



Produce for Better
Health Foundation

Novel Approaches to Measuring and Promoting Consumption, 2017

An Executive Summary



About Produce for Better Health Foundation

The Produce for Better Health Foundation (PBH) is a non-profit organization designed to support Americans in eating more fruit and vegetables, in all forms, because more matters given the current consumption gap. PBH partners with value chain stakeholders, consumer influencers, and thought leaders to facilitate and advocate for increased fruit and vegetable consumption. One way that PBH does

this is through its Fruit & Veggies—More Matters® platform. PBH is the only national organization focused entirely on promoting produce consumption in all forms (i.e. fresh, frozen, canned, dried, and 100% juice) and is dedicated to conducting and utilizing research and insights to drive efforts to help Americans increase fruit and vegetable intake.

PBH's Research Commitment

PBH is unequivocally dedicated to, and has made it a priority to invest in, conducting long-term, comprehensive consumer and marketplace research and analyses to:

1. Understand consumers' knowledge, attitudes, and behavior around fruit and vegetables, in all forms;
2. Ascertain and address challenges and opportunities in consumer messaging as well as at eating occasions and in eating environments; and
3. Develop novel approaches to help Americans increase fruit and vegetable consumption.

Background

The 2017 *PBH Novel Approaches to Measuring and Promoting Fruit and Vegetable Consumption* research represents a build on several consumer studies in which PBH has trended data for more than a decade on the attitudes, beliefs, and reported behaviors of various generations of moms and primary shoppers as they relate to fruit and vegetables. As with this ongoing research, it aimed to capture the frequency of fruit and vegetable consumption, in all forms, as well as motivators and barriers to intake and differences among various demographic audiences. In the 2017 research, an emphasis was placed on older adults, as previous research demonstrated declining fruit and vegetable intake among this audience segment.

With emerging data in the literature showing increased fruit and vegetable consumption to be predictive of improved happiness, life satisfaction, and well-being,¹ PBH also examined those factors that drive and hinder fruit and vegetable consumption, and specifically, explored the potential relationship between fruit and vegetable intake and satisfaction with life overall, as well as, happiness in the short-term.

The quest to support Americans in habitually consuming ample amounts of fruit and vegetables is an important one. The *Dietary Guidelines for Americans* consistently note that intake of fruit and vegetables fall below recommended levels.



The *Dietary Guidelines for Americans 2015-2020* identified the importance of achieving and maintaining a healthy dietary pattern in which it recommends an increase in the amount and variety of fruit and vegetables consumed, in various forms. The *Guidelines* note that fruit and vegetables contribute important and varied nutrients and that by consuming a diet consisting of diverse sources within the fruit group and the vegetable subgroups, Americans will achieve the best possible nutrient package overall.² In fact, trended PBH data demonstrates an association between the availability and preparation of all forms and intake overall with data over time showing that those with higher intakes of fruit and vegetables also report having more of all forms available in the home.³

Methodology

An online survey was administered by PBH's data partner, OnResearch, to a panel of Americans. The sample was balanced to be nationally representative and included primary shoppers with and without children and an oversampling of men and women

aged 50+ years made possible through support by AARP. A total of 2,025 survey responses were collected between January 23-31, 2017, with 931 respondents age 50+ years.

Research Overview

Over time there has been an evolution in how consumers view “health” as a relative and multi-faceted state that is comprised of typical wellness elements (e.g., physical activity, nutrition, family history), lifestyle factors (e.g., stress management, not smoking, adequate rest), and psychosocial components (e.g., friends and family, spirituality). Trends over time indicate that intake of fruit and vegetables is among the top factors that consumers feel contribute to their health. Overall, they say they eat them to stay

healthy. However, previous to the 2017 survey, PBH had observed 1) decreases over time in expressed “belief” in the healthfulness of fruit and vegetables in disease prevention, as well as the healthfulness of the nutrients and components they contain; 2) increased perception that serving fruit and vegetables is not “easy”; and 3) declining reported intake.³

The question of what was behind the decline in acceptance of fruit and vegetables’ healthfulness, combined with decreased motivation to consume them, spurred PBH to explore other emotional connections that could be identified to help consumers be healthier through increased fruit and vegetable consumption. The 2017 PBH research study questioned consumers about their overall life



satisfaction, happiness, and a series of personal statements about how respondents were feeling toward their health, as well as fruit and vegetables and their consumption.

The findings showed that consumers, on average, are falling short in fruit and vegetable consumption daily, by approximately one cup each. Additionally, fruit and vegetable intake appears to be habitual. That is, the more days per week fruit and vegetables were eaten, the more cups were consumed per day. Finally, this research identified a correlation between those who ate fruit and vegetables more frequently and higher reported levels of life satisfaction and happiness. Additional research should be conducted to further explore the nature of this correlation.

2017 Key Findings

Consumption

On average, less than half of respondents report consuming the recommended amount of fruit and vegetables daily for sedentary individuals per MyPlate. For men, recommended levels are 2 cups of fruit and 2½-3½ cups of vegetables per day, depending on age and calorie level. For women, the minimum recommended levels are 1½-2 cups fruit and 2-2½ cups of vegetables daily. Participants in this survey were shown pictures as visual cues of what counts as a cup of fruit and vegetables, in various forms, to aid in identification of their intake. On average, 39% and 27% of men reported reaching *MyPlate* recommendations for fruit and vegetables, respectively, vs. 50% and 47% of women. While the majority of those surveyed reported consuming below the recommended amounts, men more so than women, a very small percentage of men and women reported eating no fruit and vegetables at all.

Men are nearly twice as likely as women to underestimate how much fruit and more than three times as likely to underestimate how much vegetables they should be consuming daily.

The data indicates a gap between what consumers believe they should be eating and the *MyPlate* recommendations. Almost a third of men underestimate the amount of fruit (29%) and about

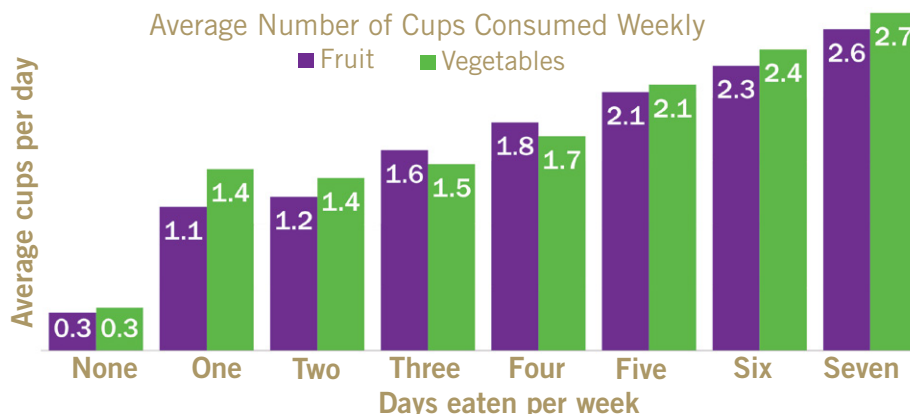
half (55%) underestimate the amount of vegetables. Women tend to overestimate the amounts of fruit and vegetables recommended per day, particularly vegetables, and 15% underestimate the recommendations for both fruit and vegetables.

Both the actual and perceived fruit and vegetable consumption gaps can realistically be closed, by approximately one cup each. Men and women, on average, report a “perceived gap”, defined as the perceived recommendations minus reported intake, of just over a half a cup (.55) per day of fruit and just under three-fourths a cup (.74) per day of vegetables. The “actual gap,” for those under-consuming, defined as the minimum *MyPlate* recommendations minus reported intake, is a bit wider with approximately one cup each of fruit (.91) and vegetables (1.2) per day.

Fruit and vegetable intake is likely habitual. With increased days per week intake, greater amounts of fruit and vegetables are consumed per day. The average reported intake is approximately 5 days per week for fruit (4.9) and vegetables (5.6). Approximately one-third of Americans report consuming fruit (35%) or vegetables (47%) daily, significantly more so for vegetables than fruit.

Increased Days per Week of Fruit and Vegetable Consumption Correlates with Increased Amounts per Day

- Q. How many days in a typical week do you eat fruit? And vegetables?
- Q. About how many cups of fruit would you say that you eat in a typical day?
- Q. About how many cups of vegetables would you say that you eat in a typical day?



Base: All respondents N=2025

Source: Produce for Better Health Foundation. *Novel Approaches to Measuring and Promoting Consumption, 2017.*



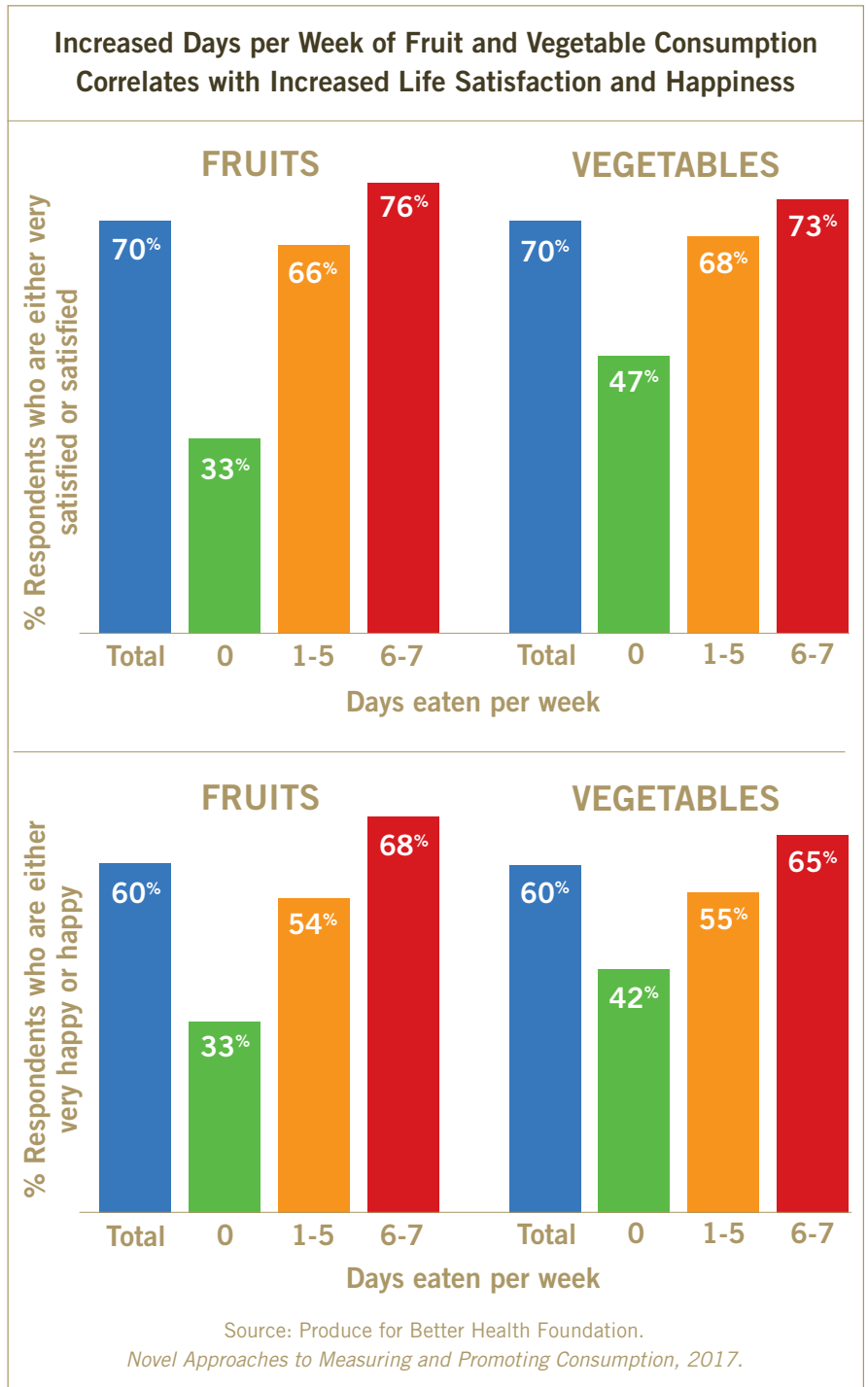
Satisfaction, Happiness, and Outlook on Life

Six out of 10 consumers report being very happy or happy. A positive outlook on life emerged as being a strong predictor of happiness. Eating fruit and vegetables to feel good about oneself also stood out as a predictor of happiness. Conversely, feeling unable to make the most of each day was inversely associated with feelings of happiness.

There is a correlation between number of days in a week one consumes fruit and vegetables and a person's reported level of satisfaction. Those who consumed fruit and vegetables every day of the week were significantly more likely to report being satisfied with their life as a whole. The average reporting satisfaction was 70%, yet 76% percent of individuals who reported eating fruit 6-7 days of the week said they were satisfied with their life as a whole, compared to 66% of those who ate fruit less often and 33% of people who ate no fruit at all. Seventy-three percent of people who ate vegetables 6-7 days of the week said they are satisfied with their life as a whole, compared to 68% of those who eat vegetables less often and 47% of people who eat no vegetables at all.

There is a correlation between number of days in a week one consumes fruit and vegetables and a person's level of happiness. Those who consumed fruit and vegetables every day of the week were significantly more likely to report being happy in the short-term. The average reporting happiness was 60%, yet 68% of individuals who ate fruit 6-7 days of the week said they had been

happy in the last four weeks, compared to 54% of those who ate fruit less often and 33% of people who ate no fruit at all. Sixty-five percent of people who ate vegetables 6-7 days of the week say they had been happy, compared to 55% of those who ate vegetables less often and 42% of people who ate no vegetables at all.



Those who consume fruit and vegetables 6-7 days in a week note a variety of physical, emotional, and social benefits. These included:

1. **Pride in their choices** (“Maintaining my health makes me feel good.” “Eating fruit and vegetables makes me feel good about myself.” “Eating fruit and vegetables makes me feel confident that I’m getting nutrients that I need.”);
2. **Feeling good in their day-to-day activities** (“I am agile and active.” “I have a sharp memory.” “I have more energy when I eat fruit and vegetables.” “If I don’t eat fruit and vegetables regularly, I don’t feel as well.”);
3. **Alleviation of physical ailments** (“Fruit and vegetables help me with bowel regularity.” “Eating fruit and vegetables has helped me avoid taking certain medications.” “Eating fruit and vegetables helps me control my weight.”);
4. **Confidence in their future health** (“I eat fruit and vegetables because I want to stay healthy.” “My lifestyle today will help me live a long, healthy and independent life.”); and
5. **Emotional and social benefits** (“I have a positive outlook on life.” “I enjoy eating fruit and vegetables.” “I eat fruit and vegetables for environmental or ethical reasons.”)

Those who consume fruit and vegetables 1-5 days per week are more likely to note physical and emotional deficits in how they feel. Statements

more frequently agreed upon by this group include:

“I don’t feel engaged and interested in my daily activities.”; “In general, I do not feel energetic day-to-day.”; “I feel unable to make the most of each day.”; “I am not happy with how I look.”; “Compared to others my age, I feel unhealthy.”

Those who do not eat any fruit and vegetables are significantly more likely to report a feeling of hopelessness and disengagement in daily activities.

Statements more frequently agreed upon

by this group include: “I don’t feel engaged and interested in my daily activities.” “I feel unable to make the most of each day.”

Barriers are in the eye of the beholder. Over time, PBH research indicates that consumers consistently report common barriers to fruit and vegetable consumption such as finding options that appeal to the whole family, lack of preparation skills, and physical limitations.³

In the 2017 research, those who consumed fruit and vegetables less than 6 days per week were most likely to cite similar barriers. However, those who consumed fruit and vegetables 6-7 days per week *and* said they were very happy/happy were also significantly likely to agree with barrier statements — indicating that these barriers can be overcome for those committed to a positive lifestyle and outlook. This is one reason that it will always be important to provide practical information and tips to support consumers in increasing fruit and vegetable intake and to use various forms to help alleviate the most commonly reported barriers and needs such as knowledge of storage, seasonality, and cost.

It is important to note that correlations do not necessarily mean causality. More work needs to be completed to fully understand and appreciate the relationship between fruit and vegetable intake, satisfaction, and happiness.



All Forms of Fruit and Vegetables

Freshness is a growing value.

In 2017, more than half of reported produce consumed at home was fresh. Fresh accounted for 60% of all fruit consumed, followed by 100% Juice (14%), canned (10%), frozen (8%), and dried (6%). Only 2% said they never consumed fruit in any format at home. Fifty-two percent of the vegetables consumed at home were fresh, followed by frozen (20%), canned (17%), 100% juice (5%), dried (4%) and only 2% said they never consumed vegetables at home. Women are more likely than men to consume fresh produce while men are twice as likely as women to consume 100% vegetable juice (8% vs. 4% respectively) and one-third more

likely to consume 100% fruit juice (16% vs. 12% respectively).

All forms are associated with higher intakes of fruit and vegetable overall. We know from previously trended PBH research (2012-2016) that in every category, availability of all forms of fruit and vegetables in the home is associated with higher consumption overall.³ Based on the 2017 data, it can also be noted that the preparation of all forms in the home is associated with higher intake of fruit and vegetables overall as well. This is true in the general population, as well as for primary shoppers and adults over 50 years of age.



Audience Segments

Life stage. Retirees report being happier and more satisfied with their lives than others who are still working. Employed individuals (even those the same age as retirees) are more likely to say they eat fruit and vegetables only because someone else advises them to (11% vs. 7% respectively). They are also more likely to consume fruit and vegetables because they want to set a good example for other household members (22% vs. 15% of retirees), for environmental or ethical reasons (22% vs. 16% of retirees), or because it helps them avoid taking certain medications (29% vs. 23% of retirees).

Income. Regardless of age, those in the lower income group report consuming fruit and vegetables less days per week compared to those at a higher income level. Higher income earners report being most motivated by lifestyle and feeling healthy. Lower income earners report needing help overcoming barriers such as different ways to prepare fruit and vegetables, finding options that everyone likes, physical limitations, and sometimes fruit and vegetables not agreeing with them. These income differences are particularly noticeable from age 40 years and onward. Across age groups, those with lower incomes are significantly less likely to describe themselves as *“agile and active”* and less likely to predict that *“my lifestyle today will help me live a long, healthy and independent life.”*

Age. Those in their 40s report the lowest levels of satisfaction with life and happiness. This period of discontent follows the sweet spot of the 30s decade where 77% report being happy/very happy (vs. 62% in their 40s). As individuals age beyond their 40s, they report higher levels of satisfaction with life, happiness and more positive attitudes.

Additionally, as individuals get older, their attitudes toward fruit and vegetables become more positive. Older adults are more motivated by long- and short-term lifestyle benefits of eating healthfully



(e.g., feeling good about their health and physical appearance, living longer, etc.) and are more likely to report consuming fruit and vegetables for internally-motivated reasons compared to younger adults who are more likely to report consuming them because they were told to, prepared for them, etc. Those in the younger age groups are more likely to report eating fruit and vegetables for environmental or ethical reasons.

Generally, the state of happiness and satisfaction of those over 50 years of age is consistent with the general population with seven in ten reporting being satisfied with their life as a whole and six in ten reporting being happy over the past four weeks.

Implications and Opportunities

With consumers' view on health and wellness expanding and evolving, it will be even more critical to meet consumers where they are with emotionally compelling messages and realistic strategies to ensure fruit and vegetable intake becomes both inspiring and actionable. Knowing that fruit and vegetable consumption is habitual, it will be important to help Americans find ways to add to the number of days they are consuming fruit and vegetables, as well as the amount they are consuming per day. We can start by helping consumers move incrementally toward closing the "reported gap" of about one cup each of fruit and vegetables per day.

Opportunities to Create Demand and Drive Consumption

Be realistic by nudging Americans on their path to eating *ONE MORE*.

- Start with ONE MORE day per week and ONE MORE cup per day to close the reported consumption gap.
- Show consumers how actionable and doable it is to increase consumption by 1 cup of fruit and 1 cup of vegetables per day using examples of a variety of choices and forms (i.e. fresh, frozen, canned, dried, and 100% juice).

Be inclusive by promoting fruit and vegetable intake using all forms language that provides solutions for every lifestyle.

- Exposure to recommendations promoting all forms increased consumers' intent to purchase packaged fruit and vegetables, without decreasing their intent to purchase fresh produce.⁵
- Trended research consistently shows that availability of all forms of fruit and vegetables in the home are associated with increased intake overall. This is also true for preparation of all forms in the home.

Be compelling and relevant by acknowledging the benefits that fruit and vegetables provide to overall well-being. Help consumers identify potential benefits beyond those they typically think of (e.g., pride in their choices, confidence that they will feel good physically now and into the future, and other emotional and social benefits).

Be resourceful. Stay connected with PBH and Fruits & Veggies—More Matters®.

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