

THE POWER OF PORTIONS



PORTION BALANCE COALITION

Business for Impact

GEORGETOWN UNIVERSITY
McDonough School of Business

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About Portion Balance Coalition

The Portion Balance Coalition is the premier organization focused on advancing portions as a means to improve consumer health and reduce obesity. It is a multi-sector collaborative whose corporate, public health, academic and association members have come together to identify, co-create, and implement demand- and supply-side innovations in support of a balanced,

healthy lifestyle. [Business for Impact](#) at Georgetown University's McDonough School of Business is the coalition's neutral organizer and convener and is anchoring the work using a portion balance framework defined as: volume (quantity), proportionality (variety), and quality (nutrient density).

Chair's Message



Since the 1970s, the dramatic increase in portion sizes for packaged foods and restaurant meals has helped fuel an alarming increase in obesity. While public health advocates and the medical community have introduced a number of measures to improve consumer health – including package labeling and new hunger-suppressing drugs – systemic changes to our food industries are needed to encourage people to eat less.

This paper, the Portion Balance Coalition's first "Power of Portions" report, looks at an important solution: a sustained strategy to reduce portion sizes in packaged foods and beverages and in the restaurant and food services industries. In the seminal 2014 "Overcoming obesity: An initial economic analysis" report from The McKinsey Global Institute (MGI), portion control was identified as the number one intervention resulting in the largest number of disability-adjusted life years (DALY's) saved.

"Power of Portions" looks at how oversized portions have contributed to the growing number of people living with obesity; efforts by industry groups, individual companies, and non-profits to offer reduced portion sizes and educate the public; what the science says about the efficacy of portion control; and the results of our latest research into consumer attitudes and behaviors about portion control.

Our goal for this report is to provide a baseline assessment of how well food-related industries are responding to the need for portion balance and what consumers are thinking; to provide a practical guide for the public health community, policymakers, food industry executives, and the media; and ultimately to help more consumers understand the role of proper portions in healthy lifestyles. Going forward, we envision future assessments to gauge how well portion balance efforts have progressed and how consumer sentiments have shifted.

As you will see in this inaugural report, challenges remain in engaging different consumer segments to change their behaviors. Reversing the tide on ever-increasing portion sizes will not be easy, but we are hoping that the information and data presented here will help galvanize our resolve to offer more reasonable portion sizes in more products and menu items, and to help consumers manage their intake of food and lead healthier lives.

- Hank Cardello

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Executive Summary

The consumption of larger portion sizes has impacted the overall health and obesity of Americans. And uneaten large portions are often thrown away, exacerbating the problem of food waste. Building on the seminal 2014 McKinsey Global Institute report which identified portion management as the best strategy to help reduce obesity rates, this paper examines the current state of portion management, the benefits of adopting the use of smaller portions, and consumer attitudes and behaviors regarding their treatment and adoption of smaller sizes.

Among our key findings are that several food industry coalitions and individual consumer packaged goods (CPG) companies have stepped up to eliminate calories from the food supply and lower their portion sizes; that up to one-half of consumers practice some form of portion management; that choosing smaller portions is dependent on which product category

is purchased; and that a “one-size-fits-all” strategic approach is not effective in helping consumers choose smaller portions and to eat less.

Our analysis identified that two consumer health & wellness segments which comprise over 50% of the population, Well Beings and Fence Sitters, especially those with children in the household, are the most likely to manage their food intake by using smaller portion sizes and employing visual cues. We concluded that these cohorts are the primary audience to deepen the adoption of smaller sizes. The report also highlights that food companies and restaurant chains should drive smaller portion commitments, while government and public health advocates should be more proactive in adopting portion balance as a tool to help tackle high rates of obesity.

Introduction

The persistently high prevalence of obesity and its related health problems — type 2 diabetes, coronary heart disease, high blood pressure, and certain cancers — are prompting the public health community, regulators, and lawmakers at all levels of government to find ways to stem the crisis. The problem is by no means confined to the US: in 2018, the UN High Level Meeting on the Prevention and Control of Non-Communicable Diseases called upon the private sector to “strengthen its commitment” to make further efforts to reformulate foods and beverages to reduce the excessive use of salts, sugars, and fats.¹

Despite having the resources to become one of the healthiest countries in the world if better eating and physical activity recommendations were broadly adopted, the US today is one of the least healthy among developed nations. The efforts so far to address the impact of diet on obesity rates have been fragmented and have not reached the populations

that need it most. While some regulatory efforts have been national in scope (e.g., placing calories on restaurant menu boards), most other approaches to discourage consumption of certain products high in calories, added sugars, sodium, and/or saturated fats through interpretive labeling, taxation, or bans have been local, and have experienced either stiff opposition or marginal results. Revised or new approaches are needed to effect change.

This paper points to one such approach: managing portion sizes. The intent is to help guide more effective policy decisions, improve dietary guidance, and encourage the food and restaurant industries to leverage the power of deploying portions as an effective strategy to help reduce consumption of excess calories and less healthy ingredients. In addition, the positive impact of these portion strategies can extend well beyond consumer health to reduce the footprint of the diet on the environment.

The State of Portions in America

Over the past few decades, food and beverage consumption has increased dramatically, largely due to the tremendous growth of portion sizes. In fact, the average size of many food items has grown by as much as 138% since the 1970s.² Regardless of where consumers are buying their meals - whether in grocery stores, fast food chains, or dine-in restaurants - food portions are significantly larger than in the past, and, according to the American Heart Association, far exceed recommended USDA and FDA guidelines.³

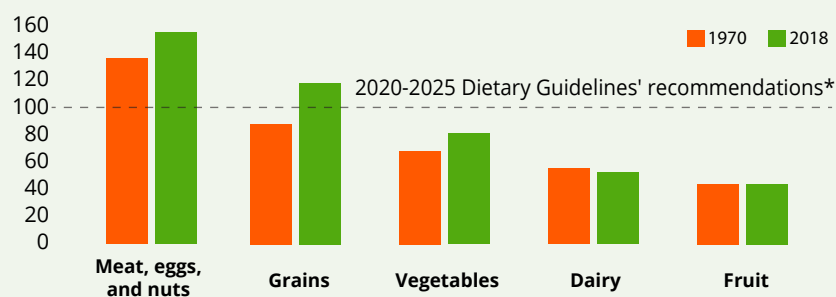
As a result, consumers are eating more both at home

and at restaurants. Americans consume 23% more calories a day than they did in 1970, averaging about 2,481 calories a day.⁴ Consumption of products comprising the largest food groups (meat, eggs, nuts, and grains) well exceed Dietary Guidelines' recommendations, while consumers are not meeting recommendations for vegetables, dairy, and fruit. (Figure 1). Compounding this situation is that the intake of "positive" ingredients is not keeping up. For instance, national surveys highlight that only about 5% of the population meets recommendations for the consumption of dietary fiber.⁵

Figure 1. Major food group consumption exceeds Dietary Guidelines recommendations.

Estimated average U.S. consumption compared to recommendations, 1970 and 2018

Percent of 2020-2025 Dietary Guidelines' recommendations



*Based on a 2,000 calorie-per-day diet.

Notes: Loss-adjusted food availability data are proxies for consumption. Rice availability data were discontinued in 2010 and thus are not included in the grains group.

Source: USDA, Economic Research Service, Loss-Adjusted Food Availability Data and 2020-2025 Dietary Guidelines.

Here are some specifics of how portion sizes have increased since 1970:⁶

- A bagel that weighed 2 ounces now weighs 4 ounces.
- Cheeseburgers have swelled from 5.9 ounces to 7.3 ounces.
- The standard restaurant serving of spaghetti and meatballs has doubled to a pound.
- Today's nutrition label on a pint of ice cream specifies that it now has three servings instead of four, and the typical serving size is now 2/3 cup, up from 1/2 cup.

While they are not the sole source, increased portions are associated with two related public health and societal problems: obesity (among both adults and children) and food waste.⁷ As it will become apparent, portion balance is an important public health issue as well as a sustainability issue and it must be part of the tool kit to address these problems.

This overview outlines the public health and societal problems that oversized portions have made worse; the research that shows why portion balance must be part of the mix of strategies that address obesity and food waste; initiatives by industry coalitions and

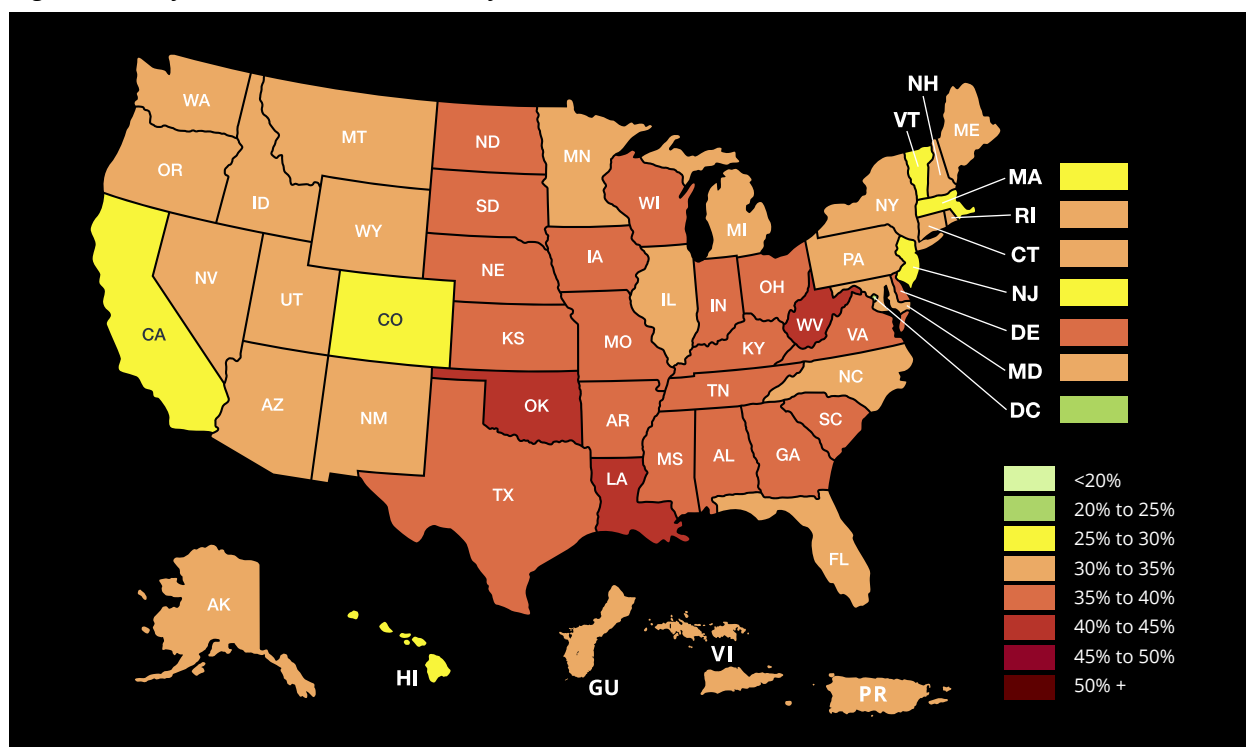
companies to reduce portion sizes of individually wrapped items; the progress and challenges in the restaurant industry; and the work of government and non-profit organizations including the Portion Balance Coalition (PBC) to educate consumers about the importance and nutritional quality of smaller portions. We also share what studies by the PBC and others reveal about consumer attitudes and behaviors regarding portion control. Finally, we unveil our latest research, which illuminates some of the challenges and possible solutions in reaching the segments of the population that need help the most.

The Rise in Obesity

Larger portion sizes and increased consumption have impacted health in America and worldwide. Such portions not only contain more energy but also encourage people to eat more, making it more difficult to balance static levels of physical activity.⁸ As portion sizes gradually increase and people become accustomed to them, they eat more and it takes longer for them to feel full, as Barbara Rolls, Alissa Smethers and Faris Zuraikat pointed out in their 2019 research.⁹

Overeating is a contributing factor to the sharp rise in people living with obesity. In September 2023 the Centers for Disease Control and Prevention (CDC) reported that 22 states now have an adult obesity rate at or above 35%, compared to 19 states in 2021 (see Figure 2).¹⁰ Just 10 years earlier, no state recorded a rate that high. The US now has one of the unhealthiest populations of all developed countries.

Figure 2. Twenty-two states now record obesity rates in excess of 35%.



Source: CDC, September 2023

The CDC also estimates that obesity affects 14.7 million children and teens, or 19.7 percent in the US.¹¹ According to the CDC, childhood obesity prevalence in the years 2017-2020 was 12.7% among 2- to 5-year-olds, 20.7% among 6- to 11-year-olds, and 22.2% among 12- to 19-year-olds. Childhood obesity is more of a problem in some populations than in others. Its prevalence was 26.2% among Hispanic children, 24.8% among non-Hispanic Black children, 16.6% among non-Hispanic White children, and 9.0% among non-Hispanic Asian children.

The obesity crisis has attracted attention from lawmakers and policy experts around the world. Most recently, in September 2022, the White House issued a National Strategy on Hunger, Nutrition, and Health that focused largely on alleviating food insecurity, and giving more Americans access to healthy food regardless of their income levels or where they live. Its stated goal was to “end hunger and increase healthy eating and physical activity by 2030 so fewer Americans experience diet-related diseases like diabetes, obesity, and hypertension.”¹²

In addition, four major organizations and committees have taken stances to limit the intake of certain food ingredients:

In July 2023 the World Health Organization (WHO) updated its guidelines on safe levels of saturated fats, total fats, and carbohydrates for both adults and children.¹³ WHO recommends that adults consume at least 400 grams of vegetables and fruits and 25 grams of naturally occurring dietary fiber per day. The new recommendations “aim to reduce the risk of unhealthy weight gain and diet-related noncommunicable diseases, such as type 2 diabetes, cardiovascular disease, and certain types of cancer.”

The USDA Dietary Guidelines for 2020-2025 (DGA 2020-2025) reflect the latest science-based advice to help adults and children make healthy decisions about what to eat and drink, including consuming nutrient-dense foods and beverages, limiting added sugars and saturated fats to less than 10% of calories per day, and restricting alcohol and sodium intake. In the DGA 2020-2025, one of the key principles highlighted is to “Pay Attention to Portion Size.” Specifically, they state that “it is important to pay attention to portion size when making food and beverage choices, particularly for foods and beverages that are not nutrient-dense.”¹⁴

The FDA’s approach to gradually reduce sodium across the food supply is the establishment of voluntary sodium targets for industry, monitoring and evaluating progress, and engaging with stakeholders.¹⁵

The American Heart Association (AHA) goes further and recommends limiting added sugar to no more than 6% of calories each day.¹⁶ While the AHA guidelines represent no more than 6 teaspoons of sugar daily for women and 9 teaspoons for men, the average American eats 17 teaspoons of sugar every day, the CDC notes.¹⁷

US obesity rates rose by 3% during the first year of the COVID-19 crisis, when people stayed home and ate more comfort foods.¹⁸ Over one in three (36%) consumers in a 2020 International Food Information Council (IFIC) survey said they were snacking more during the pandemic.¹⁹ One year into the COVID-19 pandemic, the American Psychological Association conducted a national survey with The Harris Poll to understand the impact of the pandemic on long-term physical and mental health. They found “a majority of adults (61%) reported experiencing undesired weight changes.”²⁰

While the pandemic contributed to this two-year spike in obesity, over the decades the increase in portion sizes has played a big role in fueling its steady rise. The resulting health and societal costs are high: the CDC estimates that the estimated annual medical cost of obesity in the United States was nearly \$173 billion in 2019 dollars. Medical costs for adults who had obesity were \$1,861 higher than medical costs for people with healthy weight.²¹ The McKinsey Global Institute (MGI), in a far-reaching study that explored obesity, its causes, and interventions, estimated that obesity conveys a \$2 trillion economic impact worldwide, or 2.8% of global GDP.²²

The Problem of Food Waste

Uneaten large portions are often thrown away, exacerbating the problem of food waste. Reducing food waste has become one of the priorities of the White House National Strategy on Hunger, Nutrition and Health. As part of this effort, the EPA, USDA, and FDA are leading efforts to reduce food waste and loss.²³

The Food Loss and Waste Protocol, a Washington, DC-based group, estimates that food loss and waste costs the global economy \$940 billion each year.²⁴ In the US, they point out, 61% of the food waste

comes in the consumption phase, rather than in production, storage, processing, or distribution. The USDA estimates that the US wastes 30-40% of its food supply. “Consumers also contribute to food loss when they buy or cook more than they need and choose to throw out the extras,” the USDA notes.²⁵

A consortium of the leading food industry trade groups, the Food Waste Reduction Alliance (FWRA), has worked to reduce food waste and alleviate hunger. The coalition works to promote programs that bring uneaten but still safe food to agencies

servicing people in need and supports composting inedible food waste to keep it from landfills. In 2019, FWRA announced a formal agreement with the USDA, the EPA, and the FDA to reduce food loss and waste through industry and agency-specific actions. The Consumer Brands Association, FMI-The Food Industry Association, and the National Restaurant Association comprise this alliance.²⁶

Much food waste takes place at restaurants. In the United States, food waste uses 2% of the annual energy for consumption, 70% of the potable water, and 37% of the landmass.²⁷ A 2020 report on food waste pointed to research showing that at restaurants, 31% to 40% of the food served never gets consumed. Researchers identified “consumer plate waste” as one of the key reasons for unconsumed food.²⁸ Smaller portions could greatly reduce this dilemma, as well as help restaurants save money by using lower volumes of ingredients.

Consumers have said they are open to efforts and initiatives to waste less food. IFIC’s 2022 Food and Health Survey found that nearly six in 10 Americans (57%) are concerned about food waste. The top reasons cited were because it is a waste of money (53%) and there are people in need of food (51%). Older consumers are more likely to be concerned because it is a misuse of money and they were taught not to waste food, while younger consumers are more concerned about the impact on the environment.²⁹

In short, awareness about food waste has risen sharply among both lawmakers and consumers, and we see it as an area where reducing the portions offered by food and beverage companies and at restaurants can make a significant impact, along with moving the needle on obesity.

Research Supports Portion Management Efficacy

Obesity is a complex problem and experts point to a panoply of causes: overeating, more sedentary lifestyles, communities that discourage walking, and other factors. Even the top researchers studying obesity, at a 2022 conference at the prestigious Royal Society in London, offered up no silver bullet for the problem. However, they all agreed that obesity should **not** be seen as a personal failing.³⁰

Several assessments have zeroed in on portion management as a viable strategy to help people control their weight. The seminal 2014 McKinsey Global Institute report on obesity recommended that portion management is the best strategy to improve long-term health and reduce obesity rates, and is more effective than other interventions, such as education, taxes, or package labeling. Strategies like reducing portion sizes of packaged foods and fast foods, MGI points out, “reset the default and make healthy behavior easier and more normal, thereby relying less on individual willpower.”³¹

Using protocols for rating evidence developed by the Oxford Centre for Evidence-Based Medicine, the

MGI analysis showed that there was strong evidence that portion control was a cost-effective option for changing behavior and had the biggest impact on Disability-Adjusted Life Years, a longevity measure. Along with being the highest-impact intervention, the report pointed out that reducing portions is also more cost-effective for food manufacturers and restaurants because it does not require reformulation.

However, the report stated that to be effective, **all** industry players must make a commitment to reducing portions; otherwise, organizations doing the right thing risk losing market share to companies that pursue a “value” strategy that focuses on delivering larger portions.

The effect of portion size tends to be subliminal, for good or for bad. Research has shown that big portions can override adults’ and children’s ability to know when to stop eating. “Portion Size and Obesity,” a research report published in *Advances in Nutrition* in 2014, noted that doubling a portion size caused adults to increase their consumption of a snack by 35%-80%; that adults served themselves more of an energy-



dense snack if they were given larger bowls and scoops; and that doubling the size of a macaroni and cheese entrée caused 5-year-olds to take in 10%-40% more calories at the meal. These big portions, the report concluded, “effectively distorted consumption norms and perceptions of what is an appropriate amount to eat.”³²

On the plus side, research also suggests that downsizing portions can imperceptibly nudge people to eat less. Another study published in *Nutrients* in 2021 concluded that people consumed less when they were presented with smaller-sized packages of high-calorie, low-nutrition foods.³³ And at restaurants, which now account for a growing proportion of

calories, a team of Dutch researchers found that reducing a meat course by 12.5% and doubling the amount of vegetables reduced calories without lowering customer satisfaction.³⁴

The Portion Balance Coalition’s (PBC) 2020 study, “Addressing the Obesity Epidemic Through Portion Balance,” found that more than half of survey respondents said they need guidance on portion sizes when eating at home and felt less control over their portions when eating out.³⁵ This suggests that offering smaller portions for packaged foods and restaurant meals, and educational campaigns that help people understand a proper portion size, may find a receptive audience.

Industry Coalitions Address the Over-Consumption Problem

In response to growing rates of obesity and over-consumption, the food and beverage industries have made progress in reducing sugar, calories, and portion sizes, as part of industry groups and coalitions focused on the problem. Individual companies have also addressed this issue on their own, often as part of a sustainability strategy.

In 2007, members of the Healthy Weight Commitment Foundation (HWCF), which included 16 leading consumer packaged goods (CPG) companies, pledged to sell a collective 1 trillion fewer calories in the United States by 2012 and 1.5 trillion less by 2015. These companies exceeded their goals and sold 6.4 trillion fewer calories in 2012, a 10.6% decrease from 2007. This huge elimination of calories from the food supply resulted in a reduction of 78 calories per person per day.³⁶

Soft drink companies, such as The Coca-Cola Company, Keurig Dr Pepper, and PepsiCo, have taken significant actions to reduce the sugar that consumers obtain from some of their products.³⁷ In 2014, the companies committed to reducing beverage calories per person nationally by 20% in an initiative undertaken in partnership with the Alliance for a Healthier Generation. The strategy is to support consumer efforts to reduce the sugar they intake from beverages by offering more choices with less sugar

or zero sugar, smaller package sizes and clear calorie information. The initiative’s 2021 national progress report by independent evaluator Keybridge LLC indicates that beverage calories per person nationally have gone down 7.4% since 2015.³⁸ The report shows that the companies now offer more than 400 choices that have less sugar or zero sugar, and since the start of this initiative:

- Per-person volumes of waters, including sparkling waters, grew by 43.1%;
- Volume sales of carbonated soft drinks in bottles and cans of less than 11 ounces (mini-cans) grew by 168%;
- Per-person volume sales of full-calorie soda, which is where people get most of their beverage calories, have declined 8.6%;
- Nearly 60% of all beverages sold are now zero sugar; and
- (Since 2015) nearly two-thirds of new beverage brands introduced have been either no-, low- or mid-calorie options.

Another successful industry-wide program is the confectionery industry’s Always A Treat Initiative, which emphasizes portion guidance and transparency. In 2017, the National Confectioners Association (NCA) brought together the leading

chocolate and candy companies -- including Mars Wrigley, Ferrero, Ferrara Candy Company, Lindt, Ghirardelli Chocolate, and Russell Stover Chocolates -- in a landmark commitment to help consumers manage their sugar intake. In collaboration with Partnership for a Healthier America, the companies set and achieved an ambitious, five-year goal to provide more transparency, create more portion

guidance options in innovative packaging, and educate consumers about how chocolate and candy can be an occasional treat. At the completion of the commitment period ending December 31, 2021, half (49.8%) of individually-wrapped packs were at 200 calories or less.³⁹

Figure 3. The three food and beverage company commitment campaigns.



MORE CHOICES. LESS SUGAR.
 Nearly 60% of beverages sold contain zero sugar.

THE *Coca-Cola* COMPANY Keurig DrPepper™ PEPSICO AMERICAN BEVERAGE

Frozen food companies have also played a role in portion balance. According to the American Frozen Food Institute (AFFI), pre-packaged servings allow for portion control, a principal factor in helping consumers meet caloric goals, and include a variety of options to meet varying cultural norms.⁴⁰ According to market research firm Circana, dollar sales for frozen food reached \$74.2 billion in the year ending November 19, 2023.⁴¹

A 2022 consumer survey found that the vast majority of consumers agreed that frozen meal entrées, often found in single-serve packaging, helped them to prepare more meals at home and still have an accessible meal when unable to cook – thus allowing for portion control at convenient moments.⁴²

Specific Company Initiatives

Along with their commitments to reduce portion sizes as coalition members and industry groups, individual companies have acted on their own to trim portion sizes, sometimes as part of their sustainability efforts in the US and other territories.

Mondelēz International has a 2025 goal to deliver up to 100% of net revenue through Mindful Portion Snacks, those in either individually wrapped portion serving sizes (≤ 200 calories) or with mindful portion labeling on pack.⁴³ Their 2021 global study of snacking trends among consumers found that 72% were looking for snacks that are portion-controlled, up 9% from a year earlier.⁴⁴ Three-quarters of their respondents said they were looking for visual guides on food product labels that help them understand what a portion size is.

Unilever's "Positive Nutrition" initiative focuses on creating products that are healthier with less salt, sugar, and calories. Its marketing and point-of-sale communications discuss proper portions for each consumer. Unilever has also been developing smaller-sized ice cream options for its Magnum, Cornetto, Ben & Jerry's, Breyers, and other product lines to encourage portion control and reduce the volume of sugar consumed as a result.⁴⁵ One of Unilever's goals is to have 95% of its packaged ice cream products contain no more than 22 grams of total sugar per serving by 2025. That goal was achieved for 89% of its ice cream by 2022.⁴⁶

Ferrero over the past few years has made a commitment to decrease the amount of sugar and fats in its products to control their serving sizes. In fact, around 86% of Ferrero's products now have less than 130 calories per portion. Its sustainability report notes: "Controlling the serving size of our products is a good way to limit the intake of nutrients typical in confectionery, such as sugar and fats."⁴⁷

Kraft Heinz has made portion guidance a facet of its ESG Report and goals.⁴⁸ Kraft Heinz Nutrition Recipe Guidelines provide nutritional information utilizing Kraft Heinz products to teach consumers about creating well balanced meals. In the United States,

Kraft Singles innovated to introduce Extra Thin Slices and Ultra Thick Slices. The Extra Thin Slices contain 40 calories per slice while the Ultra Thick Slices are 40% thicker than those in the 16 oz. regular sized Kraft Singles. The company's Lunchables® Ham and Cheddar, Turkey and Cheddar, Mozzarella and Pepperoni, and Light Bologna & American Cracker Stackers are also available in pack sizes under 2 ounces.

Nestlé has worked to improve nutrition education, especially around proper portions, for children and adults alike. Its approach to helping families establish healthy eating and lifestyle habits consists of implementing on-pack nutrition information and portion guidance and voluntarily restricting its marketing to kids under the age of 16.⁴⁹ For example, its Balanced Eating blogs help families create a healthy diet by making a balanced plate.⁵⁰

General Mills offers a diverse global portfolio of portion-controlled products. Single-serve products focused on weight management include Fiber One Bars and Yoplait Light Yogurt, the latter of which has recently undergone reformulation to reduce sugar and calories. General Mills also offers products such as Haagen-Dazs mini cups and Betty Crocker Mug Treats, which allow consumers to control calories through portion sizes. The company is also focused on improving the nutrient density of its single-serve products by increasing beneficial ingredients and reducing nutrients such as sugar, sodium, and calories.

Both individually and through coalitions, food industry commitments are helping to reduce calories, added sugars, and portion sizes. To make a more meaningful impact on consumer health and obesity, other food sectors, such as restaurants, food service, and sweet baked goods, are presented with the opportunity to step up their efforts to improve their product nutritional profiles and reduce portions.

Progress and Challenges in the Restaurant + Food Service Sector



One of the biggest drivers of increased portion sizes is the restaurant and food service sector, which contributes greatly to the uptick in calories consumed. For many reasons this has been the most challenging sector, including because many consumers gravitate to restaurants that offer perceived “value,” which often means bigger portions of food.

To help reduce portion sizes and improve the nutritional profile of their menu items, the National Restaurant Association modernized its “Kids LiveWell” initiative in 2021 to make it easier for participating restaurants to offer a greater variety of better-for-you options on the children’s menu, without compromising the commitment to cutting added sugar, sodium, and saturated fat in menu items.⁵¹

Since its launch in 2011, Kids LiveWell, which is voluntary, has attracted nearly 13,000 participating restaurants, including major chains such as Subway, Golden Corral, Chipotle, and Denny’s. The Association works with leading restaurant brands and independent scientific experts to identify menu options that meet added sugar, sodium, fat, and calorie thresholds established by the latest nutrition science. Participating restaurants offer a minimum of two meals and two sides that have undergone rigorous dietary analysis by registered dietitians.

They also commit to using water, milk, and juice as the default beverage options, with other beverages available on request.⁵²

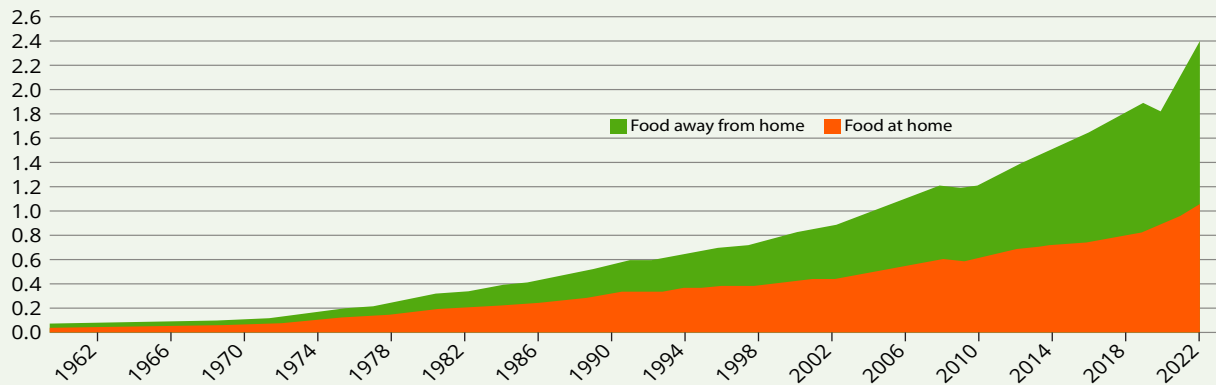
Individual restaurant chains are also reducing portions. In 2017, Taco Bell, the nation’s leading Mexican-inspired quick service restaurant (QSR) brand operating over 7,200 restaurants across the U.S., eliminated its extra-large (“XL”) beverage cups, reducing the largest size cup offering from 40 ounces (the “XL” cup size) to 30 ounces (the “L” cup size). This move by Taco Bell, one of three well-known brands in the Yum! Brands, Inc., portfolio, was implemented in response to concerns over selling larger portion sizes of sugary drinks. This market change was implemented with virtually no consumer pushback, reduced waste, and an increase in total beverage sales.⁵³

Panera Bread, a major national restaurant chain spanning across 47 states with more than 2,100 units, has put consumer well-being at the center of its efforts to enhance the customer experience. In 2019, Panera re-launched its bakery lineup with adjusted portion sizes and reformulated recipes to improve each item’s nutrient profile. The downsized bakery goods continued to sell well, supporting the merits of this smart, “stealth health” approach.⁵⁴

Figure 4. Food-away-from-home now accounts for 56% of total food expenditures.

Food-at-home and away-from-home expenditures in the United States, 1960-2022

Trillion Dollars



Note: Nominal dollars.

Source: USDA, Economic Research Service, Food Expenditure Series.

Some restaurants have begun trimming portion sizes in response to soaring prices for supplies and labor, which in turn could affect how much their patrons eat.⁵⁵ For example, Burger King's largest franchisee cut portion sizes in early 2022, including trimming their 10-piece nuggets to eight and removing the Whopper from its discount menu.⁵⁶

While we applaud these initiatives, many opportunities for improvement remain because of two indisputable facts: people are eating out more often, and they consume more calories when they do.

Except for during the pandemic, consumers over the decades have been eating fewer and fewer meals at home. According to a 2018 USDA report, consumer spending on food away from home (FAFH) surpassed that of food at home in 2010. By 2014, FAFH accounted for more than a third of calories (34%), up from 17.8% in 1977-78.⁵⁷ As shown in the figure above, by 2022 food-away-from-home spending accounted for 56 percent of total food expenditures.

Along with dining out more often, consumers are taking in more calories from restaurant meals than at-home meals. People eating out consume about 200 more calories than they would if they ate the same meal at home, according to the National Health and Nutrition Examination Survey (NHANES).⁵⁸ A 2018 Economic Research Service study found that food eaten in restaurants contained more saturated fat and sodium and less calcium, iron, and fiber than food prepared at home.⁵⁹

The Academy of Nutrition and Dietetics analyzed 1,786 restaurant menu items from 1986 to 2016, and found that the portion sizes, salt, and calories have increased significantly, especially among entrées and desserts. The calories in a single meal average 760, or almost 40% of an average adult's 2000-calorie a

day needs. Adding a sugary drink can push the calorie count to almost 1,000.⁶⁰

Alarming, even the "kid's menu" includes an unhealthy level of calories. Research published in 2016 in *Nutrition Today* analyzed the calorie counts of items on kids' menus at franchised restaurants and found that they were 147% higher than nutritionists recommend. The study found that "kid-sized" hamburgers averaged 465 calories, above the 300 calories recommended by nutritionists, and macaroni and cheese dishes averaged 442 calories.⁶¹ "The public may want to consider how they are at a disadvantage to prevent childhood obesity when so many food outlets serve foods in quantities that put their children at risk," said Dr. Deborah Cohen, a co-author of that study.⁶²

While they provide too many calories, these big portions can give restaurants a competitive advantage in an era when many consumers are looking for value when they dine out, research published by Lisa R. Young and Marion Nestle in 2002 found.⁶³ Thus, restaurants have been cited for increasing portion sizes well beyond recommended USDA and FDA limits. Moreover, people who are served larger portions have difficulty knowing when they've eaten enough, a 2009 study in the *International Journal of Behavioral Nutrition and Physical Activity* concluded.⁶⁴

Unlike alcoholic beverages, railroad ties, and other industries, the restaurant industry has no universal standard for portion sizes, a 2014 study by Debra Cohen and Mary Story pointed out. "Although each restaurant might have its own serving standards, there are no standard serving sizes across eating establishments, making it extraordinarily difficult for most consumers to gauge how much they are eating," they noted.⁶⁵

Consumers hold conflicting feelings about portion sizes at restaurants. For example, the PBC's 2020 study found that many feel regret after binging at a restaurant. Three-quarters of the survey sample said that they wished that restaurants aligned portions with U.S. Dietary Guidelines. However, many of these same respondents saw eating out as a treat plus a good value if the portions are large.⁶⁶

Subliminally nudging consumers towards more reasonable portions may help reduce the amounts they consume when they eat out. Cohen and Story recommend that restaurants adopt standard portion sizes based on a 2,000 calorie per day diet, which would not stop some patrons from eating as much as they want but would at least give them a visual depiction of a proper portion. For example, they pointed out that if a McDonald's 1,140-calorie combo of burger, medium fries, and 21-ounce soft drink were downsized to the USDA standard portion, it would cut the calories by 50%.⁶⁷

Semantics also matter. Research by Sophia Hua et al., published in 2023, found that calling a smaller-sized option "standard" or "just right" encouraged more patrons to choose that portion size, even if the larger one is a better value.⁶⁸

Much more work remains to be done, and the challenge is that many restaurants hesitate to

reduce portion sizes because they fear losing out to competitors that are dishing out more. As the McKinsey Global Institute study points out, any strategy that reduces obesity must be an industry-wide effort.⁶⁹

One positive tailwind in restaurants and food service is the increasing number of sustainability commitments. The vast majority of large restaurant chains and food service operators now have formal targets to reduce their carbon footprint and food waste. These commitments are increasingly being driven by shifts in consumer demand. Findings from the third annual Business of Sustainability Index study highlight that 74% of consumers care about the sustainability of the products they buy and 68% of consumers are willing to pay more for sustainable products.⁷⁰

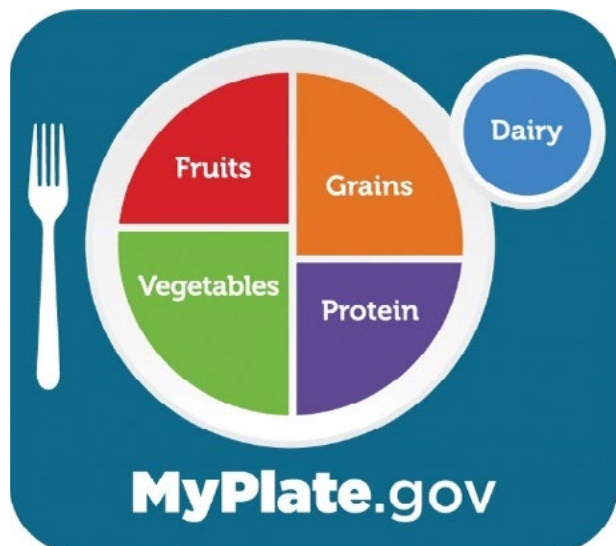
By crafting recipes that focus on the right portions of nutrient-dense ingredients while decreasing portions of sodium, saturated fats and added sugars, along with acting to minimize food waste, foodservice operators can reduce their environmental footprint. Potential business benefits can accrue from taking these actions, including improved profitability via reduced food cost per recipe, and broadening of their customer base to those who seek more sustainable and healthful ingredients.

Public Messaging/Communications

Over the past few years, a handful of campaigns encouraging consumers to eat healthier portion sizes have been launched. Determining which aspects of the existing public awareness campaigns have worked or not has been a key interest of the PBC's leadership.

USDA's MyPlate (see Figure 5) has been the most familiar national initiative that focuses on an appropriate mix of food groups.⁷¹ MyPlate, a strategic partner to the PBC, includes education about recommended portion sizes and how much protein, grains, fruits, and vegetables to eat each day. Under new federal guidelines it will be expanded to accommodate an increasingly diverse demographic. While the White House strategy did not focus specifically on portion management, it recognized the need for making the USDA's MyPlate more useful. As a result, the campaign will be expanding to make it more accessible to different cultures.

Figure 5. The USDA's MyPlate.



Introduced in 2023, the PBC’s “Eat For You” campaign connects parts of the hand to all major food groups and to MyPlate, and includes a range of helpful tips for managing portions. It is designed for educators, health care professionals, and dietitians, and provides an easy way for consumers to understand recommended portion sizes by relating them to parts of the hand. This makes it easier to adjust portion sizes for large and small adults and for children.⁷²

It also includes practical advice to make healthy eating less expensive and easier to achieve, such as using beans for protein and frozen vegetables as a nutritionally equivalent and affordable produce option. The campaign also offers tool kits such as educational materials, a social media kit, and marketing posters. The PBC’s “Eat for You” campaign has been recognized as part of the White House Challenge to End Hunger and Build Healthy Communities.

Figure 6. PBC’s “Eat for You” campaign.



The CDC offers a playable board game entitled “Avoid Portion Pitfalls” that educates consumers about how to manage portion sizes, especially at restaurants.⁷³ Educational material from the CDC suggests that consumers split meals at restaurants with friends, or immediately put half of their restaurant food in a to-go box before digging in. For meals at home, the CDC recommends apportioning food on individual plates rather than serving “family style” to discourage second and third helpings.⁷⁴

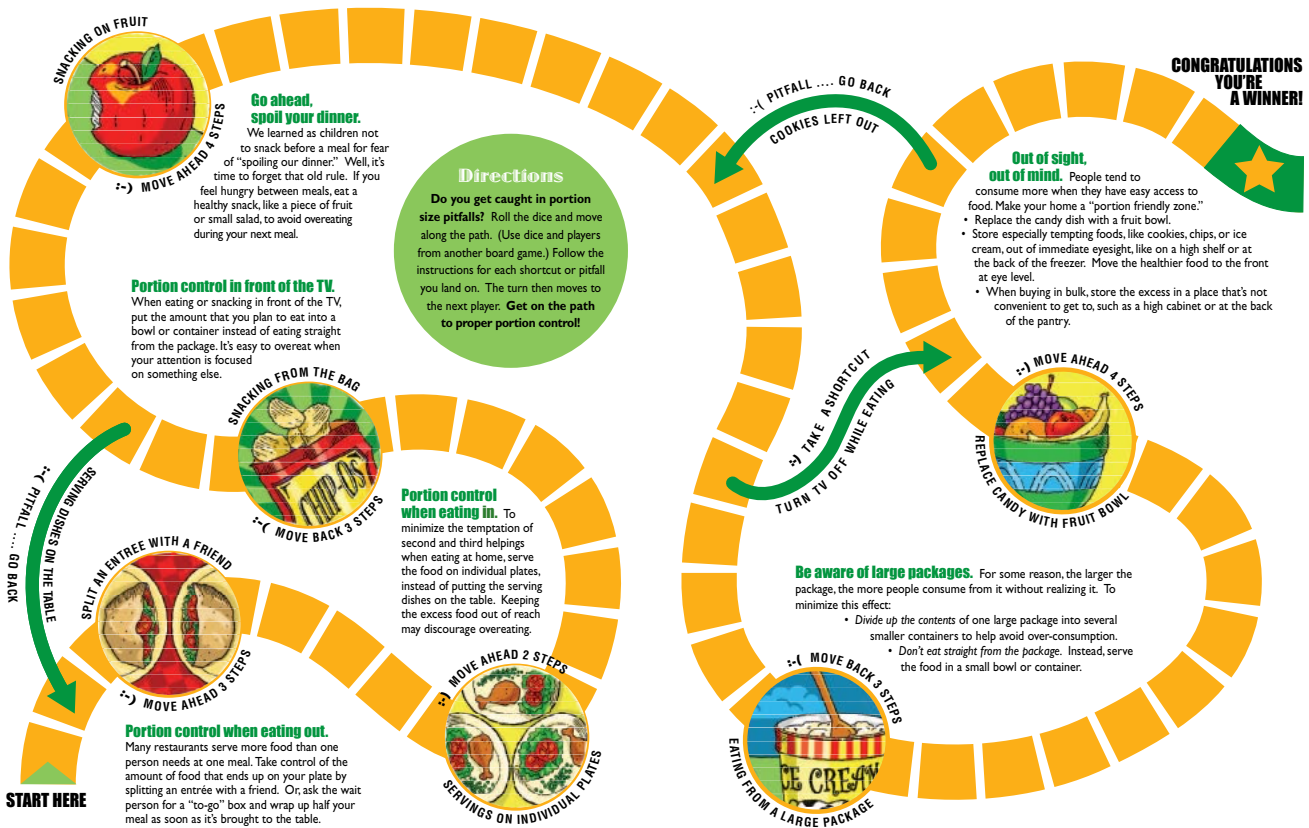
A related USDA campaign called “Make Every Bite Count” has information about allocating 85% of a person’s daily intake towards foods that support health, with 15% devoted to extras like sugar and treats.⁷⁵ USDA echoes the CDC’s portion recommendations and encourages serving food on individual plates rather than family style at home, and putting half of your restaurant meals in a to-go box before you start eating.⁷⁶

Other research has shown that visual cues and kitchen tools can be effective in convincing people to eat less. A study published in *Appetite* in June 2023

involving 65 women postured that using food control tableware reduced the amount of food women ate and encouraged them to take smaller bites.⁷⁷ A 2015 review of research on the effect of portion control aids concluded: “If sustained reductions in exposure to larger-sized food portions, packages, and tableware could be achieved across the whole diet, this could reduce average daily energy consumed from food by between 144 and 228 kcal.”⁷⁸

A comprehensive update to the *Handbook of Eating and Drinking: Interdisciplinary Perspectives* by Faris Zuraikat, Alissa Smethers and Barbara Rolls is currently in press. The chapter concludes that the most reliable and effective method to moderate energy intake from large portions is reducing the energy density of the diet. Among the strategies advanced to counter the “Portion Size Effect” include increasing the proportions of fruits and vegetables relative to more energy-dense foods or ingredients, displaying “right-size” prompts in restaurant settings and providing a wider range of portion options.⁷⁹

Figure 7. The CDC's playable "Portion Control" board game.



The Benefits of Smaller Portions

Convenience

Individual portions are single-serve and very portable.

No compromise on taste

Consumers are not required to change their eating practices.

Lower absolute cost

While the cost per ounce may be greater, smaller portions can cost less.

No/little reformulation required

Food companies only need to change packaging.

Less food waste

Smaller quantities per pack can help reduce food waste.

Consumer Attitudes + Behavior

New research is learning that consumers are becoming more mindful of the portions they consume. The Mondelez International 2022 State of Snacking Report, released in 2023, noted that, while 71% of consumers snack at least twice a day, 61% said they take time to portion out snacks before eating them, and 68% of consumers check nutrition labels on snacks before buying them, as it makes them feel more informed.⁸⁰ And according to the National Confectioners Association's 2022 State of Treating Report, 72% of consumers agree that it is important for chocolate and candy brands to offer portion size variety.⁸¹

A 2022 PBC survey of 1,000 adults found that 58% of respondents said they are eating smaller portions compared to before the pandemic as a way to help manage their weight, and 42% said that eating appropriate portion sizes at each meal or snack is an important component of healthy eating for them. To help keep portions in check, the survey reported that half of consumers choose more portion-controlled

snacks, such as 100-calorie packs. Likewise, 45% of respondents buy smaller packages of food items to help manage how much they eat, and 44% do the same for beverages. Both of these are up from before the pandemic, when 38% purchased smaller packages of food and 40% purchased smaller packages of beverages to help limit their intake.⁸²

While these studies suggest increased mindfulness about portion balance, much confusion remains about the proper volumes of food to eat. The International Food Information Council reported in early 2022 that consumers are confused about what portion and serving sizes mean. At the same time, some noted they try to eat more slowly to control their portion sizes (34%), stop eating once they feel full, even if there's still food on their plate (34%), use smaller plates/bowls to reduce portion size (32%), and choose single-serve portions (31%). Among the 17% who said they did not pay attention to portion sizes, a third said it was more important not to waste food.⁸³

The 2023 Consumer Attitudes + Behavior Study



In summer 2023, the PBC in concert with research firm Natural Marketing Institute (NMI) fielded a landmark study on portions. This study leverages NMI's Health and Wellness Trends Database and incorporates proprietary responses to questions related to portions. A total of 1,005 General Population respondents were canvassed to respond to questions that determined attitudes and purchase behaviors across five distinct health & wellness consumer segments.

Methods used by consumers to manage how much they eat and drink

The study identified that the top methods that consumers are utilizing to manage how much they eat and drink at home are primarily intuitive approaches: 52% indicated that they eat until their stomach feels full; 51% said they make enough so everyone feels they get enough; and 51% stated that they practice mindful eating. Importantly, the next 5 of the 17 methods examined were portion-oriented:

- Eat from plate or bowl, not directly from package (48%)
- Read Nutrition Facts labels to identify serving size (46%)
- Make half my plate at meals fruits and vegetables (39%)
- Refer to recipe information for calories and serving sizes (38%)
- Visually eyeball or use cues like a fist size for protein amount (37%)

In away-from-home situations, sharing an entrée, appetizer and/or dessert is the #1 method utilized to manage quantities (41%), followed by using calorie information on the menu (34%), and choosing a restaurant with a health-focused menu (33%). Tactics such as ordering kid's portions instead of adult sizes or ordering a half-portion of an entrée are infrequently used (21%).

Importance of portions in purchase and usage decisions

Our findings highlight that once core needs are satisfied (i.e., taste; convenience; etc.), portions are the next most important influencing factor when making decisions about preparing food to eat at home, followed by label/ingredient factors. As shown in Figure 8 below, core considerations are led by taste (97% top 2 box score) along with other basic needs (e.g., ease of preparation; nutritional value; cost). Portions followed next, with 85% of respondents indicating that portions influence their decisions about preparing food to eat at home. The third bucket was led by the amount of added sugars, also at 85%, followed by sodium (84%), calories (83%), saturated fats (82%), and source or origin of ingredients (77%).

When it comes to the influence of portions on food purchases, 52% of older Millennials, those aged 33-46, give the greatest consideration to portions in their buying decisions, followed by younger Millennials (44%), and Gen Z consumers (43%). Additionally, all Millennials were the most engaged in using portion size to manage weight; for example, 60% stated that they were choosing snack and candy bars that are smaller or fewer in calories, compared to 47% of Gen-X and 45% of Baby Boomers.

Figure 8. Portions are a key influencer in food preparation decisions.

Taste Rules; Portions a Key Influencer in Food Preparation Decisions

% indicating the influence of each factor when making decisions about preparing food to eat at home (Top 2 Box)



Consumer attitudes toward portions

Overall, portion management is important to one-third to one-half of consumers. As shown in Figure 9, the primary driver for using single serve items is to provide a convenient way to eat healthier and curb

hunger (49%), followed by buying smaller packages to fit budgets (45%), and purchasing multi-packages with predetermined portion sizes to control quantities eaten (44%).

Figure 9. Reasons why consumers buy smaller portions.

% respondents indicating agreement or disagreement with each statement (Top 2 Box)

49%

I buy single serve entrées/foods/ snacks because they are a convenient way for me to eat healthier by portioning my food and curbing hunger during my busy day

45%

I buy smaller packages of food just because it fits my budget

44%

I buy multi-packages with predetermined portion sizes (e.g., rice, chips, candy, cookies) to control the amount I eat

39%

I buy smaller packages or single serve packages of food items to help manage how much to eat

38%

I buy smaller sizes of beverage items to better control the amount I'm drinking

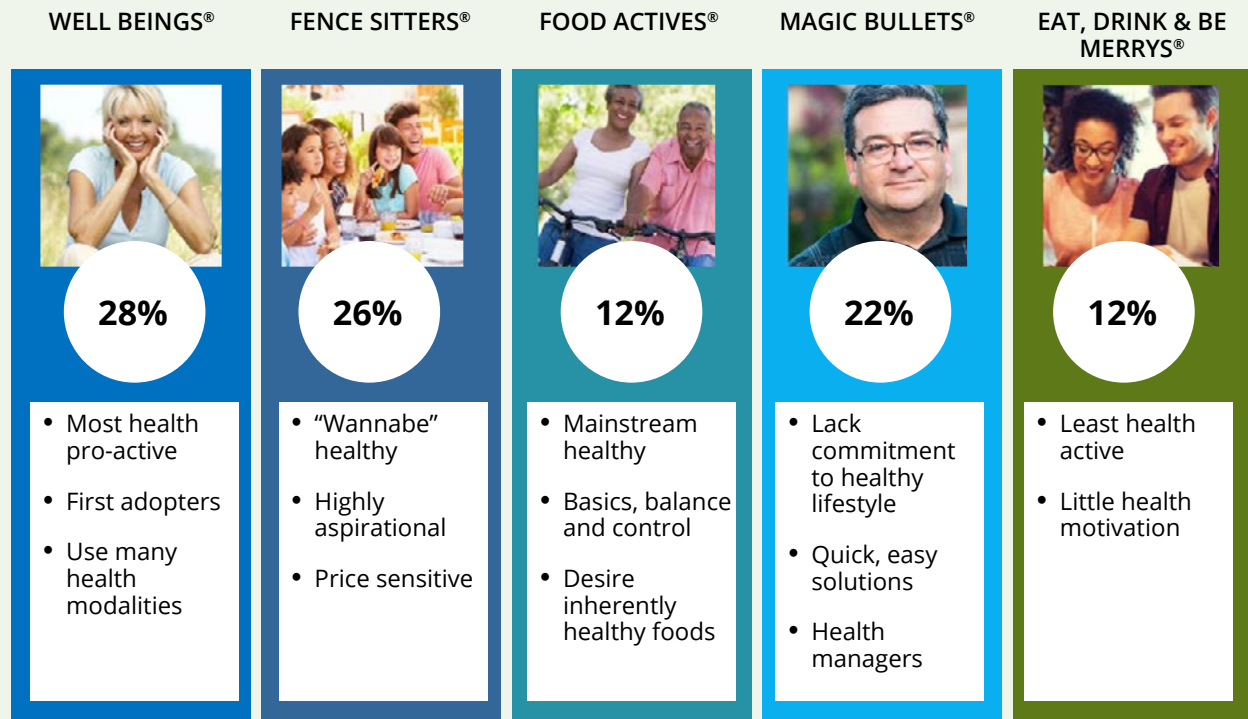
32%

I don't buy smaller packages of foods or beverages because I'm concerned about packaging waste

Attitudes and behaviors about portions differ by consumer segment

NMI defines five consumer segments based on their attitudes towards eating and health (Figure 10):

Figure 10. NMI's five health & wellness consumer segments.



NMI's 2023 Health & Wellness Study
Georgetown University Proprietary Content



Our research determined that two of these segments comprising 54% of the population – the “Well Beings” and “Fence Sitters” – represent the biggest opportunities for uptake of smaller portion sizes. Well Beings are inherently health-driven; Fence Sitters aspire to be healthier but need strategies that make it easier for them. Moreover, having children in the household made each of these segments more likely to adopt portion control strategies at home, such as using visual cues like a fist size to gauge the appropriate amount to eat.

In contrast, two consumer segments that exhibit the highest rates of overweight and obesity - the “Magic Bullets” and the “Eat, Drink & Be Merry’s,” are less attuned to employing smaller portions to help manage their weight; are less likely to read package labels; and choose their foods based on taste and quantity.

To illustrate the sharp differences across segments, for the question “I buy single serve entrées/foods/

snacks because they are a convenient way for me to eat healthier by portioning my food and curbing hunger during my busy day,” 59% of Well Beings and 57% of Fence Sitters agreed with that statement, compared to only 44% of Magic Bullets and 28% of the Eat, Drink & Be Merry’s.

This pattern was observed across virtually all portion-related responses, with the exception that Well Beings did not choose smaller portions for budgetary reasons as this cohort registers the highest income levels.

Despite the attractiveness of smaller- or pre-portioned foods, large package sizes remain popular, although consumers feel conflicted about them. While a majority of respondents conveyed that large packages offer good value (71%) and reduce the number of shopping trips (64%), two-thirds (64%) fretted over food that gets wasted if they buy more than what they need.

Product category influences portion size purchases

Among the 43% of respondents who indicated that “Portion size has a lot of purchase influence in what I eat at home,” it was determined that responses differed markedly by product category. Our survey showed that portion size had the biggest impact on

purchasing decisions for packaged cheeses (68%), bottled water (66%), yogurt (63%), and snack/tortilla chips (62%). A full list of product categories evaluated is shown in Figure 11.

Figure 11. Portion size influence varies by product category.

Portion size has a lot of purchase influence in what I eat at home (43% of respondents)	
Cheeses (Packaged)	68%
Bottled Water	66%
Yogurt	63%
Snack/Tortilla Chips	62%
Condiments/ Sauces	59%
Crackers	58%
Frozen Vegetables	57%
Packaged Ice Cream	55%
Cereal/ Granola/ Snack Bars	55%
Milk/ Dark Chocolate Candy	55%
Frozen Meals/ Entrées	51%
Frozen Pizza/ Pasta	51%
Cookies	50%
Cold Cereal	48%
Regular Soda	47%
Baked Goods	42%
Mac & Cheese	41%
Energy Drinks	38%
Frozen Fruit	35%
Low No Calorie Soda	34%
Frozen Potatoes	33%
Bottled/ Powdered Juice	33%
Baking Mixes	33%
Non-Chocolate Candy	28%
Lunchbox Snacks	26%

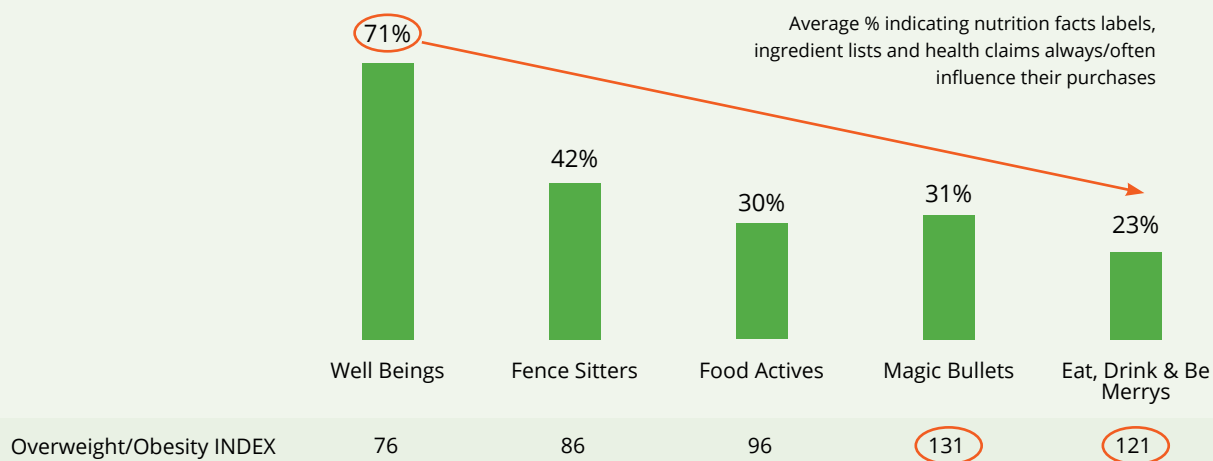
Nutrition labeling is not effective for all consumer segments

Placing nutritional information on package labels is often viewed as a viable strategy to help inform consumers to purchase healthier foods and beverages. The NMI research showed that just under half of consumers stated that nutritional information always/often influences their purchases. Among respondents, 45% said they searched for nutrition facts on the label, down 6 points from 2022; 45% examined the ingredient list, down 4 points from 2022; and 44% looked at the health or nutrient claims, down 4 points from 2022.

Similar to the patterns observed regarding the use of

smaller portions, we noted large differences in reading nutritional labeling across segments. Well Beings consistently read nutrition information on packaging (71%). However, as one skims across the remaining 4 segments, label reading declines sharply, with only 31% of Magic Bullets and less than one-quarter (23%) of Eat, Drink & Be Merry's reading nutrition information. This is discouraging as those two segments exhibit the highest rates of overweight and obesity. This finding also validates the McKinsey Global Institute study that labeling is not as strong a factor in helping to reduce obesity rates as portions are.

Figure 12. Consumer segments with the highest BMIs read nutrition labels the least.



Conclusions

Consumers are currently employing several ways to manage their portions. We have seen that intuitive methods are the most prevalent approaches, which creates an opportunity to deploy more visual cues and educate consumers about the benefits of portions -- that is, they can deliver the same taste and convenience, lower absolute price, and less food waste and environmental impact.

We also have learned that there are two consumer cohorts - Well Beings and Fence Sitters - who have been identified as the primary targets for portion messaging and usage. Households with children are especially focused on portion balance.

As illustrated in the McKinsey Global Institute study, portion control has been shown to be an effective strategy in improving projected lifespans. Smaller portions also have a key role to play in building a sustainable food system and reducing food waste.

Well Beings read nutritional labels on packages the most, while all other consumer cohorts search for this information less frequently. Those with the highest rates of overweight and obesity read nutritional labels at very low levels.

Implications/Calls to Action

1. Implement targeted strategies to drive consumer adoption of portion balance behaviors.

Because Well Beings and Fence Sitters show such dramatically different attitudes and behaviors from the other consumer segments regarding the use of smaller portions, continuing to implement one-size-fits-all strategies to improve consumer eating habits will not be successful. Instead, it is recommended that (1) strategies and communications be targeted initially to those consumer cohorts most likely to respond to using smaller portions, and (2) tactics to persuade less responsive segments be customized to motivate change.

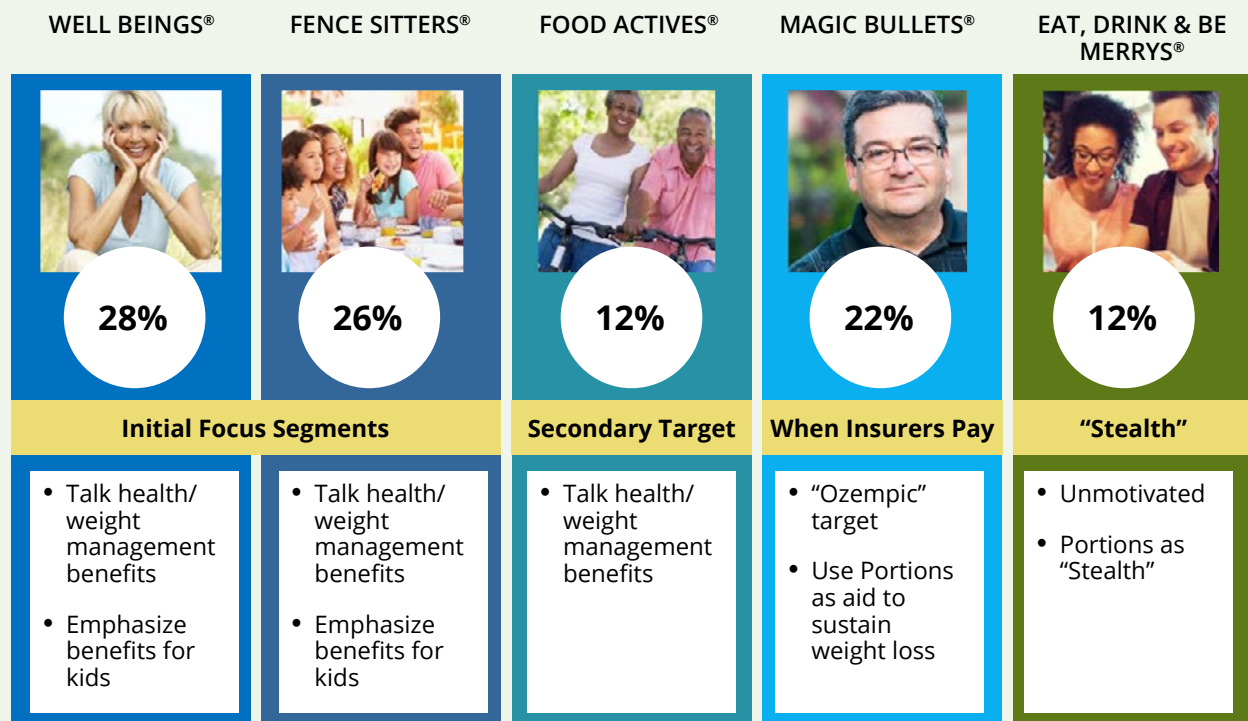
Well Beings and Fence Sitters are the primary targets for portion balance, as they score highest on interest in or usage of smaller portions. Emphasis should be directed to Well Being and Fence Sitter households with children as these consumers were most responsive to portion management. Food Actives are less engaged, but with strong messaging can be converted as they

have bought into eating and living healthier.

Magic Bullets and Eat, Drink & Be Merry's are unresponsive to changing to a healthier lifestyle. They are disengaged from portion messaging. We believe that shrinking portions in a "stealth" manner is the best way to effect change with these cohorts. That is, companies need to make gradual, imperceptible changes to their portion sizes and reduce levels of added sugars, etc. to be effective.

Magic Bullets are unique in that they prefer to take pills as a means to manage their health. This group is the prime target to adopt hunger-suppressing drugs. We believe that expanding the availability and usage of smaller portions will be a successful element to effective weight management for people taking drugs like Wegovy, Mounjaro, and Zepbound. Because these drugs cause people to consume fewer calories, offering smaller portions could be a means for the food industry to help sustain sales of food and beverage items.

Figure 13. Converting to smaller portion usage requires different strategies by segment.





2. Food companies and restaurant chains should drive smaller portion commitments.

The American Beverage Association's Balance Calories Initiative has been successful in reducing portion sizes and removing calories, added sugars, etc. from the food supply. Furthermore, single-serve items that balance calories and nutrients, such as individual frozen entrées or 100-calorie snack packs, have consistently helped consumers maintain balance and portion size in their diets. These pledges are not only good for the consumer but also offer companies the opportunity to address food waste while improving their margins.

As obesity and diabetes rates continue to climb, portions offer a quick and affordable approach requiring manageable changeovers, mostly packaging for food manufacturers and recipe and menu adjustments for the foodservice sector. The added potential for increased profitability and the expansion of the consumer base should provide strong incentive for food purveyors to adopt portions as a smart growth strategy. At the same time, underutilizing this tool leaves companies open to more uninvited pressures from government regulators and public health advocates.

3. Proliferate the use of visual cues.

The NMI study has shown that consumers, especially Well Beings and Fence Sitters in households with kids, are using or receptive to visual cues to help them manage their portion intake. Approaches such as visually eyeballing or using cues like a fist size for protein amount;

portioning out foods with measuring cups and spoons; and promoting eating from a plate or bowl and NOT directly from the package when snacking should be adopted and communicated to dietitians, government agencies, and consumers.

The PBC's "Eat for You" campaign is one way this recommendation can be implemented. Adoption by educators, health care professionals and dietitians would go a long way in advancing the reliance on and use of visual cues among consumers.

4. To motivate consumer change, add Portion Guidance to food labeling.

Each consumer segment reads nutritional labels at differing levels of engagement. Well Beings are the primary group to look for nutritional information on packaging. All other segments read at significantly lower levels, and those with the highest rates of overweight and obesity read labels much more infrequently.

In the McKinsey Global Institute study, labeling ranked 9 out of 16 interventions in improving lifespans. Current labeling efforts focus primarily on meeting the demands of Well Beings, who are already the healthiest consumer cohort. For labeling to be effective, messaging and visual executions that also motivate Magic Bullets and Eat, Drink & Be Merry's to change their eating behavior will be necessary. Therefore, programs aiming to reduce caloric intake should instead consider focusing education on portion sizes.

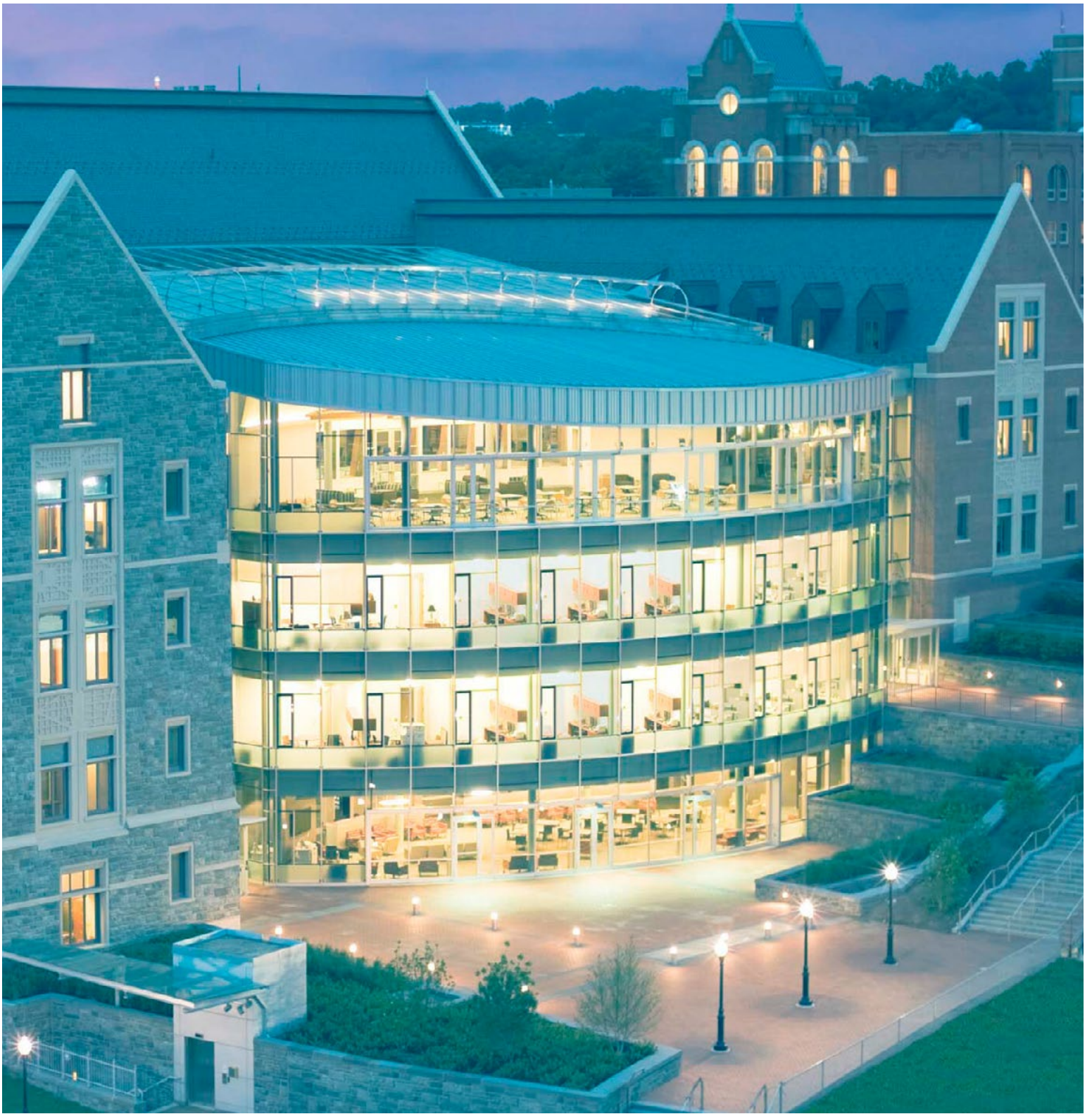
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