

Health Policy Brief

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Final 2015–20 Dietary Guidelines for Americans. The federal government published its latest recommendations intended to shape people’s diets based on the latest research.

WHAT’S THE ISSUE?

The 1990 National Nutrition Monitoring and Related Research Act requires the Department of Health and Human Services (HHS) and the Department of Agriculture (USDA) to jointly publish the Dietary Guidelines for Americans at least once every five years. The [Dietary Guidelines for Americans: 2015–2020](#), eighth edition, was released on January 7, 2016. The guidelines were heavily informed by the [Scientific Report of the 2015 Dietary Guidelines Advisory Committee](#) (DGAC), which was charged with analyzing the latest in nutrition science since the 2010 guidelines were published and coming up with food-based recommendations of public health importance. The secretaries of HHS and the USDA were under no obligation to accept every DGAC recommendation, and, in particular, they pointedly rejected its suggestion that the guidelines should recommend that Americans pay more attention to the “sustainability” of the food they eat.

The guidelines are extremely influential and heavily lobbied; they form the basis for all federal nutrition policies, including the National School Lunch Program, which serves thirty-one million children daily; the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); and the Supplemental Nutrition Assistance Program (SNAP).

And they serve as guideposts to the latest scientific thinking for health professionals throughout the country.

The DGAC’s 571-page report was made public by its fourteen-member committee on February 19, 2015, nearly a year before the 2015–20 guidelines were released. This brief is based in part on a [previous brief](#) published before the guidelines were published.

While the new guidelines are consistent with previous advice—eat more fruit, vegetables, and whole grains and eat less saturated fat, sodium, and added sugars—there are a few noteworthy differences with the 2010 guidelines:

- Although there is still plenty of advice about individual food groups and nutrients, the guidelines’ overall emphasis is now on eating patterns—“the totality of what individuals habitually eat and drink,” as the report puts it in Chapter 1.
- There is a newly introduced recommended limit of 10 percent of daily calories from added sugars.
- Drinking three to five cups of coffee per day is now considered part of a healthy eating pattern.

3-5 cups

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- The previous 300 milligram restriction on dietary cholesterol has been lifted, in line with many studies that show that dietary cholesterol does not affect blood cholesterol levels.

- The guidelines for sodium consumption remain at 2,300 milligrams per day for Americans ages fourteen and older. But unlike 2010, there is no longer the additional recommendation that everyone older than age fifty; all African Americans; and people with hypertension, diabetes, or chronic kidney disease reduce their sodium intake to 1,500 milligrams per day.

- Men and teenage boys were encouraged to cut back on their protein consumption of meat, eggs, and poultry.

- And, for the first time, the guidelines are officially known by their five-year range, 2015–20, instead of a single year.

The guidelines start from the assumption that there is a link between “poor quality eating patterns and physical inactivity” and the number of Americans—117 million, or about half the adult population—who have one or more preventable, chronic diseases, say HHS secretary Sylvia Mathews Burwell and USDA secretary Thomas Vilsack in their introductory message. These diseases include cardiovascular disease, type 2 diabetes, obesity, and being overweight.

But according to the two cabinet secretaries, the guidelines are limited, noting that chronic diet-related diseases are continuing to rise and that the guidelines are just one part (although an important one) of “a complex and multifaceted solution to promote health and help reduce the risk of chronic disease.”

While accessible to the layperson, the guidelines are intended for policy makers and nutrition and health professionals, and they include ample footnotes citing numerous studies. There are also fourteen appendices, including one each on the three different food patterns and four on different food sources ranging from fiber to vitamin D. There are recommended amounts of different nutrients based on twelve different daily calorie needs, which are further subdivided by an individual’s age, sex, and level of physical activity.

WHAT’S THE BACKGROUND?

The USDA has been dispensing nutrition advice for more than 100 years. But the modern-

day genesis of the dietary guidelines began in 1977, when the US Senate’s Select Committee on Nutrition and Human Needs released a set of nutrient-based and food-based dietary goals. With the notable exception of saturated fat and cholesterol, these recommendations have remained remarkably consistent over the past thirty-eight years: Eat more fruit, vegetables, and whole grains, and eat fewer foods high in refined and processed sugars and high levels of salt.

Beginning in 1980, scientists from both the USDA and HHS, then known as the Department of Health, Education, and Welfare, with input from other scientists around the country, released the first dietary guidelines. Instead of simply emphasizing nutritional adequacy, they also looked at the relationship between diet and chronic disease—something all subsequent dietary guidelines have done.

The 1980 guidelines, by suggesting that people limit foods with high levels of saturated fat and sodium, raised concern among certain industry groups. To try to limit future controversies and provide as “objective” a view of nutrition science as possible, Congress directed both HHS and the USDA to appoint an independent committee of nationally recognized nutrition and medical experts to review the latest scientific literature and come up with public health recommendations for food consumption.

The members of the committee follow the Federal Advisory Committee Act of 1972, are not paid, and must report any potential conflicts of interest. USDA and HHS scientists, technical experts, and ultimately the secretaries of the two departments then take the committee’s recommendations—to the extent that they choose to do so—and produce the dietary guidelines report.

In 1990 Congress passed the National Nutrition Monitoring and Related Research Act, which for the first time mandated that the Dietary Guidelines for Americans be published at least once every five years. The guidelines are targeted at all Americans ages two and older.

In 2008 and 2009 the USDA Center for Nutrition Policy and Promotion set up the Nutrition Evidence Library, which allowed for systematic study of peer-reviewed papers concerning particular nutrition-based questions. An [“evidence worksheet”](#) for each paper lists its funding sources and the likelihood of bias,

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ranging from selection bias to performance bias to detection bias and attrition bias.

Requests for nominations for the 2015 advisory committee appeared in the *Federal Register* on October 26, 2012. Nominees had to be experts in either human nutrition or chronic disease and were chosen, as much as possible, with an eye toward geographic, racial, ethnic, and sex diversity. They specifically were not chosen to speak on behalf of any particular group. The committee’s charge was to review the 2010 guidelines and determine what new research there had been that would lead to either revised or new guidance. The committee members were jointly chosen by the secretaries of HHS and the USDA.

The committee’s 2015 scientific report made extensive use of the USDA’s Nutrition Evidence Library. That process included drawing up eighty-three questions to be asked—for example, what type of dietary patterns show evidence of positive health outcomes?—selecting studies for review, pulling out the data and assessing the risk of bias, rating the strength of the evidence, and coming up with any research recommendations.

The Nutrition Evidence Library conducted original systematic reviews for 26 percent of the committee’s research questions. For half of the questions, the DGAC used existing systematic reviews and meta-analyses, and for 24 percent of the questions—those involving dietary intake and dietary trends—the committee used its own data analysis and food pattern modeling.

Ultimately, the committee used some 300 studies to formulate its recommendations, which were the basis of the 2015–20 guidelines. In addition, the committee report elicited 29,000 public comments.

WHAT’S THE ADVICE?

The DGAC was blunt in its assessment of what the average American eats: “The dietary patterns of the American public are suboptimal and are causally related to poor individual and population health and higher chronic disease rates,” the report flatly stated in its second chapter. It continued: “Few, if any, improvements in consumers’ food choices have been seen in recent decades. On average, the US diet is low in vegetables, fruit, and whole grains, and high in sodium, calories, saturated fat, refined grains, and added sugars.”

By contrast, the authors of the dietary guidelines are less harsh in their criticism, noting more blandly that “trends in food intake over time show that, at the population level, Americans are not consuming healthy eating patterns.”

“In general,” the report adds in the introduction to Chapter 3, “Americans are consuming too many calories, are not meeting food group and nutrient recommendations, and are not getting adequate physical activity.”

There are five dietary guidelines outlined in Chapter 1:

- Follow a healthy eating pattern across the lifespan.
- Focus on variety, nutrient density, and amount.
- Limit calories from added sugars and saturated fats and reduce sodium intake.
- Shift to healthier food and beverage choices.
- Support healthier eating patterns for all.

Unlike earlier editions of the guidelines, this eighth edition focuses on overall eating patterns instead of individual food groups and nutrients because food groups and nutrients, as the report notes, are not eaten in isolation. The idea is that there is not one magic diet with fixed portions of nutrients that works for everyone; instead, at least three types, or patterns, of diets are recommended.

The Healthy U.S.-Style Eating Pattern replicates one of the USDA Food Patterns from the 2010 guidelines. It recommends that people eat lean meats and poultry and unsalted nuts among other sources of protein as well as fat free or low fat for most choices of dairy. Vegetables, fruit, grains, and oils round out the choices.

The Healthy Mediterranean-Style Eating Pattern includes more fruit and seafood and less dairy than the U.S.-Style, while the Healthy Vegetarian Eating Pattern includes more soy products, legumes, nuts, seeds, and whole grains, while eliminating meat, poultry, and seafood. The 2010 guidelines had also included a vegetarian option of the USDA Food Patterns, but unlike the new pattern, it did not include changes in actual food group composition and amounts.

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And the guidelines reiterate long-standing nutritional principles for overall healthy eating: dark green, starchy, red, and orange vegetables; whole fruit; whole grains; low-fat dairy; protein from a variety of sources; and oils. As [Burwell told a reporter](#) when the guidelines came out: “Diversifying your color, in terms of when you think about eating your fruits and vegetables, making sure that you have different colors because those are different nutrients that they’re reflecting.” The reporter noted: “That can mean red and yellow peppers, green kale or broccoli, orange or red tomatoes, orange sweet potatoes, and green beans or asparagus.”

The guidelines also contain four quantitative limits—on saturated fat, sodium, and alcohol—as well as a new proscription to keep added sugars to no more than 10 percent of calories per day, the equivalent of about twelve teaspoons. The problem with sugar, according to the guidelines, is that it adds calories with no accompanying nutritional benefit, which “can make it difficult for individuals to meet their nutrient needs while staying within calorie limits.” The DGAC report notes that there is strong evidence that eating patterns with lower intakes of added sugars are associated with reduced risk of cardiovascular disease and moderate evidence of reduced risk of obesity, type 2 diabetes, and some types of cancer.

(Under a [proposed rule change](#) by the Food and Drug Administration, the Nutrition Facts label on food packages would require “added sugars” to be listed as a separate category instead of the current description that simply lists total grams of sugar, which makes it impossible to separate naturally occurring sugars from those that are added by manufacturers. These include everything from corn syrup to dextrose, high-fructose corn syrup, malt syrup, molasses, sucrose, and turbinado sugar.)

Following the new sugar guidance means that in a diet of 2,000 calories, sugar intake should be limited to 200 calories. At 3.87 calories per gram of sugar, that’s almost exactly 50 grams. A 12-ounce can of [Coke](#) has 39 grams of sugar, while a 20-ounce bottle of Coke has 65 grams.

The proscription on saturated fat to less than 10 percent of calories per day; the limitation on alcohol of one drink per day for women and two drinks per day for men; and the 2,300 milligram per day sodium limit are unchanged from the 2010 guidelines, although the sodium limitation of 1,500 milligrams for those older than age fifty and all African Americans was lifted.

One of the dietary guidelines—to shift to healthier food choices—is outlined in Chapter 2 and suggests that to actually succeed in altering their diet, people should make small, realistic shifts in food choices. Among the six examples provided are replacing high-calorie snacks such as tortilla chips and cheese dip with a nutrient-dense snack such as carrots and hummus, switching from white bread to whole wheat, and replacing butter with vegetable oil when frying food.

Another guideline—to support healthier eating patterns for everyone—uses a Social-Ecological Model that includes four factors that influence diet and physical activity, both of which in turn affect health outcomes. This model, explained in Chapter 3, includes “sectors,” such as health care and education; “settings,” such as home and away from home; “social and cultural norms,” which help determine beliefs and behaviors; and “individual factors,” such as someone’s age, sex, and socioeconomic status.

For real dietary shifts to occur, according to this model, there must be a coordinated effort among various sectors and settings that take into account a host of individual and cultural differences. These can include strategies as simple as teaching gardening and helping people limit their screen time to reduce physical inactivity.

The 2015–20 guidelines also include new advice on both coffee and cholesterol.

Dietary cholesterol is no longer limited to 300 milligrams per day—about the amount in two small eggs. Yet at the same time, the guidelines still insist that people eat as little dietary cholesterol as possible. That is because high-cholesterol foods are often full of saturated fat, so cutting down on cholesterol also reduces saturated fat intake. Healthy diets also tend to be low in cholesterol—the Healthy U.S.-Style Eating Pattern, for example, contains at most 300 milligrams of cholesterol for the highest calorie level.

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Coffee received an exceptional mention with its own call-out box and the declaration that moderate coffee consumption—liberally defined as three to five cups per day—“can be incorporated into healthy eating patterns.” But instead of stressing the positive benefits of coffee drinking—moderate evidence that it reduces the risk of type 2 diabetes and cardiovascular disease, as the DGAC report noted—the guidelines only mention that there is “strong and consistent” evidence of no link between moderate coffee consumption and increased risk of chronic diseases such as cancer or premature deaths from, for example, cardiovascular disease. At the same time, a bit illogically, the guidelines say that people who don’t already drink coffee are not encouraged to do so.

WHAT’S THE DEBATE?

Nutrition is a relatively young science, and it is rapidly evolving, which means that what was once bedrock guidance, such as limiting cholesterol intake to less than 300 milligrams per day, can change. Removing previously established nutritional norms, however, comes at a cost, as House Agriculture Committee ranking member Collin Peterson (D-MN) reminded HHS secretary Burwell and USDA secretary Vilsack during an October 7, 2015, hearing on the DGAC report. “From my constituents, most of them don’t believe this stuff anymore,” said Peterson. “You have lost your credibility with a lot of people, and they are just flat out ignoring this stuff.”

But getting nutritional advice correct, especially when it is dispensed for an entire population, is not easy. Nutritional research is usually quite difficult, in part because people’s eating habits are complex and diverse. Many studies involve small pools of participants, and they are often observational, which means there are no variables to control. In these cases, causality is difficult, if not impossible, to determine. And they are [often short term](#), even though many health outcomes can take years, if not decades, to develop.

The research gold standard, the randomized controlled trial, can be difficult to put into practice because it’s extremely difficult to control for a precise dietary regime, much less do so over a long period of time.

In addition, there are a myriad of intervening factors that affect the link between diet and health, including stress, sleep, physical activity, and other behaviors, which in turn

are affected by the context of one’s personal and social environment.

Because the guidelines ultimately affect food-buying decisions worth billions, if not trillions, of dollars and the health of Americans, they are heavily lobbied by large corporate and smaller nonprofit interests alike.

Given food production’s huge environmental footprint—and the especially prominent role played by cattle raising—the DGAC report had noted that food security itself would be compromised if land, water, and energy were not better conserved. That recommendation, however, was publicly nixed the day before the US House hearing, with the two cabinet secretaries explaining that the guidelines were not the “appropriate vehicle for this important policy conversation.”

Indeed, while the guidelines do effectively translate the advice of the committee to eat less “red and processed meat,” the point is never directly made, and the guidelines’ language has been parsed with diplomatic delicacy, which makes it more difficult to follow. “Lower intakes of meat, including processed meats,” the guidelines note in Chapter 1, “... *have often been identified* as characteristics of healthy eating patterns” (emphasis added).

The guidelines provide the same type of information again with a bit more specificity, but this time it is buried inside the “About Meats and Poultry” call-out box, in which the text notes that there is “strong evidence” that diets with less “meat and processed meats and processed poultry” are associated with a reduced risk of cardiovascular disease and “moderate evidence” that they are associated with a reduced risk of obesity, type 2 diabetes, and some cancers.

The DGAC report also states clearly several times that teenage boys and adult men eat more than the recommended amounts of meat, poultry, and eggs—an implicit recommendation to cut down on meat.

Lifting the 300 milligram cholesterol limit was also controversial and viewed by some as undue influence by the egg industry. The Physicians Committee for Responsible Medicine, a nonprofit that encourages a vegan diet and the elimination of animal testing, filed suit against the government on January 6, 2016, in a California federal court. The lawsuit alleges that the DGAC’s recommendation to remove the 300 milligram limit was reached in viola-

tion of the Federal Advisory Committee Act, which prohibits special interests from influencing the decisions of committee members. An HHS spokesperson said the department could not comment on pending litigation.

If sustainability created controversy in the industrial agriculture community, the issue of saturated fat has also generated plenty of heat. When the committee published its recommendations that saturated fat should be limited to 10 percent of total calories, it also acknowledged that recent data had “re-ignited the debate” over the “current recommendation to limit saturated fat intake.”

That proved to be an understatement. The multidecade emphasis on low-fat food, which has taken place as the nation’s obesity epidemic has only gotten worse, has left many pundits and some nutritionists wondering whether the two phenomena are related. The key concern is the quality of the food choices that were made in the US diet to replace saturated fat, ranging from polyunsaturated fat to trans fat to carbohydrates.

Three months before the guidelines were released, American journalist Nina Teicholz published a rejoinder to the committee’s saturated fat position in the *BMJ*, originally known as the *British Medical Journal*. The [five-page article](#), complete with sixty-six references, argued that committee members ignored evidence that exonerates saturated fat as a cause of heart disease. Teicholz, the author of *The Big Fat Surprise: Why Butter, Meat & Cheese Belong in a Healthy Diet*, wrote that the omitted studies “seem to suggest a reluctance by the committee” to contradict previous dietary guidelines.

On November 5, 2015, a [letter](#) signed by more than 180 cardiovascular and nutrition scientists from nineteen countries was sent to the *BMJ* asking the journal to retract the article. The letter alleges that Teicholz’s original article included eleven errors. On November 19, Theodora Bloom, *BMJ* executive editor, stated that the journal was “seeking external expert review of the points raised in the letter.”

As if more proof was needed of the guidelines’ inherent political nature, Congress also weighed in this past December with two unusual riders to its Consolidated Appropriations Act of 2016, the bill that funds the government through September 30, 2016.

The first rider requires that each of the 2015–20 guidelines be based on “significant scientific agreement” and that the guidelines limit themselves to “nutritional and dietary information,” a clause added to ensure that there would be no mention of sustainability.

The second rider appropriated \$1 million to the USDA so that the National Academy of Sciences, Health and Medicine Division (HMD), formerly known as the Institute of Medicine, can conduct a “comprehensive study of the entire process” used to establish the DGAC and create guidelines. A spokesperson from the National Academies said in late January that it had been in touch with the USDA about the study, but no starting date had yet been set.

WHAT’S NEXT?

The 2015–20 guidelines have, at the very least, resuscitated a vigorous debate about nutrition health policy, especially the role of saturated fat in one’s diet and the influence of dietary cholesterol on cardiovascular disease.

They have spawned at least one new interest group, the nonprofit Nutrition Coalition, that believes the guidelines “do not appear to reflect the most conclusive and current science available” and that says it plans to push for more clinical trial research in some of nutrition’s most problematic areas. The group is funded by John and Laura Arnold, whose foundation supported the Teicholz article in the *BMJ*.

It may never be possible to definitively determine the extent to which, if at all, the past decades of dietary guidelines have helped create the country’s obesity and chronic disease crisis. After all, most people ignore them. Three-quarters of the US population don’t eat the recommended amount of vegetables, fruit, dairy, and oils, according to the 2015 guidelines, and most Americans eat more than the recommended amount of added sugars, saturated fat, and sodium.

Yet the guidelines undeniably shape the general perception of what healthy eating means, and that perception is ultimately reflected in the food sold everywhere from the corner store to the supermarket.

A nod to sustainability, for example, and its importance in counteracting climate change, could make a serious dent in meat sales, especially beef. Despite a recommendation from the DGAC that American consumers consider

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sustainability when making their food choices, that advice was pointedly left out of the guidelines.

But the guidelines, despite vigorous opposition from the sugary beverage industry, do contain unprecedented advice to cut added sugar consumption to no more than 10 percent of one's daily calories. It will be interesting to see the extent to which this makes a

dent in the nation's obesity epidemic, assuming its impact can be measured.

One thing is likely: The guidelines' influence is only set to increase. The 2014 Farm Bill requires the guidelines to include nutritional information for infants and toddlers up to two years of age and additional guidance for pregnant women, beginning with the next edition in 2020. ■

RESOURCES

Aaron E. Carroll, "[Are Fats Unhealthy? The Battle over Dietary Guidelines,](#)" *New York Times*, October 12, 2015.

Center for Science in the Public Interest, "[Congressional Catering: How Big Food and Agricultural Special Interests Wield Influence in Congress and Undermine Public Health](#)" (Washington, DC: CSPI, June 2015).

Department of Health and Human Services and the Department of Agriculture, "[Dietary Guidelines for Americans: 2015–2020](#), 8th edition (Washington, DC: HHS, January 7, 2016).

Dietary Guidelines Advisory Committee, "[Scientific Report of the 2015 Dietary Guidelines Advisory Committee](#)" (Washington, DC: Department of Health and Human Services, February 2015).

Sandra G. Hassink and Steven J. Stack, "[Physician Perspective: Keep Politics Out of Dietary Guidelines,](#)" *The Hill*, October 7, 2015.

Kathleen Merrigan, Timothy Griffin, Parke Wilde, Kimberly Robien, Jeanne Goldberg, and William Dietz, "[Designing a Sustainable Diet,](#)" *Science* 350, no. 6257 (2015):165–6.

Nutrition Evidence Library, "[Frequently Asked Questions](#)" (Washington, DC: Department of Agriculture, March 23, 2015).

Office of Disease Prevention and Health Promotion, "[Public Meeting for Oral Testimony on the Scientific Report of the 2015 Dietary Guidelines Committee](#)" (Washington, DC: Department of Health and Human Services, March 24, 2015).

Nina Teicholz, "[The Scientific Report Guiding the US Dietary Guidelines: Is It Scientific?](#)" *BMJ* 351 (2015):h4962.

Tennille Tracy, "[Vilsack: Dietary Guidelines Are About Health, Not Environment,](#)" *Wall Street Journal*, March 11, 2015.

Thomas Vilsack and Sylvia Mathews Burwell, "[2015 Dietary Guidelines: Giving You the Tools You Need to Make Healthy Choices](#)" (Washington, DC: Department of Agriculture and Department of Health and Human Services, October 6, 2015).