

# ECONOMICS IN THE LUNCHROOM: ENCOURAGING HEALTHY FOOD CHOICES

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Childhood obesity, which raises the risk for conditions such as heart disease, has become increasingly prevalent in the United States. The foods children eat in schools can play a vital role in their nutrition and weight. However, foods and beverages sold outside of the National School Lunch Program are largely unregulated at the federal or state level, leaving it up to schools to create their own policies. This paper examines how traditional economic and behavioral economic principles can be used by schools to improve the food and beverage consumption choices of children.

Today's children and adolescents have a higher likelihood of developing life-threatening diseases, such as Type 2 diabetes, heart disease, and blood pressure, than any generation of children before them.[1] Obesity increases risk for such diseases, and obesity rates have drastically risen in the United States. The prevalence of obesity among twelve-to-nineteen-year-olds more than tripled between 1980 and 2006, from 5 percent to 17.6 percent.[2] The food eaten in schools, while not the only factor determining rates of childhood obesity, can play an important role in promoting or hindering positive health outcomes, as children consume at least one and often two meals per day in schools and spend about half of their waking hours on school campuses.[3] In order to combat the youth obesity epidemic, public health officials, school administrators, and even First Lady Michelle Obama are examining the foods offered in American schools and asking how we can improve the diets of children in those schools.

School breakfasts and lunches provided through the federal government's National Breakfast and School Lunch Programs must meet certain nutritional guidelines, but other foods and beverages sold on school campuses are only minimally regulated at the federal level. The term "competitive foods" is used to describe any foods sold in competition with federally reimbursable school meal programs, such as items sold a la carte in cafeterias and in vending machines.[4] Many states have enacted regulations restricting the types of competitive foods available to students, but schools and school districts remain responsible for implementing these regulations and may choose to enforce stricter policies than those promulgated by states.

Some states and school districts have adopted what behavioral economists call "paternalistic policies," wholly removing calorie-dense and nutrient-poor items from students' reach while on campus. Paternalistic policies include those that

limit choices in situations where, in the absence of the policy, individuals may not behave in their own best interests.[5] Other states and school districts have opted for more indirect policies, such as lowering the prices of healthy items in relation to less healthy ones, or by making it more difficult for students to purchase unhealthy foods on campus.

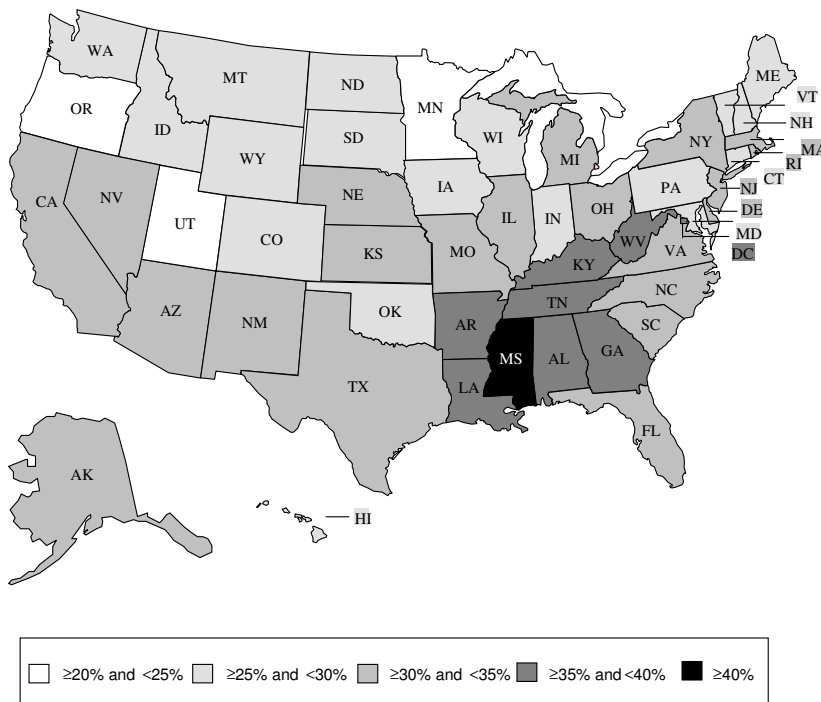
After providing an overview of the role competitive foods play in child nutrition and the types of competitive foods available to students, this article describes how students make food purchasing decisions. This article then discusses how schools and school districts have responded to the obesity epidemic by enacting policies that apply either traditional economic or behavioral economic theories to altering student food choice. This article argues that to improve student nutrition, schools and districts must apply both economic and behavioral economic theory. Whereas traditional economics assumes that individuals have stable preferences and act to maximize those preferences, behavioral economics recognizes that preferences are unstable and often misperceived by individuals. In other words, people do not always act with their own best interests in mind.[6] Finally, this article presents recommendations on improving student nutrition.

## THE CURRENT LANDSCAPE OF FOOD REGULATION IN SCHOOLS

The regulation of food sold in United States schools can be divided into two categories: the regulation of meals sold through the National School Lunch Program (NSLP) and School Breakfast Program, and regulation of all other foods and beverages sold on campus.

NSLP, a federally-assisted meal program operating in public schools, provides free or low-cost lunches to children across the country. School districts participating in NSLP receive cash subsidies and donated commodities from the US Department

**31.6% of U.S. Children Were Overweight or Obese in 2007**  
**Statewide Percentages Ranged from 23.1% in Minnesota and Utah**  
**to 44.5% in Mississippi**



Note: Data are for children ages 10 to 17.

Data: *F as in Fat: How Obesity Policies Are Failing in America*. Trust for America's Health, July 2009.

of Agriculture (USDA) for each meal they serve. In return, schools must serve lunches that meet federal requirements. School lunches must not contain more than 10 percent of calories from saturated fat or 30 percent of calories from total fat, and must provide one-third of the federal Recommended Dietary Allowances of protein, certain vitamins, and calories. Schools are free to determine the preparation of foods, as well as the specific types of foods served. The School Breakfast Program operates in the same manner as NSLP and has similar nutritional requirements.

Federal law imposes only one requirement on competitive foods: "foods of minimal nutritional value" cannot be sold in food service areas during lunch periods.[7] "Foods of minimal nutritional value" are narrowly defined, and include only soda, water ices that do not include fruit or fruit juice, chewing gum, hard candy, jellied candy such as gum drops, marshmallow candies, fondant, licorice, spun candy, and candy-coated popcorn.[8]

Other than this restriction, federal law leaves it up to states and school districts to regulate competitive foods and beverages in schools. Twenty-seven states have such laws,[9] but states vary in the extent to which junk foods and beverages are made available to students. Some states completely eliminate

calorie-dense, nutrient-poor foods, while others minimize access to such items.

For example, until the close of the last instructional period, Kentucky restricted all beverages sold through vending machines, school stores, and canteens, or sold as a la carte items, to low- and non-fat milk, 100-percent fruit and vegetable juices, and beverages containing no more than ten grams of sugar per serving.[10] In contrast, high schools in Florida may sell carbonated beverages at all times, so long as 100-percent fruit juices are sold in the same location, and so long as carbonated beverages are not sold where breakfast or lunch is being served or consumed.[11]

Some school districts enact even more stringent policies than those required by state law. Although Virginia law does not require it, Fairfax County Public Schools disallow any item from being sold in competition with the school food service program during the school day.[12]

Competitive foods offered and consumed in US middle schools and high schools, when left unregulated by the state or school district, consist of mostly high-calorie and low-nutrient foods and beverages.[13] Using data from the third School Nutrition Dietary Assessment Study (SNDA-III), a cross-sectional 2004-2005 study that included a national sample of public schools, researchers found that approximately 40 percent of children nationwide consume one competitive food item or more per school day. In another study of a nationwide sample of schools, researchers found that 34 percent of schools offered potato chips, but only 6 percent of those schools offered potato chips that were low in fat. Similarly, 23 percent of high schools offered cake-type baked goods, but only 9 percent of those schools offered low-fat cakes.[14]

Independent research shows that the availability of competitive foods affects children's health. Consumption of calorie-dense and nutrient-poor competitive food items at school has been shown to lead to weight gain.[15] Recent research found that the availability of low-nutrient calorie-dense foods in vending machines in or near food service areas was associated with a higher body mass index (BMI) score among middle-school children.[16] Other researchers have confirmed that school policies relating to the availability of competitive foods have a direct correlation to student BMI.[17]

## THE ECONOMICS OF MAKING FOOD PURCHASING DECISIONS

In order to improve child and adolescent nutrition in schools, policymakers must know what students actually eat in schools and understand how students, like other consumers, make food-purchasing decisions. As the above studies and other research demonstrate, children are eating poorly in US schools, and the availability of unhealthy items within schools plays a role in children's food-purchasing decisions. What explains food purchase and consumption decisions, and what can schools do to change such behavior? Both economics and behavioral economics explain student decision-making.

### *Traditional Economics*

Economics assumes that individuals make rational choices, or choices that reflect their best interests. It assumes that individuals, given a set of stable and coherent preferences, make decisions that maximize their utility. As such, traditional economics instructs that the prices of different foods and imperfect information about the effects of eating a nutrient-poor diet likely contribute to a child's consumption decisions. Indeed, healthy snacks, such as granola bars, nuts and water tend to be more expensive than candy bars and soda. Moreover, students may not necessarily be aware of the nutrients they need in order to be healthy.

Some schools have attempted to change the competitive food-purchasing habits of students using traditional economic tools, such as by altering prices or educating students on the health impacts of their choices. Both strategies are useful in changing student behavior. For example, several schools across the country have instituted competitive pricing of unhealthy foods by either lowering the price of healthy items, increasing the price of junk foods, or both.[18] However, pricing is only one factor considered by consumers in making decisions, as convenience and taste also contribute to a person's consumption decisions.[19]

Schools and school districts also focus on educating students about the foods sold on campus. Several schools incorporate nutritional education into the school curriculum, and others post nutritional information for foods sold in the cafeteria.[20] Educational programs and nutritional information inform children about the foods they eat but may not necessarily prevent irrational purchases of competitive foods. Children understand that some foods are healthier, but like other consumers, they do not necessarily understand their own purchasing and consumption behavior.

### *Behavioral Economics*

Behavioral economics recognizes that people act irrationally: individuals often do not have stable and consistent preferences, and actions are not always undertaken to maximize one outcome. For example, people tend to value losses more than gains, and individuals can exhibit loss of self-con-

trol and engage in altruism or even revenge. None of these emotions or motivations are strictly rational, but they can all alter our preferences and change the decisions we make.

Behavioral economists would agree with classical economists that price and information both contribute to a person's food purchasing and consumption decisions. However, they would argue that other factors also play a significant role in choosing foods. To further analyze how individuals make food decisions, researchers conducted a study incorporating findings from behavioral economics, food marketing, and psychology. They found that people have problems with self-control when choosing food, either because they prefer immediate gratification or because they are under the influence of a visceral factor, such as feeling hungry. Method of payment also significantly affects purchasing decisions.[21] Consumption choices are further affected by the moral codes surrounding the consumer. In other words, peer pressure and the desire to conform to others' behavior play a role in purchasing and consumption decisions.

In making purchasing decisions, individuals tend to place extra value more on immediate rewards than on long-term rewards.[22] Moreover, people underestimate the degree to which their future behavior will not match their current preferences.[23] For example, children may consume potato chips over apples because they are easier to eat while playing sports or in between classes. Chips sold in a vending machine outside of a classroom may also be more accessible to students than apples, which may only be sold in the cafeteria. The students may wish to consume apples instead of chips in the long term, but every day they choose the chips over the apple.

Individuals also tend to exhibit a "flat-rate bias," where they undervalue fixed costs relative to variable costs.[24] For example, individuals tend to pay for health club membership on a monthly or annual basis, rather than on a per-use basis, even though many individuals would likely spend less money if they paid a fee every time they used the gym.[25] This flat-rate bias leads people to choose items with greater frequency if they prepay for the item than if they purchase the item with cash.

Finally, people seek social validation by trying to fit in and tend to be influenced by individuals they like.[26] In a study of fourth through sixth graders, researchers found that students cited peer influence as a reason for not eating fruits, juices, vegetables, and other low-fat foods. In focus groups, the children noted that they would receive negative comments from friends when eating vegetables and low-fat foods.[27]

In sum, behavioral economics informs us that students, like other consumers, often make food decisions that do not reflect the healthy choices that would be taken by rational economic actors, but instead incorporate details such as convenience, payment method, and peer pressure.

## USING BEHAVIORAL ECONOMICS IN COMPETITIVE FOOD POLICIES

Given the many factors that influence consumers' food decisions, schools and districts should utilize these findings in constructing their own competitive food policies. As described below, several schools currently use behavioral economics to alter food purchases of students, and such policies can improve student nutrition.

### *Policies Should Exploit Present-Biased Preferences*

To offset present-biased preferences, policymakers and schools offer several solutions. Researchers recommend that schools exploit this bias by serving healthy foods in convenient containers, such as apple slices in a disposable container, allowing healthy items to be obtained and consumed quickly and easily. Schools can also place less healthy items in locations more difficult for students to access and place healthier items in more prominent locations.[28] For example, healthy items in vending machines can be placed at eye level, and vending machines with unhealthy items can be moved to less prominent locations in the school. Schools can also offset present-biased preferences by offering students more immediate rewards for making healthier decisions.

In Iowa and Illinois, seventeen middle and high schools implemented two of these recommendations. They installed dairy vending machines in their campuses, moving milk from a la carte lines to vending machines. Products were promoted by placing a sticker on the bottom of select milk bottles. When a student chose a bottle with a sticker, he or she received a prize. In addition, machines were set up to dispense a free milk or dairy product at every twenty-fifth sale. As a result of making milk more accessible by placing it in vending machines and offering rewards to students, total milk sales increased 5.1 percent by volume.[29]

Another experiment provided raffle tickets to students who purchased healthy snacks and beverages or who brought in snack items from home that met specific nutritional standards. Raffle winners received prizes such as bicycles, indoor basketball hoops, jump ropes, and calculators. The intervention also included providing nutrition education to students, altering the foods sold in schools so that they met specified nutritional standards, and engaging in family outreach. The experiment found that significantly fewer children in the intervention schools than in the control schools became overweight after two years.[30]

By providing students with more immediate gratification for eating healthy foods, making such foods more accessible, and offering incentives, schools can improve student food purchasing choices.

### *Use Flat-Rate Biases to Encourage Consumption of Healthy Items*

To account for the fact that consumers undervalue fixed costs relative to variable costs, and to help students make healthier food choices, schools could allow students to purchase healthy items with a prepaid card and require that less healthy items be paid for with cash.[31] Indeed, some schools already use debit cards to purchase foods.[32] In many schools utilizing prepaid cards, parents can limit the use of these cards to the purchase of NSLP meals, prohibiting children from using prepaid cards to purchase a la carte items. In these schools, students still have the option to pay for competitive foods in cash.[33]

In an experiment on college students, researchers found that students using an unrestricted food debit card were significantly more likely to purchase unhealthy food items than students who had a restricted card and supplemental cash for unhealthy items disallowed by the card. Those with restricted cards were also significantly more likely to purchase healthier items than those with unrestricted cards.[34] Altering the means by which students pay for healthy and unhealthy items can improve student nutrition.

### *Use Peer Influence to Change Consumption Choices*

To exploit the fact that social surroundings impact student food choice, several schools use peer pressure as a means of altering student consumption by engaging students in the promotion of eating healthier foods.[35]

One study measured the impact of using student promotion to alter nutrition. Researchers conducted a multi-component intervention that included peer nutritional education and the promotion of foods through taste tests and displaying healthy foods more prominently in a la carte lines. Some schools received only the promotional intervention and did not receive peer education. For schools receiving peer nutritional education, students were asked to nominate their peers to teach the class; researchers trained chosen students, who then led ten sessions on healthy foods. Students receiving peer education in addition to the promotional intervention reported almost a quarter-serving increase in daily fruit consumption.

**In sum, behavioral economics informs us that students, like other consumers, make food decisions that often do not reflect the healthy choices that would be taken by rational economic actors, but instead incorporate details such as convenience, payment method, and peer pressure.**

Further, students exposed to both interventions had a greater tendency to choose lower-fat foods.

In the study, the students who showed the greatest change in eating behavior were those chosen as peer leaders, who received extra training and were used to pass nutritional messages on to their peers. The researcher hypothesizes that the “cognitive dissonance” of spreading the nutritional messages without following them led to this effect.[36] By engaging students in promoting healthy eating, schools can also alter student food consumption.

## CONCLUSION

The regulation of competitive foods is largely left to the discretion of schools and school districts. Traditional and behavioral economic theory each explain aspects of student food purchasing and consumption decisions, and schools should adopt policies that incorporate the teachings of both theories. In addition to altering the price of healthy foods and beverages relative to unhealthy items and educating students about the benefits of eating healthy foods, schools can place healthy foods in more accessible locations throughout the school and reward students for purchasing healthy items. Schools able to utilize prepayment systems for competitive foods can disallow the purchase of certain foods on prepaid cards. Schools can also use peer influence to change consumption decisions by engaging students in the process of promoting nutrition.

Schools may, in the long run, consider enacting more paternalistic policies, such as complete removal of all junk foods from campuses. While eliminating all competitive junk foods and beverages from school campuses can improve student nutrition, it often requires renegotiation of vending contracts and may require that schools enter into agreements with completely

new vendors. Moreover, the definition of what constitutes “junk foods” may vary, and even with the removal of candy bars and soda, schools will likely still stock a range of competitive foods to students, with some considered to be healthier choices than others. Even if a school removes all carbonated soft drinks, schools may still wish to encourage greater consumption of water relative to 100-percent fruit juices and encourage greater consumption of fresh fruit in comparison to trail mixes. The recommendations above can be used by school districts that may face political or legal challenges to completely removing unhealthy competitive foods from the school environment, and also complement more paternalistic competitive food policies.

Whatever policies schools and districts choose to adopt, school administrators must take into consideration how the competitive food policies they employ impact the food consumption decisions, and ultimately the well-being, of their students. Though altering competitive food policies may be a difficult task, such efforts can help combat rising rates of childhood obesity and the health-related diseases that have become so prevalent among today's youth.

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## ENDNOTES

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