American Cancer Society®

COMPREHENSIVE CANCER CONTROL

Increasing Healthy Nutrition and Physical Activity Across the Cancer Continuum through Policy, Systems, and Environmental Change: A Resource for Comprehensive Cancer Control Coalitions

Acknowledgments

Through funding from the Centers for Disease Control and Prevention (CDC), the American Cancer Society (ACS) assists in the provision of technical assistance and training to grantees of the CDC National Comprehensive Cancer Control Program (NCCCP). This resource provides information, data, and tools to assist grantees in catalyzing efforts to promote healthy nutrition and physical activity across the cancer continuum.

This guide was written in collaboration with the Gretchen Swanson Center for Nutrition. ACS Comprehensive Cancer Control team members also key to the development of this guide include Katie Bathje, Director of Comprehensive Cancer Control Initiatives, and Sarah Shafir, Managing Director for National Partnerships and Innovation. ACS staff reviewers include Kristen Sullivan, Director of Nutrition and Physical Activity, and Gayle Bagley, Director of Employer Health and Wellbeing Initiatives. For questions about this guide, please contact:

Katie Bathje, MA
Director, Comprehensive Cancer Control Initiatives
American Cancer Society
250 Williams Street
Atlanta, GA 30303
1.800.227.2345
katie.bathje@cancer.org

Suggested Citation:

Increasing Healthy Nutrition and Physical Activity Across the Cancer Continuum through Policy, Systems, and Environment Change: A Resource for Comprehensive Cancer Coalitions. American Cancer Society Comprehensive Cancer Control. 2021.

We would like to thank the following comprehensive cancer control staff and partners who graciously lent their time during preliminary interviews to inform the development of this guide:

- Laura Morse (Florida), Comprehensive Cancer Control Program Director, Florida Department of Health
- Rochelle Roberts (Tennessee), Program Director II, Tennessee Department of Health
- Debbie Webster (Michigan), Cancer Survivorship Program Director, Michigan Department of Health and Human Services
- Lauren Milius (Texas), Texas Comprehensive Cancer Control Program Coordinator, Texas Department of State Health Services
- Nikki Campbell (Montana), Health Education Specialist, Chronic Disease Prevention and Health Promotion Bureau
- Elaine Russell (Kentucky), Program Director, Kentucky Cancer Consortium
- Dr. Kim Dittus (Vermont), Medical Oncologist and Director of Steps to Wellness Program, University of Vermont Medical Center
- Craig Bromley (West Virginia), Prevention Policy Manager, Bureau for Public Health/Division Health Promotion and Chronic Disease

This guide is supported by the Centers for Disease Control and Prevention of the US Department of Health and Human Services (HHS) as part of a financial assistance award totaling $825,000 with 100% funded by CDC/HHS. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement by, CDC/HHS or the US Government.

Table of Contents

Policy, Systems, and Environmental (PSE) Approaches

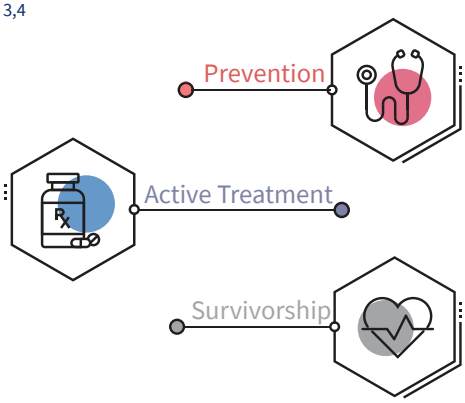
Used to minimize the disease burden on a population

Relevance to Comprehensive Cancer Control (CCC) Coalitions

PSE approaches can contribute to long-term solutions by enabling behaviors & practices that lead to:

- Cancer risk reduction
- Early detection
- Treatment access
- Improved quality of life among survivors

Make an Impact Across the Continuum with PSE Approaches [3,4]



Purpose of This Guide

Provide CCC coalitions with evidence-based PSE approaches, corresponding data, and resources to inform nutrition and physical activity efforts across the cancer continuum.

An Introduction

Background

The American Cancer Society (ACS) is a nationwide, community-based voluntary health organization dedicated to eliminating cancer as a major health problem. For over 20 years, ACS has partnered with the Centers for Disease Control and Prevention's (CDC) Comprehensive Cancer Control Branch through a cooperative agreement to provide training and technical assistance to program grantees. Grantees are charged with designing and catalyzing implementation of impactful, strategic, and sustainable plans to prevent and control cancer. These plans span the cancer continuum from primary prevention to survivorship and include goals, measurable objectives, and evidence-informed strategies to further cancer control efforts in their state, tribe/tribal organization, territory, or Pacific Island Jurisdiction.

Implementation of policy, systems, and environmental (PSE) change strategies has been at the forefront of comprehensive cancer control (CCC) planning for over a decade. Recognition of the positive population health impact and increased sustainability have made PSE change strategies a required element of National Comprehensive Cancer Control Program (NCCCP) efforts. In 2021, the CDC and ACS released an updated resource titled, "*Policy, Systems, and Environmental Approaches in Comprehensive Cancer Control,*"[1] which explores the role of CCC coalitions in catalyzing and implementing PSE approaches and offers a theory-based model, step-by-step coalition processes, and evaluation guidance. In order to build on the PSE implementation guidance provided in that resource and offer CCC coalitions a reference specific to addressing nutrition and physical activity (NUPA) in their work, the current guide, "Increasing Healthy Nutrition and Physical Activity Across the Cancer Continuum through Policy, Systems, and Environmental Change: A Resource for Comprehensive Cancer Control Coalitions," was developed.

In addition, in collaboration with the Comprehensive Cancer Control National Partnership (CCCNP), ACS conducted an online survey of CCC coalitions in April 2019. The 130 survey respondents represented health department CCC program directors, coalition leaders, and ACS regional field staff.[2] Results showed that 53% of responding CCC coalitions felt they needed to build capacity among coalition members in regard to healthy behaviors in cancer survivors, with 49% citing a lack of financial support to address the issue, 61% saying limited personnel affects their ability to address health behaviors in cancer survivors, and 19% reporting a weak infrastructure. This guide responds to those needs by compiling examples, data, and other existing resources available for CCC coalitions to use as they build coalition capacity and partnerships necessary to support the implementation of evidenced-based interventions aimed specifically at increasing NUPA. Although the NUPA PSE strategies with the highest level of scientific support have been studied in the general population, the examples and resources provided in this guide demonstrate how CCC coalitions can tailor these proven approaches to reach cancer survivors.

A Review of Policy, Systems, and Environmental Approaches

A PSE approach is one that facilitates a change in policies, system practices, or in the environment to make healthy choices practical and available to all members of a population. This can occur in a variety of settings, including **community-wide locations, targeted worksites, and health care settings**. Traditionally, public health programs have focused on individual-level behavior, assuming that if you educate people about healthier options, they will find a way to make those changes. However, being healthy is not just about individual choices. PSE approaches tend to align with interventions that have a **larger potential impact across a population[5] and are considered sustainable and long-lasting** when compared to traditional programmatic options. These interventions include efforts used to address social determinants of health, which have a broader reach and require less individual effort. PSE approaches are also often **interdependent**. For example, an environmental change may be furthered by a policy or system change, or a policy change could result in additional environmental changes.[6] Overall, PSE approaches seek to go beyond programming that targets individual-level behavior change and create change directly to the settings in which we work, live, play, and receive core services. PSE change can address disparities in cancer care and lead to improved health outcomes by maximizing the reach and extending the impact of cancer control interventions to the population level.

Policy Approaches

Policy change strategies typically seek to enact or modify policies at the legislative or organizational level and can be the most effective way to improve the health of a population. “Big P” policies are formal laws, rules, and regulations typically at the local, state, or national level, authorized by elected officials. They are often labor- and time- intensive but far-reaching. Alternatively, “little p” policies are related to practices, priorities, distribution of resources, and regulations, typically at the organizational level. They can often be adopted and implemented more

Strategy Examples (Big P and little p)

- Community: A city changes zoning ordinances so corner markets can display produce outdoors. (P)
- Worksite: A workplace policy is enacted that requires healthy food be served at meetings. (p)
- Health care: A hospital adopts a policy and process for operation of an onsite farmers markets. (p)

CCC coalitions are well positioned to work with legislators, advocacy groups, and other key decision-makers to advance policies in their state, which is often needed for community-level impact.

Systems Approaches

Systems change strategies involve changes made to the rules, structures, or processes within organizations, institutions, or networks to encourage healthier choices and promote healthier outcomes. Systems changes are most often incremental adjustments over time that can lead to broad shifts in attitudes, behaviors, rules, and processes.[8] To be successful, these approaches must eventually be fully integrated into the established system.

Strategies Examples

- Community: Establishing farmers markets or farm-to-table programs that link farmers with local retailers in low-income areas.
- Worksite: A workplace reimburses employees for preventive health and wellness activities.
- Health Care: A ospital develops a referral system to help patients access additional nutrition resources.

CCC coalitions should engage with both decision-makers and end users to effectively move forward with a systems-level change.

Environmental Approaches

Environmental change strategies are those that result in changes to the lived environment from an economic, social, or physical perspective. Environmental strategies are best used in combination with other strategies.[6,9]

Strategies Examples

- Community: Incorporating sidewalks, pedestrian friendly intersections, and recreation areas into community design.
- Worksite: Installing signage near escalators and other common areas to encourage employees to take the stairs.
- Health care: An onsite farmers market at a hospital enhances staff and community access to fresh produce.

The CDC and other leading health and research organizations have increasingly emphasized the use of evidence-based PSE strategies as the most effective method of preventing chronic diseases. CCC coalitions have been following this advice for many years by incorporating PSE strategies into their work. A focus on PSE strategies that are NUPA-specific requires a new set of considerations. The next section outlines several NUPA-specific strategies and accompanying information, such as a review of the roles a CCC coalition can play in implementation of these strategies, partners that are necessary, a deep dive into the NUPA strategies, as well as data sets and tools to support implementation and evaluation.

Nutrition and Physical Activity PSE Strategies for CCC

This section presents a comprehensive list of PSE strategies that can be implemented across settings to improve nutrition and physical activity among the general population and can be adapted for cancer survivors. Prior to selecting a strategy, a coalition will weigh several factors, such as available resources, key partners needed, and the nature of the coalition's involvement in the initiative.

The Coalition's Role in PSE Approaches

Prior to selecting a strategy, a coalition will weigh several factors, such as the coalitions capacity and expertise, available resources, and key partners needed. A coalition's role in each strategy can take several forms and vary greatly from state to state and across strategies. Based on the coalition members' skills, expertise, resources, and connections, the coalition could take on one or more of the following responsibilities:

Convene Stakeholders: Bring essential NUPA partners together to design and carry out an intervention. This could include recruiting necessary key partners, organizing planning sessions, and ensuring action items are assigned and accomplished. Additionally, coalitions could host local NUPA conferences or workshops, organize CCC NUPA committees or workgroups, and facilitate consensus among cancer and other chronic disease NUPA stakeholders.

Educate and Build Awareness: Promote the purpose and importance of NUPA in both primary prevention of cancer and long-term healthy survivorship. This may include providing a cancer coalition spokesperson for NUPA-focused media and/or public speaking engagements, developing and disseminating information to emphasize the need and potential impacts through a variety of potential modes (e.g., print, presentations, social media), as well as mobilizing CCC supporters for chronic disease NUPA initiatives.

Provide Content-area Expertise: Ensure that the PSE strategy is applicable and feasible for the population specific to a particular state or region. Provide cancer data and/or interpretation of data in relation to NUPA.

Educate Decision-makers: Provide information to decision-makers about policies or changes that will make an impact. Tools and resources can be developed that help to influence public policy. These tools could include draft model policy language or educational materials with supporting evidence around a specific issue.

Conduct Outreach: Implement activities to achieve the goals of a selected NUPA strategy, which may also include development of supporting materials (e.g., fact sheets or data briefs on the link between NUPA and cancer and on healthy NUPA in cancer survivors).

Communication Support: Develop promotional materials to educate the community, support branding efforts for an initiative, and disseminate resources.

Funding Support: Provide funding to implement or promote a strategy, invest in any physical improvement, or raise funds through donations and sponsorships. Provision of funding may also take the form of offering mini grants to advance specific strategies or providing/recruiting others to donate in-kind time in a supportive role.

Key Partnerships in PSE Approaches

The roles and responsibilities described above demonstrate the variety of ways a CCC coalition can support implementation of PSE strategies. However, bringing on new partners to fill additional roles may be necessary, given that traditional coalition partners may be new to NUPA work. In this case, partner recruitment should be prioritized to specifically include members from organizations that are in a strategic position to put cancer control activities into practice. Partnerships essential to PSE NUPA success may include:

- State and local policy makers to facilitate policy development and implementation.
- Community leaders who can help overcome cultural and social barriers.
- National non-profit organizations with a state-level footprint (e.g., YMCAs, National Recreation and Park Association, American Trails) may have dedicated staff and resources to facilitate implementation.
- Local, regional, and state agencies (e.g., health departments, parks and recreation, Cooperative Extension programs within land grant universities, local SNAP or WIC agencies) can help generate buy-in for PSE approaches and provide an opportunity to leverage existing resources.
- Partnerships with public entities (e.g., schools, community/senior centers, non-profit organizations) can help create linkages in the community with existing resources and facilities for implementation.
- Partnership with private entities (e.g., faith-based organizations, hospitals, food retail outlets, fitness centers, large employers) could serve as a host site for an intervention.
- Engaging with content area experts may be crucial in order to gain traction with specific approaches. For example, working with local farmers or a state farmers association when developing fruit and vegetable programs (e.g., produce delivery, nutrition incentives).
- Health care practitioners and health systems are trusted sources of information, essential to referrals, and have a directive to support the health of the surrounding community.

Relevance of NUPA PSE Strategies for Cancer Prevention and Survivorship

Adherence to a healthy dietary pattern, engaging in recommended levels of physical activity, maintaining a healthy weight, and avoiding alcohol consumption all play an important role in cancer prevention, improving treatment outcomes, quality of life, and overall survival. It is widely accepted that maintaining recommended levels of physical activity and eating a diet filled with a variety of plant-based foods such as fruits and vegetables, whole grains, and beans helps to lower the risk for many cancers. At least 18% of all cancers and about 16% of cancer deaths in the US are related to excess body weight, physical inactivity, alcohol consumption, and/or poor nutrition.[10]

- A healthy dietary pattern is higher in vegetables, fruits, whole grains, low- or nonfat dairy, seafood, legumes, and nuts; moderate in alcohol (among adults); lower in red and processed meat; and low in sugar-sweetened foods and drinks and refined grains.[11]
  - » Fruits and vegetables are a great source of fiber, vitamins, and minerals. Fruit and vegetables also contain natural protective substances, such as antioxidants, that can destroy cancer-causing agents (carcinogens) and cancer cells.
  - » Cancer survivors should consume at least 2 to 3 cups of vegetables and 1.5 to 2 cups of fruits each day.[12]
- Exercise has been shown to improve health-related fitness outcomes in cancer survivors, as well as reduce the risk of comorbid conditions.[13] Survivor-specific guidelines in the American College of Sports Medicine (ACSM) panel recommend that individuals avoid inactivity and return to normal activity as soon as possible after diagnosis or treatment. The ACSM panel recommends that survivors 18 to 64 years of age should engage in at least 150 minutes per week of moderate-intensity or 75 minutes per week of vigorous-intensity aerobic physical activity. In addition, evidence supports a positive effect of physical activity among cancer survivors in terms of strength, quality of life, anxiety, and self-esteem.[14]

- Maintaining a healthy weight and weight loss have long been associated with a reduced risk for cancer. There is also growing evidence that weight gain is associated with multiple types of cancer.[15] Beyond the obvious overlap with unhealthy diet and inactivity, excess adiposity can contribute to cancer risk through inflammation, hormonal responses, oxidative stress, cell proliferation, and gut microbiome pathways.[16,17] Throughout the cancer continuum, individuals should strive to achieve and maintain a healthy weight, as defined by a body mass index (BMI) between 18.5 kg/m2 and 25 kg/m2.[13]
- Alcohol consumption is an established cause of at least seven types of cancer.[18] Alcohol works synergistically with tobacco to increase cancer risk, and ethanol found in alcoholic beverages alters proteins and causes DNA damage, nutritional malabsorption, and hormonal responses.[19, 20]

In order to facilitate healthy dietary patterns, physical activity, and ultimately maintenance of a healthy weight, supporting PSE approaches is a potentially powerful mechanism for CCC coalitions to make an impact in their communities. By their nature, PSE approaches are broad and have the potential to reach a wide audience (i.e., beyond cancer survivors) and have a sustained effect. Therefore, PSE approaches are recommended for both for the prevention of cancer and to support cancer survivors. In addition, PSE approaches for NUPA have the benefit of reaching those who may need it most, by increasing healthy food access and opportunities for physical activity in low-income and other underserved communities.

Recommended Evidence-based PSE Strategies

This section presents 32 recommended PSE approaches for improving nutrition and physical activity outcomes (see Table 1). These evidence-based strategies are both "strongly" and "sufficiently" supported in the literature and organized by strategy type within the broader categories of **nutrition, physical activity, and obesity prevention.**

Environmental: Creating spaces for physical activity and access to healthy foods

Messaging: Messaging and prompts to nudge individuals to be physically active and make healthful dietary choices

Policy (taxes/incentives): Policies that support pricing strategies for healthy food access

Policy (increasing access): Policies that support access to healthy food in various community and retail settings

Systems/Provider-based: Strategies that health care systems and providers can implement to increase physical activity and healthful dietary patterns

Worksite/Institutional-based: Strategies implemented at worksites and other institutions that support populations in being physically active, having a healthful diet, and maintaining a healthy weight

Programs: Programmatic initiatives across various settings to support community physical activity, healthful diet, and healthy weight

Strongly and sufficiently supported PSE approaches means that these particular strategies are backed by evidence in the peer-reviewed academic literature, indicating their efficacy and effectiveness.

In the pages that follow Table 1 below, each of the strategies provided is described in more detail. In addition to the types of partners discussed more broadly on page 11, partners specific to each strategy are presented along with their potential role. A list of existing resources for strategy implementation is also provided, including toolkits and practical guides. Key factors for a coalition's consideration are listed, including tips for strengthening the strategy and pitfalls to avoid. Lastly, we have included examples from the field and have added a star icon next to those that have been implemented in a cancer survivor population. You will find supporting scientific literature in Appendix A, Evidence-based PSE Strategies for NUPA: Supporting Literature.

Diet and exercise strategies compiled by the County Health Rankings and Roadmaps were heavily utilized in the development of the following selected strategies.[21]

Table 1. Snapshot of Evidence-based Nutrition and Physical Activity PSE Strategies

Category	Strategy	Description	Evidence
Physical Activity			
Environmental	Complete Streets & streetscape design initiatives	Enhance streetscapes with greater sidewalk coverage and walkway connectivity, street crossing safety.	Strong ★
	Creating or improving places for physical activity	Modify local environments to support physical activity, increase access to new or existing facilities for physical activity, or build new facilities.	Strong
	Shared use agreements	Create contracts that support community access to existing public, private, or nonprofit facilities before or after business hours; also called joint use, open use, or community use agreements.	Sufficient
	Bike & pedestrian master plans	Establish a framework to increase walking and biking trails and improve connectivity of non-auto paths and trails in a particular area.	Sufficient
	Green space & parks	Increase recreational green space through new parks or open spaces, renovation or enhancement of underused recreation areas, rehabilitation of vacant lots, brownfields, etc.	Sufficient
Messaging	Point-of-decision prompts for physical activity	Place motivational signs on or near stairwells, elevators, and escalators that encourage individuals to use stairs.	Strong
Systems/ Provider-based	Exercise prescriptions	Provide patients with prescriptions for exercise plans, often accompanied by progress checks at office visits, counseling, activity logs, and exercise testing.	Strong ★
Worksite/ Institutional-based	Multi-component workplace supports for active commuting	Provide physical infrastructure (e.g., bike parking or showers), educational or social support (e.g., walking groups), and financial incentives that support active commuting.	Strong

★ = Cancer-specific relevance (successful implementation and/or supporting literature on strategy adaptations for a cancer audience)

Category	Strategy	Description	Evidence
Programs	Community fitness programs	Offer exercise classes (e.g., yoga, Tai Chi, cycling, etc.) and fitness program support in community centers, senior centers, fitness facilities, and community wellness centers. Consider adaptations needed to help cancer survivors incorporate physical activity into their daily routines.	Strong ★
	Community-based social support for physical activity	Build, strengthen, and maintain social networks that provide supportive relationships for behavior change through walking groups or other community-based interventions.	Strong ★
	Community-wide physical activity campaigns	Engage a variety of partners in a highly visible, multi-component effort to increase physical activity, often with efforts to address cardiovascular disease risk factors.	Sufficient
	Activity programs for older adults	Offer group educational, social, creative, musical, or physical activities that promote social interactions, regular attendance, and community involvement among older adults.	Strong ★
	Interventions including activity monitors for adults with overweight or obesity	Physical activity interventions that include activity monitors provide participants with a combination of behavioral instruction, regular feedback, and weight management.	Sufficient ★
Nutrition			
Environmental	Community gardens	Establish and support land that is gardened or cultivated by community members for home consumption.	Sufficient ★
	New grocery stores in underserved areas	Attract new grocery stores that sell a variety of fresh foods, baked goods, packaged foods, and frozen items to underserved areas via financing initiatives, tax incentives, or zoning regulation.	Sufficient
	Farmers markets	Support multiple-vendor markets where producers sell goods such as fresh fruit and vegetables, meat, dairy items, and prepared foods directly to consumers.	Sufficient ★
Messaging	Restaurant nutrition labeling	Provide nutrition information on menus and signboards at restaurants and other food outlets.	Sufficient
	Point-of-purchase prompts for healthy foods	Place motivational signs on posters, front of package labels, or shelf labels near fruits, vegetables, and other items to encourage individuals to purchase healthier food options.	Sufficient ★
Policy (taxes/ incentives)	Competitive pricing for healthy foods	Assign higher costs to non-nutritious foods than nutritious foods via incentives, subsidies, or price discounts for healthy foods and beverages or disincentives or price increases for unhealthy choices.	Strong
	Fruit & vegetable incentive programs	Offer low-income participants matching funds to purchase healthy foods, especially fresh fruits and vegetables; often called bonus dollars, market bucks, produce coupons, or nutrition incentives.	Strong ★
	Sugar-sweetened beverage and unhealthy snack taxes	Increase the price of sugar-sweetened beverages (e.g., soda) or snack products high in sugar and fat, by adding an excise or sales tax to the current price.	Sufficient ★
	Senior Farmers Market Nutrition Program	Support Senior Farmers Market Nutrition Programs, which provide senior program participants with coupons for fresh, unprepared, locally grown fruits and vegetables.	Sufficient

★ = Cancer-specific relevance (successful implementation and/or supporting literature on strategy adaptations for a cancer audience)

Category	Strategy	Description	Evidence
Policy (increasing access)	Healthy food initiatives in food pantries	Combine hunger relief efforts with nutrition information and healthy eating opportunities, often with onsite cooking demonstrations, recipe tastings, produce display stands, etc.	Sufficient ★
	Healthy vending machine options	Increase healthy options in vending machines by reducing the price of healthy choices, increasing the number of healthy choices compared to unhealthy choices, etc.	Sufficient
	Mobile produce markets	Support fresh food carts or vehicles that travel to neighborhoods on a set schedule to sell fresh fruits and vegetables.	Sufficient
	Healthy food in convenience stores	Encourage convenience stores, corner stores, or gas station markets to carry fresh produce and other healthier food options.	Sufficient
Systems/ Provider-based	Health information technology: comprehensive telehealth interventions to improve diet among patients with chronic diseases	Telehealth interventions allow health care providers and patients to communicate by phone, email, web-based programs, or other electronic or digital media. Health care providers and patients may also interact in person, though in comprehensive telehealth interventions, most of their interactions are distance-based. Comprehensive telehealth interventions can be used to help adults who have chronic diseases that are affected by dietary behaviors.	Strong ★
Worksite/ Institutional-based	Water availability & promotion interventions	Make drinking water readily available in various settings via regular placement of drinking fountains, water coolers, bottled water in vending machines, etc.	Sufficient
Obesity Prevention			
Messaging	Health communication and social marketing: campaigns that include mass media and health-related product distribution	A health communication campaign that uses messages to increase awareness of, demand for, and appropriate use of the product. The messages must be delivered through multiple channels, one of which must be mass media, to provide multiple opportunities for exposure and includes distribution of a health-related product, free of charge or at a reduced price (e.g., discount coupons), to reduce cost, access, and convenience-related barriers among targeted users.	Strong ★
Worksite/ Institutional-based	Worksite obesity prevention interventions	Use educational, environmental, and behavioral strategies to improve food choices and physical activity opportunities in worksite settings, also called workplace health programs.	Sufficient ★
	Financial rewards for employee healthy behavior	Offer payments, credits toward health insurance premiums, or other financial rewards to encourage employees to lose weight, eat healthy, quit smoking, engage in physical activity, etc.	Sufficient
Programs	Multi-component obesity interventions	Combine educational, environmental, and behavioral activities that increase physical activity and improve nutrition (e.g., nutrition education, aerobic/strength training, dietary prescriptions, etc.) in various settings.	Strong ★

★ = Cancer-specific relevance (successful implementation and/or supporting literature on strategy adaptations for a cancer audience)

Physical Activity

Strong Evidence

Complete Streets & streetscape design initiatives

Enhance streetscapes with greater sidewalk coverage and walkway connectivity, street crossing safety features, traffic calming measures, and other design elements.

CCC partners key to this strategy:

- State Department of Transportation

Planning and implementation resources:

- What Are Complete Streets? includes resources for organizations on enacting a resolution, state statute, or local ordinance, as well as materials for revising a comprehensive plan to include Complete Streets.
- Smart Growth America's National Complete Streets Coalition has a resource hub containing case studies, fact sheets, webinars, and toolkits.
- Montana Complete Streets Toolkit: A toolkit that shares innovative ways cities, small towns, and tribal communities can work on Complete Streets. Organized into three sections: planning guidance, case studies in Montana communities, and design guidance.

What does our coalition need to consider?

- Complete Street initiatives are most common at the local level, but state-level policies can help to move this work forward.
- Strategies and funding for promotion (e.g., signage) should be included.
- If Complete Streets or related policies are in place, consider ways to leverage this further to help promote physical activity across the community.
- Research suggests that a clear initiative definition, efforts to educate the public, advocates, and decision-makers, and strong and diverse networks of supporters (i.e., multi-sectoral collaboration) can facilitate adoption of Complete Streets policies.

Examples of successful implementation: (cancer-specific relevance)

- The Louisiana Comprehensive Cancer Control Program's Complete Streets Initiative Addresses Physical Activity and Obesity in Louisiana.
- Complete Streets Indianapolis, IN adopted a Complete Streets policy in 2012 in an effort to encourage more active lifestyles among their population and make walking, biking, and public transit safer and more convenient.

Link to Literature: *Strong Evidence* (cancer-specific relevance)

Strong Evidence

Creating or improving places for physical activity

Modify local environments to support physical activity, increase access to new or existing facilities for physical activity, or build new facilities.

CCC partners key to this strategy:

- State chapters of national nonprofit organizations (e.g., YMCAs, National Recreation and Park Association, American Trails) working to increase access
- Public (e.g., colleges, community/senior centers) and private (e.g., faith-based organizations, hospitals) entities that may engage in shared use agreements
- State Health Departments developing statewide plans to increase access to places for physical activity

Planning and implementation resources:

- Parks, Trails, and Health Workbook - A Tool for Planners, Parks & Recreation Professionals, and Health Practitioners: A guide from the CDC for incorporating public health considerations in the development and improvement of a park or trail.
- This Land is Our Land: ChangeLab Solutions provides a guide for understanding public land ownership and some of the related legal and policy issues that may arise when partnering with public entities to create opportunities for physical recreation.

What does our coalition need to consider?

- Be aware of financial and social barriers. Physical activity is generally higher in neighborhoods with greater availability of recreational facilities, and highest among those with facility memberships.
- Leveraging access to existing community resources for physical activity (e.g., parks, public spaces, and private spaces) through shared use agreements and generating awareness of resources that are available can increase success.

Examples of successful implementation:

- Safe Routes to Parks was designed to provide local governments with critical evidence- and practice-based recommendations to ensure parks are safe, accessible, and welcoming places in communities.

Link to Literature: *Strong Evidence*

Sufficient Evidence

Shared use agreements

Create contracts that support community access to existing public, private, or nonprofit facilities before or after business hours; also called joint use, open use, or community use agreements.

CCC partners key to this strategy:

- Public, private, or nonprofit organizations such as schools, colleges, community and senior centers, and government entities in charge of unused or underused public land

Planning and implementation resources:

- ChangeLab Solutions Shared Use Playbook: A comprehensive guide that includes research on the benefits of shared use for community health, real-world examples of shared use, and resources for formalizing shared use agreements.

What does our coalition need to consider?

- Legislation at the state level can enable or encourage shared use agreements.
- Formal shared use agreements are more common in large school districts and urban areas.
- Schools often close their property to the public after school hours because of concerns about costs, vandalism, security, maintenance, and liability in the event of injury.
- Shared use can be established through formal legal documents or through informal processes.

Examples of successful implementation:

- Agreement between the Seattle School District No.1 and Seattle Parks and Recreation to serve the community's recreation needs.

Link to Literature: *Sufficient Evidence*

Sufficient Evidence

Bike & pedestrian master plans

Establish a framework to increase walking and biking trails and improve connectivity of non-auto paths and trails in a particular area.

CCC partners key to this strategy:

- State Health Department working on a statewide bicycle and pedestrian master plan
- National recognition and resource program, such as Walk Friendly Communities

Planning and implementation resources:

- Pedestrian and Bicycle Information Center publishes informational briefs, discussion guides, and other resources vital to advancing mobility, access, equity, and safety for pedestrians and bicyclists.

What does our coalition need to consider?

- Plans typically include policies and planning methods to encourage alternative modes of travel, land use plans, bicycle and pedestrian infrastructure development, and also address traffic and safety concerns.
- Plans are often implemented in stages over time.
- Cost can be a significant factor for this strategy. Median cost for a bicycle rack is $540, a pedestrian wooden bridge overpass costs $122,610, a bicycle lane costs $89,470 per mile, and a paved multi-use trail costs $261,000 per mile.

Examples:

- Rails to trails initiative in Brownsville, TX

Link to Literature: *Sufficient Evidence*

Sufficient Evidence

Green space & parks

Increase recreational green space through new parks or open spaces, renovation, or enhancement of under-used recreation areas, rehabilitation of vacant lots, brownfields, etc.

CCC partners key to this strategy:

- Content experts, such as Rails-to-Trails Conservancy
- State legislature has been known to authorize a city's or state's use of food tax revenue to implement a comprehensive parks and recreation master plan.

Planning and implementation resources:

- Action strategies toolkit: A guide for local and state leaders working to create healthy communities and prevent childhood obesity. Contains promising and evidence-based practices that promote healthy, active communities and access to affordable healthy foods, and provides methods to help build upon the work in which policymakers are already engaged.
- Land Revitalization Toolkit: The EPA's Land Revitalization Program can help communities identify the possibilities for reusing a contaminated, or potentially contaminated, site. Planning upfront for site reuse provides opportunities within the redevelopment process.

What does our coalition need to consider?

- Sites may have current unsafe environmental conditions and/or land use restrictions.
- Infrastructure improvements will require funding sources and other resources.
- Increasing green space and parks in conjunction with physical activity programs can be more effective in increasing physical activity.

Examples of successful implementation:

- In Milwaukee, watershed restoration plans include park and trail renovations in adjacent neighborhoods with direction from residents.

Link to Literature: *Sufficient Evidence*

Strong Evidence

Point-of-decision prompts for physical activity

Place motivational signs on or near stairwells, elevators, and escalators to encourage individuals to use stairs.

CCC partners key to this strategy:

- Leaders of large public venues, such as airports.

Planning and implementation resources:

- Prompts to Encourage Physical Activity: Prompts such as signs or reminders inform and motivate people to make an active choice (e.g., taking the stairs) in specific environments. Communities and institutions can use approaches from the CDC website to encourage physical activity in places such as transit stations, worksites, universities, government buildings, shopping malls, airports, and walkable community environments.
- Take the Stairs: A Worksite Wellness Toolkit: Provides a step-by-step instruction on implementing the "Take the Stairs" campaign that is based on the CDC program, "Take the Stairs to Better Health." "Take the Stairs" presents an opportunity to increase daily physical activity that is both low cost and convenient.

What does our coalition need to consider?

- This is an easily adopted and implemented strategy to incorporate movement into daily routines at a low cost.
- Customizing prompts to appeal to specific populations or to describe specific benefits may increase their effectiveness.

Examples of successful implementation:

- In Texas, a collaboration between state agencies and partners supports a point-of-decision prompt and stairwell enhancement initiative, based on the former CDC "StairWELL to Better Health" program.
- In New York City, the Department of Health and Mental Hygiene supported point-of-decision prompt efforts around the city, printing and distributing approximately 30,000 point-of-decision signs to encourage stair use.

Link to Literature: *Strong Evidence*

Strong Evidence

Exercise prescriptions

Provide patients with prescriptions for exercise plans, often accompanied by progress checks at office visits, counseling, activity logs, and exercise testing.

CCC partners key to this strategy:

- Health care practitioners to prescribe physical activity and check in on progress.
- Leadership from sites where physical activity can be achieved such as parks, fitness centers, etc.

Planning and implementation resources:

- Health Care Toolkit: Ready, Set Go! 5210 provides this toolkit for health care providers to introduce healthy practices to their patients.

What does our coalition need to consider?

- Individually tailored exercise prescriptions can be more effective than generic prescriptions.
- Many successful interventions use exercise prescriptions in conjunction with exercise counseling planning and activity logs, and exercise testing that allows prescriptions to target safe heart rate zones.
- Combining exercise prescriptions with additional interventions such as phone, mail, or internet follow-up can improve prescription adherence and long-term effectiveness.

Examples of successful implementation:

- Moving Through Cancer: an initiative focused on increasing awareness of the value of exercise for cancer survivors, along with educating cancer clinicians to refer, coordinate, and prescribe exercise.

Link to Literature: *Strong Evidence* (cancer-specific relevance)

Sufficient Evidence

Multi-component workplace supports for active commuting

Provide physical infrastructure (e.g., bike parking or showers), educational or social support (e.g., walking groups), and financial incentives that support active commuting.

CCC partners key to this strategy:

- Leadership at worksites responsible for establishing policies and infrastructure improvements that promote active transit
- Environmental partners working to support active commuting to reduce air pollution and greenhouse gas emissions
- City planners working on active transit infrastructure and transportation plans

Planning and implementation resources:

- Bike to Work Day. Provides examples and resources to promote commuter bicycling at the workplace.
- Thurston County WorkWell Healthy Workplace Toolkit: This packet was designed to give employers tested ideas, resources, and guidelines for workplace health promotion programs.

What does our coalition need to consider?

- Workplace supports such as access to bike storage, incentives to bike/walk to work, showers, and maps or signs of nearby walking and biking routes are associated with increased odds of meeting recommended daily physical activity levels.
- Organizational travel plans are more likely to be effective if they include environmental changes such as bicycling infrastructure or enhanced local walkability.

Examples of successful implementation:

- Boston University's Healthy Communities Wellness Program provides support for employees to actively commute to campus, including bicycle parking and repair stations, showers, and commute planning assistance.

Link to Literature: *Sufficient Evidence*

Strong Evidence

Community fitness programs

Offer exercise classes (e.g., yoga, Tai Chi, cycling, etc.) and fitness program support in community centers, senior centers, fitness facilities, and community wellness centers. Consider adaptations needed to help cancer survivors incorporate physical activity into their daily routines.

CCC partners key to this strategy:

- Leadership from sites where people can be physically active such as parks, fitness centers, community centers, and faith-based organizations
- Worksites with organizational policies and facilities to support physical activity

Planning and implementation resources:

- WeTHRIVE! Community Toolbox: Provides resources and assistance with conducting community health assessments, adopting policies, developing action plans, and implementing sustainable health promotion initiatives.

What does our coalition need to consider?

- Programs should be tailored to a cancer survivor's needs, and the survivor's physician should be involved in the process.
- Physical activity programs may not be covered by insurance.
- Limited access to facilities and affordable programs can be a barrier in some communities.
- Worksites that implement policies that incentivize physical activity will increase success of this strategy.

Examples of successful implementation: (cancer-specific relevance)

- Since 2007, Livestrong at the YMCA has provided a program for cancer survivors to participate in free or low-cost customized exercise regimens catered to their individual needs from certified fitness instructors.

Link to Literature: *Strong Evidence* (cancer-specific relevance)

Strong Evidence

Community-based social support for physical activity

Build, strengthen, and maintain social networks that provide supportive relationships for behavior change through walking groups or other community-based interventions.

CCC partners key to this strategy:

- Faith-based organizations are often an implementation site.
- Qualified program implementers, such as promatoras (or community educators) who provide education, lead physical activity classes, conduct follow-up, etc.

Planning and implementation resources:

- America Walks Learning Center: Online portal with resources for increasing walking opportunities and expanding walkable communities. Contains a library of case studies, research articles, white papers, and other educational materials.

What does our coalition need to consider?

- Interventions with a duration of at least 6 months are more effective than shorter interventions.
- These evidence-based interventions often follow a set study design, and use of program materials may require a fee.

Examples of successful implementation: (cancer-specific relevance)

- The Delaware Breast Cancer Coalition's Yes2Health Walking Program is a 12-week program featuring weekly walking meetups and bi-weekly educational programs including fitness, health, and wellness education.

Link to Literature: *Strong Evidence* (cancer-specific relevance)

Sufficient Evidence

Community-wide physical activity campaigns

Engage a variety of partners in a highly visible, multi-component effort to increase physical activity, often with efforts to address cardiovascular disease risk factors.

CCC partners key to this strategy:

- State health departments may be particularly well-positioned to coordinate or support such campaigns.
- State chapters of national nonprofit organizations focused on health, such as the American Heart Association, American Lung Association, or the YMCA.

Planning and implementation resources:

- The CDC Guide to Strategies to Increase Physical Activity in the Community: The CDC provides guidance for program managers, policymakers, and others on how to select strategies to increase physical activity in the community.

What does our coalition need to consider?

- There are many challenges to successful community-wide physical activity campaigns, especially program reach, implementing programs in diverse community settings, and the time needed to achieve institutional change.
- Campaigns may be more effective at achieving population-level physical activity increases as part of a multi-component community change strategy that also includes environmental and policy changes.
- Community-wide physical activity campaigns, especially those with mass media components, should be culturally sensitive and tailored to communities to ensure wide reach across low- and high-income communities.
- Experts also recommend longer studies with measures for evaluation to identify effects of such campaigns at the population level.

Examples of successful implementation: (cancer-specific relevance)

- The Iowa Cancer Consortium developed Above & Beyond, a survivorship program that offers a wide variety of evidence-based programs led by medical staff and certified instructors, including indoor cycling, yoga, small-group personal training, individual coaching, walking, and meditation.

Link to Literature: *Sufficient Evidence*

Strong Evidence

Activity programs for older adults

Offer group educational, social, creative, musical, or physical activities that promote social interactions, regular attendance, and community involvement among older adults.

CCC partners key to this strategy:

- Leadership from sites where people can be physically active, such as community and senior centers
- State Aging Services Departments or Programs could assist with recruitment and advocacy efforts.
- Nationwide fitness programs for implementation (e.g., SilverSneakers, Choose to Move).

Planning and implementation resources:

- Moving Ahead: This CDC guide provides strategies and tools to plan, conduct, and maintain effective community-based physical activity programs for older adults.
- Best Practices Toolkit Resources from the Field: This toolkit is designed to foster the expansion and sustainability of evidence-based health promotion programs by providing a centralized location for sharing resources and contains a compilation of resources.

What does our coalition need to consider?

- Recruitment materials and program activities should be culturally appropriate.
- For many activity programs, men are particularly difficult to reach.

Examples of successful implementation:

- Living Healthy in Michigan's Enhance Fitness classes are designed to assist older adults at varying levels of fitness to live as independently as possible.

Link to Literature: *Strong Evidence* (cancer-specific relevance)

Sufficient Evidence

Interventions including activity monitors for adults with overweight or obesity

Physical activity interventions that include activity monitors provide participants with a combination of the following:

- Behavioral instruction in the form of counseling, group-based education, or web-based education.
- Activity monitors that are used to provide regular feedback (i.e., pedometers or accelerometers) and may include enhancements to support or promote physical activity.

CCC partners key to this strategy:

- Clinical/health systems may implement an intervention.
- Health insurers
- Health educators can provide behavioral instruction.

Planning and implementation resources:

- Workplace Pedometer Challenge Toolkit: A toolkit designed to help coordinators organize a successful workplace pedometer challenge.

What does our coalition need to consider?

- Interventions must focus on physical activity or promote physical activity within a weight management program.
- Interventions may include one or more follow-up appointments with a health care provider.

Link to Literature: *Sufficient Evidence* (cancer-specific relevance)

Nutrition

Sufficient Evidence

Community gardens

Establish and support land that is gardened or cultivated by community members for home consumption.

CCC partners key to this strategy:

- States and municipalities can encourage the development of community gardens in a variety of ways, including providing spaces for gardening on public lands, ensuring the existence of consistent funding sources, and simplifying bureaucratic requirements.
- Community gardens are typically owned by local governments, not-for-profit groups, or faith-based organizations.
- Gardens are often initiated by groups of individuals who cultivate and maintain vacant lots.
- State Cooperative Extension offices can support training and funding opportunities.

Planning and implementation resources:

- Urban Agriculture and Community Gardens - Equitable Development Toolkit: Addresses urban agriculture efforts focused on serving low-income communities and communities of color. Demonstrates how projects can improve access to healthy, affordable food for low-income communities and improve residents' health.
- Growing Community Gardens - A Denver Urban Gardens' Best Practices Handbook for Creating and Sustaining Community Gardens: The handbook provides a road map to assist in building a sustainable and socially equitable community garden. Also contains helpful documents and templates that can be adapted to any organization starting a community garden.
- Best Practices for Community Gardening - Planning for Urban Agriculture in North Saint Paul: Contains a compilation of best practices coupled with relevant case studies. Best practices highlighted in the report include: initial organization, selecting an appropriate site, management and maintenance, and developing ongoing partnerships and programs to support community gardening.

What does our coalition need to consider?

- Funding, participation, land, and materials, including water access, are typical challenges for community gardens.

Examples of successful implementation:

- To increase fruit and vegetable consumption in Wisconsin, the Department of Health Services Nutrition and Physical Activity Program developed the statewide "Got Dirt?" program designed to assist with the implementation of community, school, and childcare gardens.
- With a focus on the importance of healthier eating, the Western Maryland Health System opened its first community garden in 2015. Starting with 23 plots and with help from a wide range of partners, the garden has expanded to include five additional gardens and an orchard containing 26 trees and has been integral in improving the health and well-being of the health system's community.

Link to Literature: *Sufficient Evidence* (cancer-specific relevance)

Sufficient Evidence

New grocery stores in underserved areas

Attract new grocery stores that sell a variety of fresh foods, baked goods, packaged foods, and frozen items to underserved areas via financing initiatives, tax incentives, or zoning regulation.

CCC partners key to this strategy:

- Experts in the grocery industry, such as the state grocers association
- Partners equipped to navigate America's Healthy Food Financing Initiative (HFFI), a public-private partnership administered by the Reinvestment Fund for the US Department of Agriculture (USDA)

Planning and implementation resources:

- A resource guide for community activists and local governments. PolicyLink provides a thorough guide on attracting new grocery stores in lower income communities.
- Getting to grocery: Tools for attracting healthy food retail to underserved neighborhoods: ChangeLab Solutions developed this guide to help advocates and public health agencies coordinate and leverage the tools available through local government and other organizations to bring grocery stores into low-income communities.

What does our coalition need to consider?

- Attracting new grocery stores to low-income areas should be paired with educational materials and financial incentives for consumers in order to help change shopping patterns and support the purchase of healthier, higher-priced items.
- Healthy food retail legislation may be needed to support change.

Examples of successful implementation:

- The Pennsylvania Fresh Food Financing Initiative (FFFI), a statewide financing program, was designed to attract supermarkets and grocery stores to underserved urban and rural communities.

Link to Literature: *Sufficient Evidence*

Sufficient Evidence

Farmers markets

Support multiple-vendor markets where producers sell goods such as fresh fruit and vegetables, meat, dairy items, and prepared foods directly to consumers.

CCC partners key to this strategy:

- Local producers to participate in the market
- Farm-direct resources, such as the national Farmers Market Coalition

Planning and implementation resources:

- Current practices in developing and supporting farmers markets. The CDC provides examples and lessons learned from select farmers markets nationwide.
- From the ground up: Land use policies to protect and promote farmers markets. ChangeLab Solutions developed this guide to provide an overview of farmers market policy issues, community-tested best practices, and complementary model land use policies for comprehensive plans and zoning ordinances.

What does our coalition need to consider?

- Challenges to a market include: Small number of vendors, need for a greater variety of farm products with specific emphasis on fruits and vegetables, lack of administrative revenue to meet operating needs, low-paid or volunteer market managers, and high manager turnover.
- This strategy could be taken a step further if the market participated in SNAP incentive and produce prescription programming.

Examples of successful implementation: (cancer-specific relevance)

- The Utah Comprehensive Cancer Control's New Roots Food Access Program connected refugees with community gardens in Salt Lake County and developed a farmers market to allow refugee gardeners to sell their produce back to the community.

Link to Literature: *Sufficient Evidence*

Sufficient Evidence

Restaurant nutrition labeling

Provide nutrition information on menus and signboards at restaurants and other food outlets.

CCC partners key to this strategy:

- Restaurant owners willing to alter their menus and signboards

Planning and implementation resources:

- Putting health on the menu: A toolkit for creating healthy restaurant programs and a model healthy restaurant program agreement: ChangeLab Solutions developed this toolkit describing how to create a strong and healthy restaurant program, providing a variety of options and examples that communities can utilize when establishing their own program.

What does our coalition need to consider?

- This strategy involves voluntary or government-mandated provision of nutrition and portion size information.
- Some local governments cannot enact such measures due to state and federal preemption legislation.
- Menu changes should be accompanied by contextual information such as recommended daily calories for adults.

Examples of successful implementation:

- Some cities and states have also adopted local requirements for restaurant nutrition labeling.

Link to Literature: *Sufficient Evidence*

Sufficient Evidence

Point-of-purchase prompts for healthy foods

Place motivational signs on posters, front of package labels, or shelf labels near fruits, vegetables, and other items to encourage individuals to purchase healthier food options.

CCC partners key to this strategy:

- Managers of cafeterias, grocery stores, or retail locations in worksites, hospitals, schools, or other community venues

Planning and implementation resources:

- Supermarket strategies to encourage healthy eating: Toolkit. This toolkit provides resources for supermarket-based strategies to encourage healthy eating, including in-store marketing, nutrition education, tasting events, supermarket tours, community events and nutrition classes, as well as outreach to the food stamps/SNAP population.

What does our coalition need to consider?

- Point-of-purchase prompts are often implemented as part of a multi-component approach to improving food environments.
- Effects are less consistent in grocery stores than in settings such as worksites and universities where fewer food choices are available.

Examples of successful implementation:

- The Choose Healthy Now (CHN) program enables participating retail venues and worksite snack shops to easily promote healthy products through signage, product placement, and price incentives.

Link to Literature: *Sufficient Evidence* (cancer-specific relevance)

Strong Evidence

Competitive pricing for healthy foods

Assign higher costs to non-nutritious foods than nutritious foods via incentives, subsidies, or price discounts for healthy foods and beverages or disincentives or price increases for unhealthy choices.

CCC partners key to this strategy:

- Worksites, specifically stakeholders such as senior management, human resource managers, safety officers, and staff members

Planning and implementation resources:

- Competitive Food Toolkit. Inside this Voices for Healthy Kids toolkit is information on child nutrition, details on how to build a campaign, resources such as graphics and sample messaging, and success stories. Voices for Healthy Kids offers nearly 20 toolkits available for download.

What does our coalition need to consider?

- Strategies and funding for promotion should be included.

Examples of successful implementation:

- Tompkins County, New York utilizes competitive pricing for healthy snacks to create healthier worksites.

Link to Literature: *Strong Evidence*

Strong Evidence

Fruit & vegetable incentive programs

Offer low-income participants matching funds to purchase healthy foods, especially fresh fruits and vegetables; often called bonus dollars, market bucks, produce coupons, or nutrition incentives.

CCC partners key to this strategy:

- Potential implementing partners: farmers markets/CSAs, grocery stores, mobile markets, nonprofits, health care (produce prescription)
- Funding partner: nonprofit organizations, private foundations, government

Planning and implementation resources:

- Double Up Food Bucks: Fair Food Network is working with partners nationwide on their fruit and vegetable incentive program and offering tools to help replicate the program in new communities.

What does our coalition need to consider?

- Providing incentive requires a funding partner (e.g., USDA) and can also be supported through state and local policy with appropriations.
- SNAP-based incentives programs must be registered and comply with the US Department of Agriculture's Food and Nutrition Service rules and regulations.
- Successful fruit and vegetable incentive programs typically require support from an array of partners but can have a large impact on access to fruits and vegetables and food security among low-income consumers.

Examples of successful implementation:

- Complete Eats: At >100 participating Washington farmers markets, shoppers who use SNAP receive added benefits to spend on fruits and vegetables.
- The Food Trust developed multiple case studies and information on fruit & vegetables incentive programs across the country.

Link to Literature: *Strong Evidence* (cancer-specific relevance)

Sufficient Evidence

Sugar-sweetened beverage and unhealthy snack taxes

Increase the price of sugar-sweetened beverages (e.g., soda) or snack products high in sugar and fat, by adding an excise or sales tax to the current price.

CCC partners key to this strategy:

- Multi-sector collaboration (e.g., government, nonprofit, private, and public organizations, community groups, and individual community members) will likely be necessary to impact policy to support SSB taxes.
- Community organizers will be needed to build community engagement, awareness, and support for policy change.

Planning and implementation resources:

- Bridging the Gap provides resources and research around state-level taxes on regular soda, bottled water, and snack foods.
- Sugary Drink Strategy Playbook: ChangeLab Solutions developed the Sugary Drink Strategy Playbook and companion infographic to provide an overview of 10 common and cutting-edge strategies for communities to reduce consumption of sugary drinks. Contains updated information on the latest public health science and the legal landscape.
- Should We Tax Unhealthy Foods? This report examines a wide range of factors that determine the benefits and costs of using taxes to improve nutrition.

What does our coalition need to consider?

- It is always important to determine whether your activities could fall under the IRS definition of lobbying, especially if you receive state or federal funding that can't be used to support legislative activity.
- When exploring legal issues pertaining to proposed sugary drink strategies, local governments should review state law to determine whether they have the regulatory authority to enact those strategies.
- Many communities follow the path of starting with public education campaigns and then working up to restricting the availability of sugary drinks and promoting healthier alternatives through public policy.
- Consider how taxation will affect all populations, including those in higher-risk categories (e.g., racial-ethnic minority groups, low-income populations).
- Consider the definition of "sugary drinks" and which types of beverages will be included in a policy.

Examples of successful implementation:

- Healthy Food America highlights lessons learned from successful tax initiatives implemented in seven US cities and Mexico.
- Navajo Nation was one of the first communities to pass a junk food tax. There is a 2% tax on the sale of all food items with minimal to no nutritional value, and revenue collected is allocated to the Community Wellness Development Projects Fund.

Link to Literature: *Sufficient Evidence* (cancer-specific relevance)

Sufficient Evidence

Senior Farmers Market Nutrition Program

Support Senior Farmers Market Nutrition Programs, which provide senior program participants with coupons for fresh, unprepared, locally grown fruits and vegetables.

CCC partners key to this strategy:

- Community partners can be used to sit on the market's board of directors, assist in operations, fundraising, communication, and advocacy. Examples include businesses, government officials, schools, nonprofits, and customers.

Planning and implementation resources:

- Farmers Market Coalition Advocacy toolkit: Provides guidance in communicating the importance of farmers markets to local, state, and federal legislators.

What does our coalition need to consider?

- Seasonality of farmers markets in your area
- Accessibility of farmers markets to your target population (i.e., low-income seniors)
- Programs can have multiple components that increase access to affordable healthy foods for seniors as well as nutrition education opportunities.

Examples of successful implementation:

- The Oregon Farm Direct Nutrition Program (FDNP) connects local producers of fresh fruits, vegetables, and cut herbs with eligible low-income seniors and WIC families.

Link to Literature: *Sufficient Evidence*

Sufficient Evidence

Healthy food initiatives in food pantries

Combine hunger relief efforts with nutrition information and healthy eating opportunities, often with on-site cooking demonstrations, recipe tastings, produce display stands, etc.

CCC partners key to this strategy:

- Food banks and food pantries.
- Local producers and other food system stakeholders.

Planning and implementation resources:

- Healthy Food Pantry Policies: Contains samples of existing policies which can be used to model your own healthy food pantry.
- Banking on Health: ChangeLab Solutions has developed this resource for public health departments that want to partner with food banks to improve the health of food-insecure families and individuals.

What does our coalition need to consider?

- Seek buy-in from pantries/food banks, as there may be challenges due to fear of losing donor relationships, reduction in the amount of food distributed, plus storage and distribution of perishables.
- Consider how both food banks and food pantries in your community encourage healthy choices.
- Incremental changes are easier to push through than big, sweeping changes.
- In order to facilitate rather than demand change, offer educational materials, cooking classes, and other services along the way that appeal to food banks and help move the process along.

Examples of successful implementation:

- Healthy Communities initiative at Feeding America.
- Farm donations across various hunger relief organizations: Connecticut Food Bank; Georgia Food Bank; Maryland Food Bank.

Link to Literature: *Sufficient Evidence* (cancer-specific relevance)

Sufficient Evidence

Healthy vending machine options

Increase healthy options in vending machines by reducing the price of healthy choices, increasing the number of healthy choices compared to unhealthy choices, etc.

CCC partners key to this strategy:

- Developing a team to support healthy vending machines in a particular institution or location. This team should include staff members, management/leadership, and vendors.
- Additional organizational staff such as communications, marketing, or facilities management may be required for specific project needs.

Planning and implementation resources:

- King County - Health Vending Implementation Toolkit: To encourage organizations to offer healthy food and beverages in their vending machines, Seattle & King County staff developed this toolkit to support organizations that would like to implement the King County Healthy Vending Guidelines.

What does our coalition need to consider?

- Consider pricing and placement for options that will encourage those using the vending machine to make the healthy choice.
- Work with existing vendors to supply healthier options – or choose a new vendor.
- Ongoing communication with customers/employees to ensure healthy needs are met.

Examples of successful implementation:

- State initiatives supporting healthy vending machines are in Rhode Island, Hawaii, Alabama, Iowa, Mississippi, and Ohio.

Link to Literature: *Sufficient Evidence*

Sufficient Evidence

Mobile produce markets

Support fresh food carts or vehicles that travel to neighborhoods on a set schedule to sell fresh fruits and vegetables.

CCC partners key to this strategy:

- Identify strategic partnerships with potential host sites that are highly trafficked by the same people each week such as retirement communities, schools, or places of work, as opposed to retail establishments.
- Local producers to provide fresh fruits and vegetables
- Partners that can provide financial support and sponsorship for the vehicle, etc.
- Nutrition assistance benefit program offices
- State or regional Department of Agriculture or agricultural Cooperative Extension offices

Planning and implementation resources:

- Veggie Van Toolkit: This toolkit provides step-by-step instructions for starting and running a mobile produce market following the Veggie Van model. Also includes resources and examples from other mobile market programs.

What does our coalition need to consider?

- Mobile markets can help address health disparities by providing healthy food access to high-need communities.
- Knowledge about the customer base, business planning skills, marketing skills to target consumers in different areas, as well as knowledge and adherence to federal, state, and local policies concerning food safety and transportation are needed.

Examples of successful implementation:

- Mobile markets are currently in use in many cities across the country, including Adrian, MI; Albuquerque, NM; Baltimore, MD; Chicago, IL; and Contra Costa County, CA.
- Through the West Virginia Food & Farm Coalition's SNAP Stretch program, Ohio Valley offers a mobile produce market for residents who cannot easily make it to the grocery store.

Link to Literature: *Sufficient Evidence*

Sufficient Evidence

Healthy food in convenience stores

Encourage convenience stores, corner stores, or gas station markets to carry fresh produce and other healthier food options.

CCC partners key to this strategy:

- Local convenience store owners and managers.
- Redevelopment agencies, health departments, planning departments and vendors can provide funding and other supports.
- Marketing experts can be helpful in spreading the word about a corner store conversion.
- Local farmers can develop new markets by selling goods at corner stores.

Planning and implementation resources:

- Equitable Development Toolkit for Corner Stores: PolicyLink developed this toolkit with steps to take when starting a program, links to networks and other resources, partners involved, challenges, and keys to success.
- Healthy Corner Store Initiative Sell Healthy Guide: The Food Trust describes how corner store owners can sell healthy foods, increase sales and attract more customers in their corner stores.

What does our coalition need to consider?

- Consider utilizing mapping to identify areas of a community that could most benefit from a healthy corner store.
- Healthy corner store efforts are about "meeting participants where they are", meaning this approach increases healthy food access by working with existing outlets and not necessarily introducing a full-size supermarket to food desert communities.
- Efforts are more sustainable when there is involvement from the community to help facilitate implementation of healthy corner store approaches that fit their needs.
- Gaining buy-in from storeowners is a vital step in healthy corner store interventions; making the business case to storeowners and gaining trust can facilitate this.

Examples of successful implementation:

- The CDC's report, Current Practices in Healthy Food Retail: Small Stores, describes healthy corner store efforts across the country, including details on the partners involved and lessons learned.
- State Initiatives Supporting Healthier Food Retail: An Overview of the National Landscape describes healthy corner store policy efforts across the country, including legislation developed to address healthy food retail approaches.

Link to Literature: *Sufficient Evidence*

Strong Evidence

Health information technology: comprehensive telehealth interventions to improve diet among patients with chronic diseases

Telehealth interventions allow health care providers and patients to communicate by phone, email, web-based programs, or other electronic or digital media. Health care providers and patients may also interact in person, though in comprehensive telehealth interventions, most interactions are distance-based. Comprehensive telehealth interventions can be used to help adults who have chronic diseases that are affected by dietary behaviors.

CCC partners key to this strategy:

- Health care providers (including, nurses, social workers, health educators, and physicians)
- Health care system information technology staff

Planning and implementation resources:

- A Toolkit for Building and Growing a Sustainable Telehealth Program in Your Practice: Developed by the American Academy of Family Physicians to help build a telehealth program to connect with their patients, including those with chronic conditions.

What does our coalition need to consider?

- Comprehensive telehealth interventions may reduce the number of in-person visits and subsequently decrease opportunities for patients to receive other preventive services such as blood pressure monitoring and periodic cancer screening.
- The success of a scaled, sustainable telehealth program truly depends on knowing how to plan for, implement, operationalize, and maintain it, as this type of program can be a major investment.

Examples of successful implementation:

- The Missouri Telehealth Network (MTN) is aimed at enhancing access to care in underserved areas of Missouri.

Link to Literature: *Strong Evidence* (cancer-specific relevance)

Sufficient Evidence

Water availability & promotion interventions

Make drinking water readily available in various settings via regular placement of drinking fountains, water coolers, bottled water in vending machines, etc.

CCC partners key to this strategy:

- Industry partners to reduce expenses associated with increasing access to drinking water
- Worksite wellness coordinators to set policies to increase water availability

Planning and implementation resources:

- Water, Hydration, and Health - a Toolkit for Registered Dietitians: Features the latest information about healthy hydration in a ready-to-use format for external communications. The toolkit can also be used to educate people on the importance of healthy hydration.
- Win with Water - a Water Promotion Toolkit: This toolkit includes talking points, materials, sample social media posts, news media templates, policy guidance, and even some fun ideas to get everyone excited about drinking water.

What does our coalition need to consider?

- Promotion of tap water can be cost-effective; clean drinking fountains and conveniently placed filtered water stations otherwise known as "hydration stations" are an easy way to increase access to tap water.
- Many institutions nationally are implementing creative approaches to increase access, awareness, and education about tap water. These include posting educational signage at beverage points of purchase, signage near vending machines signaling the closest public water fountain and offering attractive fresh fruit- and herb-infused water in place of bottles in vending and retail locations.
- Alternative water delivery systems (e.g., bottleless water coolers) often cost less than improving or replacing deteriorating drinking water fountains and plumbing.

Examples of successful implementation:

- The city of Minneapolis created multiple programs to promote tap water, including Tap Minneapolis which provided portable water stations at large public events.

Link to Literature: *Sufficient Evidence*

Obesity Prevention

Strong Evidence

Health communication and social marketing: campaigns that include mass media and health-related product distribution

These health communication campaigns use messages to increase awareness of, demand for, and appropriate use of the product. The messages must be delivered through multiple channels, one of which must be mass media, to provide multiple opportunities for exposure and includes distribution of a health-related product, free of charge or at a reduced price (e.g., discount coupons), to reduce cost, access, and convenience-related barriers among targeted users.

CCC partners key to this strategy:

- Campaigns sponsored by the government, in collaboration with private advocacy or professional organizations
- Mass media organizations

Planning and implementation resources:

- Speaking of Health: Assessing Health Communication Strategies for Diverse Populations: Provides example strategies for how campaigns have addressed diverse audiences and presents available evidence for their success in reaching and affecting those audiences.

What does our coalition need to consider?

- Mass media programs have the potential to positively affect populations outside of the initial target group.
- Lack of community buy-in and failure of partners to meet their commitments can be barriers to implementation.
- Multilevel social change programs might include grassroots organizing, political and media advocacy, partnerships with private institutions, and the design and offering of new products.
- Mass media campaigns are often limited in monetary resources and are dependent on TV and radio broadcasters to donate time for public service announcements.

Examples of successful implementation:

- 10,000 Steps Rockhampton was Australia's first "whole of community" health project.

Link to Literature: *Strong Evidence* (cancer-specific relevance)

Strong Evidence

Worksite obesity prevention interventions

Use educational, environmental, and behavioral strategies to improve food choices and physical activity opportunities in worksite settings, also called workplace health programs.

CCC partners key to this strategy:

- Organization wellness committees
- Health professionals such as nutritionists and health coaches

Planning and implementation resources:

- Eat Smart, Move More North Carolina: Offers a hub of resources for worksites to support healthy weight behaviors.
- Workplace Health Promotion: The CDC provides a resource center for workplace health promotion and how to design, implement, and evaluate effective workplace wellness programs.
- Healthy Healthcare Toolkit: The Public Health Law Center and the American Cancer Society partnered to create a toolkit designed to help organizations create healthier food environments.

What does our coalition need to consider?

- These programs are common in large employers.
- Changes to the physical characteristics of work environments are likely to have greater impact than health education alone, but may require funding.

Examples of successful implementation: (cancer-specific relevance)

- To reduce obesity through PSE change, the Minnesota Comprehensive Cancer Control Program (CCCP) and Public Health Law Center offered grantees on-site technical assistance to build awareness and engage with their local hospitals and health care systems on healthy beverage policies.
- The North Dakota Comprehensive Cancer Control Program collaborated with the North Dakota Department of Health's Nutrition and Physical Activity Division to motivate employers and partners to increase physical activity in the workplace.
- Ohio has included strategies in its state obesity prevention plan such as education and environmental approaches in an effort to improve physical activity, nutrition, and overall health among all of its state employees.

Link to Literature: *Strong Evidence* (cancer-specific relevance)

Sufficient Evidence

Financial rewards for employee healthy behavior

Offer payments, credits toward health insurance premiums, or other financial rewards to encourage employees to lose weight, eat healthy, quit smoking, engage in physical activity, etc.

CCC partners key to this strategy:

- Worksite wellness coordinators
- Health professionals for screening
- C-suite engagement at worksites

Planning and implementation resources:

- Wellness Program Incentives: The Complete Guide: WellSteps provides a guide as well as examples from corporate wellness programs throughout the United States that have implemented employee incentives for maintaining a healthy lifestyle.

What does our coalition need to consider?

- There is some evidence that financial rewards for healthy behaviors helps employees reach short-term goals; more evidence is needed for long-term effects.
- Poorly constructed programs may encourage "gaming" and not meaningful behavior change.
- Workplace wellness initiatives that include financial rewards for healthy behavior can generate cost savings. Savings result from reduced absenteeism, lower use of health care services, or reduced workers compensation and disability claims, and generally begin two or more years after implementation.

Examples of successful implementation:

- Interventions including financial rewards for employee healthy behavior are implemented throughout the country and can be implemented as independent single-component programs, or combined to complement other interventions. This study showed that financial incentives produced significant weight loss over an 8-month intervention for employees.

Link to Literature: *Sufficient Evidence*

Strong Evidence

Multi-component obesity interventions

Combine educational, environmental, and behavioral activities that increase physical activity and improve nutrition (e.g., nutrition education, aerobic/strength training, dietary prescriptions, etc.) in various settings.

CCC partners key to this strategy:

- National nonprofit organizations (e.g., YMCAs, National Recreation and Park Association, and American Trails)
- Public (e.g., colleges, community/senior centers) and private (e.g., faith-based organizations, hospitals) entities
- Health care professionals (e.g., physicians, nutritionists, health coaches)

Planning and implementation resources:

- Trends and Policy Solutions in Adult Obesity, Physical Activity, and Nutrition: This toolkit provides policymakers with information about obesity, including data and trends, as well as solutions being implemented (or considered) by states and legislators across the country.

What does our coalition need to consider?

- Costs for multi-component obesity prevention programs vary based on several factors, including setting, duration, meeting structure, and number of sessions.
- Multi-component interventions that address both nutrition and physical activity for people with an increased risk of chronic disease have been shown to be cost-effective.

Examples of successful implementation: (cancer-specific relevance)

- The BeWise Program provides cardiovascular health screening and health coaching to eligible Utah women. The goal of BeWise is to provide women with the knowledge, skills, and opportunities to improve diet, physical activity, and other lifestyle behaviors to prevent, delay, and control cardiovascular and other chronic diseases.

Link to Literature: *Strong Evidence* (cancer-specific relevance)

Using Data Sources and Tools to Support PSE Approaches

After reviewing the PSE strategies that have the most impact on NUPA outcomes, a coalition will need data sources and tools to select a strategy that best fits the needs of their population. Familiarity with available data sources will help to inform the coalition's plan for evaluating their efforts. Surveillance data will be a primary data source. Surveillance data is an "ongoing, systematic collection, analysis, interpretation, and dissemination of data regarding a health-related event for use in public health action to reduce morbidity and mortality and to improve health."[22] Surveillance approaches vary in terms of scope, methods, and objectives. Some are established to track particular diseases, such as specific cancer types; others track behaviors, such as consumptions of healthy foods and level of physical activity achieved, while others track health conditions, such as obesity. Epidemiologists at the state health department or other partnering agencies will be a key collaborator for a coalition interested in exploring surveillance data. An epidemiologist is trained in accessing surveillance data sources and running appropriate statistical analyses based on coalition needs and requests.

Data Sources

Table 2 provides a high-level summary of existing surveillance datasets that may be relevant in informing NUPA PSE strategies. The second column, "Specific PSE Strategy Relevance", provides a short description of how the data can be applied across all PSE NUPA strategies, or in some cases may list specific strategies that the data can inform. For example, the Behavioral Risk Factor Surveillance Survey (BRFSS) is applicable for many of the strategies, while the American Community Survey (ACS) could be particularly helpful to inform the planning and evaluation of a complete streets initiative. The table also indicates the category (nutrition, physical activity, and obesity) and strategy type (environment, policy, and messaging) for which that data set is most relevant, to help potential data users understand the scope of each dataset.

These surveillance systems are described further in Appendix B. Key details include:

- Description - Noteworthy characteristics, background, and purpose of the dataset
- Frequency of updates - how recent or current the data may be
- Sample design and sample size - is it representative of the community of interest?
- Target population - specific subpopulations that are assessed, most of which are "civilian, noninstitutionalized individuals in the US," which means the data is representative of populations across the country
- Level of estimates – state, county, census tract, etc.
- Availability/cost
- Variables of interest, including those specific to cancer

Table 2. Data Sets Relevant to PSE Strategies

Data Set Name	Specific PSE Strategy Relevancy	Nutrition			Physical Activity		Obesity
		Envt.	Messaging	Policy	Envt.	Messaging	
American Community Survey (ACS)*	1) Complete Streets & streetscape design initiatives; 2) Bike & pedestrian master plans				X		
Behavioral Risk Factor Surveillance Survey (BRFSS)*	Can be applied to inform most PSE strategies given the in-depth assessment of nutrition, physical activity, obesity, health-related outcomes, and some access variables.	X	X	X	X	X	X
Bridging the Gap State Snack and Soda Tax Data System*	1) Sugar-sweetened beverage taxes; 2) Unhealthy snack taxes			X			
Current Population Survey (CPS)*	Large nationally representative data that includes basic demographics including income, employment, and poverty. May be useful if a CCC Coalition wants to compare poverty levels or another demographic characteristic in their state or community to national averages.	X			X		
Family Life, Activity, Sun, Health, and Eating (FLASHE)	Since the data is not linked to location but has a wide range of variables related to nutrition, physical activity, and obesity (including cancer diagnosis), all PSE strategies besides environment approaches are relevant.		X	X		X	X
Food Attitudes and Behavior Survey	Since the data is not linked to location but has a wide range of variables related to nutrition, both categories of nutrition PSE strategies besides environment approaches are relevant.		X	X			
National Health and Nutrition Examination Survey (NHANES)*	Can be applied to inform most PSE strategies given the in-depth assessment of nutrition, physical activity, obesity, health-related outcomes, and some access variables.	X	X	X	X	X	X
National Health Interview Survey (NHIS)**	The data relates mainly to individual-level behaviors and health outcomes, so is mainly applicable to PSE strategies that are not seeking to change the environment. 1) Point-of-decision prompts for physical activity; 2) Restaurant nutrition labeling; 3) Point-of-purchase prompts for healthy foods		X	X		X	X
National Hospital Discharge Survey (NHDS)**	May be useful if interested in incidence of cancer or other conditions (not necessarily linked directly to PSE strategies).						X
National Household Food Acquisition and Purchase Survey (FoodAPS)	Can inform any nutrition PSE approach, but most relevant for understanding dietary and shopping patterns. 1) New grocery stores in underserved areas; 2) Point-of-purchase prompts for healthy foods; 3) Competitive pricing for healthy foods	X	X	X			
National Household Travel Survey (NHTS)*	1) Complete Streets & streetscape design initiatives; 2) Bike & pedestrian master plans				X	X	
National Profile of Local Health Departments*	Can be applied to inform most nutrition PSE strategies since it helps to paint the picture of diet and food purchasing patterns surrounding health departments.	X	X	X			
Panel Study of Income Dynamics (PSID)*	Can be applied to inform most PSE strategies given the in-depth assessment of nutrition, physical activity, obesity, health-related outcomes, and some access variables.	X	X	X	X	X	X

*State level geocoding available **Other level available, such as census region or hospital ZIP code

Data Tools

Data tools are also a valuable resource to inform PSE efforts within CCC coalitions since they are often intuitive, user-friendly, and offer the opportunity to view various data outcomes. These tools are typically based upon national surveillance datasets, sometimes with multiple sources of data layered together. These tools may include mapping functions, report generation, or the ability to compare and contrast specific variables – without having a statistics background. Below are three data tools relevant to PSE efforts within CCC coalitions. They are described in some detail, with tips and instructions to help guide the user.

Food Environment Atlas

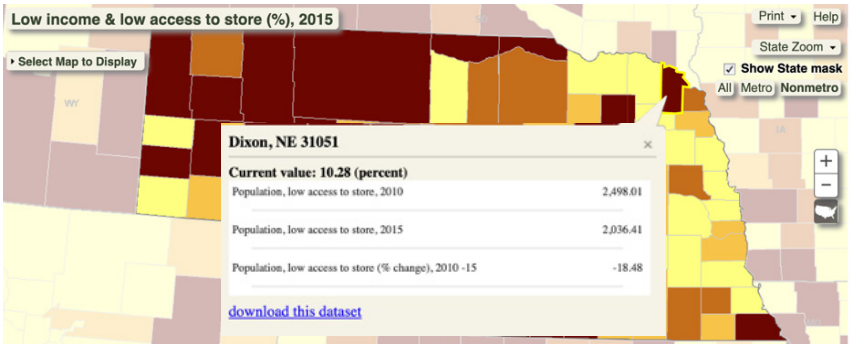
Description: Assembles statistics on food environment indicators on the determinants of food choices and diet quality. The Atlas and map functions also provide a spatial overview of a community's ability to access healthy food. Food environment factors that are captured include: store/restaurant proximity, food prices, food and nutrition assistance programs, and community characteristics.

Link: https://www.ers.usda.gov/data-products/food-environment-atlas.aspx

Instructions: When you enter the map, the tab at the top left indicates "select map to display." Under this tab, select the variables of interest you wish to see displayed on the map. On the right side, you can select a state to zoom in on. From this view, you can see the variable selected by county. You can also select to see any variable by metro or non-metro if you are interested in mostly rural or urban populations. The best way to synthesize statewide data is to download the current dataset in a format you feel most comfortable navigating. Once you download the data, you can manipulate the data (e.g., deleting other states not of interest, calculating averages for the state). **Potential variables of interest for NUPA PSE strategies relevant for cancer survivors may include:**

- Low income & low access to store (%), 2015 – this variable summarizes the most recent data (older data also available, as well as changes between years of the data). This variable will identify which counties/areas have higher proportions of low-income individuals who lack access to healthy food. Potential PSE strategies this data may inform: new grocery stores in underserved areas; community gardens; farmers markets; fruit & vegetable incentive programs; WIC & Senior Farmers Market Nutrition Programs; healthy food in convenience stores; healthy food initiatives in food pantries; mobile produce markets.
- Convenience stores/1,000 pop, 2016 – this variable will show areas where convenience stores have a greater density. This may be most relevant to the PSE strategy: healthy food in convenience stores.
- SNAP-authorized stores/1,000 pop, 2017 – this variable summarizes the density of SNAP-authorized food stores (also available for WIC), if any programs of consideration are specific to populations that receive SNAP and/or WIC.
- Food assistance variables report the percentage of outlets offering the assistance programs as well as the volume of participation (e.g., sales, percent of the population, percentage eligible). The food assistance programs that are summarized include: SNAP, WIC, NSLP, school breakfast, summer food service program, child and adult care, FDPIR.
- Household food insecurity (%, three-year average), 2015-17 – reports the percentage of the population in each county that is considered food insecure. This variable may be most relevant for programs that target low-income populations and aim to increase food security.
- Soda sales tax, retail stores/vending, 2014 – describes the price of sodas as compared to the national average. This variable is most relevant for: sugar-sweetened beverage taxes; unhealthy snack taxes.
- Farms with direct sales (%), 2012 & farmers markets/1,000 pop, 2018 – describes the density of direct-to-consumer farm outlets (on farm or at farmers markets). These variables are most relevant for PSE strategies that encompass local food efforts (e.g., starting new farmers markets, community gardens, WIC, & Senior Farmers Market Nutrition Programs).
- Adult obesity rate, 2017 & Adult diabetes rate, 2013 – describes the rate of obesity and diabetes in terms of a percentage of the population. These variables are most relevant to inform PSE strategies targeting obesity or chronic disease reduction (e.g., worksite obesity prevention interventions; health information technology: comprehensive telehealth interventions to improve diet among patients with chronic diseases; college-based obesity prevention educational interventions).
- Recreation & fitness facilities/1,000 pop, 2011 – provides the number of recreation facilities per 1,000 population. This variable is most relevant for PSE strategies targeting increases in physical activity and access to opportunities to be physically active (e.g., activity programs for older adults; community fitness programs; community-wide physical activity campaigns; community-based social support for physical activity; individually adapted physical activity programs).

Example: This example shows the percentage of low-income households that also have low access to healthy food stores in Nebraska. One of the counties is selected to show how the data is displayed.



PLACES (formerly called the 500 Cities Project)

Description: PLACES is a collaboration between CDC, the Robert Wood Johnson Foundation, and the CDC Foundation. It provides city- and census tract-level small area estimates for chronic disease risk factors, health outcomes, and clinical preventive services use for the largest 500 cities in the United States. This tool will be relevant for CCC Coalitions that are looking for data to inform efforts focusing on one of these 500 metropolitan areas (i.e., if your state efforts include programming in its larger cities). The cities ranged in population from 42,417 in Burlington, Vermont, to 8,175,133 in New York City, New York. These small area estimates allowed cities and coalitions to better understand the burden and geographic distribution of health-related variables in their jurisdictions and assisted them in planning public health interventions. Note: The 500 Cities Project was replaced by the PLACES Project in December 2020.

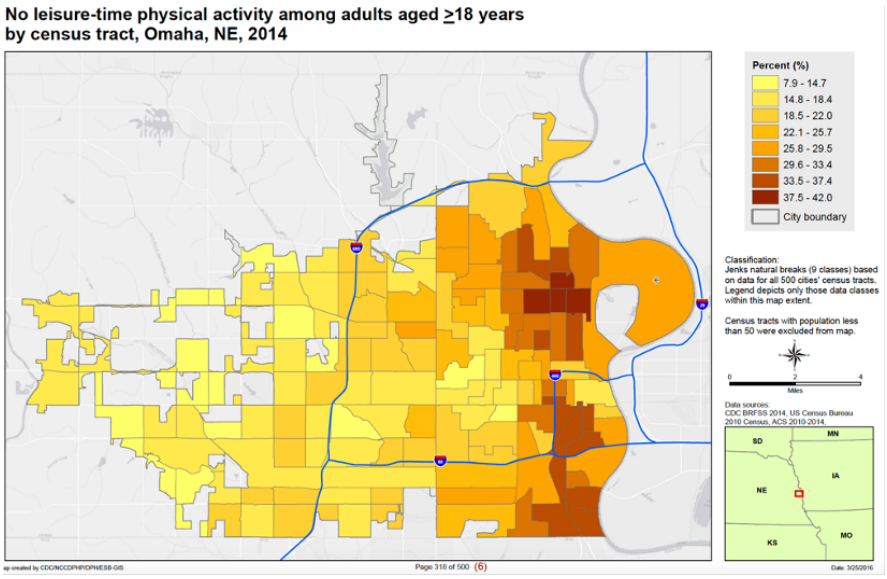
Link: https://www.cdc.gov/places/index.html

Instructions: In order to enter the map function, click on the large button "view map" on the main page. Once in the map, you can either type a location at the top right or manually zoom to a location. When you zoom in to view a city, you can click on individual census tracts to view its variables with frequencies and percentages. At the top of the map, you can toggle between health outcomes, prevention, and unhealthy behaviors. Potential variables of interest for NUPA PSE strategies relevant for cancer survivors may include:

- Cancer (cxcluding skin cancer) (health outcomes) – describes the rates of cancer by census tract, which may be helpful in determining where to implement PSE strategies to best support cancer survivors.
- Mammography use among women aged 50-74 years & cervical cancer screening (prevention) may be relevant for CCC coalitions to identify areas of need in terms of prevention and screening (not necessarily specific to PSE)
- Physical inactivity (unhealthy behaviors) – identifying areas of high concentration of physical inactivity can help inform: Complete Streets & streetscape design initiatives; Places for physical activity (Creating or improving places for PA); shared use agreements; bike and pedestrian master plans; Point-of-decision prompts for physical activity; Activity programs for older adults; Community-wide physical activity campaigns; Community-based social support for physical activity.
- Obesity among adults (unhealthy behaviors) – identifying which areas of a community have a greater proportion of residents that are obese can inform most of the PSE strategies, but may be particularly relevant for: worksite obesity prevention interventions; college-based obesity prevention educational interventions; financial rewards for employee healthy behavior; multi-component obesity interventions.

Another easy way to capture information on a particular city is to click on the link to "Compare Counties Reports." This will pull up a screen where you can view various health outcomes and behaviors across three different counties. The resulting table will include these three counties with the United States average and can be saved as a PDF. This view may be helpful in identifying which issues are of concern for a particular area of a state.

Example: This example shows rates of physical inactivity on the map of Omaha, Nebraska, with darker census tracts indicating higher rates of inactivity.



Food Access Research Atlas

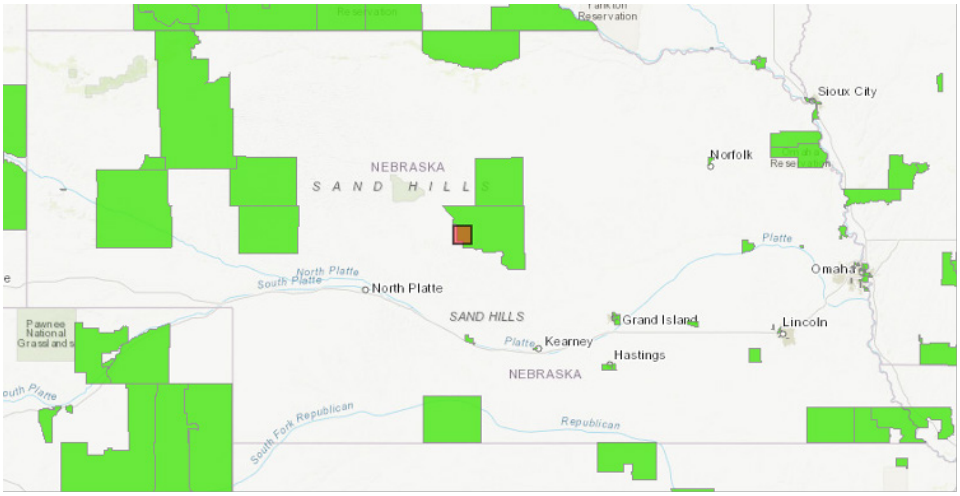
Description: Presents a spatial overview of food access indicators for low-income and other census tracts using different measures of supermarket accessibility; provides food access data for populations within census tracts; and offers census tract-level data on food access that can be downloaded for community planning or research purposes.

Link: https://www.ers.usda.gov/data-products/food-access-research-atlas/.aspx

Instructions: This mapping and data resource allows you to map low-income areas with low food access, otherwise known as "food deserts." These low food access areas can be defined as census tracts, where a significant number or share of residents is a specified distance to the nearest supermarket for urban and rural communities. The standard definition that qualifies an area as a "food desert" is 1 mile (urban) or 10 miles (rural) from the nearest supermarket. Potential variables of interest for NUPA PSE strategies include those that focus on spatial access to healthy foods:

- New grocery stores in underserved areas
- Community gardens
- Farmers markets
- Fruit & vegetable incentive programs
- Healthy food initiatives in food pantries
- Healthy vending machine options
- Mobile produce markets
- Healthy food in convenience stores

Example: This map shows low-income and low food access areas of Nebraska.



Planning and Evaluation

Using data sources and tools will help CCC coalitions navigate the evaluation step of the PSE implementation model, described in the "*Policy, Systems, and Environmental Approaches in Comprehensive Cancer Control*" resource.[1] The characteristics of a surveillance dataset vary widely, such as frequency of data collection, variables, and sample size. This variety impacts the degree to which the data is useful in evaluating the process or outcome of a particular PSE approach. For example, behaviors and health outcomes take time to change and improve, so a long-term plan for evaluating PSE approaches should be considered. Once variables are identified, data sources and tools can be reviewed to determine if there is a good match. Using existing data sources (or "secondary" data), such as the surveillance systems described above, limits the resources needed to measure your efforts and is an efficient way to evaluate PSE approaches.

If there is a need to collect primary data (or "new" data) to evaluate your efforts, this data can be collected by the CCC coalition, partner organizations, or through contracts with external evaluators. Some benefits of collecting primary data to evaluate a PSE approach include the ability to build measures to answer specific questions and have ownership over the data, including control over the methods, storage, and analysis. However, primary data collection can be expensive and time-intensive compared to using existing, secondary data.

There are many benefits of creating a logic model to support intervention planning and evaluation. A logic model framework follows a program throughout its lifecycle, starting with thinking though available resources, intended implementation activities, and the anticipated results of the work at short-term and long-term time points. The CDC provides a logic model template in the Comprehensive Cancer Control Branch Program Evaluation Toolkit.[23] Table 3 provides suggested evaluation activities that align with the logic model framework, including types of primary data that can help inform each stage of the selected NUPA PSE strategy.

Table 3. Example Evaluation Approaches Across the Logic Model Framework

Component	Description	Example Assessment and Evaluation Methods
Resources/Inputs	Factors that could potentially enable (e.g., funding, collaborating partners, volunteer time) or limit (e.g., policies, regulations, attitudes) program effectiveness.	• Landscape analysis • Key informant interviews • Stakeholder Focus Groups • Secondary data analysis • Needs assessment
Activities	All processes, techniques, tools, events, technology, and actions of the planned implementation of a program, initiative, or work.	• Program monitoring • Activity tracking
Outputs	The direct results of program activities that can be accounted for, such as delivery to the intended audience (e.g., number of classes taught) and representativeness of those reached by the program or initiative (e.g., socio-demographics).	• Participant counting • Demographic surveys of participants • Activity tracking • Technical assistance tracking
Outcomes	Less direct and typically measured in evaluation tools at the individual level, such as surveys, and include specific changes attitudes, behaviors, and knowledge.	• Pre/post surveys • Participant focus groups
Impacts	Organizational, community, and/or system level changes expected to result from program activities, which might include improved conditions, increased capacity, and/or changes in the policy arena.	• Secondary data analysis • Policy analysis

Advancing Health Equity Through PSE Strategy Implementation

Coalitions have the opportunity to impact social determinants of health and reduce inequitable processes while working through the implementation of a PSE strategy. Prioritizing organizational cultural competency at the outset and then focusing on authentic community engagement provides context for health equity-oriented strategy selection and implementation.[24] The CDC developed A Practitioner's Guide for Advancing Health Equity through Community Strategies for Preventing Chronic Disease,[25] which includes key foundational skills and practices that CCC Coalitions can utilize to advance health equity in their work.

For the American Cancer Society (ACS) and its nonprofit, non-partisan advocacy affiliate, the American Cancer Society Cancer Action Network℠ (ACS CAN), health equity means everyone has a fair and just opportunity to prevent, find, treat, and survive cancer.

The nature of a PSE approach brings with it the potential to impact health inequities. By addressing structural and policy factors that influence a population's ability to achieve a healthy diet and physical activity, CCC coalitions can remove barriers and help all individuals, including cancer survivors, achieve optimal health. A critical step to ensuring PSE strategies are relevant to populations that experience disparities is engaging with these populations throughout the planning, development, and implementation process.[26]

Additional Organizational Resource:

The Colorado Trust's Equality in Health Initiative (EIH) addresses comprehensive cultural competency domains that can be applied by coalitions to address inequities.[27] These domains are personal/professional development, organizational and infrastructure development, and community engagement, and they posit a systematic effort by a coalition to understand and appreciate diverse cultures, finesse policies and practices to meet the needs of different populations, and involve diverse stakeholders in improving the coalition's ability to serve all community members effectively.

ACS Health Equity Community Projects: Social Determinants of Health through the Cancer Lens and Strategies to Address Them highlights three social determinants of health impacting cancer across the continuum and contributing to cancer inequities, as well as accompanying evidence based-strategies. Healthy food access is one NUPA-focused social determinant discussed.[26] Strategies and associated resources in this section include:

- Health care partnerships for food insecurity screening and referral
- Retail partnerships to incorporate nutrition incentive models and other on-site healthy food access initiatives
- Health care partnership to leverage community benefit dollars and assess the needs of the community
- Health care partnership to host on-site healthy food access initiatives
- Policy work with health care settings, public venues, and large employers to increase healthy food standards
- Food bank partnerships to explore emergency food or medically tailored food box options, with accompanying onsite education opportunities
- Retail, research, or community partners to seek funding to implement nutrition incentive programs, specifically focused on fruit and vegetables
- Retail partnerships to increase healthy food access, specifically in small convenience store locations
- Transportation partnerships to increase availability of transportation to healthy food access points

Conclusion

This guide was designed to provide CCC coalitions with evidence-based PSE approaches, corresponding data, and resources to inform NUPA efforts across the cancer continuum. It builds on other key resources such as the CDC NCCCP and ACS resource, "Policy, Systems, and Environmental Approaches in Comprehensive Cancer Control," which leads a coalition through the steps for developing, planning, implementing, enforcing, and evaluating PSE strategies. By focusing on NUPA PSE strategies, CCC coalitions can impact health across the continuum – from prevention through survivorship – by implementing proven approaches that have the potential to reach a wide audience and have a sustained effect.

References

1. Policy, Systems, and Environmental Approaches in Comprehensive Cancer Control. American Cancer Society. 2021.
2. American Cancer Society. Health Behaviors for Cancer Survivors Brief, 2019. https://www.acs4ccc.org/wp-content/uploads/2020/05/online_CCC-survey_health-behaviors-survivors.pdf
3. Moore A, Villalobos A, Gardner AL, Staples C, Shafir S. Leveraging the strength of comprehensive cancer control coalitions to support policy, systems, and environmental change. Cancer Causes Control CCC. 2019;30(10):1033-1044. doi:10.1007/s10552-019-01215-w
4. Rohan EA, Chovnick G, Rose J, Townsend JS, Young M, Moore AR. Prioritizing Population Approaches: A Qualitative Evaluation of Policy, Systems, and Environmental Change Initiatives in Cancer Prevention and Control. *Popul Health Manag.* 2019;22(3):205-212. doi:10.1089/pop.2018.0081
5. Frieden TR. A framework for public health action: the health impact pyramid. *Am J Public Health.* 2010;100(4):590-595. doi:10.2105/AJPH.2009.185652
6. GW Cancer Center. Action for PSE Change - Addressing cancer care needs through policy, systems, and environmental change. Accessed February 15, 2021. http://action4psechange.org/
7. The Food Trust. What Is Policy, Systems and Environmental (PSE) Change?; 2012. Accessed November 24, 2020. http://healthtrust.org/wp-content/uploads/2013/11/2012-12-28-Policy_Systems_and_Environmental_Change.pdf
8. Auld E, Guthrie D, Hartig E, et al. Partnering4Health Approaches to Sustaining Healthy Communities: A Toolkit for Supporting Policy, Systems, and Environmental (PSE) Change Initiatives. Society for Public Health Education; 2017. https://www.sophe.org/wp-content/uploads/2017/10/Partnering4Health_Sustainability-Toolkit_Final_092817.pdf
9. North Carolina Department of Public Instruction and Division of Public Health. (2013). Promoting Physical Activity Through Joint Use Agreements. North Carolina Department of Public Instruction and Department of Health and Human Services, Division of Public Health, Raleigh, North Carolina. https://www.eatsmartmovemorenc.com/wp-content/uploads/2020/01/PromotingPhysicalActivityThroughJointUseAgreements_Rev0414.pdf
10. Rock CL, Thomson C, Gansler T, et al. American Cancer Society guideline for diet and physical activity for cancer prevention. *CA Cancer J Clin.* 2020;70(4):245-271. doi:https://doi.org/10.3322/caac.21591
11. Cespedes, E. M., & Hu, F. B. (2015). Dietary patterns: from nutritional epidemiologic analysis to national guidelines. *Am. J. Clin. Nutr.* 101(5), 899–900. https://doi.org/10.3945/ajcn.115.110213
12. US Department of Agriculture and US Department of Health and Human Services. Dietary Guidelines for Americans, 2010. 7th ed. Washington, DC: US Government Printing Office; 2010.
13. Nutrition and Physical Activity Guidelines for Cancer Survivors. (2012). https://www.cancer.org/health-care-professionals/american-cancer-society-prevention-early-detection-guidelines/nupa-guidelines-for-cancer-survivors.html
14. Speck RM, Courneya KS, Mâsse LC, Duval S, Schmitz KH. An update of controlled physical activity trials in cancer survivors: a systematic review and meta-analysis. *J Cancer Surviv.* 2010;4(2):87-100.
15. Sung H, Siegel RL, Rosenberg PS, Jemal A. Emerging cancer trends among young adults in the USA: analysis of a population-based cancer registry. *Lancet Public Health*. 2019;4:e137-e147.
16. Perez-Hernandez AI, Catalan V, Gomez-Ambrosi J, Rodriguez A, Fruhbeck G. Mechanisms linking excess adiposity and carcinogenesis promotion. *Front Endocrinol (Lausanne)*. 2014;5:65.
17. Djuric Z. Obesity-associated cancer risk: the role of intestinal microbiota in the etiology of the host proinflammatory state. *Transl Res.* 2017;179:155-167.

18. International Agency for Research on Cancer (IARC) Monographs Working Group. Alcoholic Beverages. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Vol 44. World Health Organization/IARC; 1988.
19. Seitz HK, Stickel F. Molecular mechanisms of alcohol-mediated carcinogenesis. *Nat Rev Cancer.* 2007;7:599-612
20. International Agency for Research on Cancer (IARC) Monographs Working Group. *Personal Habits and Indoor Combustions. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Vol 100E.* World Health Organization/IARC; 2012.
21. County Health Rankings & Roadmaps. Strategies. https://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/strategies?f%5B0%5D=health-factor%3ADiet%20and%20Exercise
22. CDC (Centers for Disease Control and Prevention). Updated guidelines for evaluating public health surveillance systems: Recommendations from the guidelines working group. *MMWR Recommendations and Reports*. 2001;50(RR–13):1–35.
23. Comprehensive Cancer Control Branch Program Evaluation Toolkit. National Center for Chronic Disease Prevention and Health Promotion, Division of Cancer Prevention and Control. June 2010. Available at: https://www.cdc.gov/cancer/ncccp/pdf/CCC_Program_Evaluation_Toolkit.pdf
24. Inzeo, P. T., Christens, B. D., Hilgendorf, A., & Sambo, A. (2019). Advancing Coalition Health Equity Capacity Using a Three-Dimensional Framework. *Health Equity.* 3(1), 169-176
25. Centers for Disease Control and Prevention – Division of Community Health. A Practitioner's Guide for Advancing Health Equity: Community Strategies for Preventing Chronic Disease. Atlanta, GA: US Department of Health and Human Services; 2013.
26. American Cancer Society. American Cancer Society Health Equity Community Projects. https://www.acs4ccc.org/wp-content/uploads/2021/02/ACS-Health-Equity-Community-Projects-Booklet-002.pdf
27. Baruch, E., Freeland Walker, S. (2013). Health Equity and Leadership: The Importance of Leadership in Achieving Organizational Cultural Competency. The Colorado Trust. https://www.coloradotrust.org/sites/default/files/CT_LeadershipBrief_FINALv.pdf

Appendix A: NUPA Evidence-based Strategies - Supporting Literature

Complete Streets & streetscape design initiatives

- Morrison, D. S., Petticrew, M., & Thomson, H. (2003). What are the most effective ways of improving population health through transport interventions? Evidence from systematic reviews. *Journal of Epidemiology & Community Health*, 57(5), 327-333.
- Perk, V., Catalá, M., Mantius, M., & Corcoran, K. (2015). Capturing the benefits of complete streets (No. BDV26- 977-04). Florida. Dept. of Transportation.
- Dodson, E. A., Langston, M., Cardick, L. C., Johnson, N., Clayton, P., & Brownson, R. C. (2014). Peer Reviewed: "Everyone Should Be Able to Choose How They Get Around": How Topeka, Kansas, Passed a Complete Streets Resolution. *Prev Chron Dis.*, 11.

Creating or improving places for physical activity

- Lee KH, Dvorak RG, Schuett MA, Van Riper CJ. Understanding spatial variation of physical inactivity across the continental United States. Landscape and Urban Planning (2017) 165:61-71.
- McCormack GR, Rock M, Toohey AM, Hignell D. Characteristics of urban parks associated with park use and physical activity: A review of qualitative research. *Health & Place.* 2010 Jul 1;16(4):712-26.
- Omura JD, Carlson SA, Paul P, Sliwa S, Onufrak SJ, Fulton JE. Shared use agreements between municipalities and public schools in the United States, 2014. *Prev. Med.* 2017 Feb 1;95:S53-9.

Shared use agreements

- US National Physical Activity Plan (NPAP). http://www.physicalactivityplan.org/docs/2016NPAP_Finalforwebsite.pdf?pdf=homepage-header-link
- DeFosset AR, Gase LN, Gonzalez E, Kuo T. Access to and use of schools for physical activity among adults in Los Angeles County. *Health Promotion Practice.* 2016;17(3):416-428. https://journals.sagepub.com/ doi/10.1177/1524839916636567

Bike & pedestrian master plans

- Lowry M, Loh TH. Quantifying bicycle network connectivity. *Prev. Med.* 2017;95(Suppl):S134-S140.
- Cerin E, Nathan A, van Cauwenberg J, Barnett DW, Barnett A. The neighbourhood physical environment and active travel in older adults: A systematic review and meta-analysis. *Int. J. Behav. Nutr. Phys. Act*. 2017;14(1):15.

Green space & parks

- Blanck HM, Allen D, Bashir Z, et al. Let's go to the park today: the role of parks in obesity prevention and improving the public's health. *Childhood Obesity*. 2012;8(5):423-8.
- Kondo MC, Fluehr JM, McKeon T, Branas CC. Urban green space and its impact on human health. *Int. J. Environ. Res. Public Health*. 2018;15(3).
- Cohen DA, Han B, Isacoff J, Shulaker B, Williamson S. Renovations of neighbourhood parks: Long-term outcomes on physical activity. *J. Epidemiol. Community Health*. 2019;73:214-218.

Point-of-decision prompts for physical activity

- Forberger S, Reisch L, Kampfmann T, Zeeb H. Nudging to move: a scoping review of the use of choice architecture interventions to promote physical activity in the general population. *Int. J. Behav. Nutr. Phys. Act*. 2019 Dec 1;16(1):77.
- Kaczynski AT, Stanis SA, Hipp JA. Point-of-decision prompts for increasing park-based physical activity: a crowdsource analysis. *Prev. Med*. 2014 Dec 1;69:87-9.

- Soler RE, Leeks KD, Buchanan LR, Brownson RC, Heath GW, Hopkins DH, Task Force on Community Preventive Services. Point-of-decision prompts to increase stair use: a systematic review update. *Am. J. Prev. Med.* 2010 Feb 1;38(2):S292-300.
- Task Force on Community Preventive Services. Recommendation for use of point-of-decision prompts to increase stair use in communities. *Am. J. Prev. Med*. 2010 Feb;38(2):S290-1.

Exercise prescriptions

- Hoffmann TC, Maher CG, Briffa T, Sherrington C, Bennell K, Alison J, Singh MF, Glasziou PP. Prescribing exercise interventions for patients with chronic conditions. *CMAJ*. 2016 Apr 19;188(7):510-8.
- Jones LW, Eves ND, Peppercorn J. Pre-exercise screening and prescription guidelines for cancer patients. *Lancet Oncol.* 2010 Oct 1;11(10):914-6.
- Pedersen BK, Saltin B. Evidence for prescribing exercise as therapy in chronic disease. *Scand J Med Sci Sports*. 2006 Feb;16(S1):3-63.
- Resende-Neto AG, Da Silva-Grigoletto ME. Prescription of the Functional Strength Training for Older People: A Brief Review. *J Aging Sci.* 2019;7:210.
- Schmitz KH, Campbell AM, Stuiver MM, Pinto BM, Schwartz AL, Morris GS, Ligibel JA, Cheville A, Galvão DA, Alfano CM, Patel AV. Exercise is medicine in oncology: engaging clinicians to help patients move through cancer. *CA: Cancer J. Clin.* 2019 Nov;69(6):468-84.
- Schmitz KH, Holtzman J, Courneya KS, Mâsse LC, Duval S, Kane R. Controlled physical activity trials in cancer survivors: a systematic review and meta-analysis. *Cancer Epidemiol Biomarkers Prev.* 2005 Jul 1;14(7):1588-95.
- Sweegers MG, Altenburg TM, Chinapaw MJ, Kalter J, Verdonck-de Leeuw IM, Courneya KS, Newton RU, Aaronson NK, Jacobsen PB, Brug J, Buffart LM. Which exercise prescriptions improve quality of life and physical function in patients with cancer during and following treatment? A systematic review and meta-analysis of randomised controlled trials. *Br J Sports Med.* 2018 Apr 1;52(8):505-13.

Multi-component workplace supports for active commuting

- Brady S, D'Ambrosio LA, Felts A, et al. Reducing isolation and loneliness through membership in a fitness program for older adults: Implications for health. *J. Appl. Gerontol.* 2020 Mar;39(3):301-10.
- Burhenn PS, Bryant AL, Mustian KM. Exercise Promotion in Geriatric Oncology. *Curr Oncol Rep.* 2016 Sep;18(9):58. doi: 10.1007/s11912-016-0538-5. PMID: 27484061; PMCID: PMC5839509.
- de Labra C, Guimaraes-Pinheiro C, Maseda A, Lorenzo T, Millán-Calenti JC. Effects of physical exercise interventions in frail older adults: a systematic review of randomized controlled trials. *BMC Geriatr.* 2015 Dec 1;15(1):154.
- Hu YL, Junge K, Nguyen A, et al. Evidence to improve physical activity among medically underserved older adults: A scoping review. *The Gerontologist.* 2019 Jul 16;59(4):e279-93.
- Kelly ME, Loughrey D, Lawlor BA, et al. The impact of exercise on the cognitive functioning of healthy older adults: a systematic review and meta-analysis. *Ageing Res. Rev.* 2014 Jul 1;16:12-31.
- Northey JM, Cherbuin N, Pumpa KL, Smee DJ, Rattray B. Exercise interventions for cognitive function in adults older than 50: a systematic review with meta-analysis. *Br J Sports Med.* 2018 Feb 1;52(3):154-60.

Community fitness programs

- Bock C, Jarczok MN, Litaker D. Community-based efforts to promote physical activity: a systematic review of interventions considering mode of delivery, study quality and population subgroups. *J Sci Med Sport.* 2014 May 1;17(3):276-82.
- Cleland CL, Tully MA, Kee F, Cupples ME. The effectiveness of physical activity interventions in socio-economically disadvantaged communities: a systematic review. *Prev. Med.* 2012 Jun 1;54(6):371-80.
- Craike M, Wiesner G, Hilland TA, Bengoechea EG. Interventions to improve physical activity among socioeconomically disadvantaged groups: An umbrella review. *Int. J. Behav. Nutr. Phys. Act.* 2018 Dec 1;15(1):43.
- Foley MP, Hasson SM. Effects of a community-based multimodal exercise program on health-related physical fitness and physical function in breast cancer survivors: a pilot study. *Integr Cancer Ther.* 2016 Dec;15(4):446-54.
- Guerra PH, Ribeiro EH, Lima TR, Andrade DR, Loch MR. Effects of community-based interventions on physical activity levels: systematic review. *Rev Bras Ativ Fís Saúde*. 2020 Oct 26;25:1-8.
- Irwin ML, Cartmel B, Harrigan M, Li F, Sanft T, Shockro L, O'Connor K, Campbell N, Tolaney SM, Mayer EL, Yung R. Effect of the LIVESTRONG at the YMCA exercise program on physical activity, fitness, quality of life, and fatigue in cancer survivors. *Cancer.* 2017 Apr 1;123(7):1249-58.

- Leach HJ, Danyluk JM, Nishimura KC, Culos-Reed SN. Evaluation of a community-based exercise program for breast cancer patients undergoing treatment. *Cancer Nurs.* 2015 Nov 1;38(6):417-25.
- Musanti R, Chao YY, Collins K. Fitness and quality of life outcomes of cancer survivor participants in a community exercise program. *J Adv Pract Oncol.* 2019 Jan;10(1):24.
- Santa Mina D, Sabiston CM, Au D, Fong AJ, Capozzi LC, Langelier D, Chasen M, Chiarotto J, Tomasone JR, Jones JM, Chang E. Connecting people with cancer to physical activity and exercise programs: a pathway to create accessibility and engagement. *Curr Oncol.* 2018 Apr;25(2):149.

Community-based social support for physical activity

- Barber FD. Effects of social support on physical activity, self-efficacy, and quality of life in adult cancer survivors and their caregivers. *Oncol Nurs Forum*. 2013 Sep 1 (Vol. 40, No. 5, pp. 481-9).
- Barber FD. Social Support and Physical Activity Engagement by Cancer Survivors. *Clin J Oncol Nurs*. 2012 Jun 1;16(3).
- Child S, Kaczynski AT, Moore S. Meeting physical activity guidelines: the role of personal networks among residents of low-income communities. *Am. J. Prev. Med.* 2017 Sep 1;53(3):385-91.
- McDonough MH, Beselt LJ, Kronlund LJ, Albinati NK, Daun JT, Trudeau MS, Wong JB, Culos-Reed SN, Bridel W. Social support and physical activity for cancer survivors: a qualitative review and meta-study. *J. Cancer Surviv*. 2020 Oct 31:1-6.
- McNeill LH, Kreuter MW, Subramanian SV. Social environment and physical activity: a review of concepts and evidence. *Soc Sci Med.* 2006 Aug 1;63(4):1011-22.
- Shvedko A, Whittaker AC, Thompson JL, Greig CA. Physical activity interventions for treatment of social isolation, loneliness or low social support in older adults: A systematic review and meta-analysis of randomised controlled trials. *Psychol Sport Exerc.* 2018 Jan 1;34:128-37.
- Smith GL, Banting L, Eime R, O'Sullivan G, Van Uffelen JG. The association between social support and physical activity in older adults: a systematic review. *Int J Behav Nutr Phys Act*. 2017 Dec 1;14(1):56.

Community-wide physical activity campaigns

- Baker, P. R., Francis, D. P., Soares, J., Weightman, A. L., & Foster, C. (2015). Community wide interventions for increasing physical activity. *Cochrane Database Syst Rev.* (1).
- Roussos, S. T., & Fawcett, S. B. (2000). A review of collaborative partnerships as a strategy for improving community health. *Annu Rev Public Health.* 21(1), 369-402.
- Roux L, Pratt M, Tengs TO, et al. Cost effectiveness of community-based physical activity interventions. *Am. J. Prev. Med.* 2008;35(6):578-88

Activity programs for older adults

- Brady S, D'Ambrosio LA, Felts A, et al. Reducing isolation and loneliness through membership in a fitness program for older adults: Implications for health. J *Appl Gerontol*. 2020 Mar;39(3):301-10.
- Burhenn PS, Bryant AL, Mustian KM. Exercise Promotion in Geriatric Oncology. *Curr Oncol Rep*. 2016 Sep;18(9):58. doi: 10.1007/s11912-016-0538-5. PMID: 27484061; PMCID: PMC5839509.
- de Labra C, Guimaraes-Pinheiro C, Maseda A, Lorenzo T, Millán-Calenti JC. Effects of physical exercise interventions in frail older adults: a systematic review of randomized controlled trials. *BMC Geriatr.* 2015 Dec 1;15(1):154.
- Hu YL, Junge K, Nguyen A, et al. Evidence to improve physical activity among medically underserved older adults: A scoping review. *The Gerontologist*. 2019 Jul 16;59(4):e279-93.
- Kelly ME, Loughrey D, Lawlor BA, et al. The impact of exercise on the cognitive functioning of healthy older adults: a systematic review and meta-analysis. *Ageing Res. Rev.* 2014 Jul 1;16:12-31.
- Kilari D, Soto-Perez-de-Celis E, Mohile SG, Alibhai SM, Presley CJ, Wildes TM, Klepin HD, Demark-Wahnefried W, Jatoi A, Harrison R, Won E. Designing exercise clinical trials for older adults with cancer: Recommendations from 2015 Cancer and Aging Research Group NCI U13 Meeting. *J Geriatr Oncol.* 2016 Jul 1;7(4):293-304.
- Luctkar-Flude MF, Groll DL, Tranmer JE, Woodend K. Fatigue and physical activity in older adults with cancer: a systematic review of the literature. *Cancer Nurs*. 2007 Sep 1;30(5):E35-45.
- Northey JM, Cherbuin N, Pumpa KL, Smee DJ, Rattray B. Exercise interventions for cognitive function in adults older than 50: a systematic review with meta-analysis. *Br J Sports Med*. 2018 Feb 1;52(3):154-60.

Interventions including activity monitors for adults with overweight or obesity

- Cadmus-Bertram L, Wang JB, Patterson RE, Newman VA, Parker BA, Pierce JP. Web-based self-monitoring for weight loss among overweight/obese women at increased risk for breast cancer: the HELP pilot study. *Psycho-Oncol.* 2013 Aug;22(8):1821-8.
- de Vries HJ, Kooiman TJM, van Ittersum MW, van Brussel M, de Groot M. Do activity monitors increase physical activity in adults with overweight or obesity? A systematic review and meta-analysis. *Obesity.* 2016;24(10):2076-91.
- Baker G, Gray SR, Wright A, et al. The effect of a pedometer-based community walking intervention ''Walking for Wellbeing in the West'' on physical activity levels and health outcomes: a 12-week randomized controlled trial. *Int J Behav Nutr Phys Act*. 2008;5:44.
- Morgan PJ, Callister R, Collins CE, et al. The SHED-IT community trial: a randomized controlled trial of internet- and paper-based weight loss programs tailored for overweight and obese men. *Ann Behav Med.* 2013;45:139-52.
- Rossi A, Frechette L, Miller D, Miller E, Friel C, Van Arsdale A, Lin J, Shankar V, Kuo DY, Nevadunsky NS. Acceptability and feasibility of a Fitbit physical activity monitor for endometrial cancer survivors. *Gynecol. Oncol.* 2018 Jun 1;149(3):470-5.

Community gardens

- Blair CK, Madan-Swain A, Locher JL, Desmond RA, de Los Santos J, Affuso O, Glover T, Smith K, Carley J, Lipsitz M, Sharma A. Harvest for health gardening intervention feasibility study in cancer survivors. *Acta Oncol.* 2013 Aug 1;52(6):1110-8.
- Spees, C. K., Braun, A. C., Hill, E. B., Grainger, E. M., Portner, J., Young, G. S., ... & Clinton, S. K. (2019). Impact of a Tailored Nutrition and Lifestyle Intervention for Overweight Cancer Survivors on Dietary Patterns, Physical Activity, Quality of Life, and Cardiometabolic Profiles. *J. Oncol.* 2019.
- Milliron, B. J., Vitolins, M. Z., Gamble, E., Jones, R., Chenault, M. C., & Tooze, J. A. (2017). Process evaluation of a community garden at an urban outpatient clinic. *J. Community Health.* 42(4), 639-648.
- Ornelas, I. J., Deschenie, D., Jim, J., Bishop, S., Lombard, K., & Beresford, S. A. (2017). Yéego Gardening!: A Community Garden Intervention to Promote Health on the Navajo Nation. Progress in community health partnerships: research, education, and action. *Prog in Community Health Partnership.* 11(4), 417.
- Winkels RM, Artrip R, Tupinio M, Veldheer S, Dandekar SC, George DR. Opportunities for Growth: Evaluating the Feasibility of a Community Gardening Intervention Pairing Adolescent and Young Adult Cancer Survivors with Experienced Gardeners. *J. Adolesc. Young Adult Oncol*. 2020 Feb 1;9(1):115-9.

New grocery stores in underserved areas

- Freedman DA, Choi SK, Hurley T, Anadu E, Hebert JR. A farmers market at a federally qualified health center improves fruit and vegetable intake among low-income diabetics. *Prev. Med.* 2013;56(5):288–92.
- Young C, Karpyn A, Uy N, Wich K, Glyn J. Farmers markets in low income communities: Impact of community environment, food programs and public policy. *Community Development.* 2011;42(2):208-20.
- Fitzgerald N, Hallman WK. Effectiveness of a farmers market intervention to improve the food access and intake in an urban setting. *FASEB J.* 2011;25(98.6).

Farmers markets

- Freedman DA, Choi SK, Hurley T, Anadu E, Hebert JR. A farmers' market at a federally qualified health center improves fruit and vegetable intake among low-income diabetics. *Prev. Med.* 2013;56(5):288–92.
- Young C, Karpyn A, Uy N, Wich K, Glyn J. Farmers' markets in low income communities: Impact of community environment, food programs and public policy. *Community Development.* 2011;42(2):208-20.
- Fitzgerald N, Hallman WK. Effectiveness of a farmers market intervention to improve the food access and intake in an urban setting. *FASEB J.* 2011;25(98.6).

Restaurant nutrition labeling

- Long MW, Tobias DK, Cradock AL, Batchelder H, Gortmaker SL. Systematic review and meta-analysis of the impact of restaurant menu calorie labeling. *Am J Public Health.* 2015;105(5):e11-e24.
- Sinclair SE, Cooper M, Mansfield ED. The influence of menu labeling on calories selected or consumed: A systematic review and meta-analysis. *J Acad Nutr Diet*. 2014;114(9):1375-1388.
- Nikolaou CK, Hankey CR, Lean MEH. Calorie-labelling: Does it impact on calorie purchase in catering outlets and the views of young adults? *Int J Obes.* 2015;39:542-545.

Point-of-purchase prompts for healthy foods

- Gyawu R, Quansah JE, Fall S, Gichuhi PN, Bovell-Benjamin AC. Community food environment measures in the Alabama Black Belt: Implications for cancer risk reduction. *Prev. Med. Rep.* 2015 Jan 1;2:689-98.
- Nikolova HD, Inman JJ. Healthy choice: The effect of simplified point-of-sale nutritional information on consumer food choice behavior. *J. Mark. Res.* 2015;52:817-835.
- Sonnenberg L, Gelsomin E, Levy DE, et al. A traffic light food labeling intervention increases consumer awareness of health and healthy choices at the point-of-purchase. *Prev. Med*. 2013;57(4):253-257.

Competitive pricing for healthy foods

- Multiple research studies presented at the American Society of Nutrition conference that highlight how policies encouraging healthy eating could greatly cut cancer-related costs
- Gittelsohn J, Trude ACB, Kim H. Pricing strategies to encourage availability, purchase, and consumption of healthy foods and beverages: A systematic review. *Prev Chronic Dis.* 2017;14(E107):170213.
- Grech A, Allman-Farinelli M. A systematic literature review of nutrition interventions in vending machines that encourage consumers to make healthier choices. *Obes. Rev*. 2015;16(12):1030-1041.

Fruit & vegetable incentive programs

- An R. Effectiveness of subsidies in promoting healthy food purchases and consumption: a review of field experiments. *Public Health Nutr.* 2013;16(7):1215.
- Engel K, Ruder EH. Fruit and Vegetable Incentive Programs for Supplemental Nutrition Assistance Program (SNAP) Participants: A Scoping Review of Program Structure. *Nutrients*. 2020 Jun;12(6):1676.
- Ishaq O, Mailhot Vega R, Zullig L, Wassung A, Walters D, Berland N, Du KL, Ahn J, Leichman CG, Jill Cohen D, Gu P. Food as medicine: A randomized controlled trial (RCT) of home delivered, medically tailored meals (HDMTM) on quality of life (QoL) in metastatic lung and non-colorectal GI cancer patients.
- Olsho LE, Klerman JA, Wilde PE, Bartlett S. Financial incentives increase fruit and vegetable intake among Supplemental Nutrition Assistance Program participants: a randomized controlled trial of the USDA Healthy Incentives Pilot. *Am. J. Clin. Nutr.* 2016 Aug 1;104(2):423-35.
- Ridberg RA, Bell JF, Merritt KE, Harris DM, Young HM, Tancredi DJ. Peer Reviewed: Effect of a Fruit and Vegetable Prescription Program on Children's Fruit and Vegetable Consumption. *Prev Chronic Dis.* 2019;16.
- Savoie-Roskos M, Durward C, Jeweks M, LeBlanc H. Reducing food insecurity and improving fruit and vegetable intake among farmers market incentive program participants. *J Nutr Educ Behav*. 2016 Jan 1;48(1):70-6.

Sugar-sweetened beverage and unhealthy snack taxes

- Allcott H, Lockwood BB, Taubinsky D. Should we tax sugar-sweetened beverages? An overview of theory and evidence. *J Econ Perspect*. 2019 Aug;33(3):202-7.
- Chazelas E, Srour B, Desmetz E, et al. Sugary drink consumption and risk of cancer: results from NutriNet-Santé prospective cohort. *BMJ.* 2019 Jul 10;366:l2408.
- Du M, Griecci CF, Kim DD, Cudhea F, Ruan M, Eom H, Wong JB, Wilde PE, Michaud DS, Lee Y, Micha R. Cost-Effectiveness of a National Sugar-Sweetened Beverage Tax to Reduce Cancer Burdens and Disparities in the United States. *JNCI Cancer Spectr.* 2020 Dec;4(6):pkaa073.
- Dodd R, Santos JA, Tan M, et al. Effectiveness and feasibility of taxing salt and foods high in sodium: A systematic review of the evidence. *Ad Nutr.* 2020 Nov;11(6):1616-30.
- Epstein LH, Dearing KK, Roba LG, et al. The influence of taxes and subsidies on energy purchased in an experimental purchasing study. *Psychol. Sci.* 2010 Mar;21(3):406-14.
- Falbe J, Thompson HR, Becker CM, et al. Impact of the Berkeley excise tax on sugar-sweetened beverage consumption. *Am J Public Health*. 2016 Oct;106(10):1865-71.
- Mozaffarian D, Afshin A, Benowitz NL, et al. AHA scientific statement population approaches to improve diet, physical activity, and smoking habits a scientific statement from the American Heart Association. *Circulation.* 2012 Sep 18;126(12).
- Mytton OT, Clarke D, Rayner M. Taxing unhealthy food and drinks to improve health. *BMJ.* 2012 May 15;344:e2931
- Niebylski ML, Redburn KA, Duhaney T, et al. Healthy food subsidies and unhealthy food taxation: A systematic review of the evidence. *Nutrition.* 2015 Jun 1;31(6):787-95.

- Powell LM, Chriqui JF, Khan T, et al. Assessing the potential effectiveness of food and beverage taxes and subsidies for improving public health: a systematic review of prices, demand and body weight outcomes. *Obes. Rev.* 2013 Feb;14(2):110-28.

Senior farmers market nutrition programs

- Ismail MS, Cuite CL. Serving Homebound Seniors: In-Home Senior Farmers Market Nutrition Program Enrollment and Fresh Fruit and Vegetable Home Delivery for Homebound Seniors in Central New Jersey. *Journal of Human Sciences and Extension.* 2020 Nov 2;8(3):135-54.
- Johnson DB, Beaudoin S, Smith LT, Beresford SA, LoGerfo JP. Peer Reviewed: Increasing Fruit and Vegetable Intake in Homebound Elders: The Seattle Senior Farmers Market Nutrition Pilot Program. *Prev. Chronic Dis*. 2004 Jan;1(1).
- O'Dare Wilson K. Community food environments and healthy food access among older adults: A review of the evidence for the Senior Farmers Market Nutrition Program (SFMNP). *Soc Work Health Care.* 2017 Apr 21;56(4):227- 43.

Healthy food initiatives in food pantries

- An R, Wang J, Liu J, Shen J, Loehmer E, McCaffrey J. A systematic review of food pantry-based interventions in the USA. *Public Health Nutr.* 2019 Jun;22(9):1704-16.
- Campbell EC, Ross M, Webb KL. Improving the nutritional quality of emergency food: a study of food bank organizational culture, capacity, and practices. *J Hunger Environ Nutr.* 2013 Jul 3;8(3):261-80.
- Gany FM, Yorga S, Ramirez J, Paolantonio L. Development of a Medically Tailored Hospital-based Food Pantry System. *J Health Care Poor Underserved.* 2020;31(2):595-602.
- Greenthal E, Jia J, Poblacion A, James T. Patient experiences and provider perspectives on a hospital-based food pantry: a mixed methods evaluation study. *Public Health Nutr.* 2019 Dec;22(17):3261-9.
- Helmick MJ, Yaroch AL, Parks CA, Estabrooks PA, Hill JL. Utilizing the RE-AIM framework to understand adoption of nutrition policies at food pantries across the USA. *Transl. Behav. Med.* 2019 Dec;9(6):1112-21.
- Simmet A, Depa J, Tinnemann P, Stroebele-Benschop N. The nutritional quality of food provided from food pantries: a systematic review of existing literature. *J Acad Nutr Diet.* 2017 Apr 1;117(4):577-88.

Healthy vending machine options

- French SA, Hannan PJ, Harnack LJ, Mitchell NR, Toomey TL, Gerlach A. Pricing and availability intervention in vending machines at four bus garages. American College of Occupational Medicine. *J. Occup. Environ. Med.* 2010 Jan;52(Suppl 1):S29.
- Grech A, Allman-Farinelli M. A systematic literature review of nutrition interventions in vending machines that encourage consumers to make healthier choices. *Obes. Rev.* 2015 Dec;16(12):1030-41.
- Hua SV, Ickovics JR. Vending machines: a narrative review of factors influencing items purchased. *J Acad Nutr Diet.* 2016 Oct 1;116(10):1578-88.
- van Hulst A, Barnett TA, Déry V, Côté G, Colin C. Health-promoting vending machines: evaluation of a pediatric hospital intervention. *Can J Diet Pract Res.* 2013 Mar;74(1):28-34.
- Viana J, Leonard SA, Kitay B, Ansel D, Angelis P, Slusser W. Healthier vending machines in a university setting: Effective and financially sustainable. *Appetite.* 2018 Feb 1;121:263-7.

Mobile produce markets

- Hsiao BS, Sibeko L, Troy LM. A systematic review of mobile produce markets: Facilitators and barriers to use, and associations with reported fruit and vegetable intake. *J Acad Nutr Diet.* 2019 Jan 1;119(1):76-97.
- Leone LA, Tripicchio GL, Haynes-Maslow L, McGuirt J, Smith JS, Armstrong-Brown J, Gizlice Z, Ammerman A. Cluster randomized controlled trial of a mobile market intervention to increase fruit and vegetable intake among adults in lower-income communities in North Carolina. *Int J Behav Nutr Phys Act.* 2018 Dec;15(1):1-1.
- Tester JM, Yen IH, Laraia B. Peer Reviewed: Using Mobile Fruit Vendors to Increase Access to Fresh Fruit and Vegetables for Schoolchildren. *Prev. Chronic Dis*. 2012;9.
- Ylitalo KR, During C, Thomas K, Ezell K, Lillard P, Scott J. The Veggie Van: Customer characteristics, fruit and vegetable consumption, and barriers to healthy eating among shoppers at a mobile farmers market in the United States. *Appetite.* 2019 Feb 1;133:279-85.

Healthy food in convenience stores

- Ayala GX, Baquero B, Laraia BA, Ji M, Linnan L. Efficacy of a store-based environmental change intervention compared with a delayed treatment control condition on store customers' intake of fruits and vegetables. *Public Health Nutr.* 2013 Nov;16(11):1953-60.
- Gittelsohn J, Rowan M, Gadhoke P. Interventions in small food stores to change the food environment, improve diet, and reduce risk of chronic disease. *Prev. Chronic Dis.* 2012;9.
- Middel CN, Schuitmaker-Warnaar TJ, Mackenbach JD, Broerse JE. Systematic review: a systems innovation perspective on barriers and facilitators for the implementation of healthy food-store interventions. *Int J Behav Nutr Phys Act.* 2019 Dec 1;16(1):108.
- Pinard CA, Shanks CB, Harden SM, Yaroch AL. An integrative literature review of small food store research across urban and rural communities in the US. *Prev. Med. Rep.* 2016 Jun 1;3:324-32.

Health information technology: Comprehensive telehealth interventions to improve diet among patients with chronic diseases

- Collins A, Burns CL, Ward EC, Comans T, Blake C, Kenny L, Greenup P, Best D. Home-based telehealth service for swallowing and nutrition management following head and neck cancer treatment. *J Telemed Telecare.* 2017 Dec;23(10):866-72.
- Demark-Wahnefried W, Morey MC, Sloane R, Snyder DC, Miller PE, Hartman TJ, Cohen HJ. Reach out to enhance wellness home-based diet-exercise intervention promotes reproducible and sustainable long-term improvements in health behaviors, body weight, and physical functioning in older, overweight/obese cancer survivors. *J. Clin. Oncol.* 2012 Jul 1;30(19):2354.
- Kelly JT, Reidlinger DP, Hoffmann TC, Campbell KL. Telehealth methods to deliver dietary interventions in adults with chronic disease: a systematic review and meta-analysis. *Am. J. Clin. Nutr.* 2016;104(6):1693-702.
- Roberts AL, Fisher A, Smith L, Heinrich M, Potts HW. Digital health behaviour change interventions targeting physical activity and diet in cancer survivors: a systematic review and meta-analysis. *J. Cancer Surviv.* 2017 Dec 1;11(6):704-19.

Water availability & promotion interventions

- French, S. A., Story, M., & Jeffery, R. W. (2001). Environmental influences on eating and physical activity. *Annu. Rev. Public Health,* 22(1), 309-335.
- Daniels, M. C., & Popkin, B. M. (2010). Impact of water intake on energy intake and weight status: a systematic review. *Nutr. Rev.*, 68(9), 505-521.
- Patel, A. I. (2012). Observations of drinking water access in school food service areas before implementation of federal and state school water policy, California, 2011. *Prev. Chronic Dis.*, 9.
- Popkin, B.M., Barclay, D.V. and Nielsen, S.J. (2005), Water and Food Consumption Patterns of U.S. Adults from 1999 to 2001. *Obes Res*. 13: 2146-2152. https://doi.org/10.1038/oby.2005.266

Health communication and social marketing: Campaigns that include mass media and health-related product distribution

- Athey VL, Suckling RJ, Tod AM, Walters SJ, Rogers TK. Early diagnosis of lung cancer: evaluation of a community-based social marketing intervention. *Thorax.* 2012 May 1;67(5):412-7.
- De Cocker KA, De Bourdeaudhuij IM, Brown WJ, Cardon GM. Effects of "10,000 steps Ghent": a whole-community intervention. *Am J Prev Med.* 2007;33(6):455-63.
- Kippen R, James E, Ward B, Buykx P, Shamsullah A, Watson W, Chapman K. Identification of cancer risk and associated behaviour: implications for social marketing campaigns for cancer prevention. *BMC Cancer.* 2017 Dec 1;17(1):550.
- Randolph, W., & Viswanath, K. (2004). Lessons learned from public health mass media campaigns: marketing health in a crowded media world. *Annu. Rev. Public Health.* 25, 419-437.
- Stead M, Gordon R, Angus K, McDermott L. A systematic review of social marketing effectiveness. *Health education.* 2007 Feb 27.
- Wymer W. "Innovations in social marketing and public health communication. Improving the Quality of Life for Individuals and Communities." 2015:173-84.

Worksite obesity prevention interventions

- Benedict MA, Arterburn D. Worksite-based weight loss programs: a systematic review of recent literature.
- Nahmias Z, Townsend JS, Neri A, Stewart SL. Worksite cancer prevention activities in the national comprehensive cancer control program. *J. Community Health*. 2016 Aug 1;41(4):838-44.
- Sorensen G, Thompson B, Glanz K, Feng Z, Kinne S, DiClemente C, Emmons K, Heimendinger J, Probart C, Lichtenstein E. Work site-based cancer prevention: primary results from the Working Well Trial. *Am J Public Health*. 1996 Jul;86(7):939-47.
- Taylor WC, Paxton RJ, Shegog R, et al. Impact of booster breaks and computer prompts on physical activity and sedentary behavior among desk-based workers: A cluster-randomized controlled trial. *Prev. Chronic Dis.* 2016;13(E155):160231.
- Verweij LM, Coffeng J, van Mechelen W, Proper KI. Meta-analyses of workplace physical activity and dietary be- haviour interventions on weight outcomes. *Obes. Rev.* 2011;12(6):406-29.

Financial rewards for employee healthy behavior

- Volpp, K. G., John, L. K., Troxel, A. B., Norton, L., Fassbender, J., & Loewenstein, G. (2008). Financial incentive–based approaches for weight loss: a randomized trial. *JAMA.* 300(22), 2631-2637.
- John, L. K., Loewenstein, G., Troxel, A. B., Norton, L., Fassbender, J. E., & Volpp, K. G. (2011). Financial incentives for extended weight loss: a randomized, controlled trial. *J. Gen. Intern. Med.* 26(6), 621-626.
- Mattke, S., Liu, H., Caloyeras, J., Huang, C. Y., Van Busum, K. R., Khodyakov, D., & Shier, V. (2013). Workplace wellness programs study. *Rand Health Q.* 3(2).
- Marteau, T. M., Ashcroft, R. E., & Oliver, A. (2009). Using financial incentives to achieve healthy behaviour. *BMJ.* 338.

Multi-component obesity interventions

- Beauchamp, A., Backholer, K., Magliano, D., & Peeters, A. (2014). The effect of obesity prevention interventions according to socioeconomic position: a systematic review. *Obes. Rev.* 15(7), 541-554.
- Economos CD, Hammond RA. Designing effective and sustainable multifaceted interventions for obesity prevention and healthy communities. *Obesity.* 2017 Jul 1;25(7):1155.
- Ewart-Pierce E, Ruiz MJ, Gittelsohn J. "Whole-of-Community" obesity prevention: a review of challenges and opportunities in multilevel, multicomponent interventions. *Curr. Obes. Rep*. 2016 Sep 1;5(3):361-74.
- Johns, D. J., Hartmann-Boyce, J., Jebb, S. A., Aveyard, P., & Group, B. W. M. R. (2014). Diet or exercise interventions vs combined behavioral weight management programs: a systematic review and meta-analysis of direct comparisons. *J Acad Nutr Diet.* 114(10), 1557-1568.
- Kegler MC, Alcantara I, Veluswamy JK, Haardörfer R, Hotz JA, Glanz K. Results from an intervention to improve rural home food and physical activity environments. Progress in community health partnerships: research, education, and action. *Prog Community Health Partnership.* 2012;6(3):265.
- Pekmezi DW, Demark-Wahnefried W. Updated evidence in support of diet and exercise interventions in cancer survivors. *Acta Oncol.* 2011 Feb 1;50(2):167-78.
- Rock CL, Flatt SW, Byers TE, Colditz GA, Demark-Wahnefried W, Ganz PA, Wolin KY, Elias A, Krontiras H, Liu J, Naughton M. Results of the exercise and nutrition to enhance recovery and good health for you (ENERGY) trial: a behavioral weight loss intervention in overweight or obese breast cancer survivors. *J. Clin. Oncol.* 2015 Oct 1;33(28):3169.

Appendix B. Surveillance Data Source Descriptions

American Community Survey (ACS)

Census Bureau, US Department of Commerce

Free of charge, available from Public Use Microdata Subsample (PUMS) and summary data aggregated to census geographic areas (e.g., census tracts). Currently, 1-year, 3-year and 5-year PUMS data are available. 1-year (2016), 3-year (2011-2013), and 5-year (2011-2015) data are now available.

Demographic, social, economic, and housing characteristics of the US population. This data is representative of demographics of the US population and can be helpful for CCC coalitions to understand community needs and characteristics to inform PSE strategy.

Variables of Interest: Contextual information about communities that may be useful in understanding various health behaviors (e.g., active transportation to work like walking or cycling, public transportation to work)

Level of Estimates: The smallest geographic unit that is identified within the Public Use Microdata Subsample (PUMS) is the Public Use Microdata Area (PUMA). PUMAs are defined within states based on a minimum population threshold of 100,000. The smallest geographic unit for aggregated data is the census block group.

Frequency of Updates: Conducted annually since 2005. 2018 data available.

Target Population: The resident population living in housing units and group quarters facilities in all counties and county equivalents in the US, District of Columbia, and all municipalities in Puerto Rico

Sample: Cross-sectional survey includes separate sampling for housing units and group quarters facilities. Each sample frame is divided into sub-frames so that no housing unit or facility is selected more than once in any 5-year period.

Behavioral Risk Factor Surveillance Survey (BRFSS)

Centers for Disease Control and Prevention, US Department of Health and Human Services

Free of charge, available online.

Collect state-specific data about preventive health practices and risk behaviors linked to chronic disease, injuries, and preventable infectious disease for adults in the US. This data is collected annually with a large national random sample.

Variables of Interest: Multiple diet, PA, and weight-related variables including: BMI, PA, F&V intake, hypertension/cholesterol and other chronic disease, food security status, select obesity-related health conditions

Cancer Variables: Prostate cancer, colorectal cancer screening

Level of Estimates: Public use: county, state, indicator of residence within or outside a metropolitan statistical area. Restricted access: ZIP code.

Frequency of Updates: Began in 1984. Conducted annually. Most recent year conducted was 2017. Data are available for all years through 2018. Questions may vary over time.

Target Population: Adults living in households in all 50 US states, the District of Columbia, Puerto Rico, the US Virgin Islands, Guam, American Samoa, and Palau

Sample: Cross-sectional survey with probability sampling. Approximately 432,600 records in 2009. There are 437,436 records for 2018.

Bridging the Gap State Snack and Soda Tax Data System

Robert Wood Johnson Foundation (Bridging the Gap)

Free of charge, data for 1997-2014 are publicly available in an Excel workbook on the website.

Collects data about sales tax rates for sugar-sweetened sodas, bottled water, and selected snacks sold in the US through grocery stores and vending machines in all 50 states and the District of Columbia. Also contains data on non-sales taxes applicable to sodas and bottled water. Data collected can inform what existing soda and snack taxes have been implemented across the country and details of these legislative actions.

Variables of Interest: Data on the extent to which each product is taxed at a higher rate than food (i.e., a disfavored tax).

Level of Estimates: Data are representative to the state level (including the District of Columbia).

Frequency of Updates: Began in 1997. Conducted annually. Most recent year conducted was 2014.

Target Population: All 50 states and the District of Columbia. State Federal Information Processing Standard (FIPS) code.

Sample: Census of state laws. Data are representative to the state level (including the District of Columbia). Also includes data on non-sales taxes applicable to sugar-sweetened sodas and bottled water. Data were compiled through primary legal research using state statutory laws available in Lexis-Nexis and Westlaw. Data were verified with state departments of revenue/taxation. Data reflect laws/policies in effect as of January 1 of the year in question. Data gathering did not involve sampling. Data for 50 states and the District of Columbia available.

Current Population Survey (CPS)

Bureau of Labor Statistics (US Department of Labor), in cooperation with the Census Bureau (US Department of Commerce)

Free of charge, available online.

Provides data on the labor force characteristics of the US non-institutional civilian population. Data on mediating variables (e.g., employment status) that may be useful in informing CCC coalition PSE efforts.

Variables of Interest: Labor force, employment, unemployment, persons not in the labor force, hours of work, earnings, and other demographic and labor force characteristics

Level of Estimates: Sample is large enough to provide national, state, and some substate-specific estimates. Within confidentiality restrictions; indicators are provided for 278 selected core-based statistical areas (CBSA), 30 selected combined statistical areas (CSA), 217 counties, and 76 central cities in multi-central city core-based statistical areas or combined statistical areas.

Frequency of Updates: Began in 1940. Conducted monthly.

Target Population: Civilian noninstitutionalized population in the US, ages 16 years and older

Sample: Cross-sectional survey. The CPS is administered by the Census Bureau using a probability selected sample of about 59,000 occupied households. The fieldwork is conducted during the calendar week that includes the 19th of the month. The questions refer to activities during the prior week; that is, the week that includes the 12th of the month. Households from all 50 states and the District of Columbia are in the survey. Sample size of the approximately 70,000 households selected per month, approximately 59,000 households are found to be occupied and eligible for an interview.

Family Life, Activity, Sun, Health, and Eating (FLASHE)

Funded by the National Cancer Institute (NCI) under contract number HHSN261201200039I issued to Westat, Inc.

Free of charge, available online.

The purpose of the study is to help researchers understand lifestyle behaviors that relate to cancer risk. This dataset can help CCC coalitions to understand lifestyle behaviors that relate to cancer risk.

Variables of Interest: The majority of the survey questions focus on diet and physical activity, with additional survey items about sleep, sun safety and tobacco use.

Cancer Variables: Examines psychosocial, generational (parent-teen), and environmental correlates of cancer-related behaviors. Behavioral measures focus on diet and physical activity as they relate to cancer risk. Other behaviors assessed include sun safety, sleep, and tobacco use.

Level of Estimates: Home/school neighborhood demographic variables (race/ethnicity, population density, urban/rural); home/school neighborhood socio-economic variables (including the Yost socioeconomic status index); home/school neighborhood built environment variables (including neighborhood characteristics associated with walkability); and home/school neighborhood ultraviolet radiation exposure

Frequency of Updates: Researchers collected data from dyads of parent/caregivers and their adolescent children (ages 12–17) between April–October 2014.

Target Population: Parents/caregivers and their adolescent children (aged 12–17 years)

Sample: Cross-sectional, internet-based study conducted between April and October 2014. A parent/caregiver and his/her adolescent child (ages 12-17) were enrolled and then randomly selected to a survey-only group (e.g., group received the web-based survey instruments only) or a motion study group (e.g., received the same web-based surveys plus an accelerometer worn by the adolescent). The starting sample invited to participate in FLASHE was 5,027 dyads; 1,945 dyads enrolled in FLASHE.

Food Attitudes and Behavior Survey

National Cancer Institute, National Institutes of Health, US Department of Health and Human Services

Free of charge, data available upon request.

Please contact April Oh (ohay@mail.nih.gov).

Collect data about attitudes and behaviors related to fruit and vegetable intake of adults in the US Provides data on knowledge, attitudes, and behaviors related to fruits and vegetables.

Variables of Interest: Factors that may be related to fruit and vegetable intake (e.g., self-efficacy, barriers and social support for eating fruits and vegetables, shopping patterns, taste preferences, intrinsic/extrinsic motivation, and environmental influences. Multiple diet, PA, and weight-related variables including; dietary behaviors, F&V intake, knowledge of fruit and vegetable recommendations, frequency of leisure-time PA, height and weight, perceived weight status.

Level of Estimates: Census region

Frequency of Updates: Conducted in 2007. One-time survey.

Target Population: Civilian, noninstitutionalized US population, ages 18 years and older

Sample: Panel survey. This panel sample was selected so that households in the panel survey sample reflected the same proportion by geographic region, income, population density, age, and household size as the US household population. 3,397 individuals in 2007.

National Health and Nutrition Examination Survey (NHANES)

National Center for Health Statistics, Centers for Disease Control and Prevention, US Department of Health and Human Services

Free of charge, available online. To protect the confidentiality of respondents, some data are restricted use. These data are available only through the NCHS Research Data Center.

Collect data about the health, nutritional status, and health behaviors of individuals in the United States (US). This dataset assesses nutritional status and its association with health promotion and disease prevention. NHANES findings are also the basis for national standards for such measurements as height, weight, and blood pressure.

Variables of Interest: Measured height (or length) and weight available to calculate body mass index. Physical activity assessed with accelerometers (2003-2006). Numerous other nutrition and health indicators obtained through physical examination, questionnaire, and assays (e.g., food security, attitudes).

Cancer Variables: Cancer (multiple varieties)

Level of Estimates: County and state Federal Information Processing Standards (FIPS) codes, census block, census tract, latitude, and longitude. Geographic data are restricted use data and available only through the National Center for Health Statistics (NCHS) Research Data Center.

Frequency of Updates: Began in 1999. Conducted continuously in 2-year cycles. The most recent cycle completed is 2017-2018 (data will be released Q1 2020).

Target Population: Civilian, noninstitutionalized individuals in the US; all ages.

Sample: National sample of adults and children

National Health Interview Survey (NHIS)

National Center for Health Statistics (NCHS) which is part of the Centers for Disease Control and Prevention (CDC)

Free of charge, available online.

NHIS has monitored the health of the nation since 1957. NHIS data on a broad range of health topics are collected through personal household interviews. Survey results have been instrumental in providing data to track health status, health care access, and progress toward achieving national health objectives.

Variables of Interest: Health status, health behaviors (including physical activity and nutrition behaviors)

Cancer Variables: Data can be selected by any cancer, breast cancer, cervical cancer, and prostate cancer

Level of Estimates: National

Frequency of Updates: Began in 1957. Has been conducted every year with updates about every 15-20 years, most recently in January 2019

Target Population: The target population for the NHIS is the civilian noninstitutionalized population residing within the 50 states and the District of Columbia at the time of the interview.

Sample: NHIS is a cross-sectional household interview survey.

National Hospital Discharge Survey (NHDS)

National Center for Health Statistics, Centers for Disease Control and Prevention, US Department of Health and Human Services

Free of charge, available online.
Restricted data are fee-based. Set-up fee is $750 per day.

Collect data about demographics and medical diagnoses and treatments for patients discharged from hospitals in the US.

Variables of Interest: Diagnoses of patients discharged from hospitals, including obesity and comorbid conditions.

Level of Estimates: Hospital ZIP code (restricted); patient residential ZIP code (restricted)

Frequency of Updates: Began in 1965 and ended after the 2010 data collection year. Has been replaced with the National Hospital Care Survey.

Target Population: Patients discharged from non-federal, short-term hospitals in the US

Sample: Cross-sectional survey. Three-stage national probability stratified design. Approximately 203 hospitals in 2010. Approximately 152,000 in-patient discharges (unit of analysis) in 2010.

National Household Food Acquisition and Purchase Survey (FoodAPS)

Economic Research Service (ERS) and Food and Nutrition Service (FNS) of the US Department of Agriculture (USDA) co-sponsored FoodAPS

Free of charge, available online.
ERS has expanded access to FoodAPS data by removing identifying variables and publishing public-use data files. Users can now download the public-use data in three file formats: SAS, STATA, and CSV. The Data Access page has instructions about how to gain access to restricted-use FoodAPS data.

Collect unique and comprehensive data about household food purchases and acquisitions

Variables of Interest: Diet related; quantities and expenditures for foods and beverages, eating occasions, household characteristics, food security, diet and nutrition knowledge, household access to food

Level of Estimates: Data for all 50 FoodAPS primary sampling units are provided at different geographic levels – census block groups, census tracts, and counties – depending upon the availability of data.

Frequency of Updates: The survey was fielded between April 2012 and January 2013. Data collection for FoodAPS-2 is planned to take place in 2020, and data are targeted to be released to the public in 2022.

Target Population: FoodAPS collected data from a sample of 4,826 households and is nationally representative. To capture enough low-income households, the sample was stratified by SNAP participation and income.

Sample: FoodAPS collected the data from a nationally representative, stratified sample of 4,826 households between April 2012 and January 2013. Stratification was based on participation in the Supplemental Nutrition Assistance Program (SNAP) and total household income; the four strata were:

- Households receiving SNAP benefits, with a target sample size of 1,500 (actual 1,581)
- Non-SNAP households with income less than the poverty guideline, with a target sample size of 800 (actual 346)
- Non-SNAP households with income at or above 100% of the poverty guideline and less than 185% of that level, with a target sample size of 1,200 (actual 851)
- Non-SNAP households with income equal to or greater than 185% of the poverty guideline, with a target sample size of 1,500 (actual 2,048).

The FoodAPS sample of households was selected using two sample frames and a multi-stage sample design covering the contiguous United States. The first stage of the sampling process selected a stratified sample of 50 Primary Sampling Units (PSUs, defined as counties or groups of contiguous counties). The selection was proportional to size (PPS), with the measure of size (MOS) for each PSU being a composite that reflected the overall sample targets and the estimated population in each PSU for each of the four strata. Nationally representative data from 4,826 households, including Supplemental Nutrition Assistance Program (SNAP) households, low-income households not participating in SNAP, and higher income households.

National Household Travel Survey (NHTS)

Federal Highway Administration, US Department of Transportation

Free of charge, available online.

Collect data about travel behavior by members of households in the US

Variables of Interest: Data on all travel collected through a 24-hour travel diary including commuting habits (e.g., number of transit, walking, and bicycle trips, reasons for not biking or walking more often). Provides estimates of travel for low-income households.

Level of Estimates: State, metropolitan statistical area, census region, census division, county.

Frequency of Updates: Began in 1969 as the National Personal Transportation Survey (NPTS). Conducted every 5 to 7 years, in 1969, 1977, 1983, 1990, and 1995. The NPTS became the NHTS in 2001. Most recent year conducted was 2009. NHTS fielded another survey collection effort in 2016, which will be released in 2018.

Target Population: Civilian, noninstitutionalized individuals and households in the US

Sample: Cross-sectional, nationally representative, randomized design. Approximately 151,000 households in 2009 with approximately 320,000 persons interviewed.

National Profile of Local Health Departments

Health and Human Services

Some data free of charge, available online. Data can be requested for either or both the National Profile of Local Health Departments and Forces of Change studies online through NACCHO website.

The National Association of County and City Health Officials (NACCHO) conducts the National Profile of Local Health Departments (commonly referred to as the "Profile study") every three years as a census of local health departments (LHDs). Profile data are essential to painting a picture of the realities on the ground for LHDs and are used by many people and organizations.

Variables of Interest: Diet related; quantities and expenditures for foods and beverages, eating occasions, household characteristics, food security, diet and nutrition knowledge, household access to food

Cancer Variables: Cancer screening

Level of Estimates: Data are analyzed by various LHD jurisdiction characteristics, namely size of population served, type of governance, United States census regions, and degree of urbanization.

Frequency of Updates: Began in 1989. Most recent iteration was conducted in 2019.

Target Population: Survey of local health departments in the United States

Sample: All LHDs in the study population received a common set of questions, called the Core questionnaire. A randomly selected group of LHDs also received one of the two sets of supplemental questions (or modules). LHDs were selected to receive the Core questionnaire only or the Core plus one of the two modules using stratified random sampling (without replacement), with strata defined by the size of the population served by the LHD. The module sampling process is designed to produce national estimates but not to produce state-level estimates.

Panel of Income Dynamics (PSID)

The study is funded by the National Science Foundation; the National Institute on Aging, the Eunice Kennedy Shriver National Institute of Child Health and Human Development, and the Office of the Assistant Secretary for Planning and Evaluation (US Department of Health and Human Services); the Economic Research Service (US Department of Agriculture); the US Department of Housing and Urban Development; the US Department of Labor; and the Center on Philanthropy at the Indiana University-Purdue University.

Obtain data at the Panel Study of Income Dynamics (PSID)-CDS Data Center website. Follow the instructions for requesting customized data files and documentation.

To collect longitudinal data about health, housing and food expenditures, family composition changes, marriage and fertility histories, employment histories, income/wealth, public assistance (including food stamps), and time spent on housework for individuals and their families in the United States (US).

Variables of Interest: Health-related variables (e.g., insurance, smoking and alcohol, physical activity, health status, health conditions), economic (e.g., employment), and demographics (e.g., martial status, household composition).

Level of Estimates: Census tract, census block, ZIP code, county, and state

Frequency of Updates: Began in 1968. Conducted annually through 1997 (biennially since 1997). Most recent year conducted is 2017. Longitudinal survey spanning as much as 43 years of participants' lives.

Target Population: Noninstitutionalized, civilian adults in the US and the family units in which they live.

Sample: Longitudinal/panel survey. Stratified, multistage, probability sampling was used to generate a representative sample of US individuals and the families in which they live. Low-income families were oversampled. Data were collected for a sample of 511 immigrant families from 1997 to 1999 and a Latino Supplement was added in 1990, resulting in adequate sampling of Latino individuals as well as Black and White individuals after that year. Approximately 9,000 families and 75,000 individuals in 2013.