

VENDING CONTRADICTIONS:

Snack and Beverage Options on Public Property



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CSPI and the Nutrition Policy Project

The Center for Science in the Public Interest (CSPI) is a nonprofit organization based in Washington, D.C. CSPI has been improving the public's health through its work on nutrition and food safety since 1971. CSPI is supported primarily by the 850,000 subscribers to its *Nutrition Action Healthletter* and philanthropic foundations. CSPI's Nutrition Policy Project works with concerned citizens, health professionals, government officials, and other nonprofit organizations to strengthen national, state, and local policies and programs to promote healthy eating and reduce obesity. We aim to help reduce the illnesses, disabilities, and deaths caused by diet- and obesity-related diseases and conditions, such as heart disease, cancer, high blood pressure, and diabetes.

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Vending Contradictions: Snack and Beverage Options on Public Property is available on-line, free of charge at http://cspinet.org/vendingcontradictions.pdf

Summary

Obesity and poor nutrition are contributing to high rates of heart disease, diabetes, and other diet-related chronic diseases, which diminish Americans' quality of life and increase health-care costs. The foods and beverages that are available in our surroundings have a strong influence on what and how much people eat. Unfortunately, many of the foods available in our daily food environments are unhealthy.

As a way to make sure that healthier options are available in vending machines on public property, many states and localities are starting to ensure a certain percentage of food

The Automatic Merchandising State of the Industry report, put out by the National Automated Merchandizers Association (NAMA), stated that there is an increasing demand for healthy vending, from both consumers and operators. "Vendors reported that healthy food attributed as much as a 25 percent upswing in sales."

and beverage options meet nutrition standards (sometimes referred to as food service guidelines or procurement policies). Increasing access to healthier options helps to create more supportive food environments for government employees, visitors to public property, and participants in government-sponsored programs. Though many states, counties, and cities are considering healthy vending policies, the majority do not yet have policies in place.

A three-month pilot program in the Missouri Department of Health and Senior Services demonstrated that with 50-60% of vending machine slots stocked with healthier options the vendor experienced a \$670 increase in revenue compared to the same three-month period in the previous year.

This study revealed that vending machines on state and local property are stocked primarily with unhealthy products. Fifty-eight percent of beverages were sugar-sweetened beverages. Of the 42% that were "healthier" options: 16% were water, 23% were low-calorie beverages, and 3% were 100% juice. Vended food offerings were overwhelmingly unhealthy. Candy (32%) was the most prevalent item in food vending machines on public property, followed by chips (24%) and sweet baked goods (15%). These three items together represented over 80% of the products available in food vending machines on public property. Only 5% of vended foods were healthy options, such as fruits, vegetables, or nuts.

Most state and many local governments implement obesity and chronic disease prevention programs. Those programs are undermined and contradicted by the unhealthy mix of products—sugary drinks, candy, chips, and sweet baked goods—they sell on their property. Healthy vending can help to model and reinforce other nutrition and obesity prevention efforts by state and local governments.

In addition, state and local governments pay high health-care costs related to obesity and diet-related chronic diseases for state and local employees and Medicaid recipients. It is in

"Providing exclusively healthier options in vending machines is not only a responsible business practice, but a lucrative one." Sean Kelly, CEO & Co-Founder of HUMAN Healthy

the best interest of governments to improve

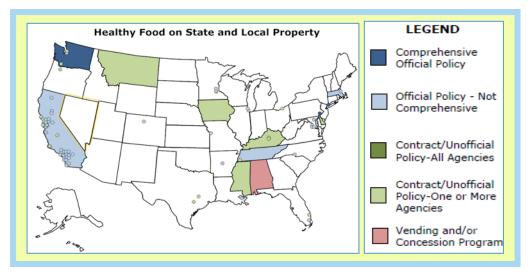
the nutritional quality of the foods and beverages available on their property and through their programs to support the health of their employees, program participants, and visitors.

People want healthier options and generally are trying to eat healthier. A recent study of healthy vending in Chicago parks showed that 88% of park-goers were satisfied with the healthier vending options. The leading complaint from Chicago park-goers was that the healthier options were not healthy enough. A Snack Food Association survey revealed that three-fourths of consumers are trying to eat healthier and two-thirds are eating specific foods to lose weight.

States from Mississippi to California and localities from North Little Rock, AR to New York City have implemented policies to improve the food and beverage offerings on their public property. These policies are being implemented in a variety of venues, from vending in health department facilities to all food provided in parks and recreation department facilities to all government property and programs. This is a low-cost strategy to address nutrition and

obesity. States and localities that want to adopt policies for healthier food choices on public places can visit: http://www.cspinet.org/nutritionpolicy/f oodstandards.html.

Vending



Chicago parks found nearly 90 percent of Chicago park-goers like the healthier vending options and healthier snacks boosted average monthly per-machine sales from \$84 to \$371.

Background

State and local government properties are important locations in our communities. They include, but are not limited to, parks, recreational facilities, highway rest stops, court houses, agency buildings, city and town halls, libraries, state university campuses, and public hospitals. Like many public places, state and local government property often houses food and beverage vending machines.

State and local governments employ approximately 17 million people.¹ In addition, many people visit public property or participate in government-sponsored programs that sell or provide food. Given their high volume of visitors and large workforces, the foods and beverages offered through vending machines on state and local property affect the food choices—and health—of millions of people.

In 2012, the vending industry generated more than \$19 billion in food and beverage sales.² Vending machines contribute to the ubiquity of food in our environment. In addition, vended offerings are often of poor nutritional value: high in calories, fats, and added sugars and low in nutritional quality. The items often offered in vending machines include sugar-sweetened beverages, candy, chips, cookies, and snack cakes. Having unhealthy foods and sugar-sweetened beverages in vending machines makes it harder for people to make healthy choices and promotes consumption of energy-dense foods and beverages that can contribute to obesity. Additionally, having unhealthy vending machine options available on government property could send the message that those foods are good snack and beverage choices. For example, in hospitals people believed unhealthy items were more healthful than they are given the health mission of the institution.³

Few Americans eat a diet consistent with the *Dietary Guidelines for Americans*. They overconsume saturated and trans fats, added sugars, refined grains, and sodium and underconsume fruits, vegetables, and whole grains.^{4,5} Soda and other sugar-sweetened beverages are the number-one source of calories and added sugars for adults in the United States, with grain-based desserts, such as pastries, cookies, and other baked goods, the second-largest source.⁶ Grain-based desserts are also the largest source of solid fats (saturated and trans fat) and the third-largest source of refined grains in Americans' diets.⁷ Sugar-sweetened beverages and grain-based desserts are among the most common vended items.

Americans are snacking more frequently. Eating more frequently is one of the largest contributors to increased calorie consumption in the United States over the past 30 years.⁸ Americans have gone from eating 3.8 snacks and meals per day to 4.9.⁹

Poor nutrition contributes to preventable and costly diseases, such as type 2 diabetes, heart disease, stroke, osteoporosis, dental cavities, and certain types of cancer. Obesity rates have doubled among adults and tripled among children since 1980; two-thirds of adults and one-third of children and teenagers are now overweight or obese. Twenty-nine million

Americans have diabetes,¹³ more than 1 in 3 U.S. adults (86 million) have prediabetes,¹⁴ and 23% of teenagers exhibit markers of being diabetic or pre-diabetic.¹⁵

Obesity-related diseases cost \$190 billion annually,¹⁶ half of which is paid for by state and federal governments through Medicare and Medicaid.¹⁷ Obesity-related diseases also contribute to lost productivity and absenteeism.

Many consumers want healthier food and beverage options. According to a survey by the Snack Food Association, 81% of Americans hope to avoid costly medical bills by eating foods that are healthful, 74% of consumers are trying to eat healthier, and 65% are eating specific foods to lose weight. ¹⁸ Moreover, healthier-snack sales growth outpaced traditional snack sales four to one. ¹⁹ There is an opportunity for vendors to tap into that demand and offer more healthful foods and beverages on state and local property.

As a way to ensure that healthier options are available in vending machines on public property, many states and localities are starting to require a certain percentage of food and beverage options meet nutrition standards, which is commonly called healthier food choices for public places, food service guidelines, or procurement policies. That ensures access to healthier options and helps to create a more supportive food environment. Though many governments are considering healthy vending policies, the majority do not yet have policies in place.

This is the first national study to look at the contents of vending machines on state and local property. Given the traditional content of vending machines, as well as the growing movement to improve the nutritional quality for food and beverages options on state and local property, we wanted to assess the current state of vending on state and local government property across the country.

Methodology

In November and December of 2013, 92 individuals in 37 states across all regions of the country (Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Utah, Vermont, Virginia, Washington, and Wyoming) surveyed the contents of vending machines on state and local government property. (Appendix A provides a list of the number of machines surveyed in each state.) Volunteers surveyed a total of 853 machines on 260 properties. Vending machines were evenly split between state and local property: 430 machines were on state property and 423 machines were on local property.

Local and state government property included agency buildings (38% of the machines assessed), state university and community college buildings (23%), state and local parks and recreational facilities (12%), city/town halls and state house buildings (8%), highway rest stops

on state managed highways (5%), state and local court houses (4%), community and senior centers (4%), state and city hospitals (3%), libraries (1%), and police stations (1%). Government property was assessed in both rural and urban settings. Volunteers assessed vending machines in areas accessible to the general public, people accessing government services and programs, and employees. Volunteers were asked to assess all vending machines on the properties they visited.

Volunteers assessed vending machines by counting the number of slots per machine for each category of beverage or food using a standardized survey form (see Appendix D). The survey was adapted from one designed by the California Center for Public Health Advocacy to assess school vending machines. We conducted a pre-survey conference call to train volunteers regarding the study protocol. Volunteers sent their completed surveys to the Center for Science in the Public Interest (CSPI) for data aggregation and analysis.

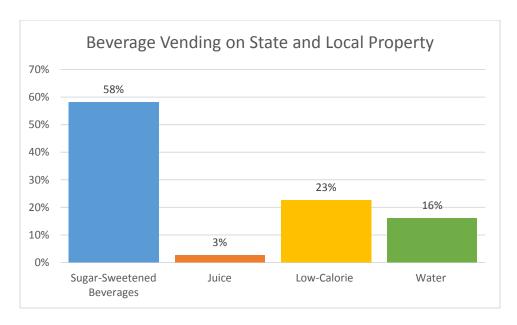
We compared products within individual product categories: regular chips vs. low-fat, baked, or reduced-fat chips; granola bars vs. candy vs. nuts and trail mix without candy; fruit gummies vs. fruits or vegetables; and regular cookies and baked goods vs. low-fat cookies and baked goods. We chose this approach given how few vending machine offerings are objectively healthful (for example, fruits and vegetables). Fruits, vegetables, and nuts were the only foods found in vending machines that we categorized as healthy in the survey. Although foods like baked chips and granola bars are not necessarily healthful, they at least represent an effort to provide healthier options. By comparing foods in typical snack categories, we identified the percentage of "healthier" options.

While the healthfulness of foods and beverages fall on a continuum, we categorized beverages as "healthier" and "unhealthy" based on the vending nutrition standards developed by the National Alliance on Nutrition and Activity. The following types of beverages were categorized as "healthier" options: water (regular or carbonated, or with non-caloric added sweeteners), low-fat or fat-free milk (flavored or unflavored), and 100% fruit juice/vegetable juice. Diet forms of soda, fruit drinks, iced tea/coffee, and sports/energy drinks were also categorized as "healthier" options. The following types of beverages were considered unhealthy options: soda (regular), fruit drinks (including lemonade, punches, and Vitaminwater), calorically sweetened iced tea/coffee, full calorie sports/energy drinks, and whole or 2% milk.

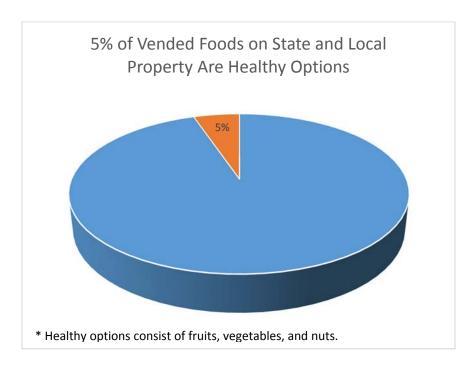
This study assessed vending machines on state and local property in 37 of the 50 states. However, the results are not necessarily representative Though the sample is large, some states had more properties and vending machines assessed than others. The types of property and the number of properties assessed in each state varied. However, it gives a snapshot of the contents of vending machines on state and local property and covers all regions of the country, both geographically and politically.

Results

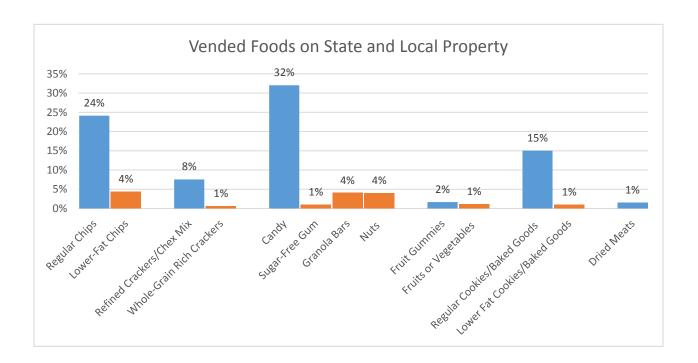
We found that beverage vending machines are more common than food vending machines on public property. Of the machines assessed, 63% contained beverages (541 machines) vs. 37% contained food (312 machines). Results were similar for state (274 vs. 156 machines) and local (267 vs. 156 machines) property.



The majority of beverages were unhealthy; 58% were sugar-sweetened beverages. Forty-two percent of beverages were "healthier" options: 16% water, 23% low-calorie beverages, and 3% juice (100%). Milk made up less than 1% of beverages; whole and 2% made up 0.47% and low-fat and fat-free milk made up 0.04%. For a complete table of the beverages available, see Appendix B.



Only 5% of vended food offerings were healthy (fruits, vegetables, and nuts). An additional 10% of food options were "healthier." "Healthier" options included items such as baked chips, granola bars, whole-grain rich crackers, and lower-fat baked goods. Two percent of the options did not fit into our food categories and were categorized as "other." The "other" category was included in the unhealthy grouping as they were primarily burritos, burgers, pizza, calzones, lasagna, cheesy garlic bread, Cup of Noodles, Hot Pockets, biscuits, soup, Lunchables, ice cream, and ice pops. One of the items listed as "other" was yogurt (which we categorized as "healthier").



Candy (32%) was the most prevalent item in food vending machines on public property, followed by chips (24%) and sweet baked goods (15%). These three items together represented over 80% of the products available in food vending machines on public property. Only 1% of options were fruits or vegetables. In each category, there were more unhealthy options than "healthier" ones. Twenty-four percent of all options were regular chips versus 4% as lower-fat varieties. Eight percent of all vended food options were refined-grain crackers versus 1% as whole-grain-rich crackers. Thirty-two percent of all options were candy, 1% was sugar-free gum, 4% granola bars, and 4% nuts. Fifteen percent were regular cookies and baked goods versus 1% lower-fat cookies and baked goods. For a complete table of the options in food vending machines, see Appendix C.

Few vending machines had calorie labeling (8%). Forty-six beverage vending machines and 25 food vending machines had calorie labeling. One vending machine in Montana had heart healthy stickers next to the healthier options. In Oklahoma, healthier items were priced a dollar or more less than the vendor's list price and unhealthy items were priced two or more dollars above the vendor's list price to nudge people toward purchasing healthier items.

Discussion

We found that beverage vending machines on public property offer a larger percentage of healthier options than food vending machines (42% vs. 15%). Given that 42% of beverage options were healthier, it should not be difficult for all beverage vending machines to offer at least 50% healthier options (a threshold commonly used in state and local vending policies). Since the beverage vending machines surveyed in this report had between 7 and 45 slots (depending on the type of machine), it would mean that an average of only one to four unhealthy beverage slots would need to be converted to healthier options to meet a 50% healthier standard. Public property with nutrition standards in place that require only 25% or 30% of beverages to be healthier might be ineffective, since they are below what the average vending machine on public property offers.

CSPI recommends that 100% of beverage slots offer healthier options on public property. However, if a phased-in approach is used (or politically necessary), a 75% threshold is more likely to provide meaningful progress from the current national average.

Food vending machine options are still overwhelmingly unhealthy, even though there is high interest from consumers in healthier items and an ever greater supply of healthier snack options. Nutrition standards should be put in place to ensure that an adequate variety of healthier options is available to employees and visitors of public property. Without standards in place, people who want to eat healthier are unlikely to be able to do so.

Requiring calorie labeling on vending machines could help consumers to identify and purchase healthier options. The U.S. Food and Drug Administration (FDA) is expected shortly to release a final rule to require calorie labeling for vending machines owned or operated by companies that have 20 or more vending machines nationwide. States and localities could require calorie labeling for vending machines that will not be covered by the FDA rule to ensure that employees and visitors to public property have information to make more informed decisions from all vending machines.

Conclusion

Vended beverages are healthier on average than vended foods, but still more than half the options are unhealthy. Due to the high health-care costs related to obesity and chronic diseases paid by governments, both for state and local employees and Medicaid recipients, it is in the best interest of state and local governments to improve the nutritional quality of the foods and beverages available on their property and through their programs. Implementing nutrition standards for the foods and beverages sold through vending machines on public property provides employees and visitors with a supportive food environment and helps to model and reinforce other nutrition and obesity prevention efforts by state and local governments.

Appendix A: Number of Vending Machines Surveyed per State

State	Number of Vending Machines Assessed
Alabama	6
Arizona	102
Arkansas	10
California	16
Colorado	53
Connecticut	7
Delaware	10
District of Columbia	3
Florida	2
Georgia	46
Idaho	38
Illinois	27
Indiana	5
Iowa	7
Louisiana	36
Maine	3
Maryland	99
Massachusetts	13
Minnesota	4
Mississippi	113
Missouri	78
Montana	5
Nevada	16
New Hampshire	5
New Jersey	6
North Dakota	9
Ohio	24
Oklahoma	6
Oregon	8
Pennsylvania	12
Rhode Island	8
Tennessee	39
Utah	7
Vermont	9
Virginia	6
Washington	11
Wyoming	4
Total	853

Appendix B: Beverage Options Available in Vending Machines on State and Local Property

Drink	Percent of Slots	Number of Slots	Total Percent	
Full Calorie Soda	38%	3,891	reiteilt	
Fruit Drinks	6%	653		
Iced Tea/Coffee	4%	440		
Sports Drinks	7%	677		
Energy Drinks	3%	340		
Total Sugar-Sweetened Beverages			58%	
Diet Soda	18%	1,835		
Diet Fruit Drinks	1%	84		
Diet Iced Tea/Coffee	2%	159		
Diet Sports Drinks	2%	162		
Diet Energy Drinks	1%	87		
Total Low-Calorie Drinks			23%	
Water w/Non-Caloric Sweetener	5%	558		
Water	11%	1,106		
Total Water			16%	
Whole/2% Milk	0.47%	48		
Low-Fat and Fat-Free Milk	0.04%	4		
Total Milk			0.5%	
Juice	3%	266		
Juice			3%	
Total		10,310		

Appendix C: Food Options in the Vending Machines on State and Local Property

Unhealthy	Percent of Slots	Number of Slots
Candy	32%	3,560
Regular Chips	24%	2,660
Cookies/Baked Goods	15%	1,658
Crackers/Chex Mix	8%	833
Other	2%	238
Fruit Gummies	2%	184
Dried Meat	1%	160
Total	85%	9,055
"Healthier"		
Granola Bars	4%	444
Nuts without Candy	4%	431
Low/Reduced Fat, Baked Chips	4%	482
Low Fat, Baked, or Reduced Fat Cookies/Baked Goods	1%	104
Whole-Grain Rich Crackers	1%	64
Fruits or Vegetables	1%	124
Total	15%	1,649

Appendix D: Survey of State and Local Vending Machines on Government Property

	Type of property:				State:		Local:		
	City:	State:							
	# of vending machines on proper	ty:	Food	:		Bevera	ge:		
	Name of data collector:			Email:					
		Food Ve	ndin	g Mach	nines				
Types of	Snacks	# of Slot in Machin		# of S in Mac	Slots thine 2		of Slots achine 3		Slots chine 4
Chips* – r	regular, pretzels								
Chips – lo	ow-fat, baked, or reduced-fat popcorn								
Crackers	or Chex Mix								
Crackers	with cheese/peanut butter								
Whole-gra	ain rich crackers								
Granola/c	ereal bars								
Nuts/trail ı	mix (w/o candy)								
Candy/Ch	nocolate/Mints/Gum w/sugar								
Gum – su	gar-free								
Dried fruit	mies (fruit snacks w/added sugar), w/added sugar								
cups)	regetables (dried fruit w/o sugar, fruit								
Cookies/s	nack cakes/baked goods								
Low-fat co	ookies/snack cakes/baked goods								
Dried mea	ats								
Other food	d:								
Total # of	f slots in vending machine								
Are calorion button?	es labeled next to item or selection	Yes [No	Yes	No	Yes	S No	Yes	
Com	*Note: Chips = potato chips, tortilla caments/Notes:	hips, corn chip	s, chee	ese snack	s, full-fat	popcorn	, etc.		

Name of government property:							
Type of property:				State:		Local:	
City:	State:						
# of vending machines on property:	: Food:			Beverage	:		
Name of data collector:			Email:				

Beverage Vending Machines

	•							
Types of Beverages	# of Slot		# of S in Mac		# of S in Mac		# of S in Mac	
Sugar-Sweetened Beverages (regular/not low-	calorie)							
Soda								
Fruit drinks (lemonade, punches, Vitamin Water)								
Iced tea or coffee								
Sports drinks								
Energy drinks								
Diet/Low Calorie (≤ 10 calories/8 oz.)								
Soda								
Fruit drinks (lemonade, punches)								
Iced tea or coffee								
Sports drinks								
Energy drinks								
Water/Seltzer (w/ non-caloric sweetener, can include flavors)								
Other	1							
Water/Seltzer (w/o any sugar or non-caloric sweeteners, can include flavors)								
Whole or 2% milk (includes flavored)								
Low-fat/1% or fat-free milk (includes flavored)								
100% Fruit/vegetable juice								
Other drinks:								
Total # of slots in vending machine								
Are calories labeled next to item or selection button?	Yes]No	Yes	☐ No	Yes	No	Yes	□No
Comments/Notes:								

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⁵ U.S. Department of Health and Human Services (HHS) and U.S. Department of Agriculture (USDA). *Dietary Guidelines for Americans 2010*. Washington, D.C.: U.S. Government Printing Office. January, 2011. ⁶ ibid.

⁷ ibid.

⁸ Duffey KJ, Popkin BM. "Energy Density, Portion Size, and Eating Occasions: Contributions to Increased Energy Intake in the United States, 1977–2006." *PLOS Medicine*, 2011, vol 6. Accessed at http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1001050 on June 23, 2014. ⁹ ibid.