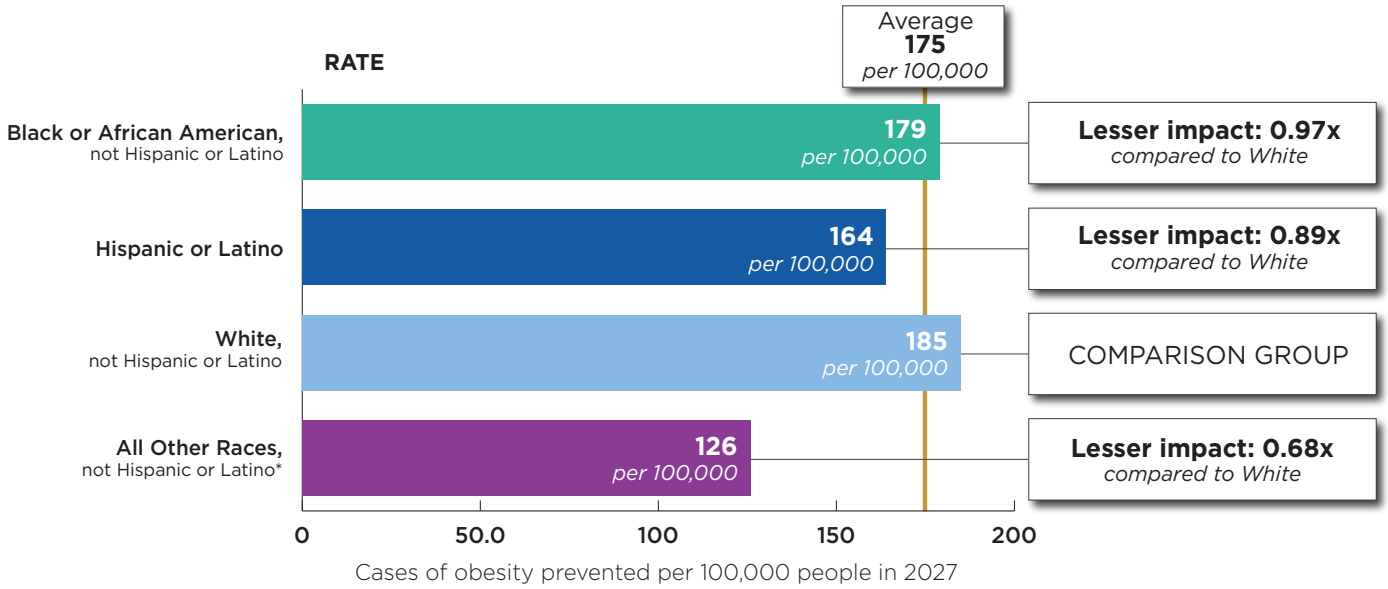
KEY TAKEAWAYS

If implemented over 10 years (2018-2027), this strategy is projected to:

- ✓ **Prevent 550,000 cases of obesity in 2027**
- ✓ **Prevent cases of obesity in all race and ethnicity groups and income groups**

Learn more about CHOICES methods for projecting health equity impacts at choicesproject.org/methods/healthequity

Comparative projected impact of the strategy by race and ethnicity



*All Other Races includes people who identify as American Indian/Alaska Native, Asian, Native Hawaiian or Pacific Islander, Multi-racial, or another race or ethnicity not represented in the categories shown. While each of these groups represent distinct populations with differences in health opportunities, risk, and outcomes, they are summarized together due to limited data in national- and state-level surveillance systems.

The Black or African American and Hispanic or Latino populations are projected to experience preventive benefits that are 0.97 and 0.89 times the preventive benefits experienced by the White population. *The comparative impact in each population group compared to the population average is provided in a table on page 9.*

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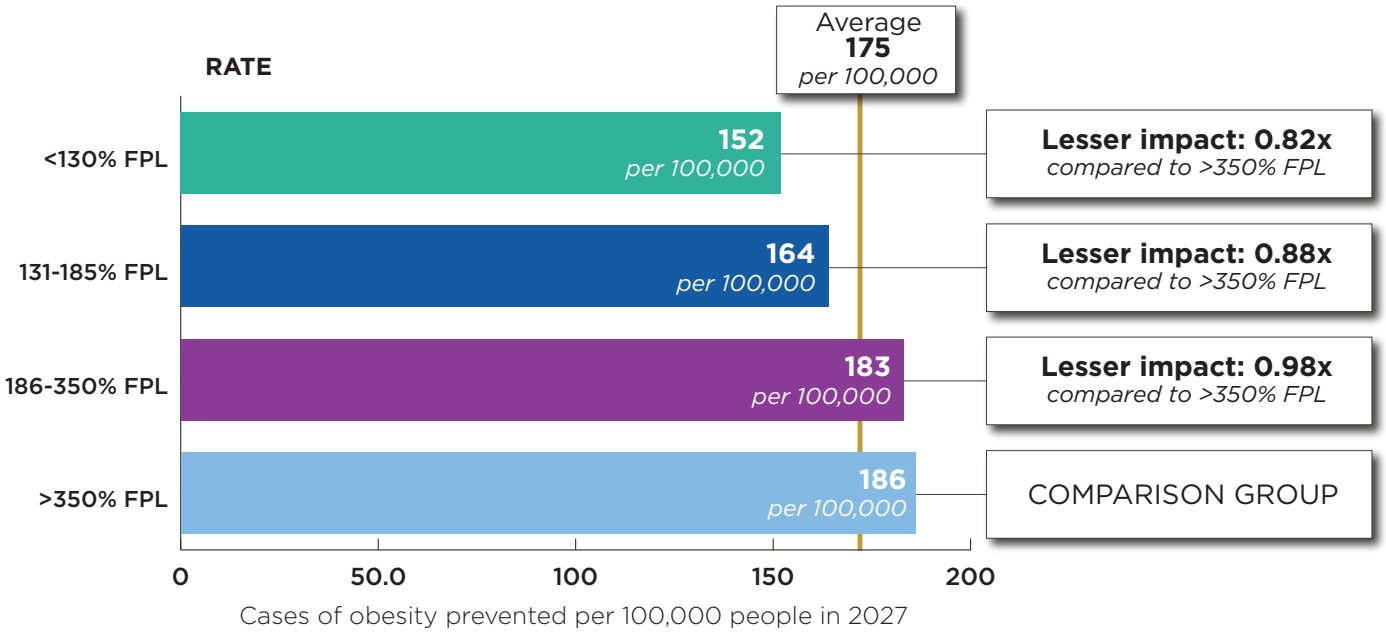
Comparative projected impact of the strategy by household income *as a percentage of the federal poverty level (FPL)*



Populations with lower household incomes (185% FPL or less) are projected to experience the smallest preventive benefits, which are 0.82-0.88 times the preventive benefits experienced by populations with the highest income (>350% FPL). *The comparative impact in each population group compared to the population average is provided in a table on page 9.*

How is this strategy expected to impact health equity?

Every person deserves opportunities to grow up and live at a healthy weight. A third of Americans consume fast food on any given day.[5,6] On days fast-food is eaten, both children and adults consume more calories,[7,8] and increased sugary drink and ultra-processed food intake can lead to increased risk of excess weight gain and chronic disease development.[9,10] Labeling calories on menus may shift individuals' behaviors to make healthier choices while eating out. Calorie labeling on menus at large chain restaurants was required nationally in 2018.[11] Recent studies have shown that implementation of menu calorie labeling has reduced calories purchased.[12] However, populations with lower incomes may have lower health or nutrition literacy and experience fewer benefits from calorie labeling compared with populations with higher incomes.[13,14] Reductions in calories purchased after menu calorie labeling was put in place were smaller in neighborhoods with lower incomes compared to those with higher incomes.[12] In the U.S., Black and Hispanic or Latino populations have lower median household incomes compared to non-Hispanic White populations,[15] driven by structural racism and economic and social marginalization. While national implementation of calorie labeling on fast-food restaurant menus is expected to improve health outcomes across all racial and ethnic and income groups, it is not expected to improve health equity by race, ethnicity, or income.

Continued on the next page

Projected impact of the strategy by race, ethnicity and income, mean (95% UI)[a]

	OBESITY PREVENTED	OBESITY PREVENTED PER 100,000	COMPARATIVE IMPACT[b]	
	Cases of obesity prevented in the final year	*Cases of obesity prevented per 100,000 people in the final year*	*Ratio of obesity prevented per 100,000*	
Race and Ethnicity			***Compared with White, not Hispanic or Latino***	***Compared with Population Average***
Overall	**550,000** (518,000; 586,000)	**175** (165; 186)	--	**1.00 (Reference)** N/A
Black or African American, not Hispanic or Latino	**70,600** (62,400; 79,200)	**179** (160; 200)	**0.97** (0.83; 1.14) *67% likelihood of lesser impact*	**1.02** (0.90; 1.16) *60% likelihood of greater impact*
Hispanic or Latino	**101,000** (93,400; 109,000)	**164** (151; 177)	**0.88** (0.81; 0.99) *99% likelihood of lesser impact*	**0.94** (0.87; 1.01) *94% likelihood of lesser impact*
White, not Hispanic or Latino	**343,000** (315,000; 372,000)	**185** (170; 201)	**1.00 (Reference)** N/A	**1.06** (1.02; 1.09) *>99% likelihood of greater impact*
All Other Races, not Hispanic or Latino[c]	**34,200** (29,900; 39,800)	**126** (111; 147)	**0.68** (0.58; 0.80) *>99% likelihood of lesser impact*	**0.72** (0.63; 0.83) *>99% likelihood of lesser impact*
Household Income *as a percentage of the federal poverty level (FPL)*			***Compared with >350% FPL***	***Compared with Population Average***
Overall	**550,000** (518,000; 586,000)	**175** (165; 186)	--	**1.00 (Reference)** N/A
<130% FPL	**110,000** (104,000; 118,000)	**152** (144; 161)	**0.82** (0.75; 0.88) *>99% likelihood of lesser impact*	**0.87** (0.82; 0.91) *>99% likelihood of lesser impact*
131-185% FPL	**52,800** (48,100; 57,700)	**164** (150; 180)	**0.88** (0.80; 0.98) *99% likelihood of lesser impact*	**0.94** (0.86; 1.01) *95% likelihood of lesser impact*
186-350% FPL	**148,000** (137,000; 163,000)	**183** (169; 201)	**0.98** (0.91; 1.07) *70% likelihood of lesser impact*	**1.04** (1.00; 1.11) *97% likelihood of greater impact*
>350% FPL	**238,000** (219,000; 258,000)	**186** (171; 200)	**1.00 (Reference)** N/A	**1.06** (1.02; 1.10) *>99% likelihood of greater impact*

Projections for the model period 2018-2027 (10 years, inclusive of the start and end years).

[a]Results displayed are the mean and 95% uncertainty interval (UI). CHOICES calculates 95% uncertainty intervals by running the model 1,000 times and reporting the range (95% of estimates, centered on the mean) of projected outcomes that account for uncertainty from data sources and population projections.

[b]Ratio that compares cases of obesity prevented per 100,000 in each population group with the reference group. When the value is greater than 1.0 for a population group, we project a greater health benefit for that group compared with the reference group. When the value is less than 1.0, we project a lesser health benefit. Note: Ratios are sensitive to extremely high and low rates, so they should be interpreted in the context of the absolute rates, represented by Obesity Prevented per 100,000 here. Results may differ if estimating absolute rates and relative impacts among children only. Likelihood of greater or lesser impact compared with the reference group is estimated based on running the model 1,000 times.

[c]All Other Races includes people who identify as American Indian/Alaska Native, Native Hawaiian or Pacific Islander, Multi-racial, or another race or ethnicity not represented in the categories shown. While each of these groups represent distinct populations with differences in health opportunities, risks, and outcomes, they are summarized together due to limited data in national- and state-level surveillance systems.

STRATEGY DETAILS & MODELING METHODS

Describes the reach, effect, and cost assumptions used to make national projections for the strategy, and provides links to additional resources related to the strategy.

STRATEGY

We modeled nationwide implementation of fast-food restaurant menu calorie labeling based on the final federal menu labeling regulations under section 4205 of the Patient Protection and Affordable Care Act of 2010, which was effective in May 2018.[11] The final rule issued by the U.S. Food and Drug Administration (FDA) required that chain restaurants and similar retail food establishments with 20 or more locations provide calories for standard menu items on menus and menu boards along with a succinct statement concerning suggested daily caloric intake.[11] The policy applies to menus and menu boards inside restaurants and at drive-thru windows. The CHOICES model evaluated the cost-effectiveness of calorie labeling at large fast-food chains, defined as restaurants with counter service and no wait staff.[16,17] Cost-effectiveness estimates for this existing policy can inform federal government decision making if there are proposals to amend the policy or to enact similar policies, such as front-of-package nutrition labeling (https://www.fda.gov/food/food-labeling-nutrition/front-package-nutrition-labeling).

REACH

We evaluated the impact of the regulations on all children and adults aged 2 and older. The strategy was estimated to reach 100% of children and adults aged 2 and older, for a total of 314 million people, during the first year of implementation.[17]

Restaurant menu calorie labeling would have a 10-year reach of 349 million people.

EFFECT

In order to evaluate the impact of menu labeling on weight change, we estimated mean daily calories consumed from fast food based on data from the 2011-2016 National Health and Nutrition Examination Survey (NHANES) 24-hour dietary recall.[17] Following the Food and Drug Administration's regulatory impact analyses, we assumed that 69% of fast-food meals would be from large chain restaurants.[18] We modeled the impact of restaurant menu calorie labeling on the calories purchased per fast-food meal based on a study of over 67 million fast-food restaurant transactions between 2015 and 2019.[12] This analysis found that customers purchased 4.7% fewer calories, equivalent to 73 calories, per transaction after implementation of calorie labeling.[12] Reductions in calories purchased due to the policy varied by median household income of the census tract in which the restaurant was located, with a 2.3% reduction in calories purchased per transaction at restaurants in the lowest income quartile (<$35,800) and a reduction of 8.1% calories purchased per transaction at restaurants in the highest income quartile ($66,120 or more).[12] Finally, the model assumed that people adjust their response to changes in energy intake to feel satiated, so that only 25% of the reduction in calories purchased would result in a change in total daily energy intake.[19-21] Mathematical models developed by Hall et al. (2011-2013)[22-24] were used to calculate the projected impact of reduced calorie intake due to menu labeling on body weight.

With calorie labeling in place, we estimate that each person in the U.S. would consume, on average, 801 fewer calories from fast-food per year. In 2027, fast-food restaurant menu calorie labeling would prevent 550,000 cases of obesity, and 41,500 of these cases prevented would be among children.[17]

COST

The model's evaluation of the cost of implementation was informed by the FDA's final regulatory impact analysis.[18] Federal government labor costs at the FDA for communicating the menu labeling guideline were included.[17] We assumed the restaurant industry would incur costs to perform nutritional analysis of menu items, including a nutrition database fee and four hours of dietitian time for each item, redesign and replace menus and menu boards, and conduct legal review.[17] Finally, the cost of local public health department monitoring to ensure compliance was included.[17]

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We estimated that fast-food restaurant menu calorie labeling would incur an annual cost per child of $0.09. *Note: this estimate varies from the published estimate of $0.10,[17] which was based on the cost per first year population reach instead of the 10-year population reach.

CHOICES METHODS

CHOICES uses cost-effectiveness analysis to compare the costs and outcomes of different policies and programs promoting improved nutrition or increased physical activity in schools, early care and education and out-of-school settings, communities, and clinics. Our methods include:

- **Key partner consultation:** Working with key partners & researchers to identify the most promising programs & policies for evaluation
- **U.S. population model:** Building a computer model of the U.S. population & projecting Body Mass Index (BMI) changes & health outcomes over time
- **Systematic reviews & meta-analyses:** Synthesizing scientific literature to estimate the likely effects of promising obesity prevention interventions on BMI & physical activity
- **Cost-effectiveness analysis:** Integrating information on the economic costs & health effects of interventions, utilizing a structured & transparent process
- **Health equity lens:** Projecting the impact of effective intervention strategies on population health and health equity

Learn more about CHOICES methods at choicesproject.org/methods.

WHY DOES CHOICES USE BMI AS A POPULATION HEALTH INDICATOR?

CHOICES focuses on programs and policies that can help reverse the societal and environmental conditions that drive increases in excess body weight and that emphasize healthy eating, improved physical activity, and reduced screen viewing. Excess body weight is associated with reduced quality of life and increased risk for chronic diseases like diabetes, heart disease, and cancers,[25] greater healthcare expenditures,[26] and increased mortality risk.[27] Obesity is a category of excess weight defined by body mass index (BMI), which is calculated as the ratio of a person's weight (kg) to their height squared (m^2).[28] Obesity is a chronic health condition recognized by the National Institutes of Health, the American Medical Association, Medicare, and Medicaid.

BMI is a useful population health indicator, although it does have limitations. BMI has been shown to be a good measure of individual-level adiposity, correlating highly (r=0.8) with gold standard measures of percent body fat, among adults, children and adolescents and for different gender and racial and ethnic groups.[29,30] BMI is relatively simple to collect and easy to calculate, and it is used widely in medical and scientific research to measure population health.

However, weight stigma occurs when people are blamed for their weight. Weight stigma can increase a person's risk of engaging in unhealthy eating behaviors and low levels of physical activity and can reduce both the quality of health care a person receives and their utilization of care, all undermining public health.[31] CHOICES evaluates the cost-effectiveness of policies and programs aimed at improving nutrition and physical activity environments, promoting related health behaviors, and promoting a healthy weight across all population groups and BMI levels.

For Additional Information

Contact the CHOICES team at choicesproject@hsph.harvard.edu for additional information about model assumptions.

For more information about this strategy, see:

Dupuis R, Block JP, Barrett JL, Long MW, Petimar J, Ward ZJ, Kenney EL, Musicus AA, Cannuscio CC, Williams DR, Bleich SN, Gortmaker SL. Cost Effectiveness of Calorie Labeling at Large Fast-Food Chains Across the U.S. Am J Prev Med. 2024 Jan 66(1):128-137. doi: 10.1016/j.amepre.2023.08.012.

For prior projections, see:

Gortmaker SL, Claire Wang Y, Long MW, Giles CM, Ward ZJ, Barrett JL, Kenney EL, Sonneville KR, Afzal AS, Resch SC, Cradock AL. Three interventions that reduce childhood obesity are projected to save more than they cost to implement. Health Affairs, 34, no. 11 (2015):1304-1311. Available at: https://pubmed.ncbi.nlm.nih.gov/26526252

CHOICES NATIONAL ACTION KIT: MODELED OUTCOMES GLOSSARY

Provides definitions for each modeled output displayed in the National Results table.

Modeled Output	Definition
BEHAVIOR CHANGE PER PERSON* *Change in health behavior per person in the first year*	The change in health behavior a person is projected to have after a strategy is put in place. Health behavior changes may include decreases in sugary drink intake, increases in physical activity, decreases in time spent watching TV, or increases in water intake. Behavior change per person is reported when the strategy aims to improve a specific health behavior and data are available to project how much a behavior would improve. *Averaged across people who actually receive the strategy.*
COST PER PERSON *Average annualized cost per person to implement the strategy over the model period*	The average annualized cost to implement the strategy over the model period (e.g., 10 years) per person reached over the model period. This includes cost by all payers (government, private sector, non-profit, individual/family). See the Cost Results for a breakdown of implementation costs by activity and payer. *Averaged across people in the intended population of focus where the strategy is adopted (that is, people who are eligible based on age, income, geographic area, and/or participation in the setting or program of focus, and who could potentially receive the strategy based on estimated adoption rates).*
POPULATION REACH* *Reach over the model period*	The number of people reached by the strategy over the model period. *Includes all people in the intended population of focus where the strategy is adopted (that is, people who are eligible based on age, income, geographic area, and/or participation in the setting or program of focus, and who could potentially receive the strategy based on estimated adoption rates).*
OBESITY PREVENTED* *Cases of obesity prevented in the final year*	In the final year of the model, the difference in the projected number of people with obesity if the strategy were not put in place and the projected number of people with obesity if the strategy were put in place.
CHILD OBESITY PREVENTED* *Cases of child obesity prevented in the final year*	In the final year of the model, the difference in the projected number of children with obesity if the strategy were not put in place and the projected number of children with obesity if the strategy were put in place.
HEALTH EQUITY IMPACT* *Impact on obesity-related health equity in the final year*	The projected impact on differences in obesity levels between population groups defined by race, ethnicity, and by household income. Learn more about our methods for projecting health equity impacts.
QUALITY-ADJUSTED LIFE YEARS (QALYS) GAINED *Quality-adjusted life years (QALYs) gained (totals over the model period)*	The difference in total number of quality-adjusted life years (QALYs) in the population over the model period if the strategy were not put in place compared with if the strategy were put in place. A QALY is a measure of both the quantity and quality of life. CHOICES estimates the QALYs gained as a measure of how much implementing a strategy to prevent future excess weight gain could improve the quantity and quality of life for a population. See our User Guide for more information about QALYs.
OBESITY YEARS PREVENTED *Years with obesity prevented (totals over the model period)*	The difference in total number of person-years lived without obesity if the strategy were not put in place compared with if the strategy were put in place. This measure sums up portions of years lived without obesity across all the persons in the model, comparing the result if the strategy were put in place or not.
HEALTH CARE COSTS SAVED PER $1 INVESTED *Total health care costs saved per total intervention costs over the model period*	The amount avoided in health care cost related to excess weight for every dollar spent to implement the strategy over the model period. See the Cost Results for a breakdown of implementation costs by activity and payer.
COST PER QALY GAINED *Net cost per quality-adjusted life year (QALY) gained (totals over the model period)*	The total cost impact to improve population health in terms of quality-adjusted life years gained. Cost per QALY gained is a measure of cost-effectiveness. It includes costs to implement a strategy, cost savings due to efficiencies when implementing a strategy, and health care cost savings related to reductions in excess weight after a strategy is implemented. See our User Guide for more information about QALYs and cost per QALY gained.

All metrics reported for the population over the model period and discounted at 3% per year, unless otherwise noted. Definitions for these modeled outputs are all written assuming that an intervention is implemented.
* Not discounted.

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