PBH® FOUNDATION

STATE OF THE PLATE

America's Fruit & Vegetable Consumption Trends

2020 EXECUTIVE SUMMARY

PRODUCE FOR® BETTER HEALTH FOUNDATION

ABOUT THE PRODUCE FOR BETTER HEALTH FOUNDATION

Produce for Better Health Foundation (PBH), a nonprofit 501(c)(3), is the only national organization dedicated to helping consumers live happier, healthy lives by eating more fruits and vegetables, including fresh, frozen, canned, dried and 100% juice, every single day.

PBH's award-winning Have A Plant® Movement reaches millions of consumers and influencers by tapping into the emotional connection felt during the fruit and vegetable eating experience and in turn, inspiring lasting behavior change. #haveaplant

PBH is also responsible for the Lead The Change Movement — a multi-sector, multi-year initiative designed to maximize the power of PBH's unique thought leadership position, widespread influencer network, credible scientific and market research as well as its innovative members and partners, to lead a call-to-action for addressing the global fruit and vegetable consumption crisis.

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INTRODUCTION

The importance of eating fruits and vegetables has long been recognized as core to any healthy eating strategy, and its role continues to be emphasized today even as science evolves. The *2015-2020 Dietary Guidelines for Americans* (DGA) were the first of their kind to recommend that following a healthy dietary pattern (defined as the combination of foods and beverages that constitute an individual's complete dietary intake over time) be the focus to reach the destination of achieving short- and long-term health benefits.[1] Within healthy dietary patterns, the 2015-2020 DGA prominently featured fruits and vegetables.[1]

As the Produce for Better Health Foundation (PBH) prepared to release insights from its ***2020 State of the Plate: America's Fruit & Vegetable Consumption Trends*** research, the 2020-2025 DGA were released. The new DGA drilled down to specify a series of beneficial outcomes associated with following a healthy dietary pattern, including reducing the risk of all-cause mortality, cardiovascular disease, overweight, obesity, type 2 diabetes, certain cancers, and promoting bone health.[2] As in the previous edition, the 2020-2025 DGA emphasized the important role fruits and vegetables play as components of healthy dietary patterns.[2] They also underscored their dramatic and chronic underconsumption among Americans across *all* ages and life stages.[2]

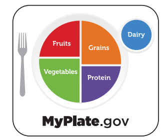
We are experiencing a fruit and vegetable consumption crisis that is affecting our health and happiness.

The vast majority of Americans do not meet recommended fruit and vegetable intake with 80% under-consuming fruit and nearly 90% under-consuming vegetables.[2] Further, this underconsumption is not only pervasive but also persistent. Government data shows average intakes of fruits and vegetables have remained unchanged between the 2003-2004 and 2015-2016 National Health and Nutrition Examination "What We Eat In America" Surveys.[3] More concerning is what this national consumption data does not show — the changing behaviors behind fruit and vegetable intake.

The 2020 *PBH State of the Plate* research, conducted in partnership with The NPD Group, utilizing the National Eating Trends® (NET®) database, illuminates these behaviors — namely that **Americans have decreased their fruit and vegetable eating occasions by nearly 10% since 2004**. This is particularly concerning through the lens of behavioral science, which places a premium on habit and repetition as precursors to lasting behavior change. In fact, PBH's own research shows that, with increased days of consumption, come greater intakes of fruits and vegetables.[4]

For all these reasons and more, a decline in fruit and vegetable eating occasions does not bode well for the future of fruit and vegetable intake. Government, public health professionals, and the produce industry, in addition to many others, have invested in, and worked toward, increasing consumption for decades. MyPlate, and its accompanying message to "make half your plate fruits and vegetables" visually punctuates the role of produce on the plate. Yet, to date, intake remains disappointing and subpar.

EVIDENCE OF A GROWING CONSUMPTION CRISIS



Make half your plate fruits and vegetables.

Approximately 9 in 10 Americans do not eat enough fruits and vegetables.[5]

The amount of fruits and vegetables consumed between 2003-2004 and 2015-2016 has not changed significantly.[3]

Average vegetable consumption was 1.5 cups/day in 2003-2004 and 1.4 cups/day in the 2015-2016 survey.

Average fruit consumption was 1.0 cups/day in 2003-2004 and 0.9 cups/day in the 2015-2016 survey.

The average adult consumes 1.6 cups[3], of the recommended 2-4 cups/day[2], of vegetables.

The average adult consumes and 0.9 cups[3] of the recommended 1 ½ - 2 ½ cups/day of fruit.[2]

OVERVIEW

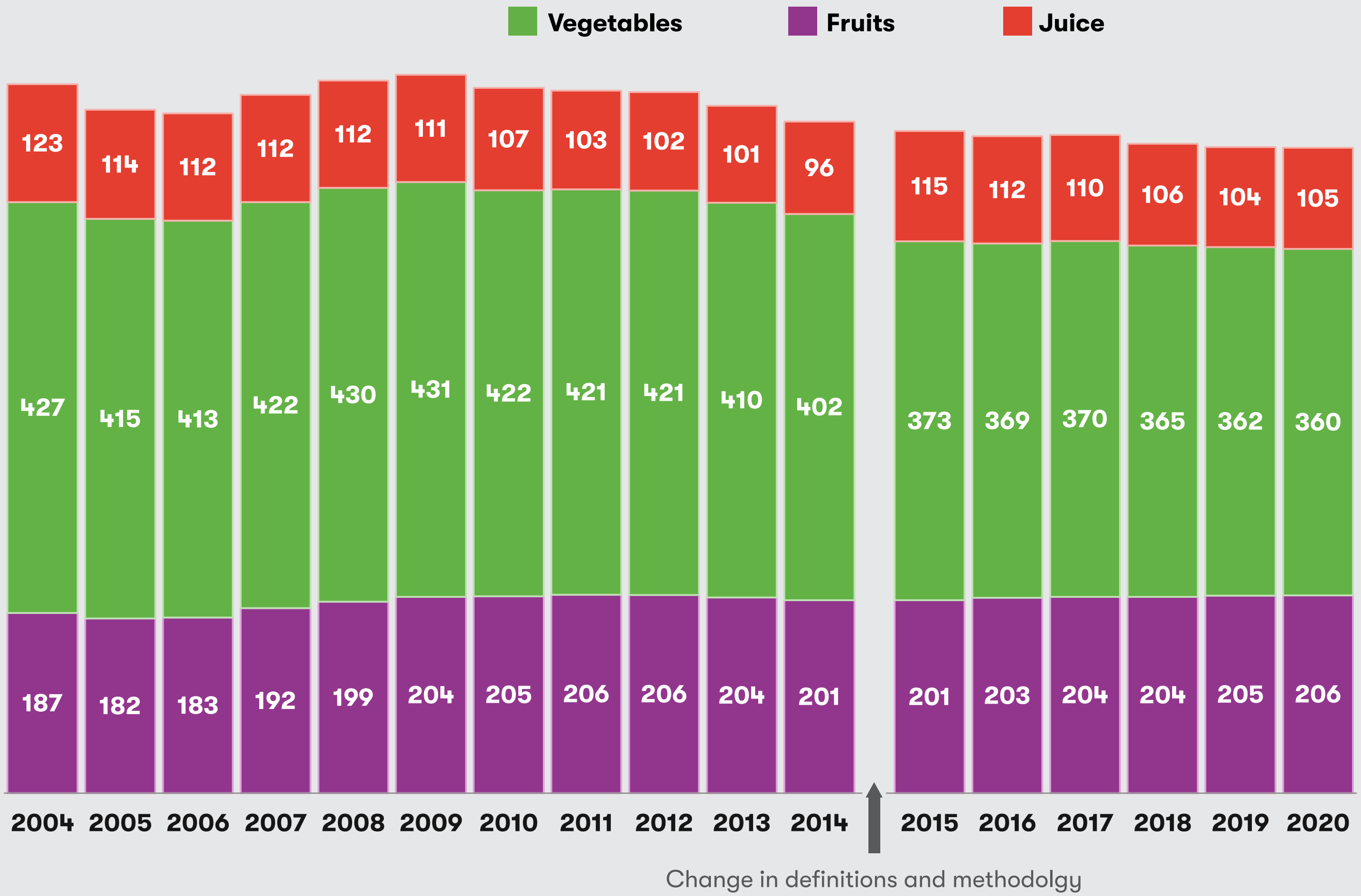
Every five years, PBH commissions The NPD Group to conduct an in-depth analysis of fruit and vegetable consumption trends, based on the National Eating Trends® (NET®) database, which captures intake of all foods and beverages individuals consume in- and away-from-home. The *2020 PBH State of the Plate: America's Fruit & Vegetable Consumption Trends* research covered intake between 2015-2020 and was concluded prior to the COVID-19 pandemic. This year's research was particularly comprehensive, including annual fruit and vegetable consumption frequency; drivers of consumption patterns; specific changes in consumption behaviors; common food pairings; and in-depth segmentation of heavy, medium, and light fruit and vegetable eaters and non-eaters. Findings are covered in this report and demonstrate concerning trends, but also insights into opportunities to improve intake.

KEY FINDINGS

Fruit and vegetable eating occasions continue to decline. Over the past 16 years, the frequency in which Americans consume produce has decreased by nearly 10%. This amounts to a loss of at least one fruit/vegetable eating occasion per week. Between 2015-2020 alone, consumption declined by 3%, indicating that the trend is worsening every year. Within the fruit, vegetable, and juice categories, the most significant contributors have been decreased vegetable consumption frequency (down 16% since 2004 and 4% in the past five years) and a reduction in juice (down 15% since 2004 and 8% in the past five years). Fruit eating occasions (excluding juice) grew 10% between 2004-2020 and 3% between 2015-2020. Yet, even this growth in whole fruit intake over time has not been enough to overcome the net decline.

AMERICA'S FRUIT, VEGETABLE & JUICE CONSUMPTION

Annual Eatings Per Capita, 2004-2020



% CHANGE

2004 vs. 2020

Total Consumption, -9%
Vegetables, -16%
Fruits, +10%
Juice, -15%

2015 vs. 2020

Total Consumption, -3%
Vegetables, -4%
Fruits, +3%
Juice, -8%

While most Americans consume produce, many only eat fruits and vegetables one time, or less, each day.

Vegetables are consumed, on average, 7.5 times per week. Fruits are consumed, on average, 5.8 times per week.

Those who typically eat the most fruits and vegetables now appear to be eating them less often.

While 95% of individuals eat vegetables at least once during the week, vegetable eating occasions have declined in 5 out of 8 age groups between 2015-2020.

The greatest loss of 47.9 annual eating occasions is seen among adults ages 51-70 years — the second highest consumer of vegetables, behind those 71+ years.

Nearly one-fourth of individuals do not eat any fruit over the course of the week. Further, consumption trends in key age groups are moving in the wrong direction.

Young children ages 1-3 years typically eat fruit more often than any other age group. Yet, between 2015-2020, their fruit intake declined the most with a loss of 16.6 annual eating occasions.

Fruit and vegetable consumption patterns are different.

While we often talk about fruits and vegetables, collectively, there is wide variability between how individuals approach and consume them.

CONSUMPTION TRENDS BY TOPIC

Fruits

Approximately three-fourths of the population consume fruit at least once during the week. Children's intake declined between 2015-2020. In addition to declining intake among children 1-3 years old, there is a slight decrease of 3.3 annual eating occasions among those 4-8 years old. Eating frequency, however, is growing, even slightly, among the majority of age segments.

Annual Eating Occasions Per Capita Change

9-13 years old, +20.1
14-18 years old, +16.1
19-30 years old, +9.9
31-50 years old, +0.9
51-70 years old, +0.5
71+ years old, +5.4

TOP FRUITS CONSUMED BY FREQUENCY

Annual eating occasions per capita

1. Bananas, 41.9
2. Apples, 28.2
3. Strawberries, 13.7
4. Oranges, 12.8
5. Grapes, 12.6
6. Blueberries, 11.7
7. Applesauce, 7.3
8. Watermelon, 5.8
9. Lemons, 5.7
10. Fruit salad, 4.9
11. Peaches, 4.7
12. Pineapple, 4.3

TOP FRUITS CONSUMED BY VOLUME

Average cups per occasion

1. Melons, 2
2. Apples, 1.3
3. Peaches, 1.2
4. Citrus, 0.9
5. Bananas, 0.9
6. Applesauce, 0.7
7. Berries, 0.7
8. Grapes, 0.6
9. Dried fruit, 0.5
10. Single/mixed nuts, 0.4

TOP GROWING FRUITS

Annual eating occasions per capita change, 2015-2020

1. Bananas, +2.3
2. Grapes, +1.9
3. Blueberries, +1.8
4. Strawberries, +0.9
5. Oranges, +0.7

TOP DECLINING FRUITS

Annual eating occasions per capita change, 2015-2020

1. Raisins, -1.3
2. Mixed Fruit, -0.8
3. Peaches, -0.8
4. Cantaloupe, -0.6
5. Pineapple, -0.5
6. Apples, -0.2

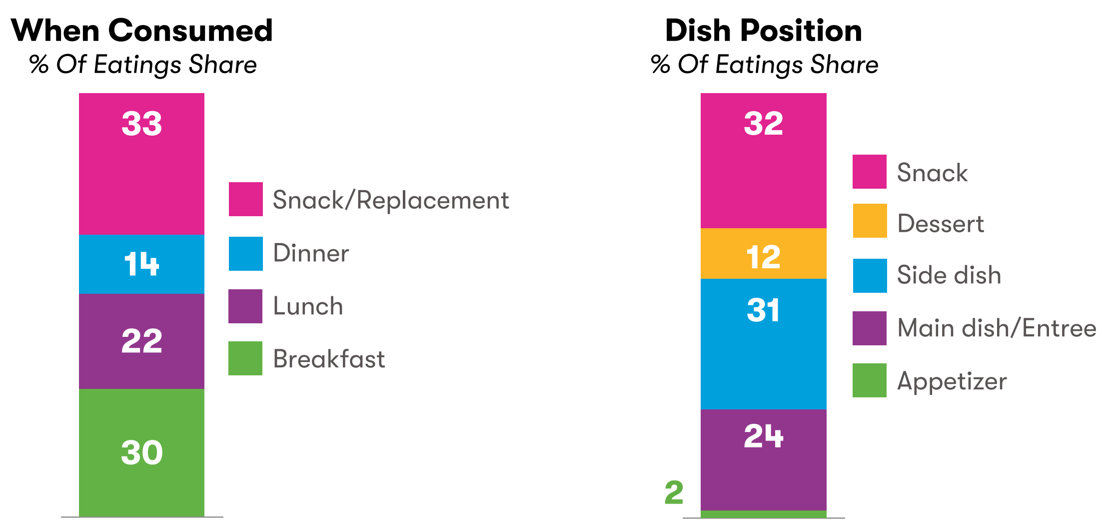
Since 2015, fruit (excluding juice) has experienced slight increases (five annual eating occasions) in net consumption frequency. Nearly three-quarters (72%) of fruit is consumed at home and at-home consumption is growing in frequency. Away-from-home intake has remained flat. Across daypart and dish type, fruit shows versatility. Thirty-two percent of the time, fruit is consumed as a snack, followed by 31% as a side dish, 24% as a main dish or entrée, and 12% as dessert. Fruit is consumed throughout the day (30% at breakfast; 22% at lunch; 14% at dinner; 33% in snacks) and its use as a snack and side dish is growing. Fruit consumed as a dessert has remained flat.

Bananas are the top fruit consumed followed by berries, and both (bananas, blueberries/ strawberries) have seen growth in recent years. Apples round out the top three but have seen declines in the previous five-year period.

Fruit is consumed "as is" (vs. as an ingredient) **the majority (>80%) of the time.** When consumed as is, the fruit eaten in the highest quantities at one time include melons (more than 2 cups), apples and peaches (more than 1 cup), and citrus and bananas (just less than 1 cup). When used as an ingredient or addition, the top foods paired with fruits are breakfast favorites like hot cereal, cold cereal, and yogurt.

According to the 2020-2025 DGA, adults, on average, are eating just less than 1 cup of fruit per day (0.9 cup).[2] This is consistent with the *2020 PBH State of the Plate* data that show the average consumption of fruit at less than one eating occasion per day and average amount consumed per occasion at just under one cup. (For reference, the recommendation for the average adult is 1 ½-2 ½ cups of fruit/day.)[2]

FRUITS — WHEN & HOW CONSUMED



By all accounts, fruit has wide appeal. It sees somewhat balanced consumption throughout meal and snack occasions and is versatile across multiple dish positions.

The exception is appetizers, representing a growth opportunity for fruits.

Vegetables

Vegetable intake typically increases with age (307 annual eating occasions in children 1-3 years old compared with 474 annual eating occasions in adults 71+ years old). **However, the total number of vegetable eating occasions has been declining for at least the past 16 years**. Only three groups increased eating occasions — 14-18 year olds (+16.3 annual eating occasions), 19-30 year olds (+15.1), and 71+ year olds (+9.3). The following five age segments declined:

Annual Eating Occasions Per Capita Change

1-3 year olds, -5.8

4-8 year olds, -6.6

9-13 year olds, -33.2

31-50 year olds, -14.4

51-70 year olds, -47.9

TOP GROWING VEGETABLES

Annual eating occasions per capita change, 2015-2020

1. Potatoes (including fries), +5.3
2. Caesar Salad, +2.5
3. Avocados, +1.2
4. Tomato Sauce/Paste, +0.9
5. Tomato Salsa, +0.9

TOP DECLINING VEGETABLES

Annual eating occasions per capita change, 2015-2020

1. Onions, -7.2
2. Tomatoes, -6.3
3. Green Salads, -6.0
4. Lettuce, -5.4
5. Carrots, -3.9

TOP VEGETABLES CONSUMED BY FREQUENCY

Annual eating occasions per capita

1. Lettuce/vegetable salads, 61.2
2. French fries, 45.3
3. Onions, 31.6
4. Tomatoes, 27.1
5. Carrots, 20.8
6. Mashed potatoes, 19.0
7. Beans/legumes, 18.3
8. Corn, 15.7
9. Peppers, 14.7
10. Broccoli, 13.7
11. Green beans, 13.7
12. Baked potato, 11.2
13. Celery, 8.7

TOP VEGETABLES CONSUMED BY VOLUME

Average cups per occasion

1. Lettuce/salads, 2.9
2. French fries, 2.1
3. Green beans, 1.6
4. Broccoli, 1.5
5. Beans/legumes, 1.4
6. Corn, 1.2
7. Carrots, 0.9
8. Mashed potatoes, 0.9
   Peppers, 0.8
9. Tomatoes, 0.7

Between 2015-2020, vegetable intake declined by 13 eating occasions annually (4%). While away-from-home eating occasions grew (+10), in-home occasions declined (-24) at double the rate, resulting in a net decrease. Vegetables are eaten largely as part of dinner (58% dinner; 6% breakfast; 30% lunch; 6% snacks) and are consumed as a side dish in more than half (56%) of the eating occasions. About one-third of the time (38%) vegetables are consumed as a main dish or entrée.

Vegetables are eaten "as is" (vs. as an ingredient) about three-quarters of the time. Otherwise, vegetables pair well in a variety of dishes including salads, sandwiches, and ethnic cuisine (e.g., Italian, Mexican, Asian dishes). When consumed as is, the vegetables eaten in the highest quantities at one time include lettuce/salads (close to 3 cups), French fries (about 2 cups), and green beans, broccoli, beans/legumes (about 1.5 cups).

Eating occasions that included avocados and tomato-based products (e.g., sauce, paste, salsa) grew between 2015-2020. Potatoes have long been a bright spot for the vegetable category. Still, salads, the most popular vegetable type, have seen the largest declines since 2015. Other favorites including onions, tomatoes, and carrots have also declined. If staples such as salads, vegetable side dishes, and the vegetables that accompany burgers and sandwiches continue to decline, this could be very damaging for vegetable intake going forward.

According to the 2020-2025 DGA, the average daily vegetable consumption among adults is 1.6 cups.[2] This is consistent with the *2020 PBH State of the Plate* data that shows the average consumption of vegetables at approximately one eating occasion per day and average amount consumed at a time as 1.4 cups. (For reference, the recommendation for the average adult is 2-4 cups/day.)[2]

Juice

Eating occasion losses are occurring across all age groups with the most notable being 1-3 year olds who are down 40.9 annual drinking occasions per capita.

Half of the population (52%) are drinking juice over the course of the week with the average individual drinking juice four times per week. In-home occasions are down (-12 annual eating occasions), while away-from-home intake is slightly up (+3 annual eating occasions) for a net loss of 10 annual eating occasions. This equates to an 8% decline between 2015-2020.

Orange juice continues to be the most popular juice consumed followed by apple and cranberry. However, these traditional favorites have seen recent declines while lemon juice is one juice seeing a bump in juice occasions. Nearly three-quarters (74%) of juices are consumed in-home and about 70% of that juice is sourced from grocery retail. Close to half of juice consumption (46%) occurs at breakfast.

Juice consumption declined by 8% between 2015-2020.

TOP GROWING JUICE

Annual drinking occasions per capita change, 2015-2020

1. Lemon Juice, +1.2
2. Fruit Smoothies, +0.2
3. Lime Juice, +0.2

TOP DECLINING JUICE

Annual drinking occasions per capita change, 2015-2020

1. Fruit/Veg Blend, -3.1
2. Orange Juice, -2.9
3. Grape Juice, -1.4
4. Cranberry Juice, -1.1
5. Apple Juice, -0.9

TOP JUICE CONSUMED BY FREQUENCY

Annual drinking occasions per capita

1. Orange juice, 41.9
2. Apple juice/cider, 24.5
3. Cranberry juice, 7.3
4. Lemon juice, 6.3
5. Grape juice, 5.1
6. Fruit/vegetable juice blend, 2.8
7. Coconut water, 2.5
8. Smoothie, fruit based, 2.2
9. Vegetable juice, 1.8
10. Grapefruit juice, 1.4
11. Lime juice, 1.2
12. Tomato juice, 0.7

TOP JUICE CONSUMED BY VOLUME

Average ounces per occasion

1. Grapefruit juice, 10.3
2. Orange juice, 9.4
3. Pomegranate juice, 9.1
4. Vegetable juice, 8.9
5. Tomato juice, 8.7
6. Grape juice, 8.5
7. Fruit/vegetable juice blend, 8.4
8. Cranberry juice, 7.9

Motivators & Habits

Just over one half of adults say they are making an effort to eat more fruit (53%) and vegetables (56%) and the desire to eat more increases with age. Overall motivation to eat more fruits and vegetables remained unchanged between 2015-2020.

Motivators for choosing fruits and vegetables are similar yet ranked differently. Americans report their top motivators for eating fruit are: health and nutrition (34.1% of eating occasions), ease (33%), and “it’s a favorite” (27.9%). The reasons to eat vegetables mirror fruit, but in a different order — “it’s a favorite” is first (29.2%), followed by ease (24.8%), and finally, healthfulness (22.2%). [see chart]

TOP FRUIT & VEGETABLE MOTIVATORS

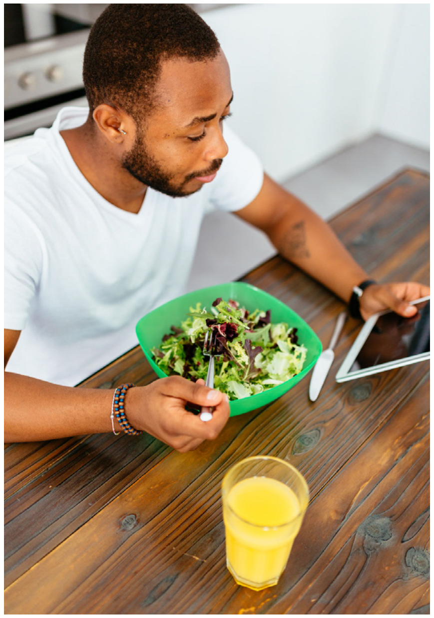
Which of the following describes why the [fruit item] was chosen?

Rank	Motivators	% Of Occasions
1	*It was healthy/ nutritious*	34.1
2	*It was quick/ easy to make/ get*	33.0
3	*It’s a favorite*	27.9
4	*I regularly serve or have*	23.0
5	*It was made with items on hand*	18.5

Which of the following describes why the [vegetable item] was chosen?

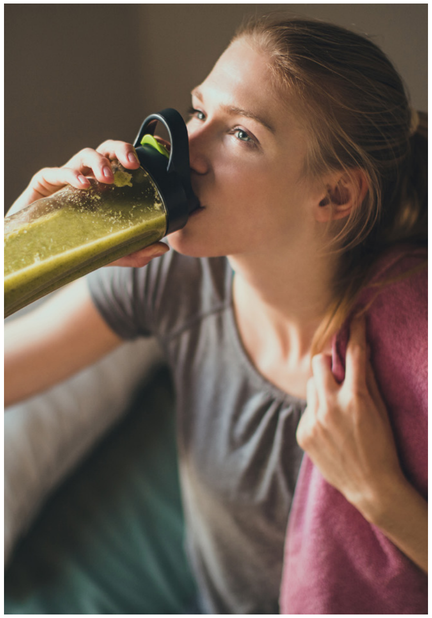
Rank	Motivators	% Of Occasions
1	*It’s a favorite*	29.2
2	*It was quick/ easy to make/ get*	24.8
3	*It was healthy/ nutritious*	22.2
4	*It was made with items on hand*	19.2
5	*Satisfied craving/ specific taste*	15.5

Compared to other foods, consumers say that fruit is healthy to eat, part of their routine, and on hand. Similarly, they say that they eat vegetables because they have them on hand and because they are healthy. Building fruit behaviors into daily life and having vegetables on hand are examples of two behavioral tenets — routine and ease — that can be reinforced and result in lasting fruit and vegetable consumption habits.



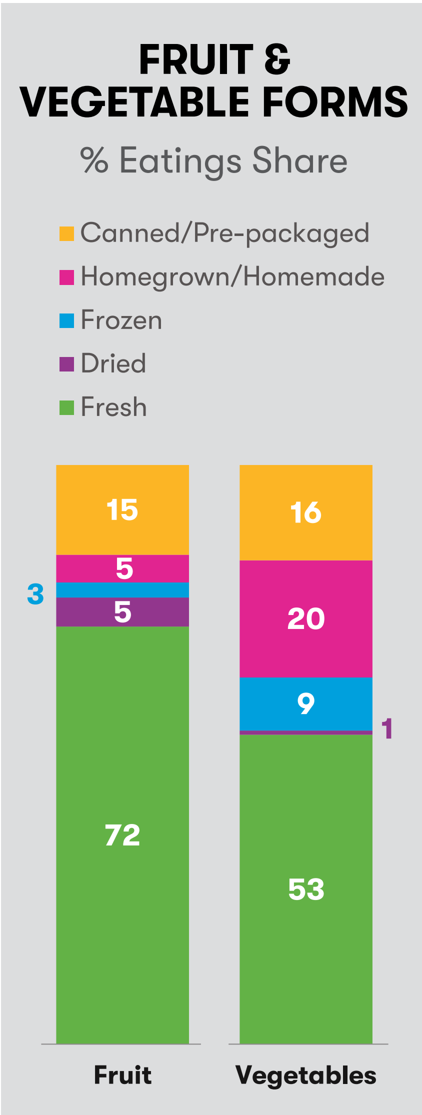
Consumers express the same top barriers in relation to eating fruits and vegetables, and in almost the exact percentages. Top barriers include finding new menu ideas (31% for both fruits and vegetables); staying within budget (30% for both fruits and vegetables); planning healthy meals (29% for vegetables and 30% for fruit); and finding meals quickly (26% for both fruits and vegetables).

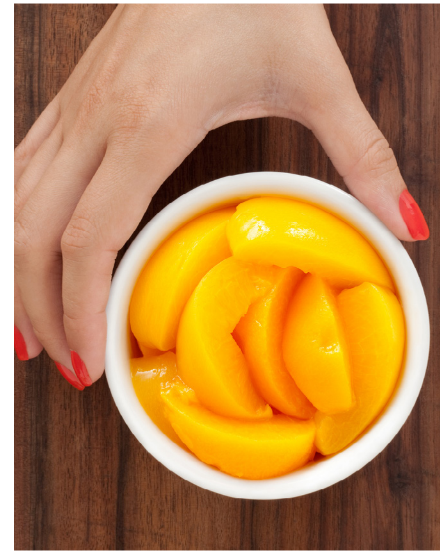
From a health and nutrition perspective, consumers say they are trying to get more protein (61%), vitamin C (56%), whole grains (52%), and fiber (52%). Vitamin C and fiber are firmly in the sweet spot when trying to effect increases in produce consumption. Interest in perceived health- and nutrient-related benefits (e.g., organic, probiotics, antioxidants, fiber) increases with consumption of fruits and vegetables, potentially related to the emotional and motivational power of health.



Those consuming higher amounts of fruits and vegetables tend to have greater desire and ability to plan. This is consistent with the *2017 PBH Novel Approaches to Measuring and Promoting Fruit and Vegetable Consumption research*[4], which showed that those who consume more fruits and vegetables encounter the same barriers as those who consume less — yet they make consumption happen in spite of the barriers.[4]

Fruit & Vegetable Forms





More than half the fruits and vegetables consumed are fresh, currently 53% and 72%, respectively. Market share of fresh produce increases with each *PBH State of the Plate* report, while other forms (frozen, canned, dried, and 100% juice) decline or remain stable. Among those who eat fruits and vegetables, vegetables are more likely than fruit to be consumed in other forms such as frozen (34.7% vs. 4.3%) and shelf stable (51.4% vs. 29.2%).

About one-third of the population consumes frozen vegetables, while a much smaller percentage (<5%) consume frozen fruit. Intake of frozen vegetables has decreased slightly from 2015-2020. Medium and heavy fruit and vegetable eaters are most likely to choose frozen forms compared with light eaters.

Consumption of canned and dried produce is flat between 2015-2020. Shelf-stable intake is greatest among light fruit, vegetable, and juice consumers and then decreases as individuals consume more often.

The *PBH State of the Plate* data was collected pre-pandemic. Other data collected throughout the pandemic indicate growth of additional fruit and vegetable forms beyond fresh.

Pairings & Settings

Fruit is most often paired with cereal, both hot and cold; salads are the top vehicle for vegetables. Other breakfast and snack options (e.g., yogurt, smoothies, and salads) are also common pairings for fruit. Additionally, sandwiches, ethnic mixed dishes (e.g., Italian, Asian, Mexican), and burgers rise to the top of vegetable pairings, and could be utilized more as a vehicle for increasing vegetable eating occasions. Other pairing ideas include animal- and plant-based protein foods as well as seafood.

Light fruit and vegetable eaters consume produce away-from-home more often than other segments, perhaps because it is easy. About one-quarter of vegetable purchases are sourced from foodservice including cafeterias and restaurants (quick- and full-service). Fruit consumed in quick- and full-service restaurants largely remained stable between 2015-2020, while vegetables consumed through quick-service establishments grew by 40% for eating occasions that included French fries and 48% for those not including French fries.

THE PATH FORWARD

Perspectives From PBH President & CEO Wendy Reinhardt Kapsak, MS, RDN

At PBH, we believe we must act now to help Americans easily eat and enjoy (and maybe even love) more fruits and vegetables. And we must do so together, to effectively create sustained and impactful behavior change. A multi-sector approach, reaching all points across the produce supply chain, in concert with the broader food system, will be critical to create "surround sound" action emphasizing behavior-based solutions.

Our Opportunity

International dietary guidance is clear: Eating more fruits and vegetables, in all forms, is the single most important thing ALL people can do — at every age and stage of life — to improve overall health and well-being. Based on the *2020 PBH State of the Plate* research findings, and consistent with the 2020-2025 DGA, it will be of the utmost importance for Gen Z and millennials to start early to establish good fruit and vegetable habits and enjoyment in their children, within their families, and for themselves. It will also be critical to act immediately and decisively to preserve fruit and vegetable intake in older adults and guard against further attrition.

Ultimately, we need to start with understanding consumer behavior — including our own. The entire food system must reinforce fruit and vegetable consumption norms to collectively help create a next generation of fruit and vegetable super eaters. Public health as well as food and nutrition communicators must connect with consumers in meaningful ways — encouraging ease and enjoyment while also capitalizing on the interest in health and nutrition benefits among medium and heavy produce consumers and inspiring them to share the feel-good, motivating successes among their social circles.

Industry stakeholders must also unite to help enact multi-sector, food systems-based change. Consumer behavior trends reinforce the need for all sectors to collaborate and facilitate new fruit and vegetable consumption trends by enabling more enjoyable and more accessible experiences wherever and whenever people make food and beverage decisions, so eating fruits and vegetables becomes a crave-worthy and easy habit.

America's widespread underconsumption of fruits and vegetables is a vulnerability that the COVID-19 pandemic further illuminated. Eating foods that preserve one's physical and mental health, as well as bolster immunity, has never been more top-of-mind. Further, factors such as mobility to access healthful foods and/or grocery shop, as well as illness and/or reduction in or loss of income, secondary to the virus, all play a role in rising food and nutrition insecurity levels. These reasons, among others, indicate that consumer shopping, preparation, and eating behaviors have shifted since this research was fielded. In fact, in the weeks following stay-at-home orders, large percentages of consumers reported having can, cup, pouch, frozen and juice forms of fruits and vegetables on hand. Additionally, purchase of juicing equipment increased by double-digits during the pandemic among other household cooking appliances. Clearly, the next *State of the Plate* research will be a telling analysis, to help us understand how the pandemic affected fruit and vegetable behaviors well-beyond this tumultuous time.

COVID has shone a light on a reality that the fruit and vegetable industry and other food system thought leaders have long known — that facilitating consumption of produce in all forms (fresh, frozen, canned, dried, and 100% juice) will be key in resolving the pervasive and worsening consumption crisis. The pandemic has disrupted all aspects of our lives, including all points of the food system supply chain, leaving many in search of what behavioral scientists call a "fresh start" moment. **If a global pandemic does not change fruit and vegetable consumption behaviors, what will?**

PBH KNOW-FEEL-DO™ Behavioral Framework

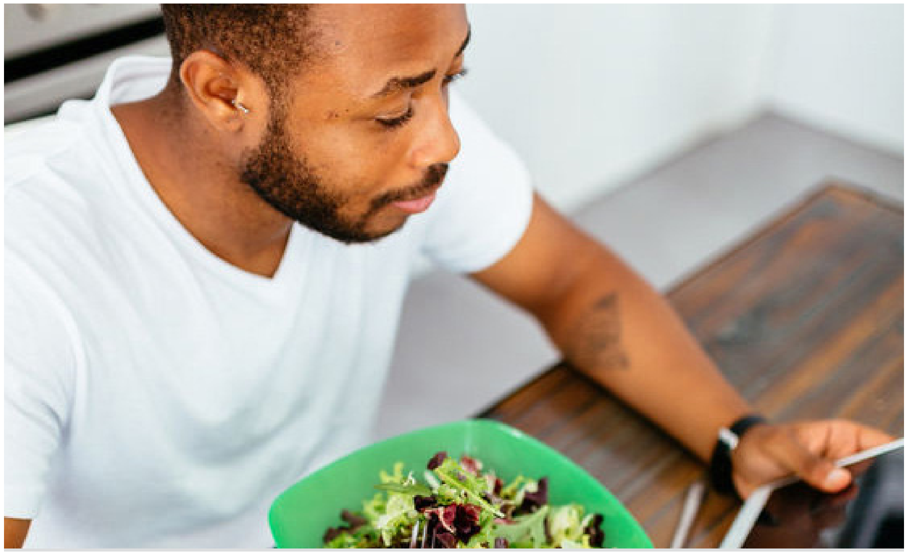
PBH remains committed to working with multi-sector stakeholders to identify, innovate and implement behavior science-based solutions to reverse the continued erosion of fruit and vegetable intake. To focus on shifting Americans' consumption behaviors, PBH has engaged behavioral science experts to develop a framework for supporting Americans in eating and enjoying more fruits and vegetables. This framework identifies three drivers of eating behavior: 1) what we KNOW; 2) what we FEEL; and 3) what we DO.

Most Americans already KNOW fruits and vegetables support better health and well-being — yet knowledge alone does not yield new fruit and vegetable consumption behaviors. Experts agree that effective consumer education and engagement must lean into how people FEEL about eating fruits and vegetables and then inspire environments that make DOing easy and habitual.

Knowing the importance of eating fruits and vegetables is not enough. We must also focus on creating emotional pulls (feel) and making it easy for people to act on this knowledge and emotion (doing).

Repeated exposure to fruits and vegetables is likely to lead to longer-term habits (easier doing), and also to increased enjoyment of these foods (more feelings).

We must make it easy for consumers at all stages of the fruit and vegetable consumption journey — from finding and buying, to storing and prepping, and ultimately, to eating and enjoying. If it is not easy and somewhat enjoyable, people are not likely to add more fruits and vegetables to their routines, and consumption will continue to decline.



As we work together to make fruit and vegetable behaviors easy, the focus should be on creating sustainable habits rather than achieving recommended goals.

That is, instead of telling people HOW MANY fruits and vegetables they should eat each day, let's inspire them with realistic, everyday habit-forming ideas — such as aiming to eat fruits or vegetables first at a mealtime, such as breakfast, lunch or dinner, on most days. Or better yet — simply Have A Plant®! Habit formation requires a consistent context, repetition and reward. In order to become a habit, the behavior has to become automatic, or EASY.

New fruit and vegetable habits are more likely to be attained when built upon current consumption behaviors and when paired with other foods.

Fruit is fairly versatile, primarily consumed at breakfast, lunch, and as snacks — with snacking and side dish occasions driving growth for this category. Vegetables, on the other hand, are generally consumed at dinner as a side dish. There's an opportunity to help consumers with new habits built upon when and how they typically enjoy fruits and vegetables.

In addition, fruits and vegetables are less frequently consumed as an ingredient — indicating room for growth. We know people are adding fruits to hot and cold cereals, as well as yogurt; and that they're trying vegetables in a variety of dishes including salads, sandwiches, and ethnic cuisine (e.g., Italian, Mexican, and Asian dishes). Let's inspire them with new ingredient ideas and delicious flavor combinations born out of these insights and celebrate how consumers can easily enjoy adding fruits and vegetables to favorite meals and snacks.

LEAD THE CHANGE MOVEMENT

We owe it to Americans to help them easily eat and enjoy (and maybe even love) more fruits and vegetables for improved health and happiness.

With fruit and vegetable intake consistently declining in the past 16 years, industry and food systems thought leaders must act differently, and quickly, to reverse the trend by enabling and empowering new, sustainable fruit and vegetable behaviors that bring the KNOW-FEEL-DO™ Behavioral Framework to life.

Determined to shift consumption trends for the future, PBH and its members have declared the next five years "A New Era of Conscious Consumption," with an emphasis on helping *all* Americans *easily enjoy* more fruits and vegetables every day.

While many Americans know "conscious consumption" benefits their health and wellbeing — as well as their families, communities and environment — this mindset may sound daunting and unattainable. PBH's insights stress fruit and vegetable behaviors must be easily transitioned into new habits; this new era of conscious consumption will flip the philosophy on its head to consciously make new fruit and vegetable eating habits unconscious, automatic, and enjoyable behaviors.

To facilitate this new era of conscious consumption, PBH has initiated the Lead The Change Movement, which includes three actions to unify consumption efforts:

1. Conducting consumer behavioral research to identify trends and increase new, more sustainable fruit and vegetable eating habits;
2. Assembling a multi-sector coalition focused on collaborating and celebrating innovations to support consumers in their new fruit and vegetable behaviors; and
3. Convening the first-ever National Fruit & Vegetable Consumption Summit in 2022, to further emphasize behavior-based opportunities for elevating fruit and vegetable consumption as a national priority.

We invite the entire food system — from farms and academic centers to suppliers, retailers, manufacturers, culinary leaders to food and lifestyle influencers and public health experts — to join this effort and collectively reverse America's chronic consumption crisis.

APPENDIX

Research Methodology

The Produce for Better Health Foundation (PBH) commissions The NPD Group to complete the *PBH State of the Plate: America's Fruit & Vegetable Consumption Trends* research utilizing their National Eating Trends® (NET®) database, which provides a complete view of consumption habits by capturing the who, what, where, when, why, and how for all foods and beverages and all situations — both in and away from home. This in-depth analysis of fruit and vegetable consumption trends is conducted every 5 years.

Specifically, this *PBH State of the Plate* report is based on NET® data collected from a panel of participants for two years ending February 2020 by The NPD Group. Unless otherwise noted, all data in this document is from this data source.

Participants report all foods and beverages consumed in the home or away from home on an individual level for a one-week period. Data was collected for approximately 38,000 individuals. Every day a new wave of respondents start their seven-day reporting period capturing seasonal variation of habits. Data measurement is an eating occasion, with respondents reporting the estimated amount consumed at the occasion, which is then converted into cups. The NET® sample is weighted to be nationally representative of the total U.S. population using U.S. Census Bureau targets for age, gender, household income, household size, presence of children, and nine Census Division geographies.

Fruit and vegetables consumed "as is" were analyzed, as well as those used as an addition or ingredient to other dishes. All consumption represents total in home (eaten at home and carried-from-home) and away from home (eaten on/off premise) unless otherwise noted.

Sample Design	Data Collection	Scope	Reporting Period	Annual Yield
• Individual sample; infants, children, adults (all ages) • Weighted to U.S. Census targets for age, gender, and other key demos	• Two instruments: 1) Web-based Journal 2) Post Journal survey (attitudes, personal characteristics, shopping habits)	• All foods, beverages • All uses • All situations (in-home and away)	• Up to 7 days • Continuous daily reporting; every day a new wave begins their reporting period • Data collected March 2013 -February 2020	• ~15,000 individuals • 400,000+ occasions • 900,000+ food & beverage transactions

Questions about the NPD Group and/or their National Eating Trends® (NET®) database? Contact Bridget Kraft at Bridget.Kraft@npd.com.

Key Definitions

ANNUAL EATINGS PER CAPITA
The number of times the average person (across users and non-users) consumes annually

“AS IS” OR “AS THE DISH ITSELF”
Fruits and vegetables that are not eaten as an ingredient or addition to another dish (for example a side of corn or an apple)

EATINGS
The number of times a food or beverage item is consumed; measures frequency, not volume

FRESH
Foods reported to be fresh produce or refrigerated — excluding meat/fish/poultry

FROZEN
Foods reported to be frozen

FRUIT
All forms including dried and pouched
Seeds and nuts
Fruit chips
Fruit-based pies (excludes snack pies)

HOMEMADE
Foods reported to be completely homemade/from scratch or partially homemade/assembled, including homegrown items

INTAKE LEVELS
“Light” vegetable eaters were defined as consuming vegetables 1-7 times/week; “Light” fruit eaters were defined as consuming fruit 1-6 times/week; “Medium” vegetable eaters were defined as consuming vegetables 8-11 times/week; “Medium” fruit eaters were defined as consuming fruits 7-11 times/week; and “Heavy” eaters were defined as consuming vegetables or fruits 12+ times/week

INGREDIENT
The item is used as an ingredient within a base dish (for example corn used in a succotash)

INGREDIENT/ADDITION VS. DISH AS ITSELF
Panelists also determine how each food and beverage was used. They can report that the item was consumed as the “dish itself” or as an ingredient or addition to another dish. Example: With milk, if it is drank as a glass of milk it is considered the “dish itself” but if used in baking a cake it would be considered an “ingredient”

INDEX
Relative measure indicating if a group is well developed or underdeveloped compared to the rest of the population of interest
Index < 80 is below average
Index > 120 is above average

JUICE
All fruit and vegetable juices and ciders (excludes fruit and vegetable “drinks”). In this research, juice includes lemon and lime juices, homemade juices, fruit-based smoothies, fruit and vegetable juice blends.

MAIN DISH
Main dishes are the item perceived to be the “center of the plate” dish at the meal

OCCASIONS
The number of unique situations when a food and/or beverage is consumed

READY-TO-EAT FROM FOODSERVICE
Foods reported to be ready to eat from a foodservice establishment

SHELF STABLE
Foods reported to be shelf stable

SIDE DISH
Side dishes are items that accompany the main dish. Example: If a panelist reported having steak with mashed potatoes and carrots they may say the steak was their main dish while the mashed potatoes and carrots were the sides.

VEGETABLES
All forms vegetables
All forms legumes
Vegetable chips

VOLUME INTAKE
Measured in the NET database only on fruits and vegetables consumed “as the dish itself.” Panelists determine how each food and beverage was used.

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PBH Agents Of Change

PBH's multi-sector consumption initiative, Lead The Change, unifies produce industry stakeholders and food system thought leaders to close the consumption gap and develop innovative, behavior-based solutions that help people eat and enjoy more fruits and vegetables for happier, healthier lives.

The *2020 PBH State of the Plate: America's Fruit & Vegetable Consumption Trends* research was made possible by the following industry leaders who have demonstrated their commitment to fruit and vegetable consumption, as well as America's health and happiness by contributing to this pivotal initiative.

American Frozen Food Institute

American Beverage Association

Bayer

California Avocado Commission

California Walnut Board and Commission

Chelan Fresh

Del Monte Foods, Inc.

Del Monte Fresh Produce N.A., Inc.

Dole Food Company, Inc.

Dole Packaged Foods, LLC

Duda Farm Fresh Foods, Inc.

Florida Fruit and Vegetable Association

HZPC Americas Corp.

Juice Products Association

Kellogg Company

Naturipe Farms, LLC

Potatoes USA

Produce Marketing Association

Red Sun Farms

Robinson Fresh

Seneca Foods Corporation

Stemilt Growers, LLC

Sunkist Growers, Inc.

Sun-Maid Growers of California

The Wonderful Company

United Fresh Produce Association

Ventura Foods/Marie's

Western Growers

PBH FOUNDATION

STATE OF THE PLATE

America's Fruit & Vegetable Consumption Trends

Find resources and inspiration to help create change at:

fruitsandveggies.org/stateoftheplatetoolkit

Join the Have A Plant® Movement on social media!

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