

Americans love to eat out. And it shows as almost 50% of consumer food dollars are spent on food away-from-home. Even when the economy is sluggish and consumer confidence is down, dining out is still part of a household's budget. Admittedly, we are seeing more trading out and trading down. Dining out is quick and convenient, and with QSRs and Casual Chains offering special promotions such as "Buy one, Get one" or "Kids Eat Free", it's easy to see why families continue to dine out. In the past decade, more and more consumers have been looking for healthier alternatives on the menu. In a 2005 study conducted on behalf of the Produce for Better Health (PBH)<sup>1</sup> Foundation, 98% of consumers indicated they consume fruits and vegetables regularly at home. Of this group, half claimed to eat them regularly while dining away-from-home. A third of the surveyed consumers felt that there was not enough variety of fruits and vegetables on the menu. In fact, 25% of quick-service customers indicated that they would eat at a restaurant more often if a broader selection of fruits and vegetables were offered.<sup>2</sup> According to QSR magazine, 'consumers increasingly seek healthy, great-tasting food, it seems that more chefs and restaurant operators are looking to fruit as a perfect ingredient for menu items.'<sup>3</sup>

### Recognizing the Need for More Fruit and Vegetables in the Diet

For the past 30 years, the Centers for Disease Control and Prevention (CDC) has monitored obesity levels among children. From 1980 to 2012, obesity among children between the ages 6-11 more than doubled from 7% to 18%. During this same period, obesity among 12-19-year olds more than tripled from 5.0% to 18%.<sup>4</sup> Childhood obesity has both immediate and long-term effects on health and well-being.

Immediate health effects include:

- Obese youth are more likely to have risk factors for cardiovascular disease, such as high cholesterol or high blood pressure. In a population-based sample of 5- to 17-year-olds, 70% of obese youth had at least one risk factor for cardiovascular disease
- Obese adolescents are more likely to have prediabetes, a condition in which blood glucose levels indicate a high risk for development of diabetes
- Children and adolescents who are obese are at greater risk for bone and joint problems, sleep apnea, and social and psychological problems such as stigmatization and poor self-esteem

Long-term health effects:

- Children and adolescents who are obese are likely to be obese as adults and are therefore more at risk for adult health problems such as heart disease, type 2 diabetes, stroke, several

<sup>1</sup> "Closing the Opportunity Gap: Offering More Fruits and Vegetables on the Nation's Menu", Produce for Better Health Foundation, pg. 3.

<sup>2</sup> "Closing the Opportunity Gap", pg. 5.

<sup>3</sup> Wolf, Barney; "Fruit Blooms on Menus," QSR magazine, September, 2011; <http://www.qsrmagazine.com/menu-innovations/fruit-blooms-menus>.

<sup>4</sup> <https://www.cdc.gov/obesity/data/childhood.html>. Accessed 6/5/19.

types of cancer, and osteoarthritis. One study showed that children who became obese as early as age 2 were more likely to be obese as adults

- Overweight and obesity are associated with increased risk for many types of cancer, including cancer of the breast, colon, endometrium, esophagus, kidney, pancreas, gall bladder, thyroid, ovary, cervix, and prostate, as well as multiple myeloma and Hodgkin's lymphoma<sup>5</sup>

Children are not the only ones at risk. Studies have also shown that approximately 69%, or more than 2 out of 3 people, are overweight (as defined as a body-mass index (BMI) of 25+) or obese (30+ BMI).<sup>6</sup>

There has been some evidence that the rate of increase in obesity has slowed since 2005: in 2011, the rates increased in 16 states, however in 2012 the rates only increased in Arkansas.<sup>7</sup> The top 10 states with the highest obesity rates are:<sup>8</sup>

Rank	State	% of Adult Obesity
1	Louisiana	34.7%
2	Mississippi	34.6%
3	Arkansas	34.5%
4	West Virginia	33.8%
5	Alabama	33.0%
6	Oklahoma	32.2%
7	South Carolina	31.6%
8	Indiana	31.4%
9	Kentucky	31.3%
10 (tie)	Michigan/Tennessee	31.1%

Since 1984, CDC's Behavioral Risk Factor Surveillance System (BRFSS) have monitored American's eating habits.<sup>9</sup> Studies have shown that eating fruits and vegetables, a dietary source of essential vitamins and minerals, as part of a healthy diet may help reduce the risk of heart disease, high blood pressure, and Type II diabetes, and may protect against certain types of cancer.<sup>10</sup> In addition, fruits and vegetables provide vitamins, minerals and phytonutrients, are often high in fiber and naturally low in calories, and can help facilitate weight management when eaten instead of other higher-calorie food.

In 2011, the USDA launched MyPlate, to replace the Food Pyramid, as an easier way to help consumers think about building a healthy plate at mealtimes. The new MyPlate icon and program clearly emphasizes fruit, vegetable, grains, protein and dairy food groups. While the MyPlate icon replaces the Food Pyramid icon, the message remains the same – half of a meal plate should consist of fruits and vegetables.

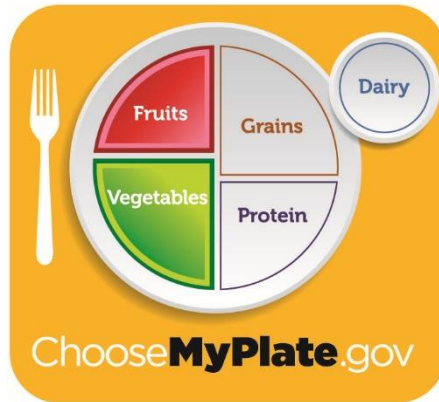
<sup>5</sup> "The Health Effects of Overweight and Obesity." <https://www.cdc.gov/healthyweight/effects/index.html>. Accessed June 5, 2019.

<sup>6</sup> National Center for Health Statistics. Health, United States, 2012; <http://www.cdc.gov/nchs/data/hus/hus12.pdf>, Table 68.

<sup>7</sup> Executive Summary "F as in Fat: How Obesity Threatens America's Future 2013," Robert Wood Johnson Foundation and Trust for Health, <https://www.rwjf.org/en/library/research/2013/08/f-as-in-fat-how-obesity-threatens-america-s-future-2013.html>. Accessed June 5, 2019.

<sup>8</sup> "F as in Fat: How Obesity Threatens American's Future 2013, Robert Wood Johnson Foundation and Trust for Health, pg. 8.

<sup>9</sup> (NRA/PMA "An Examination of Fresh Produce Usage in the Restaurant Industry, June 2009).



The amount of fruit one needs depends on their age, sex and level of physical activity. Fruit servings can be anywhere from 1 serving (1 serving = 1 cup fruit or 100% fruit juice = ½ cup of dried fruit) to 2 servings.\*

**TIP:** Adding more fruits or vegetables to the plate – or even making vegetables the center-of-the-plate – results in more plate coverage and can help reduce food cost.

\* For more specific fruit or vegetable serving size, please visit <http://www.choosemyplate.gov/food-groups/>.

## What does this mean for foodservice?

For chefs and menu developers, there's no better time than now, to take decisive action and add healthier menu options. In fact, savvy operators are taking advantage of the higher consumer demand for healthier menu items and are adding more fruits and vegetables. In a 2009 study sponsored by the National Restaurant Association and Produce Marketing Association, 32% of operators indicated they were serving more fresh produce compared to two years ago; in fact this percentage is even higher among Fine Dining (46%) and Casual Dining (47%) operators.<sup>10</sup>

Almost three-quarters of the operators discovered that by emphasizing fresh produce in their marketing promotion, they were able to increase traffic.<sup>11</sup> The power of “fresh” resonates with consumers.

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<sup>10, 11</sup> (NRA/PMA “An Examination of Fresh Produce Usage in the Restaurant Industry, June 2009).

## Avocados Are a Nutrient Booster

It's no wonder avocados are also listed as a "nutrient superstar" in the American Diabetes Association's *Diabetes Food and Nutrition Bible*.<sup>12</sup> The Fresh California Avocado is one of nature's most extraordinary and special fruit. Packed with delicious flavor, the avocado contributes nearly 20 vitamins, minerals, and beneficial nutrients, including 8% of the recommended Daily Value (DV) for fiber, 8% vitamin K, 6% folate, 4% vitamin E, 4% vitamin C, 4% potassium, 2% iron, with 81 micrograms of lutein and 19 micrograms of beta carotene.

California Avocados can be a fresh, natural, wholesome part of a healthful diet. They're irresistibly rich in flavor and avocados also provide vital nutrients and phytochemicals. Healthy Diets rich in fruits and vegetables may reduce the risk of some types of cancer and other chronic diseases.

There are 13 vitamins that the body absolutely needs: vitamins A, C, D, E, K and the B vitamins (thiamine, riboflavin, niacin, pantothenic acid, biotin, vitamin B-6, vitamin B-12 and folate). Avocados naturally contain many of these vitamins.

- There are 13 vitamins, minerals and nutrients that the body absolutely needs. Nutrient-dense California Avocados naturally contain many of these nutrients. Including:

### MONOUNSATURATED FATS (3 grams per serving)

- Helps lower blood cholesterol L, if used in place of saturated fats and *trans* fat

### VITAMIN K (6.3 mcg/8% Daily Value per serving)

- A fat-soluble vitamin that plays an important role in blood clotting

### FOLATE (27 mcg/6% Daily Value per serving)

- Promotes healthy cell and tissue development. Especially important during periods of rapid cell division and growth such as infancy and pregnancy and helps maintain normal levels of homocysteine in the blood system

### POTASSIUM (152 mg/4% Daily Value per serving)

- In the body, potassium is classified as an electrolyte. Potassium is a very important mineral to the human body. It has various roles in metabolism and body functions and is essential for the proper function of all cells, tissues, and organs: Potassium is a very important mineral to the human body. Your body needs potassium to: Build proteins, Break down and use carbohydrates; Build muscle; Maintain normal body growth; Control the electrical activity of the heart; and Control the acid-base balance
- According to the *Dietary Guidelines for Americans, 2010* dietary potassium can help lower blood pressure by blunting the adverse effects of sodium on blood pressure

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<sup>12</sup> Warshaw, Hope S and Webb, Robyn. American Diabetes Association "The Diabetes Food & Nutrition Bible". Port City Press. 2001.

VITAMIN E (.590 mg/4% Daily Value per serving)

- An antioxidant that protects the body tissue from damage caused by unstable substances called free radicals. At lower levels, vitamin E may help protect the heart and also plays a role in healthy skin and hair

LUTEIN (81 mcg)

- A carotenoid and antioxidant that may be associated with a lower risk of eye diseases, such as cataracts and macular degeneration, and may help maintain the health of skin

## **AVOCADO NUTRITION FACTS**

One-third of a medium avocado (50 grams) has 80 calories with nearly 20 vitamins and minerals, making it a nutrient-dense choice.

Avocados provide “good” fats, 1g Poly and 5g Mono per 50g serving.

The avocado is virtually the only fruit that has monounsaturated fat.

California Avocados are a heart-healthy superfood and naturally sodium and cholesterol free.

<b>Nutrition Facts</b>	
3 servings per container	
<b>Serving size</b>	<b>1/3 medium (50g)</b>
<hr/>	
<b>Amount per serving</b>	
<b>Calories</b>	<b>80</b>
<hr/>	
	<b>% Daily Value*</b>
<b>Total Fat</b> 8g	<b>10%</b>
Saturated Fat 1g	<b>5%</b>
<i>Trans</i> Fat 0g	
Polyunsaturated Fat 1g	
Monounsaturated Fat 5g	
<b>Cholesterol</b> 0mg	<b>0%</b>
<b>Sodium</b> 0mg	<b>0%</b>
<b>Total Carbohydrate</b> 4g	<b>1%</b>
Dietary Fiber 3g	<b>11%</b>
Total Sugars 0g	
Includes 0g Added Sugars	<b>0%</b>
<hr/>	
<b>Protein</b> 1g	
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Vitamin D 0mcg	0%
Calcium 10mg	0%
Iron 0.3mg	2%
Potassium 250mg	6%
Vitamin A 0mcg	0%
Vitamin C 4mg	4%
Vitamin E 1mg	6%
Vitamin K 11mcg	10%
Thiamin 0.04mg	4%
Riboflavin 0.1mg	8%
Niacin 1mg	6%
Vitamin B <sub>6</sub> 0.1mg	6%
Folate 45mcg DFE (0mcg folic acid)	10%
Pantothenic Acid 0.7mg	15%
Phosphorus 30mg	2%
Magnesium 15mg	4%
Zinc 0.3mg	2%
Copper 0.1mg	10%
Manganese 0.1mg	4%
<small>* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.</small>	

## Calories

The USDA recommended daily dietary caloric intake is about 2,000 (2,000 – 3,000 for men and 1,600 – 2,400 for women – depending on age and how physically active the person is).<sup>13</sup> Calorie is a measure of how much energy we receive from the food, so ideally Americans should be consuming the level of calories that is expended in a day in order to maintain their weight.

Americans watching their caloric intake should seek foods that are high in nutrient density – such as an avocado, instead of foods with empty calories – such as a candy bar.

<sup>13</sup> Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 2010, PARTD, Section 1. September 2, 2010.

The three nutrients that provide calories are:

1. Carbohydrates
2. Fat
3. Protein

### Carbohydrate<sup>14</sup>

There are 4 calories in one gram of carbohydrate. Ideally, we should dedicate 45-65% of the calories to carbohydrates.

Carbohydrates provide most of the energy we need for our normal body functions such as heartbeat, breathing, and digesting, as well as for our physical activities and exercise. High-carbohydrate foods are sometimes the only source of many essential nutrients such as:

- Fiber
- Vitamins C & E
- Most of the B vitamins
- Carotenoids and other beneficial phytochemicals
- Potassium

### Fiber<sup>15</sup>

A healthy balanced diet also includes fiber. Fiber may be helpful in moderating the development of diabetes and heart disease. Studies have shown that it may help maintain colon health.

There are two types of fiber which our bodies need:

- Soluble: Makes you feel full, and it slows down the digestion
  - Dissolves in water
  - Regulates blood sugar; binds with cholesterol
  - Sources: beans, fruits, oats, lentils
- Insoluble: Nature's broom, because it sweeps things out of our system
  - doesn't dissolve in water
  - sources: fruits, vegetables, wheat bran, whole-grain flour, popcorn

Focus on "good carbs" – foods with a lower calorie count versus calorie-dense foods that are high in fat, sugar or refined grains. Examples of good carbs are:

- Vegetables
- Fruits
- Skim milk
- Hot cereal, cooked
- Brown rice, cooked
- Barley, cooked
- Whole-wheat spaghetti
- Beans, boiled

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<sup>14</sup> "Carbohydrate 101". <http://foodandhealth.com/carbohydrate-101/>. Accessed March 4, 2014.

<sup>15</sup> "Fiber". <http://www.nlm.nih.gov/medlineplus/ency/article/002470.htm>. Accessed March 4, 2014.

## Fat<sup>16</sup>

Fats provide more calories per gram than any other calorie source—9 calories per gram. And believe it or not, our bodies need fat as it provides essential fatty acid which keeps our skin soft, delivers fat-soluble vitamins and are a source for energy. But, according to the USDA, we should limit our calories from fat to 20-35%. Types of fat include saturated, *trans*, monounsaturated, and polyunsaturated fatty acids. Some fat is found naturally in foods, and fat is often added to foods during preparation. Similar to protein, inadequate intake of total fat is not a common concern in the United States. Most Americans consume too much saturated and *trans* fatty acids and not enough unsaturated fatty acids. Understanding the different types of fat, and what's 'good' versus 'bad' fat will help the foodservice industry offer better alternatives on the menu.

There are three types of fat to be aware of:

### Saturated Fat:

- usually solid when at room temperature
- increases total cholesterol and LDL cholesterol
- Daily intake should not be more than 10% of total calories; however, the American Heart Association recommends no more than 7% of total calories<sup>17</sup>

### Trans Fat:

- made by adding hydrogen to vegetable oils
- increases total cholesterol, increase LDL cholesterol and may decrease HDL cholesterol
- more stable so it doesn't go rancid as quickly

Unsaturated Fats – which there are two types:

- Monounsaturated:
  - typically liquid at room temperature, but starts to turn solid when chilled
  - Sources: certain plant oils such as olive oil, canola oil, peanut oils, and avocados, pumpkin seeds
- Polyunsaturated:
  - liquid at room temperature and when chilled
  - sources: oily seafood such as salmon, mackerel, herring, sardines, lake trout, and certain plant oils like safflower, sesame, soy, corn and sunflower-seed oils, nuts and seeds

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<sup>16</sup> Dietary Guidelines for Americans, 2010.

<sup>17</sup> "The Skinny on Fats," American Heart Association.

[http://www.heart.org/HEARTORG/Conditions/Cholesterol/PreventionTreatmentofHighCholesterol/Know-Your-Fats\\_UCM\\_305628\\_Article.jsp](http://www.heart.org/HEARTORG/Conditions/Cholesterol/PreventionTreatmentofHighCholesterol/Know-Your-Fats_UCM_305628_Article.jsp). Accessed June 5, 2019.



According to the American Heart Association, good fats (unsaturated fats) are those that can lower cholesterol levels are beneficial when consumed in moderation and in place of saturated and trans fats. Due to their mono and polyunsaturated fat content, avocados are a great substitution for foods rich in saturated fat.

### Protein<sup>18</sup>

One gram of protein contains 4 calories. Calories from protein should be in the 20-40% range.

Proteins are a part of our cell, tissue, and organ, and these proteins are constantly being broken down and replaced. Our bodies need to replace the proteins to build and maintain our bones, muscles and skin. The protein from foods we eat is digested into amino acids and used to replace the proteins in our bodies.

Protein from animal-based foods are complete protein, which means they supply all of the essential amino acids our body cannot make on its own. Animal-based foods are meat, poultry, fish, milk, eggs, and cheese.

Protein is also easily consumed through whole grains, soy products, nuts and beans.

For more information on nutrition and labeling, visit the following websites:

- United States Department of Agriculture Nutrient Data Laboratory at <https://www.nal.usda.gov/fnic/usda-nutrient-data-laboratory>
- United States Department of Agriculture at <http://www.choosemyplate.gov/>
- National Institute of Health at [www.ods.od.nih.gov](http://www.ods.od.nih.gov)
- US Food and Drug Administration at <https://www.fda.gov/food/food-labeling-nutrition>

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<sup>18</sup> Carbohydrates, Proteins, and Fats. Merck Manual Consumer Version. Accessed June 5, 2019  
<https://www.merckmanuals.com/home/disorders-of-nutrition/overview-of-nutrition/carbohydrates,-proteins,-and-fats>.

## Avocados Are a Nutrient Absorption Booster

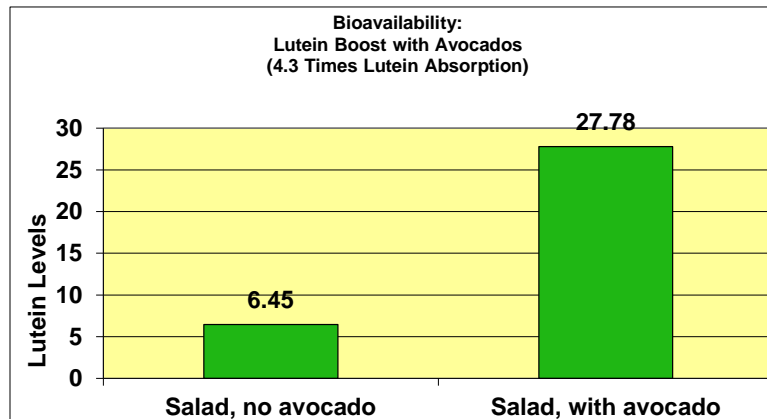
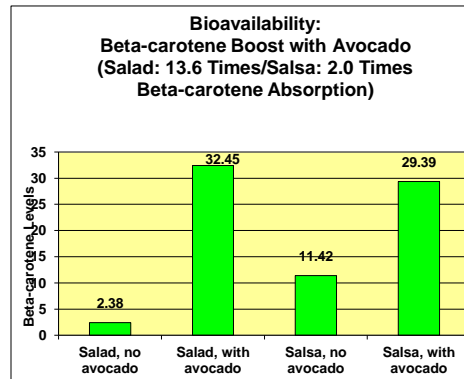
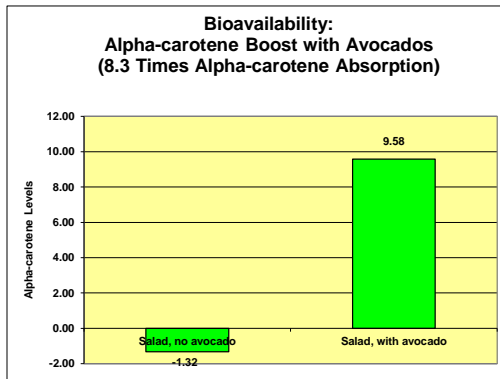
When served with other fruits and vegetables, avocados have the ability to act as a “nutrient absorption booster,” enabling the body to absorb more fat-soluble nutrients, such as alpha-carotene and beta-carotene, as well as lutein. These carotenoids are being studied for their role in heart, eye and prostate health.

During a study at Ohio State, participants who consumed 75g, or 2.5 servings (approximately 2.5 tablespoons) of avocados along with lettuce, carrots and spinach absorbed more than 8 times the alpha-carotene, 13 times more beta-carotene and more than 4 times the lutein than subjects who only consumed lettuce, carrots and spinach. When salsa was consumed with the 150g of avocados, the subjects absorbed 4.4 times more lycopene and doubled the absorption of beta-carotene.<sup>19</sup>

Alpha-carotene – Converted to vitamin A; enhances the immune system

Beta-carotene – Converted to vitamin A; may have positive effect on immunity; may promote heart health

Lutein – May promote healthy vision



<sup>19</sup> Nurray Z. Unlu, Torsten Bohn, Steven K. Clinton and Steven J. Schwartz, “Carotenoid Absorption for Salad and Salsa by Humans Is Enhanced by the Addition of Avocado or Avocado Oil”, Journal of Nutrition, 2005 135: 431-436.

## Avocados Enhance Nutrient Quality of Diet

Avocados contribute nearly 20 vitamins, minerals and beneficial plant compounds that can enhance the nutrient quality of your diet.

The American Heart Association recommends foods that provide good fats (mono- and poly-unsaturated fats); and low-fat dairy products, poultry, fish, legumes and non-tropical vegetable oils and nuts. <sup>20</sup>

Avocados help assist consumers in meeting a major dietary goal of reducing saturated fat in the diet, when they are consumed in place of saturated-fat containing foods.

**TIP:** When eaten in place of saturated fats, avocados can assist in meeting a dietary goal to reduce saturated fat in the diet. Use mashed avocados as a sandwich spread or stuffed potato topper to add flavor and texture.

**NOTE:** Websites cited in this section have been provided as a convenience to you. The California Avocado Commission is not responsible for the accuracy, quality, safety, or nature of the content of these sites.

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<sup>20</sup> Dietary Fats. American Heart Association. <https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/fats/dietary-fats>.