Primary Shoppers' Attitudes and Beliefs Related to Fruit & Vegetable Consumption

2012 vs 2014

Produce for Better Health Foundation

About Produce for Better Health Foundation

We’re on a Mission!

Produce for Better Health Foundation

Produce for Better Health Foundation (PBH) is a non-profit 501 (c) (3) consumer education foundation whose mission is to motivate Americans to eat more fruit and vegetables to improve public health. PBH partners with government agencies like CDC, non-profit organizations, health professionals, educators, and members of the fruit and vegetable industry to promote increased consumption of fruit and vegetables. We leverage private industry and public sector resources, influence policy makers, motivate key consumer influencers, and promote fruit and vegetables directly to consumers.

Fruits & Veggies—More Matters®

Managed by PBH, Fruits & Veggies—More Matters is the nation’s largest public-private fruit and vegetable nutrition education initiative. The foundation of Fruits & Veggies—More Matters is a brand logo and messaging designed to motivate Americans to eat more fruit and vegetables. Fruits & Veggies—More Matters materials and messages are widely featured in print, on websites, and on social media platforms like Facebook, Twitter, Pinterest, YouTube, and blogs. Since its inception in 2007, it is estimated that the Fruits & Veggies—More Matters logo has been seen an average of 108 times by every American.

Produce for Better Health Foundation. *Primary Shoppers’ Attitudes and Beliefs Related to Fruit & Vegetable Consumption, 2012 vs 2014,* Produce for Better Health Foundation, 2014. Web. <http://www.PBHFoundation.org>.

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Executive Summary

Since 1991, Produce for Better Health Foundation (PBH) has been dedicated to producing a healthier America through increased fruit and vegetable consumption. PBH conducts regular consumer surveys to identify psychosocial factors associated with fruit and vegetable consumption in an effort to monitor progress and inform industry, health influencers, and policy makers. Primary shoppers were surveyed in 2012 and 2014 and are the basis for this report. Highlights include:

Shoppers Eat More

More than 80% of primary shoppers think it's important to eat fruit and vegetables and nearly that same percentage find them enjoyable to eat. Three in four shoppers say the most important reason they eat them is to stay healthy. In fact, shoppers report eating more fruit and vegetables each day in 2014 than in 2012, though half of them believe they still eat too few. Freshness is the most important factor for nearly two out of three when shopping for fruits and vegetables, followed by cost and then taste.

Can Be A Chore

One in four primary shoppers, however, thinks eating fruits and vegetables is a chore and don't know how to prepare them. Roughly one in three consume less than a cup of fruit and a cup of vegetables each day. They report that differing family preferences, cost, needing new ideas for preparation, and spoilage concerns are all factors that make it difficult to eat more. In fact, concern about spoilage is cited as more of a problem in 2014 than two years prior. Learning cost savings tips, including proper storage, is the most important thing that would help them eat more fruit and veggies, even more than new recipes or learning new cooking techniques.

Favorability

Despite the fact that shoppers recognize the health benefits of eating fruits and vegetables, virtually all forms of fruits and vegetables (fresh, frozen, canned, dried, and 100% juice) are viewed less favorably in 2014 than two years prior. In particular, respondents are notably less enthusiastic about canned produce and 100% fruit or vegetable juice, which is disconcerting given that cost is of great concern and these are nutritious and economical choices. Yet, notably, shoppers who eat the most fruits and vegetables report having more of all forms available in their homes suggesting that all forms are important to meet daily fruit and vegetable recommendations.

Communications

Primary shoppers continue to report that TV news segments, supermarket flyers or newspaper ads, and signs on supermarket displays are the most effective ways to communicate with them when they are making a food decision. Social media influence has improved over time, but not to the level of those traditionally referenced. The Internet is still where most shoppers go to find recipes, though friends and family increased over time as a recipe source. Allrecipes.com is still the top site to find recipes, with The Food Network, search engines and Pinterest all notably increasing over time.

Income Differences

Lower income households consume fewer fruits and vegetables than higher income households, yet they equally perceive that they consume enough. They also have less of almost all forms of fruits and vegetables in the home. The good news is that lower income shoppers appear to be more interested in eating fruits and vegetables in 2014 than two years prior:

- 10% more think it is important to eat fruit and veggies
- 11% fewer (of those with children) think of them as a chore
- 8% more are interested in new preparation ideas

Motivated Purchases

Regarding Fruits & Veggies—More Matters,[1] the branded social marketing campaign that replaced the previous national 5 A Day program,[2] positive results can be seen between 2012 and 2014:

- There is a significant increase in those who are aware of the brand, find it motivating, and are likely to purchase the product after seeing it, with strongest results among women and lower income households.
- Two out of three shoppers are favorable toward the campaign and appreciate the message as a reminder to eat more fruits and vegetables.

Over time, shoppers want to, and are, eating more fruits and vegetables, with growing interest among lower income shoppers. Cost continues to be a concern, yet some of the more economical canned and juiced fruits and vegetables are becoming less favored. Having all forms available in the home, however, correlates with greater consumption. Finally, use of Fruits & Veggies—More Matters as a marketing tool continues to drive consumer intent to purchase, especially among women and lower income households.

Key Trends

In an effort to understand various factors related to fruit and vegetable consumption among primary shoppers, PBH conducted an on-line survey in 2012 and 2014. Primary shoppers were defined as shoppers who were either solely responsible for, or normally participated in, their household's grocery shopping. Each survey included 600 primary shoppers and an equal number of male and female shoppers, all ages 18 and older. Most questions were answered using a 5-point Likert scale, with several questions that required open-ended responses. For more information about methodology and demographics, see Appendix A and B.

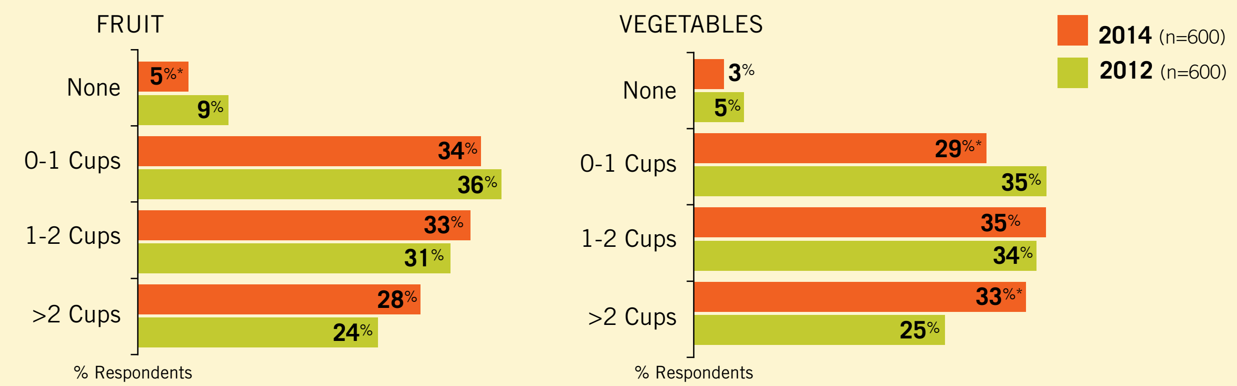
Primary shoppers' responses to questions about various factors related to fruit and vegetable consumption are outlined below.

Self-Reported Intake

Primary shoppers self-reported eating or drinking more cups of fruit and vegetables each day in 2014 than in 2012 (Chart 1), while fewer shoppers reported eating none at all. This is consistent with the perceived adequacy of their fruit and vegetable consumption (Chart 2) where a few more shoppers in 2014 reported eating too many fruits and vegetables, though the majority of primary shoppers continue to believe that they do not eat enough fruit and vegetables.

Chart 1: Primary Shoppers' Self-Reported Fruit & Vegetable Consumption: Cups

About how many cups of fruit (including 100% fruit juice) do you eat or drink each day?



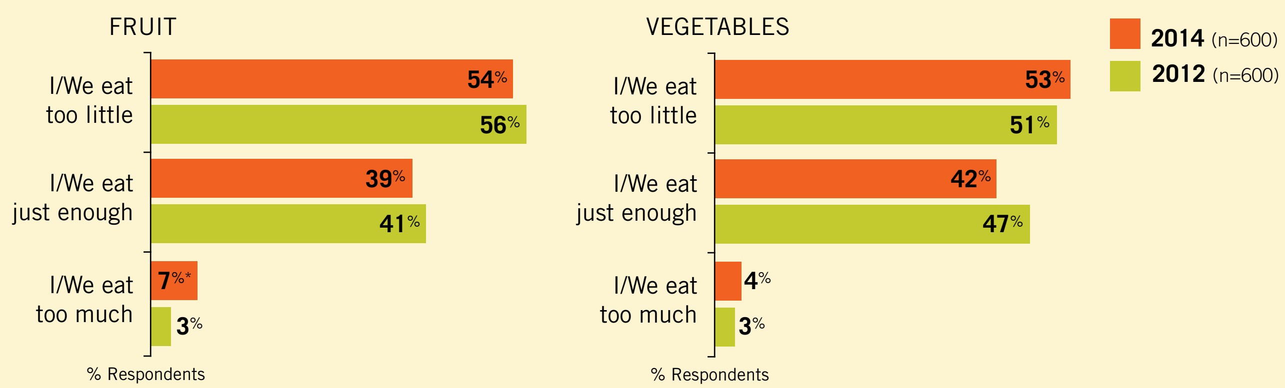
*Represents statistically significant difference between years.

In 2014, households with incomes less than $50,000 were significantly more likely than higher income shoppers to consume less than a cup of fruit and a cup of vegetables each day (Chart 3). In addition, higher income households were significantly more likely than lower income households to consume more than 2 cups of fruit and 2 cups of vegetables each day, consistent with 2012 findings. However, there were no significant differences by income in self-perceptions of fruit and vegetable consumption in either 2014 or 2012. That is, even though lower income shoppers were eating less than higher income shoppers, they didn't perceive themselves as eating less.

The reported increase in consumption of fruits and vegetables is also consistent with the portion of fruits and vegetables that primary shoppers say make up their plate (Chart 4). The new USDA MyPlate graphic and recommendation to make 'half your plate' fruits and vegetables was released in June of 2011. Despite indications that more shoppers are filling half their plates with fruits and vegetables, knowledge about this recommendation is less evident (Chart 5).

Chart 2: Primary Shoppers' Perception About Adequacy of Their Fruit & Vegetable Consumption

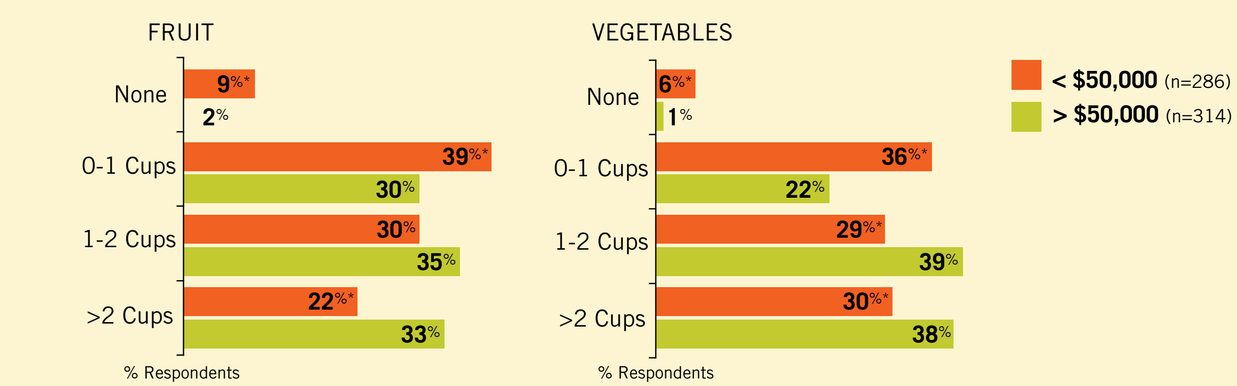
Which of these statements best represents you or your family's eating habits for each of the following?



*Represents statistically significant difference between years.

Chart 3: Primary Shoppers' Self-Reported Fruit & Vegetable Consumption: Cups by Income, 2014

About how many cups of fruit (including 100% fruit juice) do you eat or drink each day?



*Represents statistically significant difference between income groups.

Chart 4: Primary Shoppers' Self-Reported Fruit & Vegetable Consumption: Portion of Plate

Thinking about all the food you consume in a typical day, what portion of your 'plate' (total food consumed) would be made up of fruits and vegetables (versus all other foods)?

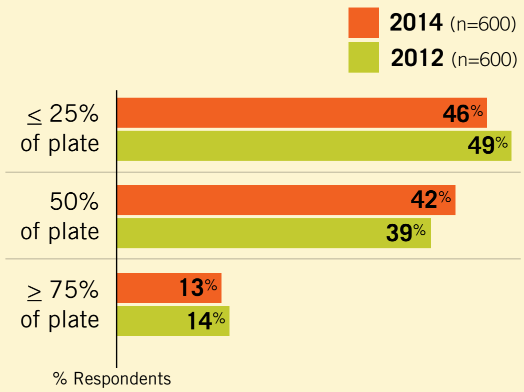
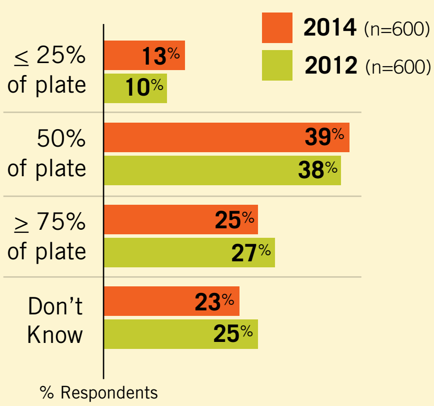


Chart 5: Primary Shoppers' Knowledge About Recommendations for Fruit & Vegetable Consumption

What portion of your 'plate' (total food consumed) is RECOMMENDED to be made up of fruits and vegetables?



Attitudes & Beliefs

Primary Shoppers Without Children

For primary shoppers without children living at home, there were few differences between 2012 and 2014 in attitudes about including more fruits and vegetables in meals. The majority still would like to be able to include more, feel that it is important, and are interested in doing so. The majority continue to think that eating fruits and vegetables is enjoyable and that eating them is not a chore (Chart 6).

Lower income shoppers appear to becoming more interested in eating fruits and vegetables. For example, in 2014, more lower income shoppers (88%) think it is important to include fruits and vegetables in meals and snacks, significantly higher than the 78% of them who felt this way in 2012. Also, 68% of lower income shoppers expressed increasing interest in knowing how to prepare fruits and vegetables in new ways in 2014 compared to only 60% in 2012. And finally, in 2014, significantly more lower income shoppers (76%) indicated they would like to be able to include a greater variety of fruits and vegetables in meals than higher income households (64%).

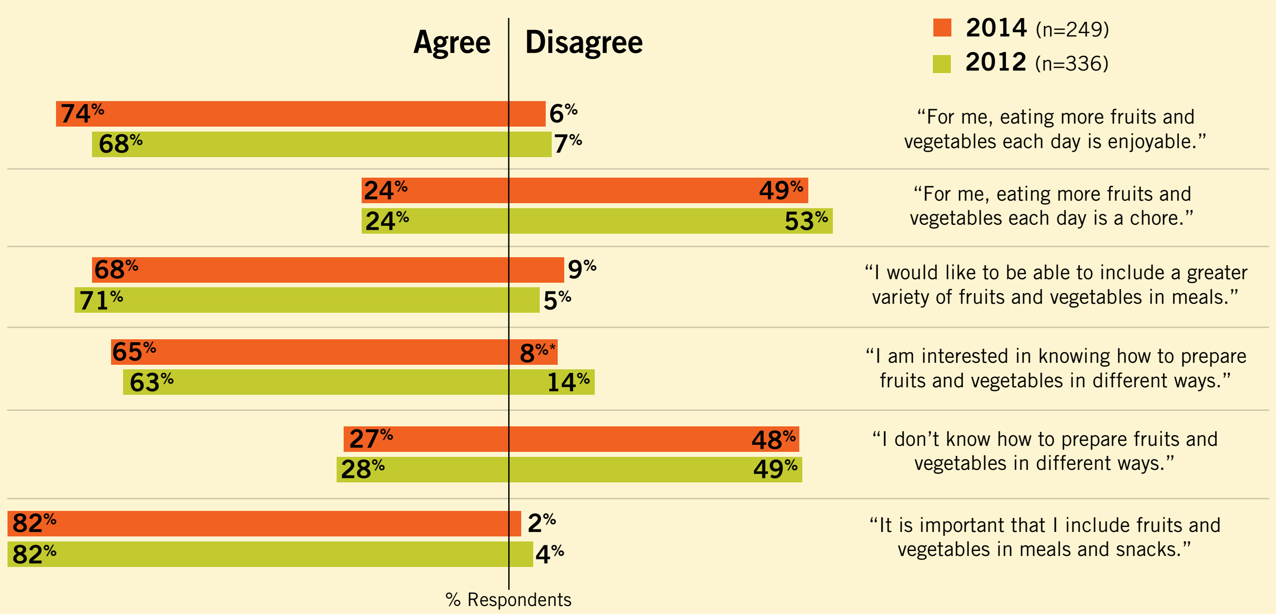
Primary Shoppers With Children

For primary shoppers with children 18 years old or under, there were no statistically significant changes between 2012 and 2014 (Chart 7). Generally parents indicate they have the support they need to include fruits and vegetables in their family's meals and snacks, and their spouse/partner believes it is important to do so. The majority believe it is important and are interested in including more fruits and vegetables in meals and snacks.

There were also no significant differences between higher or lower income shoppers with children in 2014. Changes in attitudes by income levels over time, however, did occur. In 2014, for example, 69% of high income shoppers found eating fruits and vegetables enjoyable, significantly less than the 81% who felt this way in 2012. In 2014, 18% of lower income shoppers expressed that eating fruits and vegetables each day was a chore, less than the 29% who felt this way in 2012. Though this was not a statistically significant change, it suggests that lower income shoppers are learning new skills or finding new products that make it easier to eat fruits and vegetables.

Chart 6: Primary Shoppers' Without Children: Attitudes Toward Fruits & Vegetables

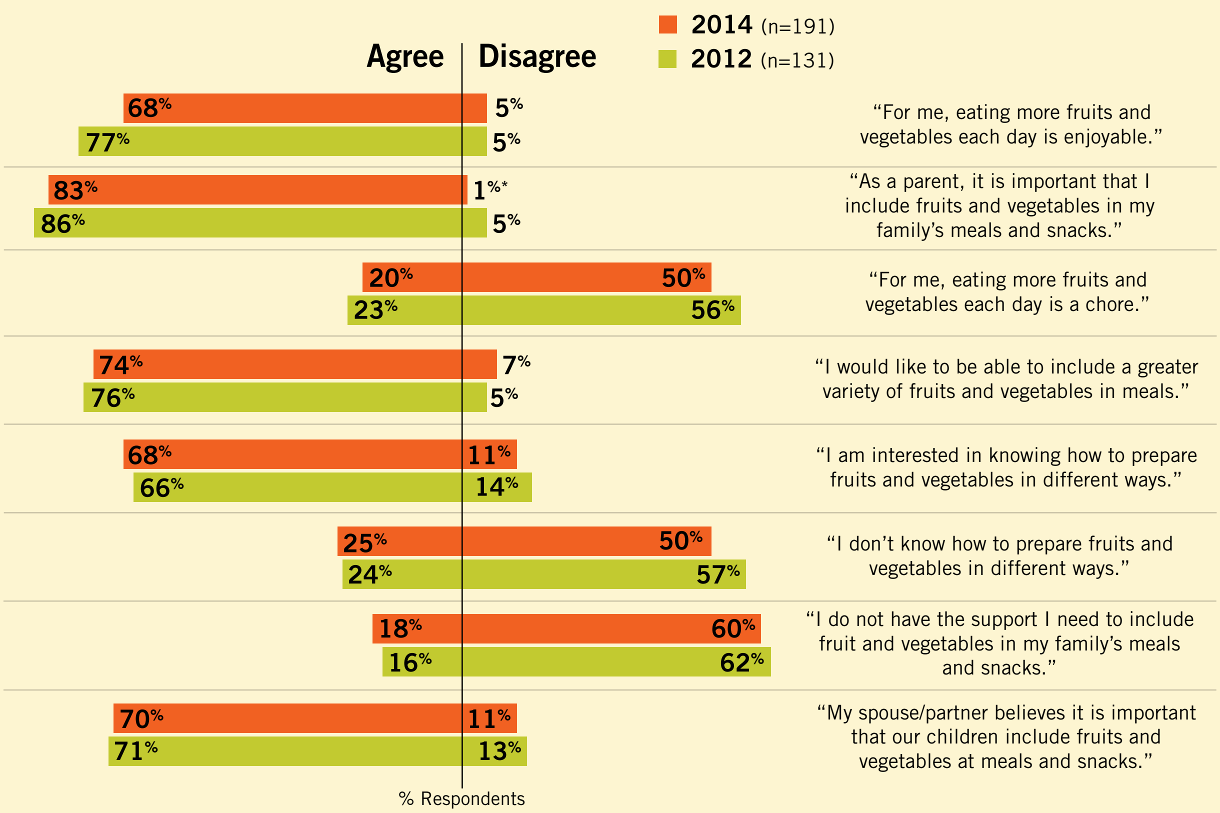
Please rate your level of agreement or disagreement with the following statements:



*Represents statistically significant difference between years.
Responses do not equal 100% because mid-point in 5-point Likert Scale was omitted.

Chart 7: Primary Shoppers' With Children: Attitudes Toward Fruits & Vegetables

Please rate your level of agreement or disagreement with the following statements:



*Represents statistically significant difference between years.
Responses do not equal 100% because mid-point in 5-point Likert Scale was omitted.
Only asked of primary shoppers with children under the age of 18 living at home.

Perceived Benefits

The role that fruits and vegetables play in weight control and heart disease ranked highest among primary shoppers as a perceived benefit of eating them than the prevention of any other disease state (Chart 8). There were few notable differences between shoppers by income or gender. Shoppers ages 45 and older were significantly more likely than shoppers under age 35 to cite that fruits and vegetables were beneficial for preventing heart disease and cancer.

Vitamins, antioxidants, fiber and minerals were the components of fruits and vegetables that most shoppers thought provided the greatest health benefits (Chart 9). Water and protein were seen as beneficial components by near half of all shoppers, while carbohydrates and phytonutrients were seen as the beneficial components in fruits and vegetables by only one in four shoppers. Households with incomes higher than $50,000 cited vitamins, minerals, and antioxidants significantly more often than lower income households as the components within fruits and vegetables that provided health benefits. Male shoppers were significantly more likely than female shoppers to believe that protein provided health benefits (men 52% vs females 44%), while female shoppers thought water was a component that provided health benefits (females 52% vs males 43%). Shoppers ages 45 and older were significantly more likely than younger shoppers to cite that fiber and antioxidants in fruits and vegetables provided health benefits.

Chart 8: Primary Shoppers' Perceived Disease-Prevention Benefits of Fruits & Vegetables, 2012

Which of the following do you believe consuming fruits and vegetables may be beneficial for preventing? (Please select all that apply.)

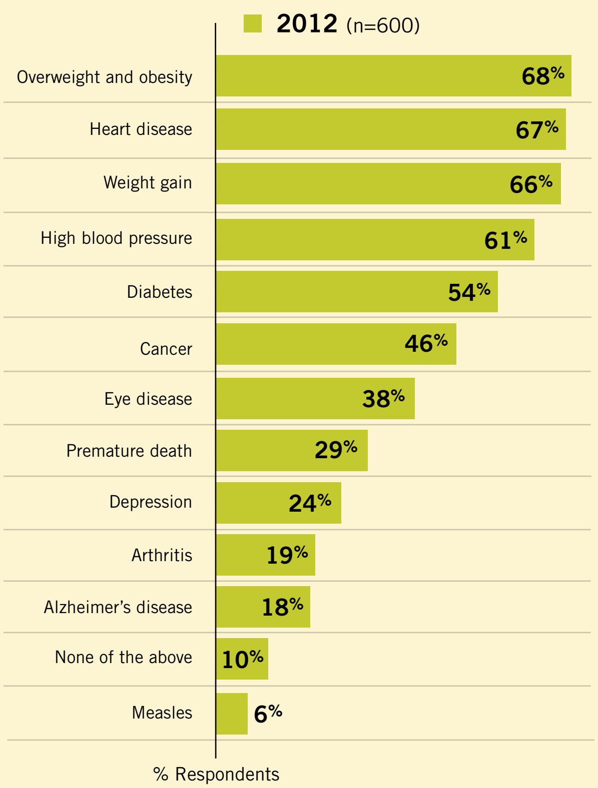
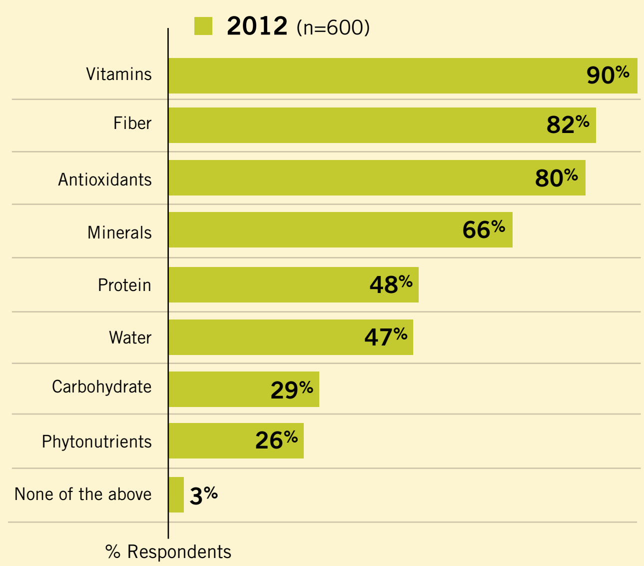


Chart 9: Primary Shoppers' Perception of Healthy Components Associated with Fruits & Vegetables, 2012

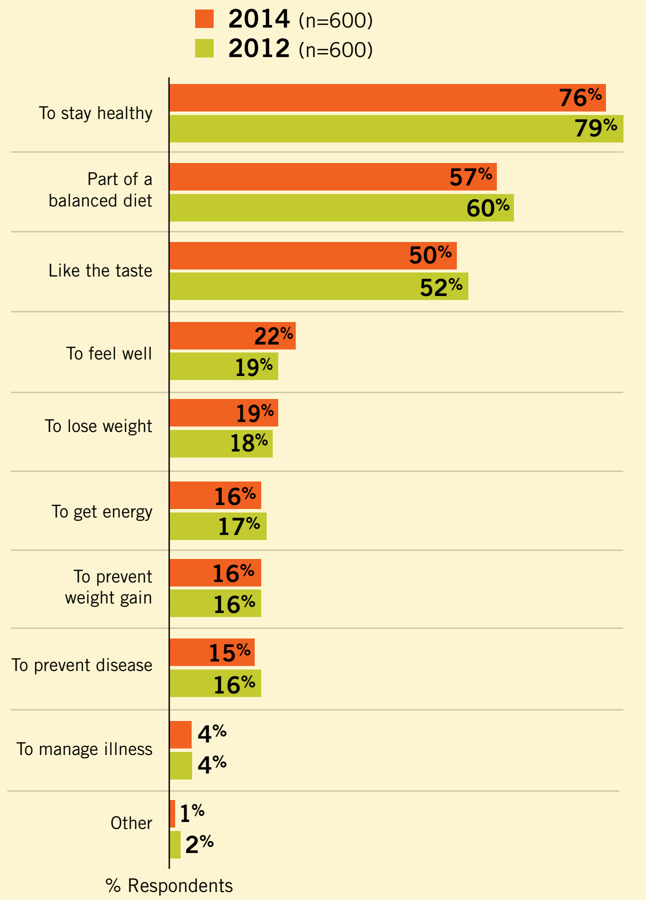
Which of the following components of fruits and vegetables do you believe may provide health benefits? (Please select all that apply.)



When asked for the most important reasons why primary shoppers themselves eat fruits and vegetables, the main reasons remained consistent between 2012 and 2014 (Chart 10). These included to stay healthy, they are part of a balanced diet, and because they liked the taste, though these all decreased as important reasons in 2014 compared to 2012. Lower income households in 2014 were significantly less likely than higher income households to eat fruits and vegetables to stay healthy (71% vs 80%.) Women were significantly more likely than men to say they ate fruits and vegetables because they liked the taste (55% vs 46%), to stay healthy (81% vs 71%), and because they were part of a balanced diet (61% vs 52%).

Chart 10: Primary Shoppers' Reasons Why They Eat Fruits & Vegetables

Please select up to three of the most important reasons why you, yourself, eat fruits and vegetables.



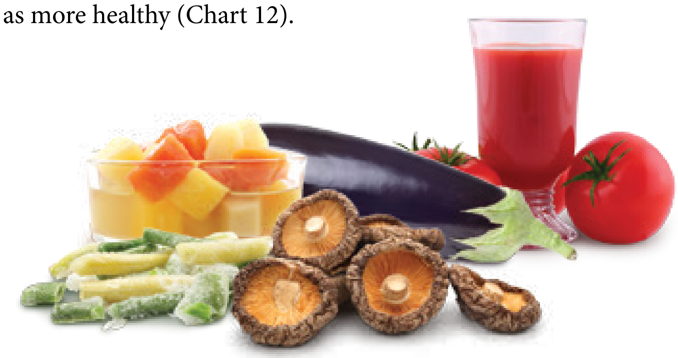
All Forms

All forms of fruits and vegetables provide much needed nutrients that are currently under-consumed in the United States, including folate, magnesium, potassium, dietary fiber, and vitamins A, C, and K.[3] All forms of fruits and vegetables also contain various phytochemicals that are thought to play an important role in disease prevention.[4-10]

Perception of Healthy

Despite the health benefits of eating more fruits and vegetables, primary shoppers view virtually all forms of fruits and vegetables as less healthy in 2014 than in 2012 (Chart 11).

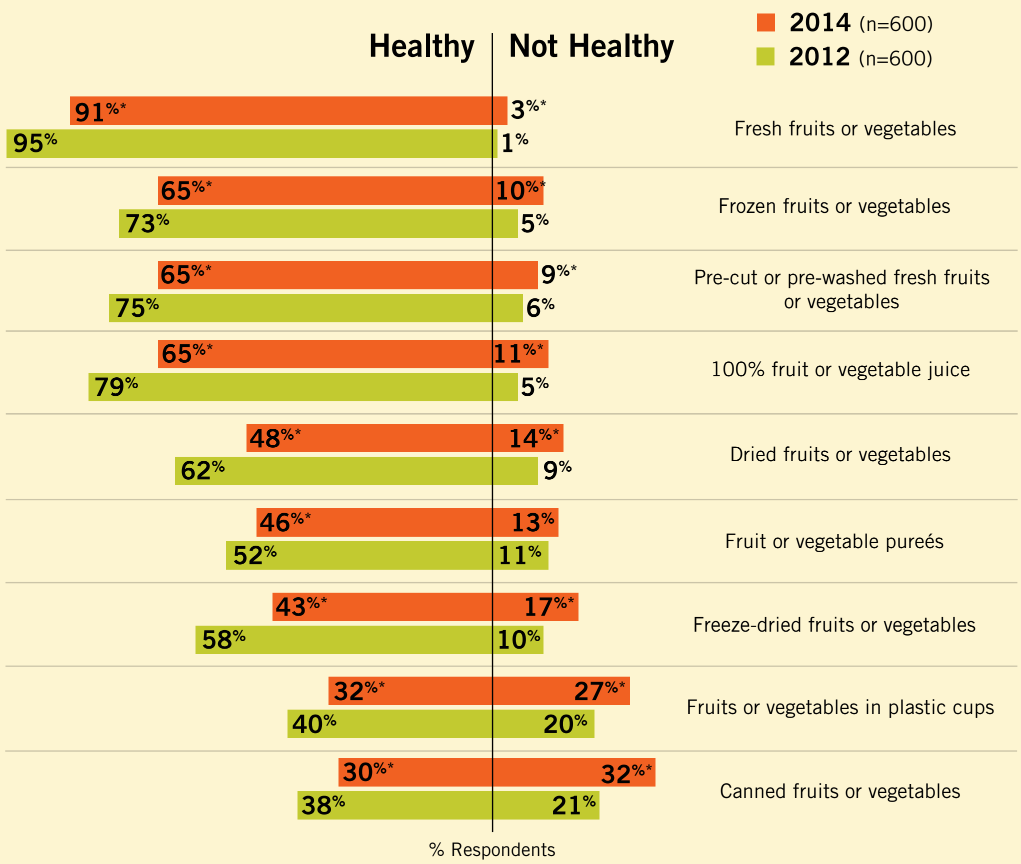
The main statistically significant difference between lower household income shoppers (less than $50,000) and higher incomes is that lower income households view 100% fruit or vegetable juice as more healthy (Chart 12).



Despite the health benefits of eating more fruit and vegetables, primary shoppers view virtually all forms of fruits and vegetables as less healthy in 2014 than in 2012.

Chart 11: Primary Shoppers' Perceived Healthfulness of Different Forms of Fruits & Vegetables

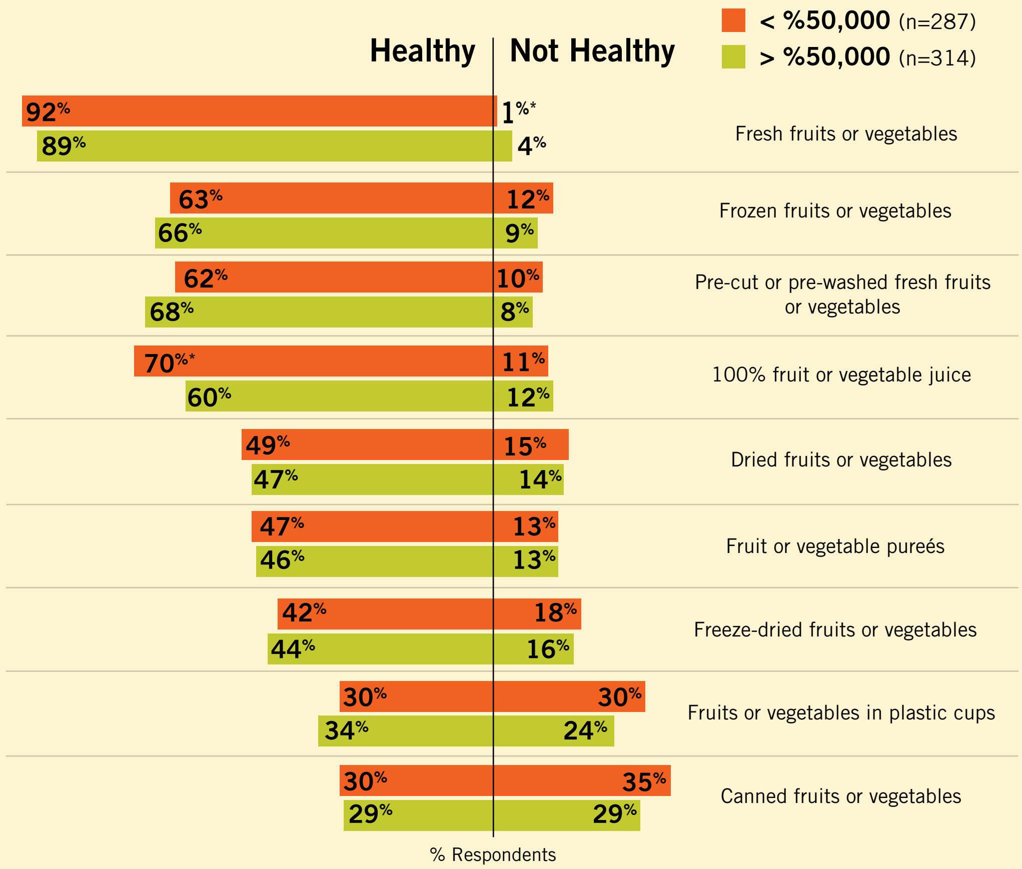
In general, how healthy do you consider the following foods to be?



*Represents statistically significant difference between years.
Responses do not equal 100% because mid-point in 5-point Likert Scale was omitted.

Chart 12: Primary Shoppers' Perceived Healthfulness of Different Forms of Fruits & Vegetables: By Income, 2014

In general, how healthy do you consider the following foods to be?



*Represents statistically significant difference between income groups.
Responses do not equal 100% because mid-point in 5-point Likert Scale was omitted.

Healthy, tastes good, good snack and family preferences were the main reasons primary shoppers purchased fresh produce.

Purchase Drivers

Healthy, tastes good, good snack and family preferences were the main reasons primary shoppers purchased fresh produce (Chart 13). Convenience, shelf-life, and cost are key purchase drivers of other forms of fruit and vegetables, though shoppers did not appear to be as committed to purchasing these in 2014 compared to 2012.

Uses

As shown in Chart 14, fresh and canned fruit and 100% fruit juice are primarily used as is; frozen fruit is primarily used in smoothies/beverages; and dried fruit is primarily used as a snack.

Fresh vegetables are primarily consumed as a side dish, in salads, or as is. Frozen and canned vegetables are primarily consumed as a side dish, and vegetable juice is primarily consumed as is.

Charts 13: Primary Shoppers' Reasons for Purchasing Various Forms of Fruit and Vegetables, 2014

Why do you purchase fresh, frozen, canned, dried, and 100% fruit and vegetable juice? (Please select all that apply.)

Reasons for Purchasing FRUIT	% Respondents				
	Fresh	Frozen	Canned	Dried	100% Juice
Healthy	85%	34%	14%	52%	66%
Tastes Good	84%	33%	35%	58%	74%
Good Snack	76%	19%	30%	71%	20%
I and/or my family likes them	77%	32%	39%	47%	63%
Easy to Use	46%	62%	64%	49%	51%
Quality	41%	16%	7%	15%	30%
Variety	37%	18%	23%	18%	18%
Quick to prepare	35%	47%	51%	23%	25%
Cost	22%	28%	43%	8%	17%
Use in recipes	15%	39%	26%	27%	6%
Keeps well	11%	61%	67%	53%	30%
Other	1%	4%	2%	3%	3%
	(n=176)	*(n=152)*	*(n=162)*	*(n=151)*	*(n=172)*

Reasons for Purchasing VEGETABLES	% Respondents				
	Fresh	Frozen	Canned	Dried	100% Juice
Healthy	88%	44%	20%	21%	58%
Tastes Good	73%	43%	27%	22%	56%
Good Snack	39%	3%	3%	33%	27%
I and/or my family likes them	66%	38%	33%	19%	39%
Easy to Use	37%	69%	76%	28%	35%
Quality	54%	20%	12%	14%	22%
Variety	35%	29%	23%	11%	18%
Quick to prepare	31%	66%	67%	17%	17%
Cost	20%	46%	49%	16%	19%
Use in recipes	45%	40%	35%	26%	12%
Keeps well	12%	72%	69%	29%	22%
Other	3%	3%	2%	5%	3%
	(n=185)	*(n=177)*	*(n=177)*	*(n=141)*	*(n=157)*

Significantly higher than 2012. Significantly lower than 2012.

Only asked of respondents who usually have the product available in the home.

Chart 14: Primary Shoppers' Use of Various Forms of Fruits & Vegetables, 2014

How do you use fresh, frozen, canned, dried, and 100% fruit and vegetable juice? (Please select all that apply.)

% Respondents

FRUIT	Fresh	Frozen	Canned	Dried	100% Juice
Snacks	77%	27%	49%	79%	-
Dessert	41%	36%	48%	-	-
Smoothies/Beverages	34%	70%	17%	-	30%
Fruit Salads	32%	21%	39%	-	4%
As is	86%	29%	65%	-	94%
Baking	18%	22%	26%	41%	-
Side dish	-	7%	26%	12%	-
On cereal	47%	-	-	42%	-
Added to sauces/salsas	5%	9%	11%	9%	6%
In salads	28%	14%	19%	42%	-
Trail mix	-	-	-	37%	-
Other	2%	8%	2%	5%	2%
	(n=176)	(n=152)	(n=162)	(n=151)	(n=172)

% Respondents

VEGETABLES	Fresh	Frozen	Canned	100% Juice
Snacks	47%	-	-	-
Dessert	2%	-	-	-
Smoothies/Beverages	14%	-	-	32%
As is	70%	-	-	69%
Baking	22%	-	-	-
Side dish	77%	82%	88%	-
In salads	77%	14%	14%	-
Casseroles	31%	41%	45%	-
Soups/stews	56%	55%	51%	31%
Stir-fry	56%	48%	19%	-
Add to sauces/salsas	27%	18%	17%	20%
Other	2%	2%	2%	3%
	(n=185)	(n=177)	(n=177)	(n=157)

Empty boxes indicate that the category was not presented to the respondent.
Only asked of respondents who usually have the product available in the home.

Availability in the Home

Availability of fruits and vegetables in the home has been associated with higher intake.[11-14] Availability may aid consumption by making choosing fruits and vegetables easy, stimulating consumption through visual cues, and increasing preference through consistent exposure.[11] Encouraging a home environment that facilitates choosing fruits and vegetables is a practical way to promote consumption.

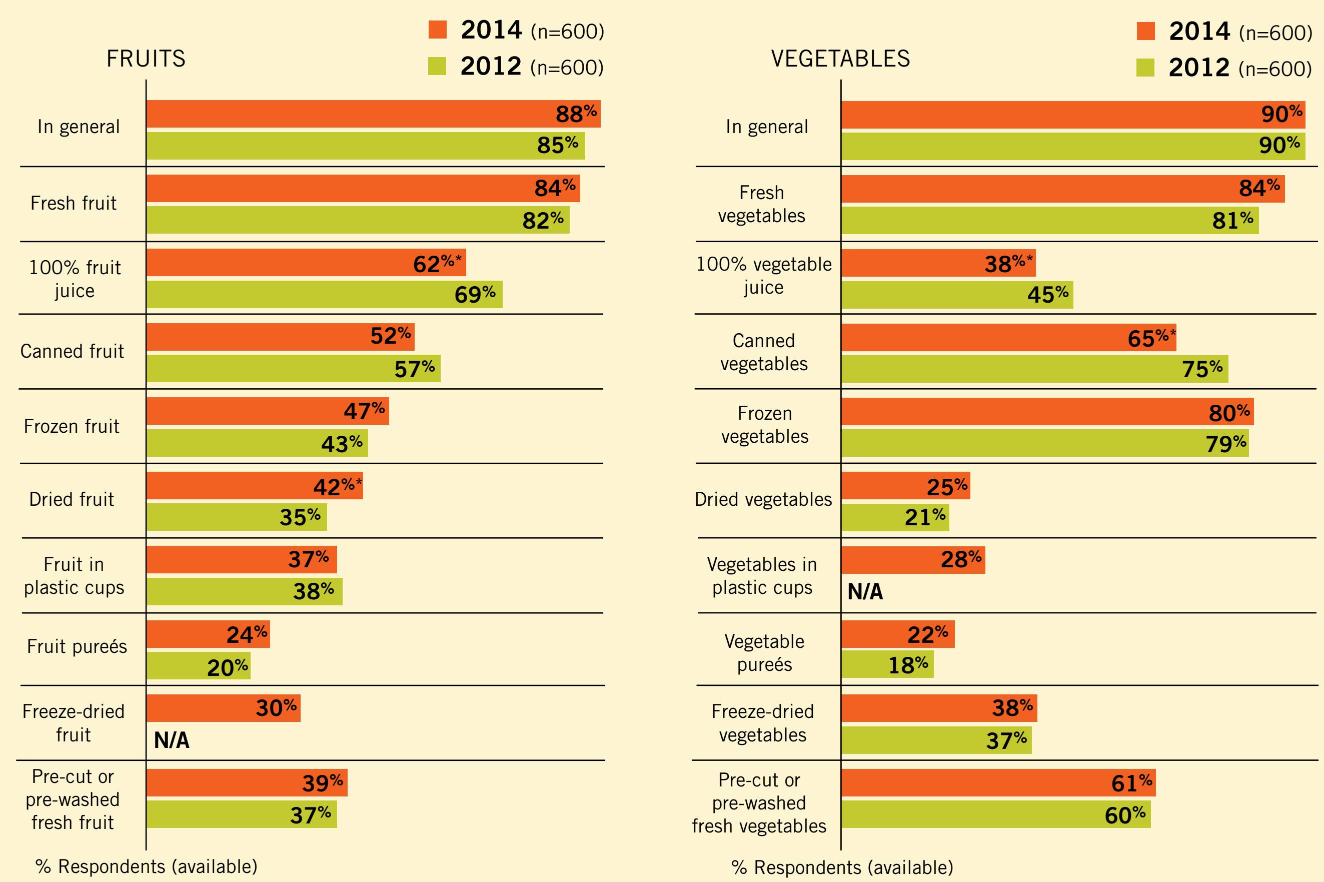
In this study, the majority of shoppers indicated that fruits and vegetables were always or almost always available in the home. In fact, primary shoppers who reported higher intake of fruit and vegetables also reported having more of all forms of fruits and vegetables available in the home, suggesting that all forms are important to help meet daily fruit and vegetable recommendations.

Between 2012 and 2014, there was a significant increase in the amount of dried fruit in the home, while 100% fruit juice significantly decreased. Among vegetables, canned and 100% juice were available in the home significantly less often in 2014 compared to 2012 (Chart 15). Fresh, pre-cut, purees, and frozen fruit and vegetables were up slightly in 2014 from 2012, though not significant statistically.

In 2014, when considering households with incomes below and above $50,000, there were significant differences in availability

Chart 15: Primary Shoppers' Home Availability of Different Forms of Fruit & Vegetables

Please rate the availability of fruits and vegetables in your home.



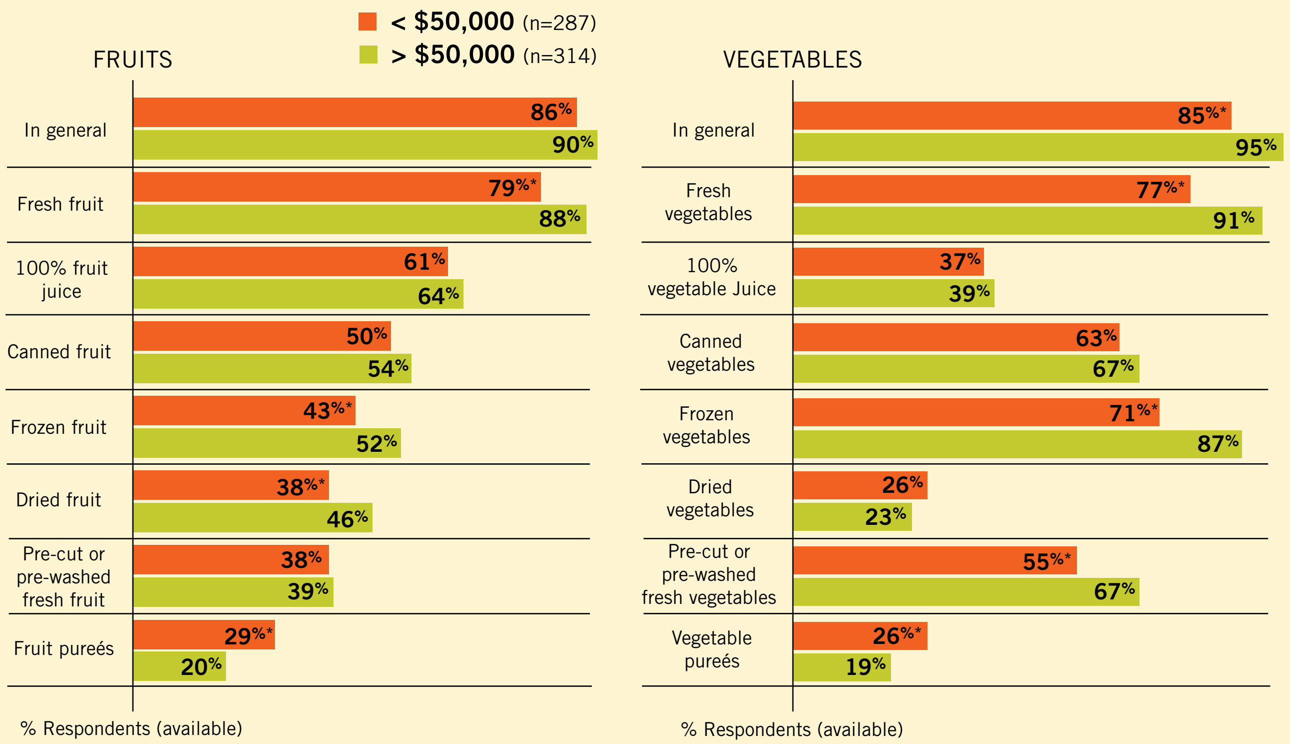
*Represents statistically significant difference between years.
Scores represent top 3 box scores in 6-point Likert Scale.

of different forms of fruit and vegetables, with higher income households having more vegetables generally, more fresh, pre-cut, and frozen vegetables, and more fresh, frozen, and dried fruit than lower income households (Chart 16). In both 2012 and 2014, higher income households had more of all forms of fruits and vegetables, with the exception of fruit and vegetable purees, which were significantly more available in lower income households.

While not asked of primary shoppers in this survey, moms in a 2012 PBH survey were asked about why a particular form of fruit or vegetable was not available in the home.[15] For moms who said they didn't have fresh or fresh-cut fruit and vegetables in the home, it was primarily because they were believed to be too expensive. If canned fruits and vegetables weren't available, it was because they were thought to be less healthy, with added preservatives or artificial ingredients. If frozen fruit was not in the home, it was primarily because they were thought to be too expensive or they simply weren't used. If dried fruit was not available in the home, it was due to disliking them and finding them too expensive. Similarly, if dried vegetables were not available, it was because they didn't use them, didn't like them, or found them too expensive. For those without 100% fruit juice available in the home, it was largely because it was considered expensive or less healthy.

Chart 16: Primary Shoppers' Home Availability of Different Forms of Fruit & Vegetables: By Income, 2014

Please rate the availability of fruit and vegetables in your home.



*Represents statistically significant difference from previous year.
Scores represent top 3 box scores in 6-point Likert Scale.

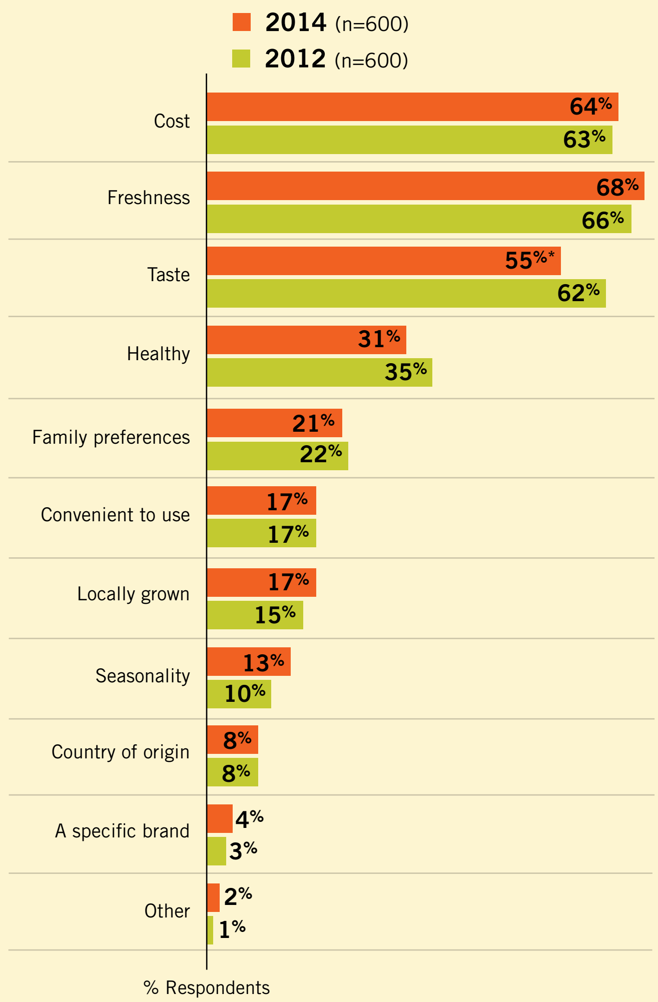
Important Factors When Purchasing

Factors identified as most important to all primary shoppers when shopping for fruits and vegetables remained relatively stable between 2012 and 2014, with cost and freshness as top factors of importance cited by nearly two out of three respondents (Chart 17). Nearly three of four shoppers (71%) with household incomes below $50,000, however, ranked cost as the most important factor, compared to 56% of those with higher incomes (Chart 18).

Taste ranked third in importance for all primary shoppers, but was significantly lower in 2014 than 2012 with only 55% of respondents indicating this was important. Taste was less important for lower income shoppers, but not significantly so. Health ranks as the fourth most important factor for all primary shoppers, with nearly a third of respondents indicating it is of top importance.

Chart 17: Primary Shoppers' Important Factors When Shopping for Fruits & Vegetables

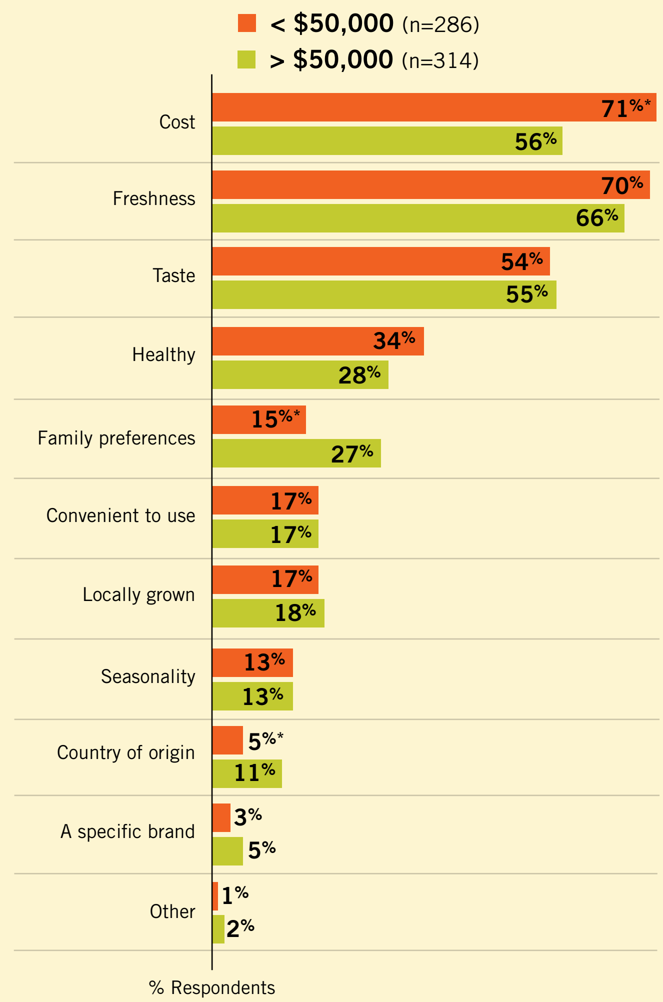
When shopping for fruits and vegetables, these factors are most important to me. (Please rank your top 3 choices.)



*Represents statistically significant difference between years.

Chart 18: Primary Shoppers' Important Factors When Shopping for Fruits & Vegetables: By Income, 2014

When shopping for fruits and vegetables, these factors are most important to me. (Please rank your top 3 choices.)



*Represents statistically significant difference between income groups.

Households with lower incomes report country of origin labeling and family preferences as a significantly less important factor when shopping than higher income households (Chart 18).

In 2012, male shoppers were significantly more likely than female primary shoppers to rank healthy (Male 39%/ Female 31%) and special brands (Male 4%/ Female 1%) as a higher priority when purchasing fruit and vegetables. These trends held true in 2014 as well, with healthy (Male 36%/ Female 26%) and special brands (Male 6%/ Female 2%) as a higher priority for male shoppers.

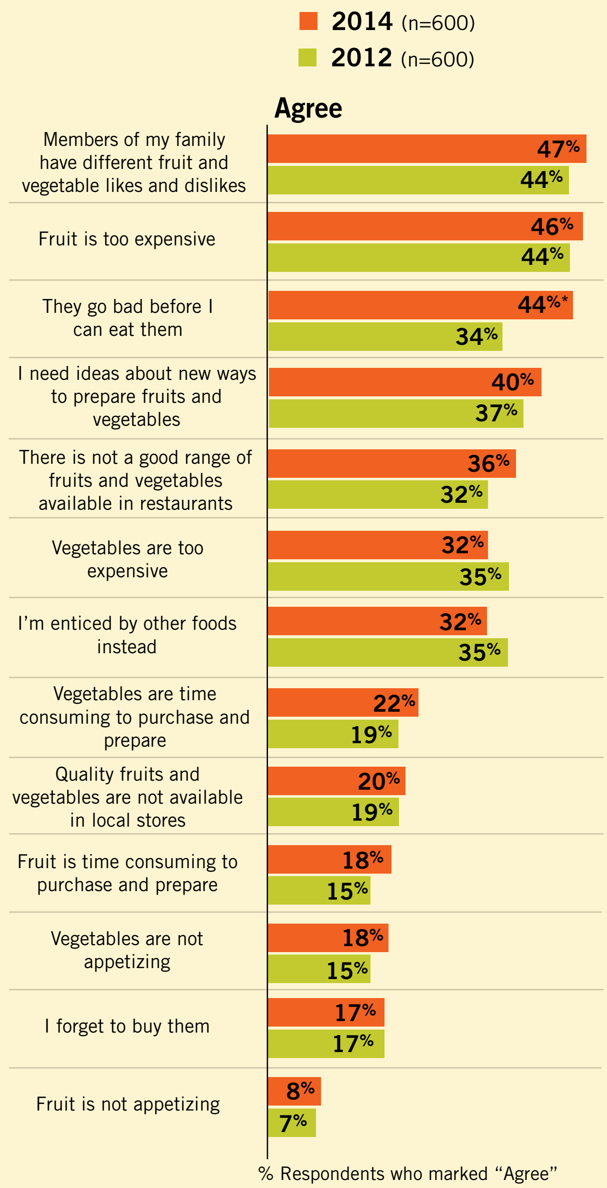
Female shoppers were significantly more likely than male shoppers to rank family preferences in their top 3 choices (Female 26%/ Male 17%) in 2012, as well as in 2014 (Female 25%/Male 18%). No other significant differences were seen between male and female shoppers in terms of important factors while shopping.

Barriers

When asked about how difficult it is to personally include fruits and vegetables in meals and snacks, primary shoppers indicated in both 2012 and 2014 that primary barriers were: different likes and dislikes of family members, concern about cost of fruit, spoilage, and needing ideas about new ways to prepare fruits and vegetables (Chart 19). Only concern about spoilage was significantly more problematic in 2014 than 2012 across all shoppers, regardless of income and gender.

Chart 19: Primary Shoppers' Perceived Barriers to Increased Fruit & Vegetable Consumption

Please indicate your level of agreement or disagreement in relation to how difficult each is for you personally to include fruits and vegetables in meals and snacks.



*Represents statistically significant difference between years.
Scores represent top 2 box scores in 5-point Likert Scale.

When comparing households with incomes above and below $50,000 in 2014 (Chart 20), we see the main barriers are similar for both income groups. The significant differences are that lower income households believe fruits and vegetables are too expensive, they are time consuming to purchase and prepare, and that they more often forget to buy them. This is consistent with 2012 responses to this question. It is also consistent with the lower availability of most forms of fruits and vegetables in homes of lower income shoppers (Chart 16).

In 2014, male shoppers were significantly more likely than female primary shoppers to indicate that they forget to buy fruits and vegetables (Male 22%/ Female 11%) and that fruit is not appetizing (Male 11%/ Female 5%). Male shoppers were also more likely to say that vegetables are not appetizing (Male 20%/ Female 15%) though this wasn't statistically significant. Not surprisingly, male shoppers were also less likely to indicate that they needed ideas about new ways to prepare fruits and vegetables than female shoppers (Male 36%/ Female 44%). These differences were consistent with those found between male and female shoppers in 2012.

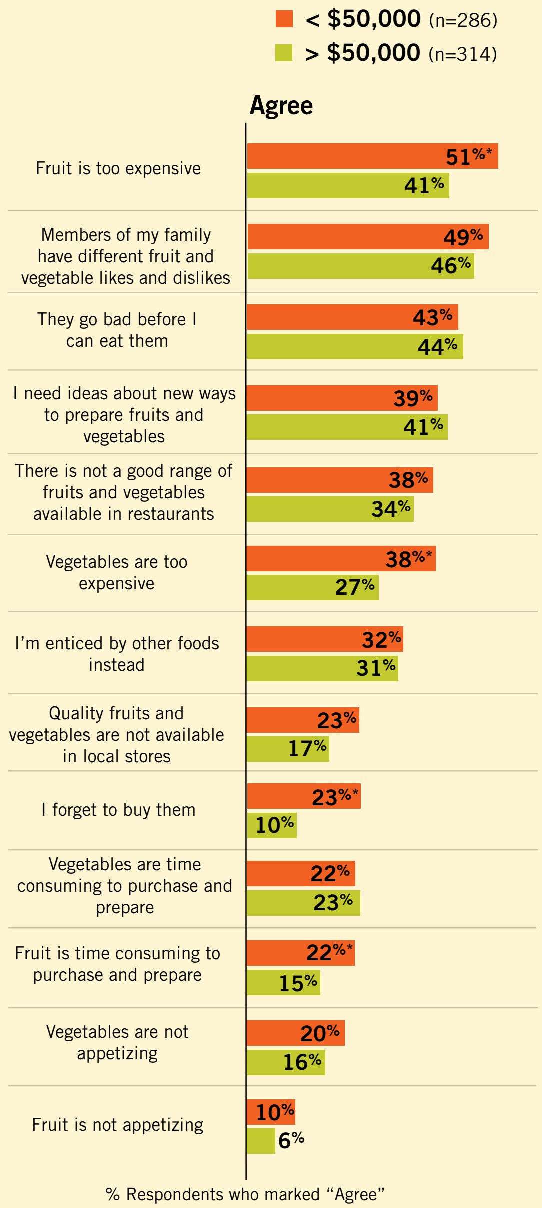
Of interest, significantly more female shoppers (19%) reported in 2014 that fruit is time consuming to purchase and prepare compared to only 10% of female shoppers who felt this way in 2012. Vegetables were also reported as more time consuming to prepare in 2014 (21%) versus 2012 (17%), though not significantly. The seemingly reduced preference for processed fruits and vegetables over time (Chart 13) may be driving more consumers to fresh, which respondents report as less easy to use or quick to prepare (Chart 13).

Helpful Aids

Tips that primary shoppers perceive to be most useful to help them eat more fruits and vegetables remained relatively stable between 2012 and 2014 in terms of priority. In both years shoppers responded that learning some cost savings tips would be most helpful (Chart 21). Note that the question in 2014 differed slightly from 2012. Two different tips were included as potential responses in 2014, including having more organics available and making them less time-consuming. Two responses from 2012 were not included in 2014: receiving regular reminders and tasting them for the first time at a restaurant. Respondents could select all that applied, as opposed to rank-ordering responses, so a comparison between the two years is useful though not an

Chart 20: Primary Shoppers' Perceived Barriers to Increased Fruit & Vegetable Consumption: By Income, 2014

Please indicate your level of agreement or disagreement in relation to how difficult each is for you personally to include fruits and vegetables in meals and snacks.



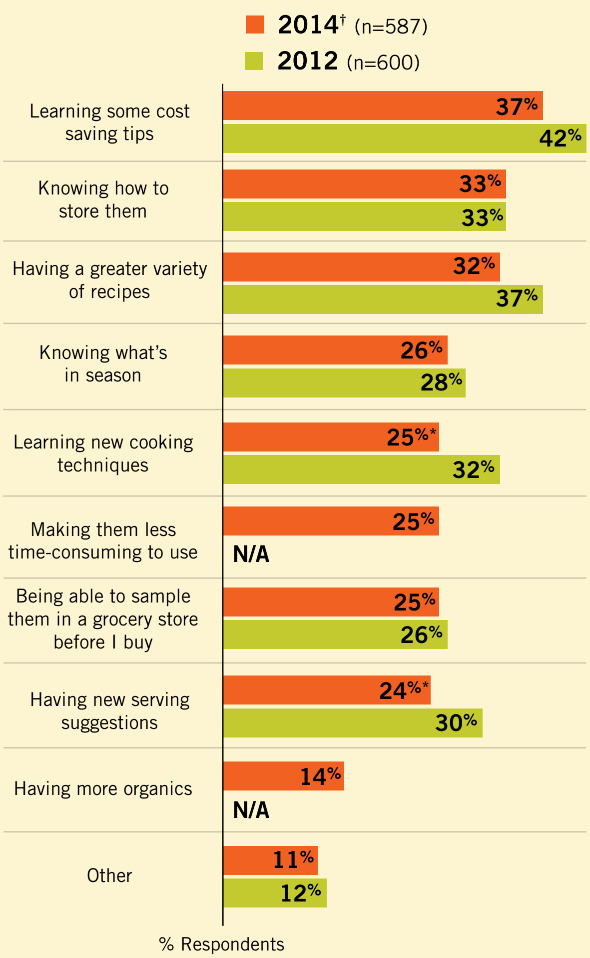
*Represents statistically significant difference between income groups.
Scores represent top 2 box scores in 5-point Likert Scale.

exact comparison. Learning new cooking techniques and having new serving suggestions were the only items that significantly decreased from 2012 to 2014. Having a greater variety of recipes also decreased, though not significantly. Of the 11% who marked 'other', the majority suggested fruit and vegetable price reduction and finding ways to get their kids to eat them as things that would be most helpful to them.

In 2014, those with household incomes below $50,000 were significantly more likely to say that learning some cost saving tips (42% vs 32%) would be useful to them compared to those households with incomes more than $50,000 per year (Chart 22). Higher income shoppers were significantly more likely to want fruits and vegetables less time consuming to prepare, along with a need for new serving suggestions. There were no other useful tips that were significantly different between income groups.

Chart 21: Most Useful Tips to Help Primary Shoppers Eat Fruits & Vegetables

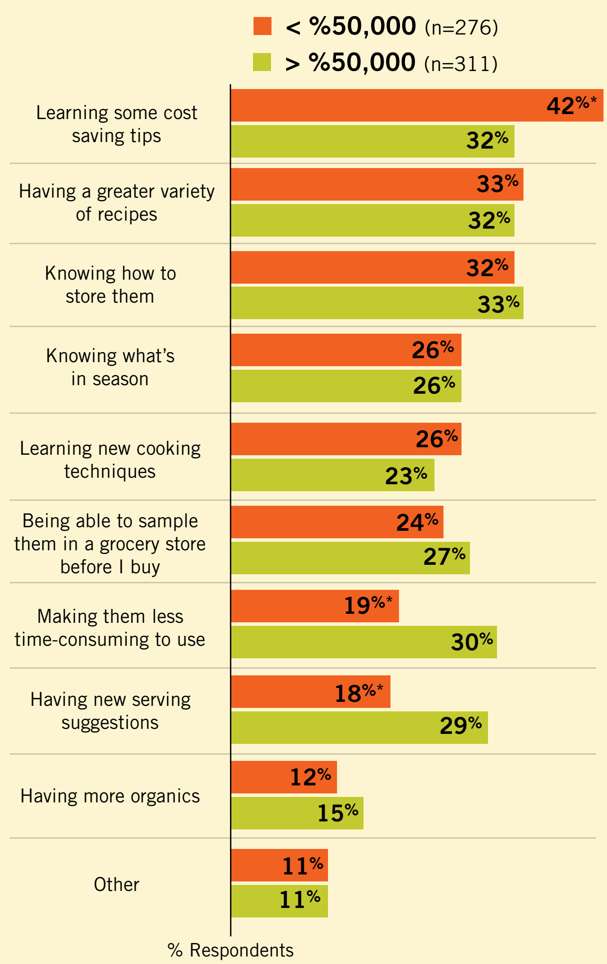
What would be most useful to help you eat more fruits and vegetables? (Please select all that apply.)



†Only asked of those who say they eat too little or just enough fruits and vegetables.
*Represents statistically significant difference between years.

Chart 22: Most Useful Tips to Help Primary Shoppers Eat Fruits & Vegetables: By Income, 2014

What would be most useful to help you eat more fruits and vegetables? (Please select all that apply.)



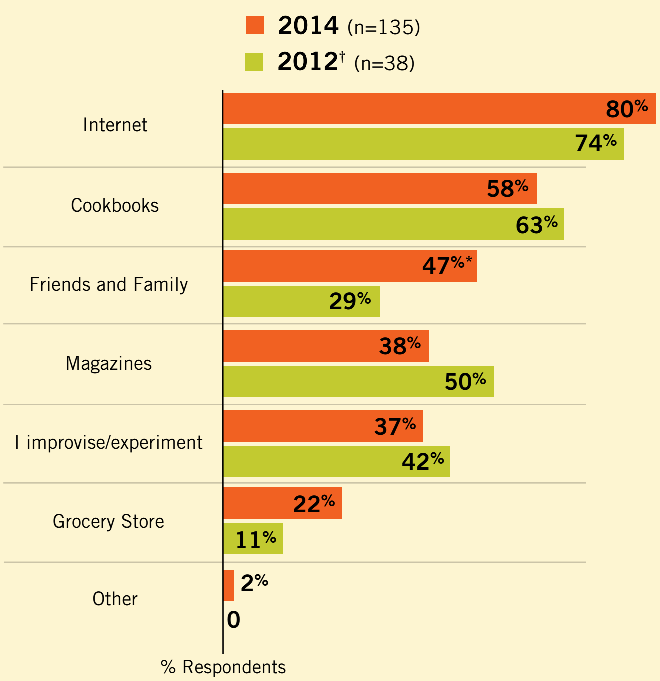
*Represents statistically significant difference between income groups.
Only asked of those who say they eat too little or just enough fruits and vegetables.

For shoppers who used recipes, they cite the Internet most frequently in both 2012 and 2014, followed by cookbooks when asked about where they would normally go to find them (Chart 23). In 2014, there was a significant increase in friends and family as a source for recipes (47% in 2014 vs 29% in 2012). Only moms were asked this question in 2012, while both male and female primary shoppers were asked this question in 2014. There were no differences in male or female shoppers, however, other than that men were more likely to improvise and experiment with recipes. Grocery stores increased and cookbooks and magazines decreased as a source of recipes in 2014, but this was not significantly different than 2012.

Then, for shoppers who cited the Internet as a source for recipes, an open ended question about which websites they visited shows increased popularity of The Food Network, search engines, Pinterest and Food.com (Chart 24). The 32% of 'other' responses were primarily single mentions of other websites or blogs.

Chart 23: Primary Shoppers' Sources for Recipes

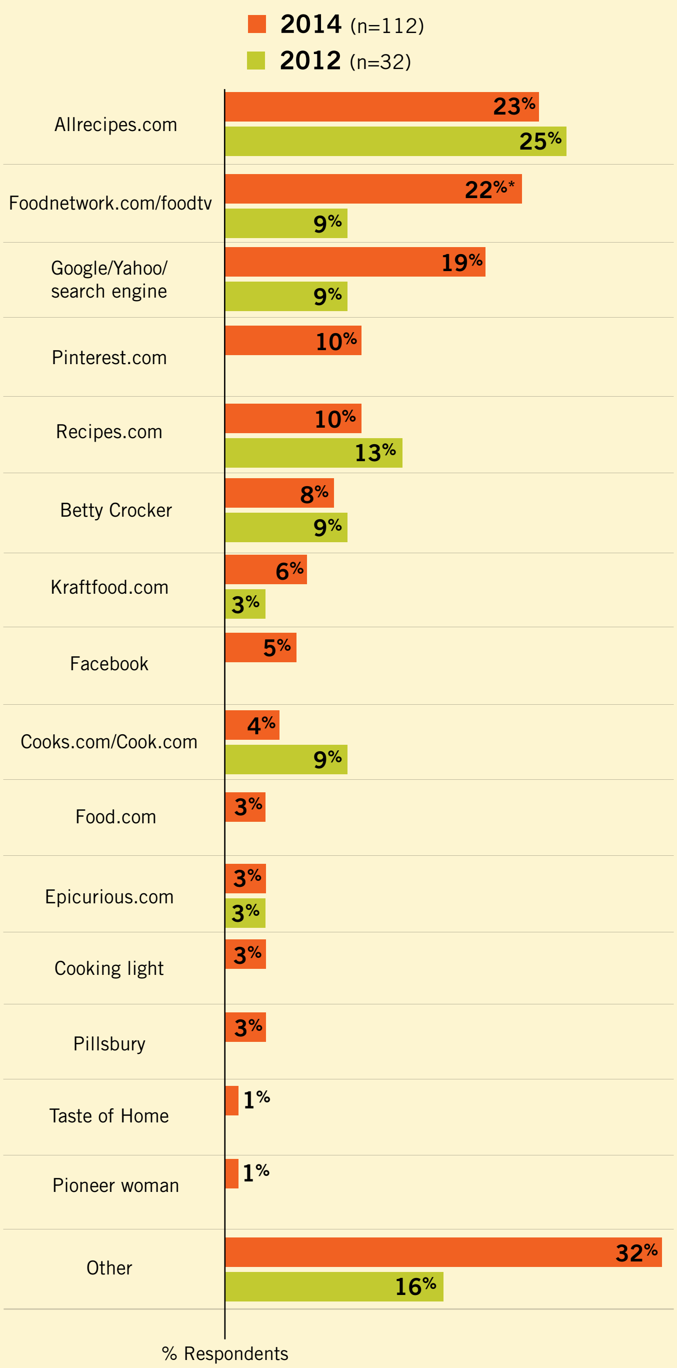
Where do you normally go to find recipes? (Please select all that apply.)



†In 2012 this question was only asked of Primary Shoppers who are Moms.
In 2014 this question was only asked of Primary Shoppers who are parents.
*Represents statistically significant difference between years.

Chart 24: Websites Used by Primary Shoppers to Find Recipes

What websites do you normally visit to find recipes? (Open-ended question.)

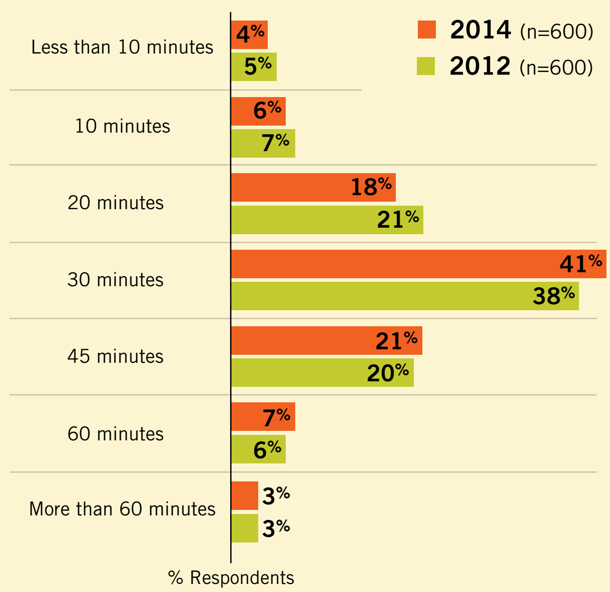


*Represents statistically significant difference between years.
This question was only asked of those who, in Chart 24, indicated they used the internet to find recipes.

Finally, because time is a barrier to increasing fruit and vegetable consumption for some shoppers, a question to understand how much time shoppers spend making a dinner meal was included in the survey. Responses remained fairly stable between 2012 and 2014, with two-thirds of primary shoppers reporting spending 30 minutes or less making a dinner meal (69% in 2014 and 71% in 2012) (Chart 25). In 2014, households with income less than $50,000 were significantly more likely than higher income households to spend less than 10 minutes making a dinner meal (7% lower income vs. 2% higher income). Conversely, those with higher annual household incomes were significantly more likely to spend 30 minutes or more making a dinner meal (67% lower income vs 75% higher income) in 2014. This was true in 2012 as well.

Chart 25: Primary Shoppers' Time Spent Making a Dinner Meal

On average, how much time do you spend making a dinner meal?



There were no significant differences between years.

Sources of Information

The Internet was selected as the top choice by respondents as either their first, second or third choice of where they would go to obtain information about fruit and vegetables in both 2012 and 2014 (Chart 26). In 2014, households with incomes below $50,000 were statistically less likely to use the Internet (65%) versus households with higher incomes (77%), though no significant differences were seen in their preferences from other sources for information. After the Internet, supermarkets, dietitians, and family ranked next highest in 2014 as a source of information for all primary shoppers.

Between 2012 and 2014, family and friends were becoming more influential, while government agencies were becoming less influential. Schools significantly increased as a source of information in 2014 over 2012, likely because more primary shoppers in 2014 had children (or grandchildren) living at home than those surveyed in 2012. Surprisingly, using a nutritionist/dietitian as a source of information about fruits and vegetables decreased significantly, despite the older average shopper respondent in 2014. Older shoppers who are likely managing disease states would have more need for dietary counseling, although these shoppers were also more educated and perhaps felt less need for counseling.

The active use of the Internet, family, and friends to obtain information about fruits and vegetables is why PBH continues to expand its presence in social media. Continued promotion and use of the FruitsAndVeggiesMoreMatters.org website and leveraging social media are inexpensive ways to reach consumers.

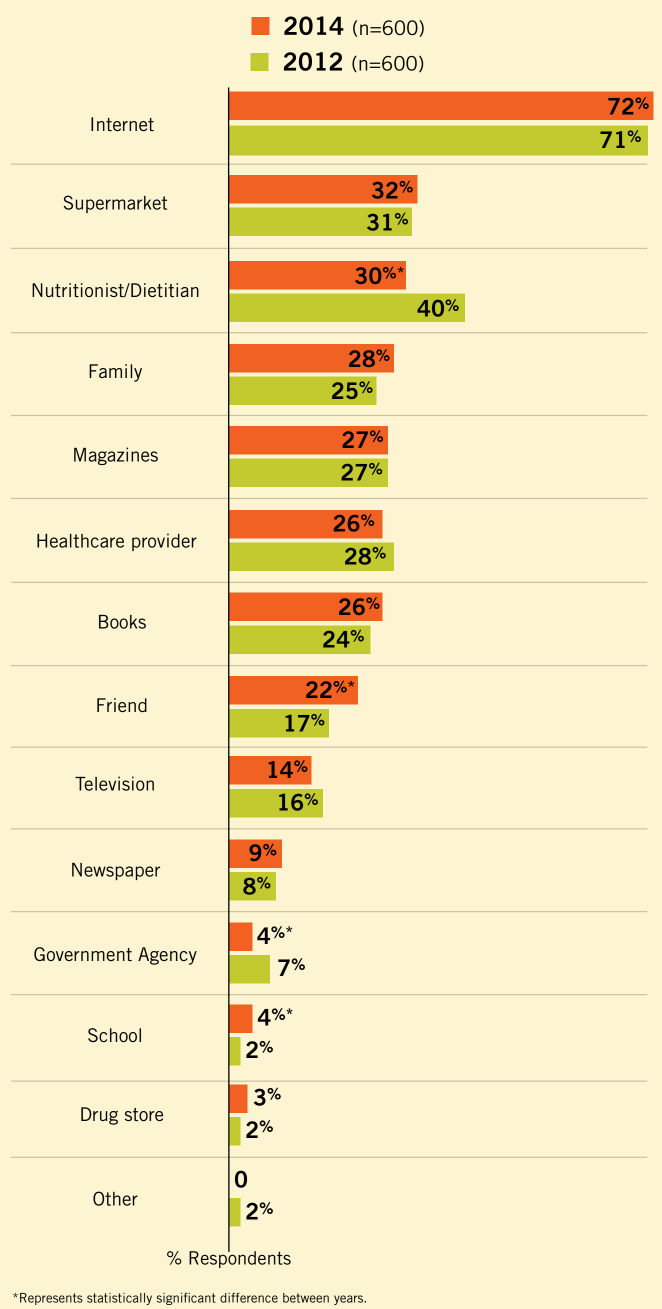
Communications Methods

Primary shoppers report that television news segments, supermarket flyers, newspaper ads, and signs on supermarket displays are the communication method they find most effective when it comes to making a food decision (Chart 27). However, there was a significant decrease in receptivity to these methods of communication between 2012 and 2014. Only social media posts, text messages, and QR codes improved as a preferred communication modes, but these still ranked as the least preferred overall.

Continued use of new communication technologies bodes well, especially among female shoppers. In 2014, female shoppers were significantly more likely than male shoppers to find Facebook, Twitter, social media posts, text messages, supermarket flyers/ads, signs on supermarket displays, and TV commercials

Chart 26: Primary Shoppers' Sources of Information About Eating More Fruits & Vegetables

If you wanted information about how to get yourself and/or your family to eat more fruits and vegetables, where would you go to obtain it? (Please rank your top 3 choices.)



*Represents statistically significant difference between years.

as an effective communication method when it comes to making a food decision for themselves or someone in their household. Male shoppers were significantly more likely than female shoppers to say that billboards and radio were an effective communication method for them.

Since most fruit and vegetables consumed in the U.S. are primarily purchased through grocery stores, and supermarkets continue to be one of the most effective food communication methods to influence primary shopper purchases, grocers are key to increasing fruit and vegetable sales and consumption.

Chart 27: Primary Shoppers' Responses to Communication Methods Regarding Food

What would be your response to the following communication methods regarding a type of food that you or someone in your household may enjoy?

*Represents statistically significant difference between years.

Percentages represent those who would stop, scan, listen, absorb information, do additional research, or purchase the product minus those who would completely ignore the communication.

Since . . . supermarkets continue to be one of the most effective food communication methods to influence primary shopper purchases, grocers are key to increasing fruit and vegetable sales and consumption.

Fruits & Veggies—More Matters

Fruits & Veggies—More Matters was launched in March of 2007 with the support of many stakeholders (see Appendix C). A report about moms attitudes and behaviors between 2007-2014 is available separately.[15] This section describes awareness of Fruits & Veggies—More Matters, its purchasing and motivational impact and shoppers affinity toward the brand.

Awareness

Total "definite" familiarity with the Fruits & Veggies—More Matters campaign grew from 18% in 2012 to 24% in 2014 among all primary shoppers (Chart 28). Between 2012 and 2014, familiarity of the campaign brand grew among both men and women of all income levels, though more so among women and those with household incomes under $50,000. While not asked of shoppers in 2014, most shoppers in 2012 became aware of the Fruits & Veggies—More Matters campaign through a supermarket display (Chart 29). Men were more likely than women to say they learned about it through the Internet. Those with household incomes below $50,000 were more likely than higher income households to have learned about it from TV or their health care provider. Brochures were more effective with higher income than lower income households.

Motivational Impact

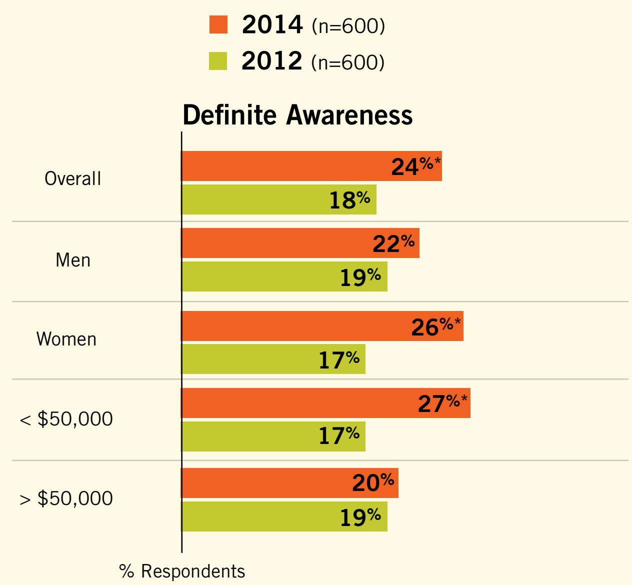
Of those who were aware of the Fruits & Veggies—More Matters logo, when asked how well it motivates them to help themselves or their family eat more fruits and vegetables, 39% said they find the brand logo very or extremely motivating in 2014, significantly higher than the 30% who responded in this manner in 2012 (Chart 30). Men and women, as well as all income levels, responded more positively to the brand in 2014 compared to 2012. Women were significantly more motivated by the brand in 2014 than they were in 2012.

Purchasing Impact

When primary shoppers were asked how seeing the Fruits & Veggies—More Matters logo affects their decision to purchase a product, 49% said they were more likely to purchase the product in 2014, significantly more than the 40% in 2012 (Chart 31). While the likeliness to purchase a product after seeing the brand logo was higher in 2014 for men and women, as well as all income levels, it was only statistically higher for women.

Chart 28: Primary Shoppers' Awareness of the Fruits & Veggies—More Matters Brand Logo: By Gender & Income

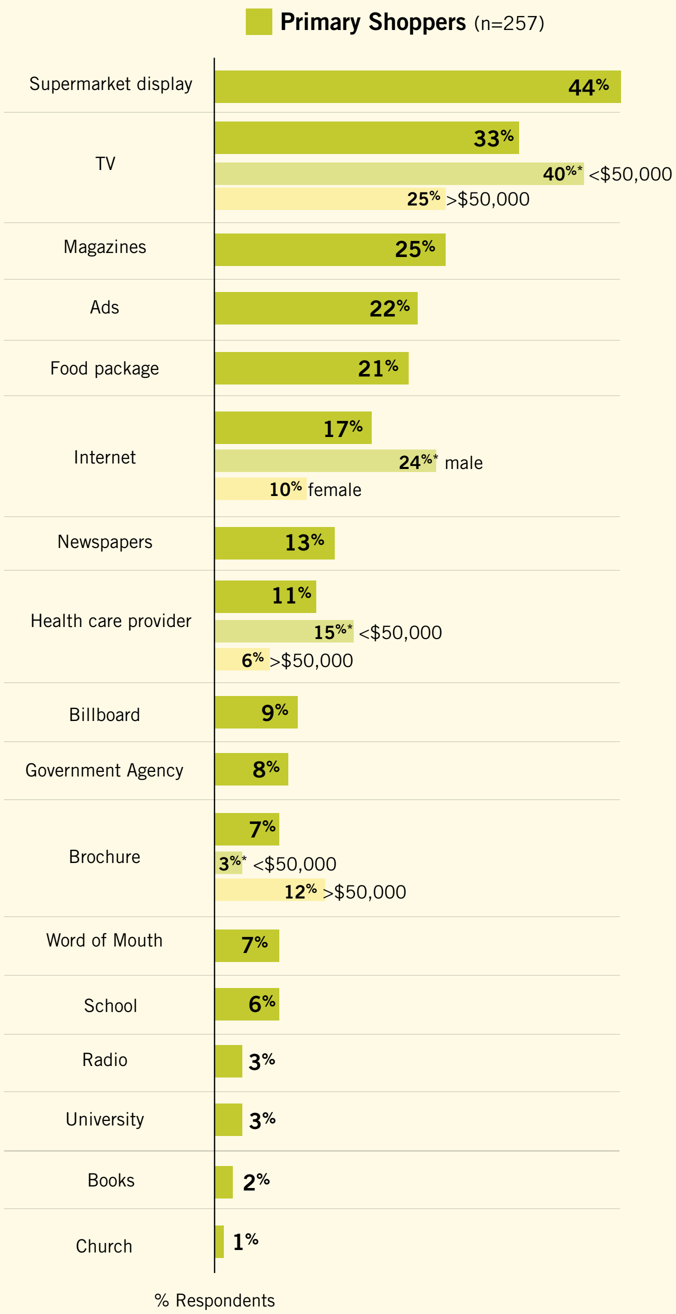
Which of the following statements best describes your level of familiarity with Fruits & Veggies—More Matters®?



*Represents statistically significant difference between years.
Scores represent top 3 box scores in 5-point Likert Scale.

Chart 29: How Primary Shoppers Have Become Familiar with the Fruits & Veggies—More Matters Brand Logo, 2012

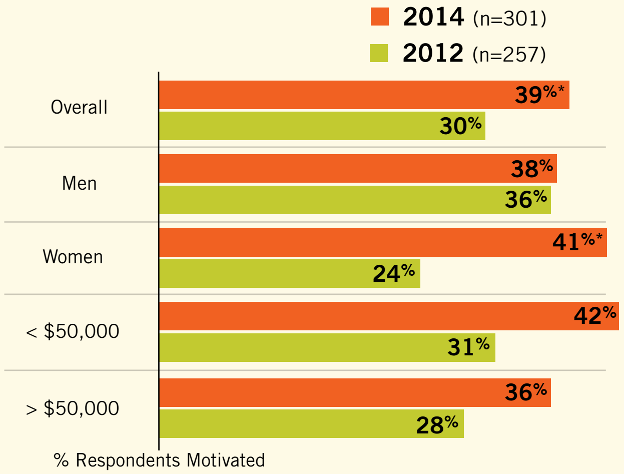
Where did you see or hear of Fruits & Veggies—More Matters®? (Please select all that apply)



*Represents statistically significant difference between gender or between income levels.
Only asked of those aware of Fruits & Veggies--More Matters.

Chart 30: How Well Fruits & Veggies—More Matters Motivates Primary Shoppers: By Gender & Income

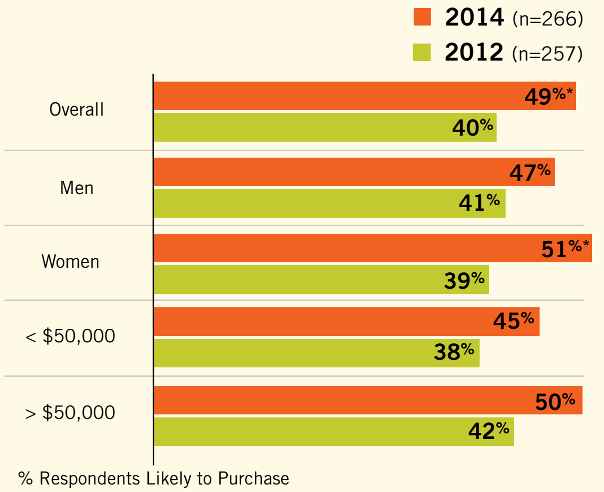
How well do you believe Fruits & Veggies—More Matters motivates you to help yourself and/or your family to eat more fruits and vegetables?



*Represents statistically significant difference between years.
Scores represent top 2 box scores on 5-point Likert Scale.
Only asked of those aware of Fruits & Veggies—More Matters.

Chart 31: Primary Shoppers' Likelihood of Purchasing Products Carrying the Fruits & Veggies—More Matters Brand Logo: By Gender & Income

How does seeing the "More Matters" logo affect your decision to purchase the product?



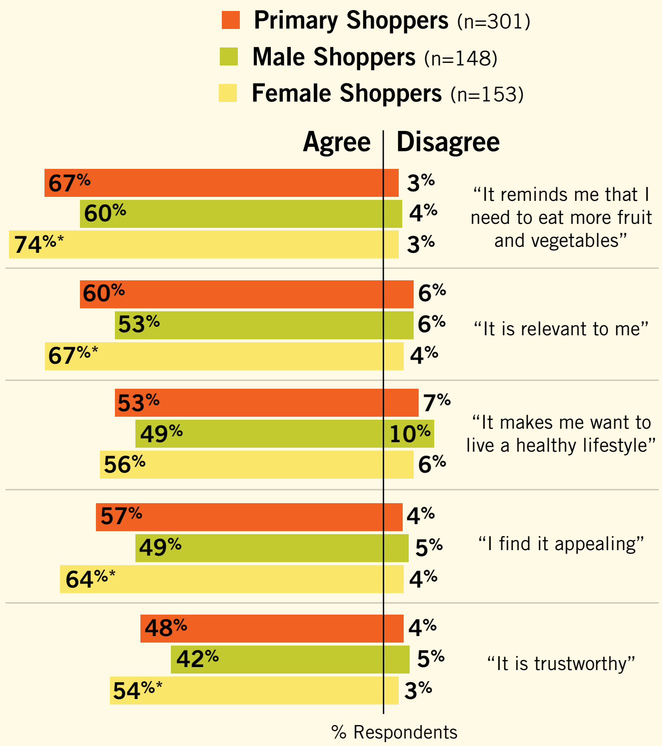
*Represents statistically significant difference between years.
Scores represent top 2 box scores on 5-point Likert Scale.
Only asked of those aware of Fruits & Veggies–More Matters.

Brand Affinity

In 2014 primary shoppers were asked questions about the Fruits & Veggies—More Matters brand to begin to gauge their affinity toward it. More than two out of three shoppers appreciate the campaign as a reminder to eat more fruits and vegetables (Chart 32) and nearly two-thirds are favorable toward it (Chart 33). Women are significantly more likely than men to say they find it appealing, relevant and trustworthy. Similarly, more women (74%) say it reminds them to eat more fruits and vegetables than men (60%). Women (69%) also rated the brand more favorably than men (58%). There were no differences by income level.

Chart 32: Primary Shoppers' Affinity Toward the Fruits & Veggies—More Matters Brand Logo, 2014

Please rate your level of agreement or disagreement with the following statements regarding Fruits & Veggies—More Matters

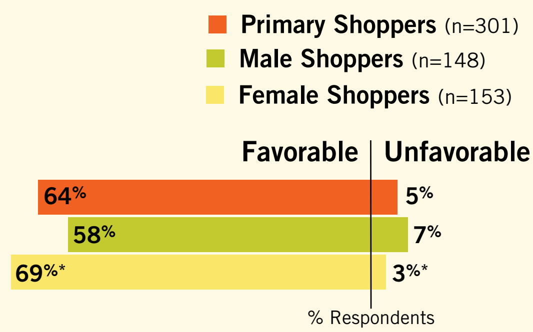


*Represents statistically significant difference between males and females.

Only asked of those aware of Fruits & Veggies—More Matters.
Responses do not equal 100% because mid-point in 5-point Likert Scale was omitted.

Chart 33: Fruits & Veggies—More Matters Brand Favorability Among Primary Shoppers, 2014

Taking everything into account from what you may have seen, read, heard, or experienced, please rate your overall impression of Fruits & Veggies—More Matters



*Represents statistically significant difference between males and females.

Only asked of those aware of Fruits & Veggies—More Matters.
Responses do not equal 100% because mid-point in 5-point Likert Scale was omitted.

Encourage having frozen, canned, dried, and 100% fruit or vegetable juice readily on hand to aid in making 'half the plate' fruit and vegetables . . .

Applications

Over time, shoppers want to, and are, eating more fruits and vegetables, with growing interest among lower income shoppers. Cost continues to be a concern, yet some of the more economical canned and juiced forms of fruits and vegetables are becoming less favored. Having all forms available in the home, however, correlates with greater consumption. Finally, use of Fruits & Veggies—More Matters as a marketing tool continues to drive consumer intent to purchase, especially among women and lower income households. Things that the industry, health influencers, and policy makers should consider moving forward include:

Industry

- Continue use of the Fruits & Veggies—More Matters brand logo on packaging, promotions, and in-store signage since half of shoppers say that it makes them more likely to purchase the product.
- Continue to expand your social media presence since this is the fastest growing way to communicate about food.
- Continue offering fruits and vegetables where budget conscious consumers eat since they are interested in eating more.

Health Influencers

- Enhance the use of Fruits & Veggies—More Matters as part of MyPlate education efforts.
- Encourage having frozen, canned, dried, and 100% fruit or vegetable juice readily on hand in the home to aid in making 'half the plate' fruit and vegetables at various eating occasions. Packaged forms of produce offer convenience without sacrificing taste in many meal occasions: frozen fruit in smoothies; canned or frozen vegetables, or 100% vegetable juice in soups; canned or dried fruit for baking, or on salads; and 100% juice as a quick serving when on the go.
- Emphasize how in-season fresh fruit and vegetables are budget-friendly, especially when they can be used within a few days of purchase, and demonstrate how to wash and store produce to extend shelf-life.

Policy Makers

- Encourage enhanced use of Fruits & Veggies—More Matters with lower income shoppers, since this group finds the message particularly motivating.
- Continue to recognize that packaged fruits and vegetables are critical to helping meet dietary goals.
- Continue to encourage that use of public funds spent on food (e.g. SNAP, WIC, and school meals) be spent on healthy foods like fruits and vegetables.

Enhanced, collective efforts to implement any or all of these suggestions will assist shoppers in making healthy food choices within their own budget constraints. The end result will be a healthier America.

Appendix A. Methodology

OnResearch, Inc (Ontario, Canada), fielded both surveys. The 2012 survey was fielded online January 23-31, 2012 and included 600 Primary Shoppers, with 300 men and 300 women. The 2014 survey was fielded online December 12, 2013 through August 18, 2014, as part of a new ongoing survey, with shoppers responding online each month of the year. A total of 600 primary shoppers, with 300 men and 300 women, were included during this period of time.

For all surveys, the sample was drawn from membership lists of survey panels for online companies who partner with OnResearch, Inc. Potential respondents who met inclusion criteria were invited via email to participate in the survey. The specifications included shoppers who were either solely responsible for their household's grocery shopping, or normally participated in their household's grocery shopping either alone or with their spouse or partner. The email invitation did not specify the survey was about fruits and vegetables, and the order of the questions was carefully considered to minimize bias in responses. In each study, a total of nearly 20,000 were asked to participate. Access to the survey was terminated once the planned sample was reached. Survey participants received rewards from the panel company for participating in the survey.

Most questions were answered using a 5-point Likert scale, with several questions that required open-ended responses. The Theory of Planned Behavior was used as a framework to ascertain psychosocial factors (social norms, perceived behavioral control, attitudes and intentions) related to consumption of fruits and vegetables.[16] Other constructs from Social Learning Theory that have been associated with fruit and vegetable intake in the scientific literature, including self-efficacy and social support were also included.[17, 18] Finally, other questions assessed perceptions about fruits and vegetables and awareness of recommendations for intake.

Results of each survey were tabulated by OnResearch, Inc.

Methodology

All respondents were residents of the United States.
The online survey was conducted via an online panel.

Wave	2012	2014
Fielding Period	January 23-31 2012	December 12, 2013 - August 18, 2014 (n=300)
Sample Size	n=600	n=600
Confidence Level (within year)	4% (19/20 times)	4% (19/20 times)
Gender	Men=300 Women=300	Men=300 Women=300
Age	18 years old and older	18 years old and older
Additional Criteria	Solely or normally participate in household's grocery shopping	Solely or normally participate in household's grocery shopping

Appendix B. Demographics

Respondent Profile: **Primary Shoppers**

MARITAL STATUS	2012	2014
Married/living with someone	57%	56%
Single	23%	26%
Separated/divorced	14%	13%
Widowed	6%	4%
SPOUSE'S EDUCATION	**2012**	**2014**
Did not finish high school	4%	2%
High school graduate	26%	19%
Some college	24%	21%
College graduate	25%	26%
Some graduate work	2%	5%
Completed graduate work	15%	24%
Trade/vocational school	3%	3%
WORK OUTSIDE THE HOME	**2012**	**2014**
No	48%	39%
Yes, Part-time	16%	23%
Yes, Full-time	36%	38%
ETHNICITY	**2012**	**2014**
White/Caucasian	85%	75%
Black/African American	7%	7%
Hispanic/Latino	4%	7%
Asian/Pacific Islander	3%	7%
Mixed Race	0	2%
Other	0	1%
GENDER	**2012**	**2014**
Female	50%	50%
Male	50%	50%
AGE	**2012**	**2014**
18-24	17%	11%
25-34	25%	15%
35-44	27%	26%
45-54	21%	9%
55+	11%	39%

HOUSEHOLD INCOME	2012	2014
Less than $25,000	21%	24%
$25,000 - $49,999	32%	24%
$50,000 - $74,999	23%	20%
$75,000 - $99,999	12%	12%
$100,000 or more	12%	20%
OWN EDUCATION	**2012**	**2014**
Did not finish high school	4%	1%
High school graduate	26%	14%
Some college	24%	26%
College graduate	25%	30%
Some graduate work	2%	6%
Completed graduate work	15%	22%
Trade/vocational school	3%	2%
NUMBER OF PEOPLE IN HOUSEHOLD	**2012**	**2014**
1	22%	27%
2	40%	32%
3	18%	12%
4	12%	14%
5+	8%	15%
CHILDREN UNDER AGE OF 18 LIVING AT HOME	**2012**	**2014**
Yes	28%	43%
No	72%	57%
LIVING AREA	**2012**	**2014**
Urban	26%	24%
Suburban	52%	53%
Rural	22%	23%

Appendix C. About Fruits & Veggies—More Matters

Recommendations for fruit and vegetable intake have increased due to research suggesting numerous potential benefits of fruit and vegetable consumption to prevent chronic diseases. The increased importance of fruit and vegetable consumption is illustrated by the inclusion of fruits and vegetables in the Dietary Guidelines for Americans, 2010 as one of the "food groups to encourage" and in updated recommendations for fruit and vegetable intake that 'half your plate' should consist of fruit and vegetables in the new ChooseMyPlate graphic.[2, 55] This change represented an increase for most people from the previous recommendation of 5-9 servings a day.

The 5 A Day for Better Health Program ("5 A Day") was a statewide social marketing program begun by the California Department of Health Services in 1988 to promote increased fruit and vegetable consumption. The national 5 A Day program began in 1991 as a public-private partnership between the National Cancer Institute (NCI) and Produce for Better Health Foundation (PBH). As lead health authority, NCI determined health statements and nutrient criteria for products which could carry the brand logo, and PBH coordinated private-sector activities. In 2005, NCI transferred lead health authority to the Centers for Disease Control and Prevention (CDC).

Awareness of recommendations for fruit and vegetable consumption increased over time. In 1991, 8% of individuals reported being aware that fruit and vegetable intake should be at least 5 servings a day.[19] In 2004, that percentage had increased to 40%.[20] However, this heightened awareness had not translated into behavior change. Between 1994 and 2005, the proportion of adults eating 5 or more servings of fruits and vegetables per day remained virtually unchanged with an estimated decrease of 0.22 servings per day among adults.[21]

In light of new dietary recommendations, PBH, CDC, and other partners recognized the need to establish a new identity for 5 A Day with the ability to sustain itself into the future, generate a brand that would provide an emotional or inspirational connection with consumers, and transfer 5 A Day equity—increased awareness of fruit and vegetable recommendations and the network for promoting consumption—to a new program identity, which is now Fruits & Veggies—More Matters®.

The Fruits & Veggies—More Matters® brand was developed based on comprehensive formative research with consumers. While specifically developed with moms, as the primary target audience, the Fruits & Veggies—More Matters® message tested well with men, women and people of different ages, incomes, and ethnicities. Moms preferred a nurturing tone rather than a preaching, frightening, or bullying one. The most effective approach in motivating moms was to be their ally, sending a message that promotes their responsibility as family caretaker. Fruits & Veggies—More Matters® brand appeals to moms' sense of responsibility to take care of her family in a strong, simple, and positive manner. Moms feel they can help their families eat more fruits and vegetables when they know that various forms (fresh, frozen, canned, dried, and 100% juice) all help meet daily fruit and vegetable requirements.[1] For time-starved moms, providing simple serving suggestions, tips, and recipes was also identified as important.

Ultimately the Fruits & Veggies—More Matters campaign and graphic are seen as positive reminders to eat more fruits and vegetables by the broader consumer audience. It reminds them of the known health benefits of consuming fruits and vegetables and encourages them to eat more.

Effectively replacing 5 A Day, Fruits & Veggies—More Matters was launched in March 2007 with the support of many stakeholders, including growers, supermarket retailers, state departments of health, CDC, and others.

fruits & veggies more matters®
FruitsAndVeggiesMoreMatters.org

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RESEARCH AND PUBLICATION FUNDED BY:

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1578-0614