

# Assessing the Food and Beverage Environment in Denver's Recreation Centers: **EXECUTIVE SUMMARY**

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## **Background and Project Context**

Despite its reputation for being one of the healthiest states in the nation, Colorado is not immune to the negative health impacts of an overweight population. Colorado is ranked 23rd in the nation for childhood obesity, and is one of only three states with an increase in childhood obesity from 2008 to 2012 (CDC, 2013). Thirty-one percent of Denver Public School children are overweight or obese (Denver Public School District, 2013). Additionally, just over 20% of Colorado's adult population is classified as obese, a number that will continue to increase if childhood obesity continues to rise (United Health Foundation, 2013). Because the environment in which a person lives, works, and plays influences food choices and body weight, the trends above support the need for community initiatives to promote healthy eating. If successful, interventions to promote a healthier weight could reduce the costs of weight-related co-morbidities such as heart disease, diabetes and hypertension.

Denver's Department of Parks and Recreation consists of 200 city and county parks, 5 mountain parks, 27 recreation centers, 29 swimming pools, 100 athletic fields, and 8 municipal golf courses. The mountain parks alone draw more than two million visitors annually (City and County of Denver, 2013). A variety of food and beverage options are available for sale within these settings at restaurants, vending machines, temporary kiosks, permanent kiosks and concession vendors. Due to their considerable reach throughout Denver, and a recent policy that allows all city youth ages 5-18 free year-around access, Denver parks and recreation settings is an ideal place to implement healthy food and beverage strategies to reduce childhood obesity. Though they are often overlooked as source of unhealthy food for children, recreation centers can play an important role in the enhancement of opportunities for good nutrition among children and families (Blanck et al., 2012).

The priority community for the current project was patrons and staff of the 27 recreation centers in the Denver area. Among patrons, the primary focus was youth accessing these recreation centers with their parents, as a recent Chicago Parks District study found that children under 12 (and adults with children) are the most likely to access on-site concessions, accounting for over 54% of vending machine purchases (Mason et al., 2012). Due to the time constraints of the current project and the winter weather limitations, the current project focused on indoor recreation centers only.

The primary purpose of this project was to assess the food and beverage environment found within Denver's recreation centers and, with reference to published literature on this topic, to provide recommendations for changes based on those findings. Information gathered will act as baseline information to allow changes to be monitored over time. The secondary purpose of the current project was to assist the Denver Department of Environmental Health in making recommendations to the Centers for Disease Control and Prevention (CDC) for the development of new nutrition assessment tools to be used in recreational facilities. The State and Local Parks Nutrition Environment Assessment Tools (PNEAT tools) served as a template for the tool used for this project.

This project was a partnership between Denver Environmental Health (DEH) and the Colorado School of Public Health (CSPH). Dr. Mondy Mason from DEH and faculty advisors led CSPH graduate students through the process described below as part of their Community Health Assessment (CBHS 6624) course.

## **Methods**

A thorough literature review was completed to provide background on obesity within the target population and vending regulations, and to inform recommendations regarding best practices.

Two intercept surveys for recreation center patrons and staff were created to gather information about free drinking water consumption patterns, current vending purchasing behavior, opinions about current vending choices and opinions and attitudes about healthier vending initiatives. The questions were loosely based on a survey created by the Chicago Parks District that assessed the vending habits and attitudes of patrons at Chicago recreation centers (Mason, 2012). The questions were modified to meet our current project objectives and to be applicable to the target population in Denver. Thirty patrons and sixteen staff were interviewed about their vending purchase habits and opinions about healthier vending at 10 centers.

Quantitative CDC PNEAT surveys for assessing food vending, beverage vending and free water access were modified for use in a recreation center environment and converted to an electronic format that can be accessed with a tablet or smartphone to facilitate data collection, entry, and analysis.

Drinking water was assessed at 14 centers by observing and recording data on water access, palatability, temperature, quality, and water pressure for 41 drinking water fountains and water refill stations. Food and beverage vending was assessed at 12 centers by observing and recording data on vending availability, cost, promotional materials on display, existing healthy vending initiatives, and proximity of machines to other recreation center features. Assessments were completed for 22 beverage vending machines and 12 food vending machines.

Because food vending machines were not located at all recreation centers, each recreation center was called in advance to assess vending availability. Information gained was used to strategically collect data from recreation centers that had food and beverage vending.

## **Key Findings**

Free Drinking Water: Drinking water is widely available and centrally located at the centers visited. All water observed was clean, odorless, colorless, and free of particulates. Eight fountains had high streams that splashed, while three fountains had low streams that didn't reach a comfortable drinking height. At the centers visited, 87% of patrons and 94% of staff interviewed indicated that they do utilize the water fountains at the recreation centers. Promotional displays encouraging water consumption were not observed.

Food and Beverage Vending: Vending machines are centrally located, most often in the open area or lobby near the front entrance. While beverage vending is available at 26 of 27 centers, only 14 have a food vending machine. Beverages vended at centers include: 25% diet/non-caloric, 37% reduced-calorie, and 35% regular/sugar-sweetened. Most beverage vending machines observed display the calorie content of items offered, accompanied by a promotional sign encouraging a lower calorie beverage. Likewise, most food vending machines display a promotional sign on the machine encouraging customers to look for specially labeled vending slots containing food items that have been identified by the vendor as healthier. Overall, 27% of food vending slots are labeled as healthier by the vendor. However, several items stocked in slots labeled as healthy do not meet vendor's healthy criteria. Results from the patron surveys indicate

that the majority of patrons interviewed have never made a vending purchase at the recreation centers. However, among those who had made a purchase, 100% had children with them at the time of purchase. Almost all agreed that healthy vending would be a positive change in the recreation centers. Forty-three percent of respondents indicated that if healthier vending changes were implemented they still would not be likely to make vending purchases. The two most common reasons patrons reported for not currently making purchases are that they eat before or after they visit the recreation center, or that they bring food and drink from home. Compared to patrons interviewed, staff members were more likely to utilize both food and beverage vending. Only 13% of staff interviewed had never used the vending machines. In addition, 93% of staff agreed that healthier vending is a good idea, expressing a common theme regarding the importance of supporting the recreation center's mission to encourage a healthy lifestyle.

### **Limitations**

The current project had several limitations. The qualitative findings of the current project cannot be applied to the Spanish-speaking patron population because, though Spanish-speaking patrons were present, all survey-based data collection was done in English. Additionally, social desirability is likely to have influenced responses from patrons on their opinions toward implementing healthy snack vending and may have caused patrons to respond in a manner that would be viewed favorably by others.

### **Recommendations**

Drinking Water: Free drinking water consumption could be promoted through a variety of measures: displaying water-promoting posters, providing stools at higher drinking fountains to make them more child accessible, and by encouraging staff to act as role models by drinking water and using reusable bottles. Also, staff should be reminded about procedures to report need for water fountain maintenance if the water access point at their center needs water height or temperature adjustment.

Food and Beverage Vending: Based on our findings, a variety of initiatives can be considered for future vending operations. We recommend initially that the Denver Parks and Recreation department, in collaboration with the vending contractor, select which healthier vending criteria is most appropriate, and then enforce that criteria. There is no clear consensus in the literature on what qualifies as healthy vending criteria, but possibilities include:

- The vending contractor's current healthy vending criteria.
- The CDC's NEMS-V healthy vending criteria, which uses a color-coding method to label items from healthiest to least healthy (Green=Go, Yellow=Slow, Red=Whoa). This national criterion is more stringent than the current vendor's standards, but some "Green" items could be incorporated into the existing choices, allowing for a greater variety of healthy options.
- The USDA's "Smart Snacks in Schools" guidelines for vending. These standards are also more stringent than the current vending contractor's guidelines, and will soon be the minimum requirements for the sale of vended foods in public schools. Using these guidelines would make recreation center vending consistent with the changes that children are seeing in their schools (USDA, 2014).

Another possible avenue is to consider a cost adjustment to incentivize water and healthy snack consumption. Research supports the implementation of either an upward cost adjustment of less healthy items or a downward cost adjustment of more healthy items (French, 1997). A third

possible initiative is to consider eliminating food vending machines altogether in the 14 recreation centers that offer it, with a possible exception of limited snacks available at the front desk for emergencies. Eliminating food vending requires further study on how significant the impact of this loss of revenue would be for recreation centers (Han-Markey et al., 2012). Colorado is one of three states with an increase in childhood obesity from 2008-2012 (CDC, 2013). Denver's recreational facilities are one tool for reversing this trend, particularly because children heavily utilize recreation centers throughout Denver. However, vending machines located in recreational facilities give children easy access to unhealthy snack and beverage items, which makes vending machines an appropriate point of intervention. Through the current project we gathered a variety of baseline data, which can inform one of several potential interventions outlined.