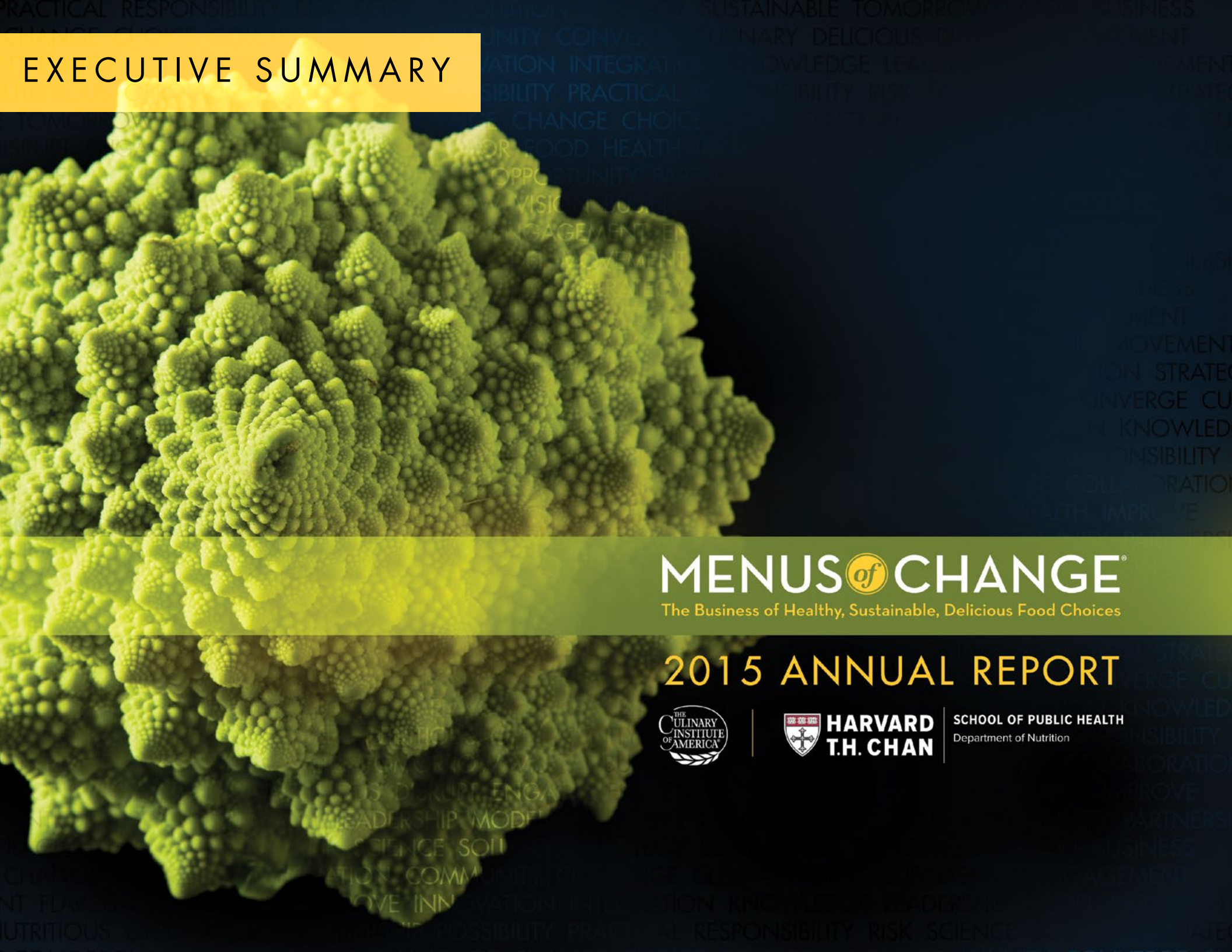


# EXECUTIVE SUMMARY



## MENUS <sup>of</sup> CHANGE<sup>®</sup>

The Business of Healthy, Sustainable, Delicious Food Choices

## 2015 ANNUAL REPORT



**HARVARD**  
**T.H. CHAN**

SCHOOL OF PUBLIC HEALTH  
Department of Nutrition



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*The Menus of Change® (MOC) Report and Annual Summit are co-presented by The Culinary Institute of America (CIA) and Harvard T.H. Chan School of Public Health—Department of Nutrition. A Menus of Change Scientific and Technical Advisory Council composed of leading nutrition, environmental, and other scientists and scholars ([menusofchange.org/advisory-councils/stac/](http://menusofchange.org/advisory-councils/stac/)), together with Harvard Chan School and CIA, are solely responsible for the nutrition and environmental guidance of the report and conference. The Menus of Change Sustainable Business Leadership Council ([menusofchange.org/advisory-councils/sblc/](http://menusofchange.org/advisory-councils/sblc/)) contributes insights to parts of the report and conference designed to help translate this guidance into actionable strategies for foodservice industry change, highlight case studies in innovation (e.g., menu research and development, product sourcing, and supply chain management, etc.), and build industry participation in supporting healthier, more sustainable menus. Project sponsors and other commercial interests are not permitted to influence the editorial independence of the Menus of Change initiative.*

# I. MENUS OF CHANGE: CULINARY EDUCATION FOR OUR FUTURE

Scientific and government reports and media headlines of the past year—together with seismic shifts in next-generation restaurant customer attitudes towards health, environmental imperatives, and food ethics—signal that continual changes in our industry are part of a new status quo, not a series of periodic issue to be solved.

Our third *Menus of Change Annual Report* on the future of food and foodservice, co-presented by The Culinary Institute of America and Harvard T. H. Chan School of Public Health, once again brings together the most critical information and insights to help our industry's culinary and business leaders prepare for a changing landscape of menus, concepts, and business strategies. The report is being issued in conjunction with our third annual Menus of Change leadership summit, also in collaboration with Harvard Chan School, which will be held for the first time at our newly completed Marriott Pavilion at the CIA's main campus in Hyde Park, NY.

Academic innovation and interest on the part of our faculty and students in these issues continues to accelerate, as witnessed by their engagement around a number of recent CIA curriculum additions, including the applied food studies concentration in our bachelor's program in Hyde Park, as well as the farm-to-table concentration based at our California Greystone campus. Students in the latter program have the opportunity to re-imagine menus—and flavors—from the ground up by spending class time in our three-acre farm and learn directly about strategies in sustainable production practices.

Also new within the past year is the launch of the CIA's Food Business School (FBS), our center for executive and graduate education. FBS has taken as its mission to “enable and empower students to design, deliver, and lead transformative innovations that address the world's most pressing food-systems challenges—and its greatest business opportunities.”

That sense of focusing on business opportunities is also fundamental to the Menus of Change initiative, as well as to our thinking, more broadly, about these issues here at the CIA. Because, from an operator perspective, if we don't have foodservice cost and profit structures that work, and customers willing to support change with their actual food purchases, we have very little. Yes, absolutely we need the best science and other expertise we can gather to crystalize the risks and problems; and we need to understand how, from an evidence-based perspective, we are not simply facing a daunting list of imperatives but rather an *integrated* view of the drivers of change for the future. Further, we need to work collectively to develop broad strategies that can foster a more robust environment for change within our industry.

Then we need to support and encourage the innovators and entrepreneurs among us to take up the challenge of re-inventing and renewing the art of deliciousness, and the business models and menu concepts of our industry. Our customers, our guests, expect no less of us.

**Tim Ryan '77, President**  
The Culinary Institute of America



## II. MENUS OF CHANGE IN 2015

Over the past year, menus changed and so did the fundamentals of the foodservice industry. “It” ingredients defied conventional wisdom: Trash fish, carrot tops, “ugly” fruits and vegetables, and seeds worked their way into the nation’s most innovative menus, as chefs found ways to bring new flavors to diners while also reducing food waste and increasing farm yields.

More predictably, chefs continued a successful trend of opening independent restaurants that think plants first. The Culinary Institute of America opened Pangea, its first plant-forward restaurant, to help train the nation’s best young culinary talent for the future of fine dining.

Meanwhile, the now abundant crop of innovative kale- and Brussels sprout-studded recipes continued its move into the mainstream, showing up on the menus of Panera Bread, Corner Bakery, and dozens of other national restaurant chains. Even McDonald’s followed suit, testing kale in new breakfast items.

Menus always change. But established business models often remain in place... except for the past year. Two of the world’s largest restaurant companies—McDonald’s and Yum! Brands—set a new course for the quick service restaurant (QSR) segment, promising to move away from artificial additives and towards cleaner ingredient lists. McDonald’s also flipped from emphasizing more menu options and food served faster to made-to-order burgers and slower service.

These shifts came when the two companies faced declining sales as supply chain problems of food quality, labor, and animal welfare came to light. Meanwhile, Chipotle pulled carnitas off the menu at a third of its restaurants when it discovered similar problems among its suppliers, further strengthening its brand’s reputation among the dining public. These moves all underscore the business case for better monitoring of supply chains and greater transparency with diners.

The past year in science was a bit more predictable, but equally important. Climate and environmental scientists were unsurprised to find that 2014 was the hottest year ever (again) and it was a historically

dry year in California (again). Both weighed heavily on restaurants that didn’t nimbly manage menus and supply chains. So far, 2015 is on pace to yet again set more troubling, and costly, records on both measures. But as this year’s report shows, efforts to shift to more plant-forward approaches represent a rare opportunity to both better manage food costs and help address climate and water issues.

Meanwhile, the nutrition community wrestled with an annual harvest of contrarian studies and catchy book titles that urged the public to return to the diets of past decades, or even millennia, when our foraging skills brought us closer to nature and lifespans were a bit shorter. Headlines followed, but the fundamental science remained unchanged.

Some of the biggest changes in how we eat may come as science is translated into public policy. This spring, the Dietary Guidelines Advisory Committee released its long awaited recommendations for what Americans should eat. The recommendations include less meat, sugar, and refined grains, and more plants, closely matching the principles of Menu of Change. While there is still much political “sausage making” to come, the committee’s report further emphasizes that public health and environmental imperatives must come together.

The Menu of Change initiative aims to do the essential, difficult, and unprecedented work of integrating the latest findings from both nutrition and environmental science into a single set of recommendations to help foodservice and culinary professionals make better choices and successfully navigate the rapidly changing landscape.

This annual report is a part of that mission. It seeks to advance a long-term, practical vision that integrates optimal nutrition, environmental stewardship and restoration, and social responsibility within the foodservice industry. The tools it offers include a guide to the key issues that face the foodservice community, a dashboard that will help businesses evaluate their own efforts in the areas that matter most, and a comprehensive set of principles to inform menu development and design.

The CIA and Harvard Chan School invite businesses to use this report to measure their progress and to work through new and complex challenges. Not all culinary professionals and foodservice companies will take the same path forward. But more and more have a similar goal: to lead successful businesses serving healthy, sustainable, and delicious food.



### III. EXECUTIVE SUMMARY: A TASTE OF WHAT'S AHEAD

WHEN IT COMES TO FOOD, HEALTH, AND THE ENVIRONMENT, THE PAST YEAR SAW A TREMENDOUS OUTPOURING OF INNOVATION AND INVESTMENT, CONTROVERSY AND CONFUSION.

Some of the world's top chefs turned to fast-casual restaurant concepts, many of which put plants on a pedestal. The issue of food waste took center stage, with entrepreneurs and chefs alike jumping into the discussion to help bring solutions to market. And it seems that across nearly every college campus, interest is buzzing around finding ways to improve the food system: Last fall, the University of California, Davis announced a new Innovation Institute for Food and Health, backed with \$40 million from Mars, Incorporated and \$20 million from the university; Harvard T.H. Chan School of Public Health partnered with Harvard Law School in a university-wide food system innovation challenge awarding \$50,000 to the first place team of interdisciplinary students; and in November, The Culinary Institute of America launched The Food Business School, the CIA's center for executive and graduate education, and the world's first business school dedicated to food entrepreneurship and innovation.

The 2015 Dietary Guidelines Advisory Committee made history by including environmental considerations in its nutritional guidance for the first time ever. California's drought, far from over, brought the term "water footprint" into the mainstream lexicon and made the concerns about the environmental toll of animal protein in American diets only more pressing. However, a flawed meta-analysis created a wave of confusion by concluding that the type of dietary fat was unrelated to the risk of heart disease, with misleading media headlines like "Eat Butter" and "Butter Is Back" only making matters worse.

Amid these national conversations, Menus of Change is more relevant today than ever before. As the initiative hits the three-year milestone,

some remarkable progress has been made. For example, Compass Group USA announced a commitment to four key Menus of Change principles, with corresponding metrics to track progress. The adoption of these principles, which supplements its existing commitments to sustainability, applies across its foodservice portfolio. In this report, you will learn more about not only the announcement from Compass Group but the many other ways the Menus of Change initiative is making real and lasting impact in the foodservice industry.

But it would be a mistake to interpret all these important efforts, these signs of progress, as indication that the work is done. In fact, the challenges remain formidable. In a survey conducted in January 2015 by Datassential on behalf of the Menus of Change initiative, most foodservice operators polled across the U.S. feel that a shift toward more plant-forward menus is important; yet nearly all feel that doing so presents a major challenge.

The *Menus of Change Annual Report* is designed to help foodservice and culinary professionals navigate the complexities of change: to gain the insights and the tools to make informed decisions about difficult issues in order to benefit the triple bottom line of people, planet, and profit. Along with sharing findings from this survey of operators, this report draws on two surveys conducted by the CIA, one to gauge the impact of the initiative on past participants and users of Menus of Change materials, and another to examine what innovations are taking place when it comes to offering alternatives to an all-beef burger. The report sifts through culinary trends and innovations to shed light on some of the most intriguing companies and projects happening around the country, all in the name of healthier, more sustainable food.



The Menus of Change initiative also importantly provides comprehensive advice and strategies for menu design that support the triple bottom line through the **Principles of Healthy, Sustainable Menus**. These guidelines outline essential culinary strategies, such as new emphasis on portion size, calorie quality, and plant-based foods, which are needed to increase the success of new business models. They also provide a set of suggestions for menu development based on the latest nutrition science.

The centerpiece of Menus of Change is a concise analysis of 16 issues that sit at the intersection of public health, the environment, and the business of food. These briefs synthesize the latest health and environmental data to provide a clear picture of the industry's challenges and opportunities, as well as practical next steps for foodservice operations. The report also assigns each issue a score that rates the industry's efforts in these critical areas. The scores are updated annually. Among these 16 issues are:

#### **Diet Quality and Consumer Attitudes and Behaviors**

The past year has been a particularly confusing one for consumers and foodservice operators who want to make the healthiest choices. New and existing evidence has recently led to some encouraging conclusions among the nutrition community: The Dietary Guidelines Advisory Committee's report removed the advice to limit the percentage of calories from total fat, instead emphasizing the *type* of fat. Also noteworthy was the elimination of the recommendation to limit dietary cholesterol, due to a lack of evidence that egg consumption was related to heart disease risk except among people with diabetes, considering eggs effectively neutral. While these recommended updates to the Dietary Guidelines have the potential to improve diet quality, misleading headlines pose a major hindrance to consumer understanding. And with such an overwhelming number of purveyors of advice about nutrition, much of it contradictory, the average consumer is left unequipped to navigate the food landscape in ways that are most optimal for health and sustainability.

#### **Protein Sources and Production**

In its groundbreaking conclusion about the intersection of people and planet when it

comes to food, the Dietary Guidelines Advisory Committee's report concludes that, "a dietary pattern that is higher in plant-based foods, such as vegetables, fruits, whole grains, legumes, nuts, and seeds, and lower in animal-based foods is more health promoting and is associated with lesser environmental impact (GHG emissions and energy, land, and water use) than is the current average U.S. diet." The advice to Americans is to reduce consumption of red and processed meats, for both health and sustainability reasons. But there is still a long road ahead to put this advice into action. It falls to chefs to present smaller portions of red meat, more plant proteins, and more plants in general, in delicious and satisfying ways.

#### **Climate Change**

The year 2014 was declared to have the highest average annual global temperature on record, and 2015 is so far proving to be warmer still. Greenhouse gas emissions continue to rise, with agriculture and especially livestock production both contributing significantly to the rise while also suffering from its effects, namely severe weather events that damage crops. Culinary professionals have a major role to play in beginning to move the needle the other direction; for instance: directing their collective purchasing power to farms with responsible management practices such as efficient irrigation and fertilizer systems; using existing crop supplies in creative ways and reducing food waste; and providing alternatives to beef on menus.

Overall, the industry is making gradual progress: 12 of 16 issues received a score of four (making good progress) or three (holding steady), and scores improved for supporting supply chain resiliency and transparency; innovations in the food industry; and most notably, changes in investment standards for food industry companies among professional investors. The issue of water sustainability—affected most dramatically over the past year by California's fourth year of record drought—remained a two (lacking significant progress even as the challenge grows) from 2014. Restaurant and foodservice professionals continued to be underprepared for the impact of climate change on their operations, which remains the industry's most intractable issue, still at a score of one.

# STATE OF THE PLATE

How are we doing? Sometimes it's hard to tell. The Menus of Change Dashboard on the next page provides a snapshot of the foodservice industry's progress to improve nutrition, sustainability, and profitability. Its scores on critical issues that affect the foodservice industry are updated annually to show where progress is being made. It also creates a set of standards, which are designed to be used by businesses to judge their own efforts on health and sustainability.

#### **Dashboard Score Key:**

The score assigned to each issue indicates progress or lack thereof in the food industry and/or culinary profession over the last 12 months, as follows:



1: SIGNIFICANT DECLINE OR REGRESS



2: GETTING BETTER, BUT FAR FROM WHERE IT NEEDS TO BE



3. NO SIGNIFICANT PROGRESS



















































4. GOOD PROGRESS, WITH ROOM FOR MORE



5. SIGNIFICANT PROGRESS

## METHODOLOGY

The scores were developed based on the expert opinions of the Menus of Change Scientific and Technical Advisory Council, who considered new research findings and trend data as well as innovations and changes in business practices and policies, and were reviewed by members of the Menus of Change Sustainable Business Leadership Council to ensure they reflected new industry initiatives and practices.

| ISSUE  | SCORE<br>2015   | SCORE<br>2014   | SCORE<br>2013  | JUSTIFICATION   |
|--|---|---|--|---|
| <b>DIET AND HEALTH: RECENT TRENDS</b>  |    |    |    | Modest improvements toward healthier diets include reduction in the intake of trans fats and sugar-sweetened beverages, and a small increase in whole fruits and whole grains. Actions to undercut standards for nutritional programs for low-income Americans and school children are steps backwards. |
| <b>PORTION SIZE AND CALORIC INTAKE</b>   |    |    |    | Efforts to reduce calories continue to move toward an emphasis on low-sugar and smaller portion size, but a more fundamental focus on food (or calorie) quality, not just quantity, is needed.  |
| <b>PROTEIN CONSUMPTION AND PRODUCTION</b>  |    |    |    | Red meat production and consumption in the United States continue to decline but are growing in the developing world. Climate conditions are reducing supplies and driving up price volatility, underscoring the business benefits from further reductions.   |
| <b>FRUIT AND VEGETABLE PRODUCTION AND CONSUMPTION</b>  |    |    |    | While the promotion of fruit and vegetable consumption has increased, it has not yet achieved sufficient scale and long-term trends have not been reversed.   |
| <b>FISH, SEAFOOD, AND OCEANS</b>   |    |    |    | Public and private efforts are improving seafood sustainability. But continued environmental concerns, social ills, mislabeling, and a lack of traceability hinder the path toward true sustainability.   |
| <b>CLIMATE CHANGE</b>  |    |    |    | Although the announcement in November 2014 by China and the U.S. to curtail future greenhouse gas emissions is positive, carbon emissions are still relentlessly increasing and atmospheric CO2 has crossed a significant threshold of 400ppm.  |
| <b>WATER SUSTAINABILITY</b>  |    |    |    | Reducing meat consumption and raising awareness about water stress are helpful measures that consumers and chefs can take, but these trends do not yet reflect broad efforts in the foodservice industry, while producers face prolonged periods of drought.  |
| <b>AGRICULTURE, DRUGS, AND CHEMICALS USE</b>   |    |    |    | Lack of real progress on the regulatory front is counterbalanced by growing demand from chefs, foodservice professionals, and consumers for antibiotic-free meats.  |
| <b>HEALTHY FOOD VS. HEALTHCARE SPENDING AND TRENDS IN MEDICAL-CULINARY EDUCATIONAL ALLIANCES</b> |    |    |    | Innovative programs are starting to link healthcare and healthy eating along with culinary education. But these connections are not yet widespread, and more education and demonstration projects are required.   |
| <b>ANIMAL WELFARE</b>  |    |    |    | Better, alternative practices are being employed by a small group of producers, and some promising legislative and policy initiatives are being proposed and passed. However, in general there remains substantial room for improvement.  |
| <b>LOCAL FOOD AND THE FARM-TO-TABLE MOVEMENT</b>   |  |  |  | Federal and local policies are supporting local and regional food. The combination of farmers, buyers, and food consumers in this new policy environment will hopefully accelerate growth in the segment.   |
| <b>CONSUMER ATTITUDES AND BEHAVIORS ABOUT HEALTHY AND SUSTAINABLE FOOD</b>                       |  |  |  | Even consumers motivated to make healthier food choices can't help but be confused about the right choices given the steady barrage of inconsistent advice, including efforts to create confusion around the Dietary Guidelines Advisory Committee's report.  |
| <b>CHEFS' INFLUENCE ON CONSUMER ATTITUDES</b>  |  |  |  | Chefs are engaged in the movement for sustainability and are making progress in offering more plant-forward menu options, but need to increase their consideration of portion size, nutrition, and public health.   |
| <b>SUPPLY CHAIN RESILIENCY AND TRANSPARENCY</b>  |  |  |  | Food supply chains remain vulnerable to fraud and contamination. More traceability information is needed.   |
| <b>INNOVATIONS IN THE FOOD INDUSTRY</b>  |  |  |  | An outpouring of innovation can be seen throughout the industry, and a greater array of tools and technologies are available to foodservice professionals. But it may be difficult for some culinary professionals to know which technologies to embrace.   |
| <b>CHANGES IN INVESTMENT STANDARDS FOR THE FOOD INDUSTRY AMONG PROFESSIONAL INVESTORS</b>        |  |  |  | Private investors have significantly increased their support for new food and foodservice companies that feature plant-forward concepts and focus on sustainable supply chains.   |

# OUR VISION



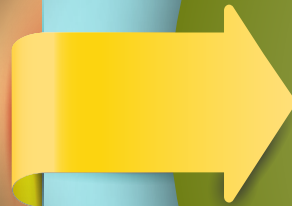
# OUR VISION



HEALTHY, SUSTAINABLE,  
AND DELICIOUS



BUSINESS MODELS  
AND STRATEGIES



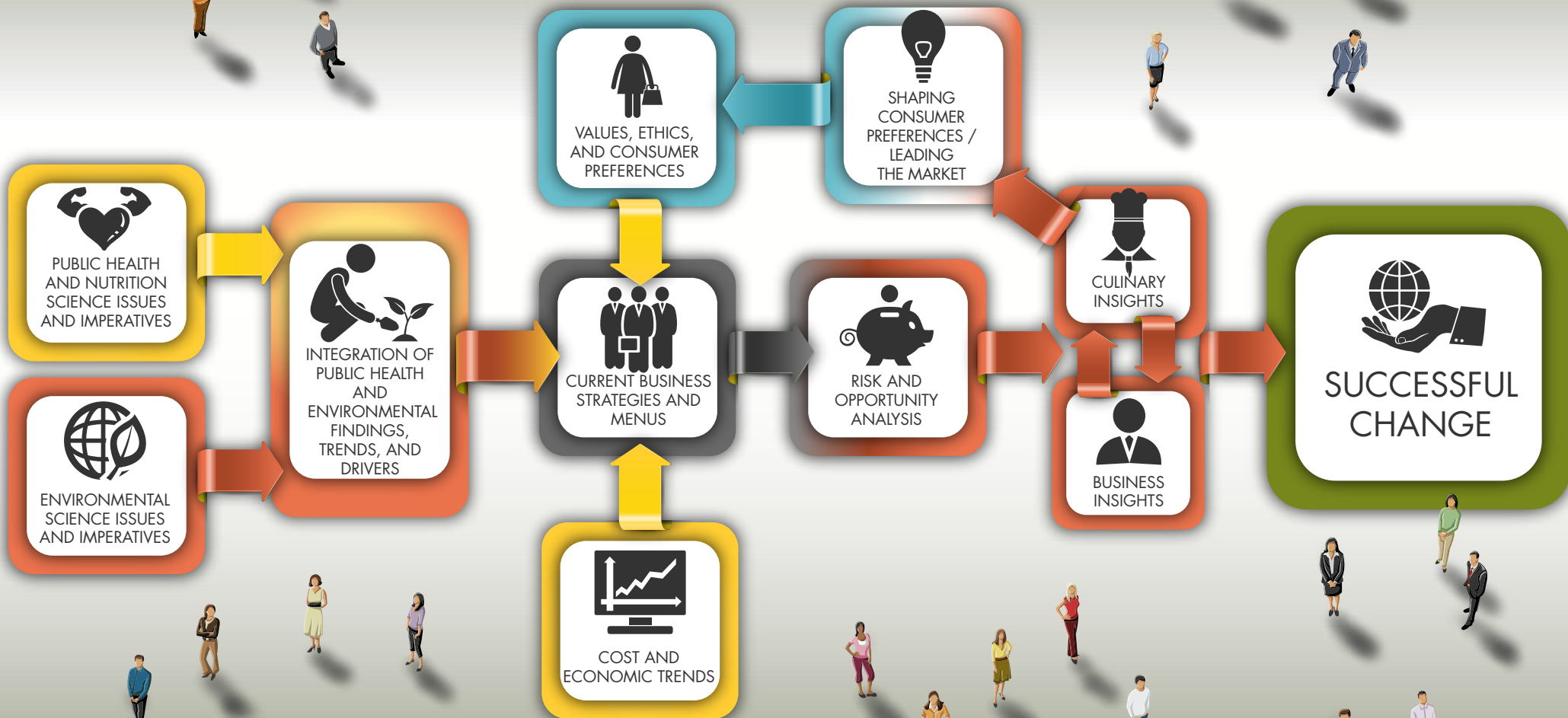
**MENUS<sup>of</sup> CHANGE<sup>®</sup>**

The Business of Healthy, Sustainable, Delicious Food Choices

THE FUTURE OF FOOD

INTEGRATED GUIDANCE FOR  
BUSINESS AND CULINARY LEADERS

# GPS: A MODEL FOR CHANGE





## OUR APPROACH: DIVERSITY OF STRATEGIES

Any approach to providing guidance on nutrition, the environment, and culinary insight to business leaders must recognize that America's \$710 billion foodservice industry is as diverse as it is large and omnipresent in our culture. Customers, quite apart from their interest in health, sustainability, or food ethics, look to different kinds of operations to fill a variety of needs and interests. Appetites and preferences vary, depending on whether the meal is a workplace lunch, a mid-week dinner with the family, a snack on the run, or a celebratory occasion. What a diner or a family chooses to eat and order in a single instance is

less important for their health and the environment than the aggregate pattern over days and weeks. Chefs and the foodservice industry have an enormous opportunity to embrace change, while still preserving a wide range of options for an American public that often wants someone else to do the cooking. These principles and strategies, together with the *Menus of Change Annual Report*, are intended to support innovation on the part of operators and entrepreneurs wherever they are positioned in the industry, and help connect them with their aspirations and their unique views of imperatives and opportunities.

# VII. PRINCIPLES OF HEALTHY, SUSTAINABLE MENUS

Consumers say they want food that is healthier, sustainable, and ethically sourced, but figuring out which foods to eat is often not easy. As a result, the dining public is looking to chefs and food industry leaders to help them make the "right" choices. Culinary professionals are responding. But giving people what they want isn't always easy either. Some diners believe that foods advertised as "farm to table" or certified with sustainability labels are also healthier. While customers don't always purchase what they say they want, these trends are profoundly changing the landscape of the foodservice business.

The **Principles of Healthy, Sustainable Menus** represent unique guidance for the foodservice industry. They incorporate findings from nutrition and environmental science perspectives on optimal food choices, trends in consumer preferences, and impacts of projected demographic shifts in order to provide culinary insight and menu strategies that build on promising innovation already occurring in the sector.

The principles anticipate that fast-moving, mid- and long-term global trends—from continued population growth and increasing resource shortages to commodity price spikes and food security issues—will increasingly reframe how we think about food and foodservice in the United States. They also consider that the rise in diet-related chronic diseases suggests that many of today's food and foodservice business models cannot remain unchanged for the long term. They outline pivotal culinary strategies designed to increase the odds that customers will reward pioneering and innovative restaurants and other industry operations with their business.

In short, the Menus of Change Principles offer a guide to optimal menu design and innovations for future culinary development to promote the foodservice industry's abundant creativity and entrepreneurial dynamism in support of a future of tremendous opportunity.

Collectively, these principles and strategies also speak to our most vulnerable members of society.

Chefs who are inspired by the possibility of delicious, healthy, and sustainable foods are working to make these flavors more accessible across America, in K-12 schools, in hospitals, and in low-income neighborhoods. Without the benefit of culinary expertise and insight, a focus on inexpensive ingredients can often be a recipe for failure, whether the customer is a child or an adult, middle-class or economically disadvantaged, healthy or sick.

Finally, the Menus of Change Principles have not been chiseled in stone; rather, they are designed to be part of an interactive, cooperative, and evolving process. As science progresses, trends shift, and new opportunities and challenges come to light, we will revisit and revise this document annually. Please join the conversation at the annual Menus of Change Leadership Summit or online to help us further strengthen this essential guidance for the foodservice sector. You can reach us at [info@menusofchange.org](mailto:info@menusofchange.org).

For additional guidance on sustainability and nutrition science-based dietary advice, consult the CIA-Harvard Chan School Menus of Change website, [menusofchange.org](http://menusofchange.org) and Harvard Chan School's Nutrition Source website, [nutritionsource.org](http://nutritionsource.org), which includes additional CIA-Harvard Chan School integrated dietary information and culinary strategies.

# MENU CONCEPTS AND GENERAL OPERATIONS

## 1. Be transparent about sourcing and preparation.

Providing customers with abundant information about food production methods, sourcing strategies, calorie and nutrient values, labor practices, animal welfare, and environmental impacts is a necessity in our technology-driven and networked era. Consumer engagement is driven by the rise in food safety and fraud alerts, a growing interest in sustainability and food ethics, and a hyper-connectivity that yields instant access to information such as impending crop failures or the latest farm-labor conditions across global supply chains. Consumers can learn about what they eat regardless of what chefs and businesses share. Given that, food operators can build trust by learning about environmental and social issues in the food system and sharing information about their own practices. Identifying the farms that grow key ingredients, for example, is a strategy that creates value and brand identity and one that is quickly becoming a standard practice. Going further and explaining how food is produced and the rationale for sourcing decisions are the next steps, while limiting or restricting information on hot-button consumer issues such as calories, trans fats, genetically modified ingredients, or processing methods are approaches not likely to survive over the long term. Operators who do not adjust business models and strategies to anticipate the impacts of this accelerating trend risk disappointing the dining public and having to play costly catch-up as such issues assume greater urgency with the public.

## 2. Buy fresh and seasonal, local and global.

For chefs, peak-of-season fruits and vegetables can help create unbeatable flavors—and marketing opportunities. When designing menus, draw ideas and inspiration from local farmers and their crops during your growing season as well as the varieties and growing seasons of more distant regions. The advantages of local sourcing include working with smaller producers who may be more willing to experiment with varieties that bring interest and greater flavor to the table. A focus on local foods also can play an important role in building community by encouraging school children, retailers, media, and others to learn how to grow food, steward the land, and adopt healthier eating habits. But designing menus to draw on in-season fruits and vegetables from more distant farms also is a key strategy for bringing fresh flavors to menus throughout the year.

## 3. Reward better agricultural practices.

Sourcing sustainably grown foods is complex, but there is one important rule of thumb. The environmental cost of food is largely determined by how it is produced. The best farms and ranches protect and restore natural systems through effective management practices, such as choosing crops well-suited for their local growing conditions, minimizing use of synthetic pesticides and fertilizers, and avoiding the use of groundwater for irrigation. Better-managed farms sometimes qualify for organic or other sustainable-farming certifications. But many—including smaller farms—simply adopt better practices. The most powerful strategies for supporting better farms include aligning menus to emphasize fresh foods during the peak of their local growing season and shifting purchases toward farms that have responsible management programs.

## 4. Leverage globally inspired, plant-based culinary strategies.

Scientific research suggests that the most effective way to help diners make healthy, sustainable food choices is to shift our collective diets to mostly plant-based foods. Growing plants for food generally has less of a negative impact on the environment than raising livestock, as livestock have to eat lots of plants to produce a smaller amount of food. In fact, no other single decision in the professional kitchen—or in the boardrooms of foodservice companies—can compare in terms of the benefits of advancing global environmental sustainability. From the well-researched Mediterranean diet to the cuisines of Asia and Latin America, traditional food cultures offer a myriad of flavor strategies to support innovation around healthy, delicious, even craveable cooking that rebalances ratios between foods from animal and plant sources.

## 5. Focus on whole, minimally processed foods.

In general, consumers and chefs should first focus on whole, minimally processed foods. Such foods are typically higher in micronutrient value and less likely to contain high levels of added sugars, saturated or trans fats, and sodium. (Indeed, nearly three-quarters of the sodium in the U.S. food supply is estimated to come from processed foods.) Whole, minimally processed foods are also typically slowly metabolized, preventing sharp increases in blood sugar that over time may lead to insulin resistance.

That said, some minimally processed foods—low-sodium tomato paste, wine, nut butters, frozen fruits and vegetables, mayonnaise, dark chocolate, canned low-sodium beans, 100 percent whole-grain crackers, fresh-cut vegetables, spice mixtures, yogurt, reduced sodium sauces, many kinds of canned fish and shellfish, among other things—can be incorporated into healthy meals. Processing can also be used to extend the season of local and sustainably grown produce and to make use of cosmetically imperfect foods, especially produce.

## 6. Grow everyday options, while honoring special occasion traditions.

The foodservice industry historically developed around special occasion dining. Today's industry, however, is increasingly responsible for providing everyday food choices to a substantial segment of the U.S. population. From a health and environmental perspective, there will always be room in the industry for indulgence and special occasion foods. However, the real opportunity in menu and concept development is the expansion of everyday food and menu choices that embrace current nutrition and environmental science, as well as emerging consumer values about how food is produced.

## 7. Lead with menu messaging around flavor.

To sell healthy and sustainable food choices, lead with messages about flavor, rather than actively marketing health attributes. Research shows that taste trumps nearly all, even if customers want chefs, on some level, to help them avoid foods that increase their risk of chronic disease. Messages that chefs care and are paying attention to how and from whom they are sourcing their ingredients—such as by naming specific farms and growing practices (e.g., organic)—can enhance perceptions of healthier food choices (if, in fact, these choices are healthier—i.e., that they are also consistent with guidance for optimal nutrition).

## 8. Reduce portions, emphasizing calorie quality over quantity.

Moderating portion size is one of the biggest steps foodservice operators can take towards reversing obesity trends and reducing food waste. This is different than offering

multiple portion sizes, as many diners “trade up” to bigger portions, which they see as offering greater value.

Consider menu concepts that change the value proposition for customers from an overemphasis on quantity to a focus on flavor, nutrient quality, culinary adventure, new menu formats, and the total culinary and dining experience (thereby mitigating potential downward pressure on check averages). Calorie quality is also important. Dishes should feature slowly metabolized whole grains, plant proteins including nuts and legumes, and healthy oils that promote lasting satiety and create great flavors.

## 9. Celebrate cultural diversity and discovery.

Our respect for cultural diversity and the savoring and preservation of family traditions and centuries-old food cultures are as vital as our public health and environmental sustainability. Fortunately, these imperatives are compatible with the Principles of Healthy, Sustainable Menus. Chefs collaborating with nutrition experts and public policy leaders need to reimagine the role of less healthy, culturally based food traditions by limiting portion size, rebalancing ingredient proportions, or offering them less often. At the same time, many chefs are reporting greater success from introducing new, healthier and more sustainable menu items instead of reconfiguring existing items. Emerging demographic changes and greater global connectivity are making the American palate more adventurous, giving foodservice leaders a long-term opportunity for creative menu R & D.

## 10. Design health and sustainability into operations and dining spaces.

Food and menu design are not the only ways to advance sustainability in foodservice. Choices that affect the way restaurants and other foodservice operations are designed, built, and operated are also important. These include imagining kitchens that support the optimal preparation of fresh, healthy foods and selecting energy- and water-efficient equipment and environmentally friendly building materials. As behavioral economics studies have shown, dining-room operations and foodservice eating spaces also deserve more attention: design, set-up, service, and communication strategies can all lead consumers towards healthier, more sustainable choices.

# FOODS AND INGREDIENTS

**1. Think produce first.** Focus on fruits and vegetables first—with great diversity across all meals and snacks. Recognize that customers aren't eating nearly enough, when instead they should be filling half their plates with produce. Menus should feature green leafy vegetables and a mix of colorful fruits and vegetables daily. Fruit is best consumed whole or cut, fresh and in season, or frozen and preserved without added sugar or salt. Fruit juice often contains healthy micronutrients, but it also packs a large amount of fast-metabolizing sugar and should be limited to one small glass per day. Dried, unsweetened fruit is also a good choice; though it contains natural sugars, it also contains fiber, which can mitigate negative blood sugar response.

**2. Make whole, intact grains the new norm.** Menus should offer and highlight slow-metabolizing, whole and intact grains, such as 100 percent whole-grain bread, brown rice, and whole grain/higher protein pasta. Use white flour and other refined carbohydrates sparingly, as their impacts on health are similar to those of sugar and saturated fats. Ideally, new menu items should emphasize whole, intact, or cut—not milled—cooked grains, from wheat berries and oats to quinoa, which can be used creatively in salads, soups, side dishes, breakfast dishes, and more. In baking, blend milled whole grains with intact or cut whole grains to achieve good results.

**3. Limit potatoes.** Potatoes have rapid metabolizing impacts on blood sugar, which is of special concern as they are regularly used as a starch to fill plates. Chefs can limit their use of potatoes by combining small portions of them with other, non-starchy vegetables or featuring them as an occasional vegetable, as they do green beans, broccoli, carrots, and peppers. Chefs should also consider healthier alternatives including sweet potatoes, which are rich in beta-carotene and other vitamins, and healthier side dishes that highlight fruits, vegetables, whole grains, legumes, and nuts.

**4. Move nuts and legumes to the center of the plate.** Nuts and legumes are full of flavor, contain plant protein, and are associated with increased satiety. Nuts contain beneficial fats, while legume crops contain fiber and slowly metabolized

carbohydrates. Legumes also are renowned for helping to replace nitrogen in the soil and produce impressive quantities of protein per acre. Nuts (including nut butters, flours, and milks) and legumes (including soy foods and legume flours) are an excellent replacement for animal protein. They also are a marketable way to serve and leverage smaller amounts of meat and animal proteins.

**5. Choose healthier oils.** Using plant oils and other ingredients that contain unsaturated fats, such as canola, soy, peanut, and olive oils, as well as featuring fish, nuts, seeds, avocados, and whole grains, are simple ways to create healthier menus. Research shows that reducing saturated fat is good for health if replaced with “good” fats, especially polyunsaturated fats, instead of refined carbohydrates such as white bread, white rice, mashed potatoes, and sugary drinks. High-flavor fats and oils that contain more saturated fat—including butter, cream, lard, and coconut oil—can have a place in healthy cooking if used only occasionally in limited, strategic applications. Trans fats from partially hydrogenated vegetable oils, now labeled a “metabolic poison” by leading medical scientists, have no place in foodservice kitchens.

**6. Go “good fat,” not “low fat.”** Current nutrition science reverses the mistaken belief that we need to limit all fat. Moderate and even high levels of beneficial fats in the diet—from (most) non-hydrogenated plant oils, nuts, nut butters, avocados, and fish—are associated with optimal nutrition and healthy weight. Beneficial fats paired with an abundance of vegetables, whole grains, legumes, and nuts can give our diets a baseline of slow-metabolizing, healthy foods, which are associated with increased satiety. A more liberal usage of healthy fats, offering the potential to deliver high-impact flavors, might represent the difference between consumers liking—or not liking—healthier and more environmentally friendly foods. Even small, occasional servings of deep-fried foods and condiments are appropriate offerings if operators use healthy, non-hydrogenated oils, and avoid potatoes, breadings, and other refined carbohydrates in favor of fish, vegetables, legumes, and legume flour. Research confirms that the vast majority of people report better adherence to a moderate- or higher-fat, healthy diet.

**7. Serve more kinds of seafood, more often.** Seafood is an important part of a healthy diet, and most Americans don't eat the recommended one to two servings per week of fatty fish, which contain higher levels of health-promoting omega-3s. However, the focus on just a few species is emptying parts of the oceans of popular types of seafood such as cod and tuna and now also fish like menhaden that are a key ingredient in feed for some types of farm-raised fish. Scientific studies have found that the benefits of eating seafood greatly outweigh the risks and that removing or reducing seafood from the diet can have negative effects on health. Serving more seafood more often from responsibly managed sources is the priority. Chefs can have a positive impact on the environment and public health by expanding their understanding of how to source and use a greater variety of responsibly managed and underutilized wild-caught and farm-raised fish and shellfish.

**8. Reimagine dairy in a supporting role.** While there is tremendous innovation underway to improve dairy production and its impact on the environment, the nutrition science on dairy is still unsettled and evolving. Current research suggests that it seems prudent for individuals to limit milk and dairy to one to two servings per day. Chefs should leverage the flavor of cheese (high in saturated fat and sodium) in smaller amounts and minimize the use of butter. Yogurt (without added sugar) is a good choice for professional kitchens, as its consumption is associated with healthy weight.

**9. Use poultry and eggs in moderation.** Chicken and other poultry in moderation is a good choice for healthier protein with a far lower environmental footprint than red meat. Chefs should avoid or minimize the use of processed poultry products, which are high in sodium, often as a result of sodium pumps and brining. Eggs in moderation—an average of one per day—can be part of a healthy diet for most people. Creative menu items that mix whole eggs and egg whites for omelets, and eggs with vegetables, are ideal.

**10. Serve less red meat, less often.** Red meat—beef, pork, and lamb—can be enjoyed occasionally and in small amounts. Current guidance from nutrition research recommends consuming a maximum of two 3-ounce servings per week. Chefs and menu developers can rethink how meat is used by featuring it in smaller, supporting roles to healthier plant-based choices, and experimenting with meat as a condiment. From at least some environmental perspectives (e.g., GHGE, feed efficiency ratio), pork is the better choice among red meats (though not distinguishable from a nutritional perspective). Saturated fat is one health concern associated with red-meat consumption, but it's not the only issue. Chefs should strive to limit bacon and other processed and cured meats, which are associated with even higher incidence of chronic disease than unprocessed red meats. Many diners choose to splurge on red meat when they eat out, and there will always be an appropriate place for meat-centered dishes. But chefs can help to shift eating patterns by building a sense of theater and value in menu concepts that don't rely so heavily on a starring role for animal protein. For example, they might offer delicious meat/vegetable and meat/legume blends, or smaller tasting portions of red meat as part of vegetable-rich, small-plate formats.

**11. Reduce added sugar.** Consumers crave sugar, and the foodservice industry responds by selling processed foods and sweets that are loaded with it. But sugar's role in spiking blood-sugar levels and increasing rates of Type 2 diabetes and other chronic diseases means that professional kitchens should substantially restrict its use. Various strategies include: choosing processed foods with little or no added sugar; favoring healthy oils over sugar in products such as salad dressings; featuring smaller portions of dessert augmented with fruit; and substituting whole, cut, and dried fruit for sugar in recipes. There is nothing wrong with an occasional dessert; but pastry chefs and dessert specialists need to take up the challenge to create sweets centered on whole grains, nuts, dark chocolate, coffee, fruit, healthy oils, yogurt, small amounts of other low-fat dairy and eggs, and, as appropriate, small amounts of beverage alcohol—with the addition of only small to minimal amounts of sugar and refined carbohydrates.

**12. Cut the salt; rethink flavor development from the ground up.**

The foodservice and food-manufacturing sectors have long been too reliant on salt to do the heavy lifting to create high flavor impact and customer satisfaction. Single items, such as a sandwich or entrée, might contain more than 2,500 milligrams of sodium, well above the current maximum recommended intake of 1,500 milligrams to 2,300 milligrams for the entire day. Chefs should focus on a range of other strategies to deliver flavor including: sourcing the best-quality, high-flavor produce; working with spices, herbs, citrus, and other aromatics; and employing healthy sauces, seasonings, and other flavor-building techniques from around the world. Many chefs are finding success in focusing their innovation where they have the highest aggregation of sodium (e.g., processed meats, cheese, and bread) in a single menu item. Others are making progress in implementing an across-the-board incremental 10 to 20 percent sodium reduction in their preparations. Still others are focusing on collaborating with manufacturing partners to reduce sodium using alternative strategies to create desired flavors and textures.

**13. Substantially reduce sugary beverages; innovate replacements.**

A drastic reduction in sugary beverages represents one of the biggest opportunities for foodservice operators to help reverse the national obesity and diabetes epidemics. Sugary beverages add no nutritional value and contribute negligible satiety. Yet they are a prime source of extra calories in the diet and a principal contributor to the development of Type 2 diabetes, heart disease, and other chronic conditions.

Smaller portion sizes and less frequent consumption are steps in the right direction, but nowhere in foodservice is there a greater need of creative, “disruptive” innovation than in the challenge to replace current soda and sugary beverage formulations with more healthful options. Operators should diligently research, support, and promote the products of entrepreneurs and emerging and established brands that are rapidly developing beverage solutions in this important area. Diet sodas and other diet beverages, though lower in calories, may reinforce an aggregate preference for sweet flavors, potentially driving down the appeal of vegetables and other healthy foods. As such, they should be consumed in smaller portions less frequently.

**14. Drink healthy: from water, coffee, and tea to, with caveats, beverage alcohol.**

Water is the best choice to serve your customers, either plain or with the addition of cut-up fruit, herbs and aromatics, or other natural flavors—but no sugar. Served plain, coffee and tea are calorie-free beverages containing antioxidants, flavonoids, and other biologically active substances that may be good for health. Wine, beer, and other beverage alcohol present a more complicated story of benefits for many individuals, with some offsetting risks. Current nutrition guidance suggests a maximum of two drinks per day for men, and one drink per day for women.

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