

Food Service Professional's Guide To **Balanced Menus**

Part I.

Understanding the Need



Partner with
Balanced for
FREE one-on-one
support and get
started today!

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WELCOME

Thank you for your commitment to improving the lives of the people you serve. Like you, we understand the intimate connection between food and health, and we recognize that food environments heavily influence customers' dietary choices. In an era of widespread diet-related disease, we believe that everyone deserves access to healthy food, no matter the circumstance. Moreover, we believe that the healthiest choices should be easy and convenient to make, which is only possible in a food environment that values, encourages, and supports a more balanced way of eating.

At Balanced, we understand the challenges of today's modern food system, and like you, we're determined to overcome them for the sake of improving public health. In providing food for large numbers of people every day, you and your team have an incredible opportunity to prevent and reverse the leading causes of disease, disability, and premature death in the United States. We know this is not an opportunity or responsibility you take lightly. This is why we're so grateful to collaborate with visionary leaders like you as we work together to *change menus and save lives*.

ABOUT US

Balanced is a public health and nutrition advocacy organization focused on improving the healthfulness of institutional menus by providing food service professionals with the tools, resources, and supports they need to balance their menus. We believe community institutions are a key lever in the fight against chronic, preventable diet-related diseases and it's Balanced's goal to help prevent and reverse them in children, families, and communities.

Audrey Lawson-Sanchez

Audrey Lawson-Sanchez is the founder and executive director of Balanced. A decade-long educator, Audrey was inspired by the birth of her daughter to start Balanced and advocate for the healthiest possible future for all families. She is passionate about and committed to combatting our country's leading cause of disability, disease, and premature death: unbalanced nutrition. Audrey is proud to call Kansas City her home, where she lives with her husband and daughter. You can reach her at audreys@balanced.org.

Madeline Bennett

As the Manager of Institutional Outreach and Support, Madeline Bennett will be your primary point of contact at Balanced. Her role is to provide strategic support, practical insights, and to problem-solve for partner institutions. Previously, Madeline researched retail food environments for the nutrition policy department at Center for Science in the Public Interest in Washington, D.C. As an intern with Selamta Family Project, she conducted household food insecurity assessments and advocated for higher nutritional standards in Addis Ababa, Ethiopia. She studied nutrition, food policy, and economics in her undergraduate and graduate education. You can reach her at madelineb@balanced.org.



Partnership Goals & Roles

The goal of this collaboration, on the part of Balanced, is to help you *profitably, marketably, and successfully* design your institution's food environments to further emphasize **health-promoting foods** and beverages, while minimizing amounts of health-harming foods.





We want to make this transition as smooth and streamlined as possible for you and your team.

In practice, this means we will work with your institution to:

- Analyze the baseline healthfulness of your menus
- Assess and address your needs and constraints (e.g., food procurement issues)
- Develop a plan of action and set goals
- Provide educational materials, resources, and practical tips
- Provide plant-forward menu development tools and recipe ideas
- Help you successfully market incremental menu changes
- Assist in handling concerns from various stakeholders
- Track and evaluate progress across various metrics (e.g., student satisfaction with meals)
- Provide ongoing support and open communication after successful implementation of changes
- Connect you with a network of professionals who have completed this process successfully



Your institution's roles are to execute the plan of action and provide feedback and any data required to track and evaluate progress.

Open, honest communication will be key to the success of the collaboration.

The more information you provide, the more specific and tailored our support and resources can be.

If at any point, you become uncomfortable with the direction of the changes or with the nature of our partnership, we can always re-evaluate the strategy, pause, or halt progress. There are no financial commitments or contracts. Ultimately, our success is measured by how successful you and your team are, so we have every incentive to support you in a good-faith partnership.



The role of Balanced in this partnership is to provide directly, or connect your team with, the non-monetary resources it needs to successfully balance menus. This support can take several forms at varying degrees of involvement, including general consulting, connecting your kitchen staff with trainings, providing recipes and educational resources, working around procurement barriers, and spearheading marketing strategies—just to name a few.



Madeline Bennett is responsible for ensuring that you receive the resources you need, and you can reach out to her at any time with questions, concerns, or feedback at madelineb@balanced.org. Whether you need to speak with her on the phone or you require her assistance in-person, she will make herself available to you.



WHY BALANCE YOUR MENUS?

First, a note on terms. What do we mean when we say “balanced” menus, meals, and food environments? Ideally, a balanced menu, meal, or given food environment centers around minimally processed, mostly plant-source foods, lower overall in saturated fats, cholesterol, and sodium, and rich in fiber.

COMPONENT	BALANCED RANGE
SATURATED FAT	<7% OF CALORIES
CHOLESTEROL	<50 MG/DAY
SODIUM	<1500 MG/DAY
FIBER	>30 G/DAY



PUBLIC HEALTH IN CRISIS

According to the Centers for Disease Control, 60% of American adults, or about 117 million people, suffer at least one diet-related disease, and 40% suffer two or more. These diseases are largely preventable—some even reversible—and include cardiovascular disease, cancers, and diabetes, among others. These diseases are our nation's deadliest killers, individually and collectively. As a common denominator, **poor diet is the leading cause of illness, disability, and premature death.**

The toll is sobering: **nearly 700,000 Americans die every year** from diet-related disease.

These maladies, on paper, often seem too distant and abstract to apply to us. And yet, the average American's lifetime risk for developing cancer is more than one in three—not much better than a coin toss. The lifetime risk of dying from cancer is an alarming one in five. Chemotherapy, often the first treatment cancer patients receive, is not only excruciating to endure for many, but, sadly, contributes a mere 2% to all cancer survival in the United States. It is not nearly as effective at saving lives as preventive dietary measures, which have the added benefit of greatly reducing the need for such a grueling treatment to begin with.

Longevity in the United States has been on the decline for the last three years. While the opioid crisis explains much of the decline, the fall in women's life expectancy is largely due to women dying at younger ages from the usual diet-related diseases, particularly heart disease. In fact, for both men and women, the death rates have gone up from multiple diet-related illnesses, including diabetes, stroke, and Alzheimer's. Heart disease remains our number one killer, and advances in modern medicine are no longer improving the survival rate from it. It's time to get serious about this crisis and uproot one of its fundamental causes—poor diets encouraged by industries that promote unhealthy, addictive food environments.

THE DECLINING HEALTH OF TODAY'S YOUTH

A SERIOUS PUBLIC HEALTH CRISIS REQUIRES MEANINGFUL ACTION, AND IT IS UNDENIABLE THAT CHILDREN'S HEALTH IN THE UNITED STATES HAS BEEN IN DECLINE FOR A NUMBER OF DECADES.

30%

Between 2000 and 2009, the prevalence of type 2 diabetes in children ages ten to 19 increased by over 30%. Diabetes is a leading cause of death in the United States.

Childhood obesity, which quadruples the risk of type 2 diabetes before age 25, is still on the rise in 2018. The largest increases in obesity prevalence were seen among two- to five-year-olds.



35%

Thirty-five percent of children ages two to 19 are overweight while about 20% are obese.

Twenty percent of teens have abnormal blood cholesterol, a risk factor for heart attack and stroke.



Among young people with no cardiovascular risk factors, 25% already have atherosclerotic lesions in their coronary arteries.



Shorter, **less** **healthy** lives

Public health experts predict today's generation of youth will experience worse health and shorter lifespans than their parents did.



Children in 1995 were already consuming **five times as much fast food** as children in 1977, and today, the clustering of fast-food establishments around schools has been linked with lower diet quality and a greater odds of overweight and obesity among students.

Given the shifts we've seen in the food system, it's no surprise that many lunch items now resemble typical fast-food fare, such as hamburgers, pizza, wings, and hot dogs.

This crisis means each of us has a responsibility to do what we can to improve the health of the children who depend on the institutions we manage and influence.

School food service teams have already done **an amazing job** adhering to the USDA mandates, but there's more work to be done—and a situation this urgent requires that food service teams treat and address children's health as the crisis it is.

Boldly balancing menus and school food environments is the most effective response your team can take.



HOW DID WE GET HERE?

Saturated Fat, Cholesterol, and a Lack of Fiber: **A trio of disease-promotion**

Given that a significant and increasing proportion of children today have high blood cholesterol, elevated body mass indices, and diabetes or prediabetes, it is not only reasonable but essential to combat deteriorating health trends at a collective, institutional level. The severity and pervasiveness of this deterioration indicate that actions taken at the individual level, while helpful, are completely inadequate as a public health strategy. Further, individual attempts to improve health are unlikely to be sustainable in food environments unsupportive of, or even hostile to, healthy dietary choices.

At the institutional level, focusing menu reforms particularly on three dietary components—saturated fat, cholesterol, and fiber—can dramatically reshape food environments, as the relative balance among these components reflects the relative balance between disease-promoting and health-promoting foods. As we will explore below, meals higher in saturated fat and cholesterol, in confluence with a dearth of dietary fiber, are linked with deteriorating health trends among children and adolescents.

While the USDA Dietary Guidelines for Americans provide recommended limits on saturated fat, trans fat, and cholesterol intakes, the Institute of Medicine (IOM) has not set recommended limits for these dietary components because LDL cholesterol concentrations invariably increase at any level of consumption above 0% of energy. As the entity responsible for determining national nutrition standards, the IOM recommends that intakes of these components be kept as low as possible while still maintaining nutritional adequacy. But what passes for “nutritional adequacy” is often subjective, allowing for globally health-harming meals and foods to slip under the radar.

In order to be objective and clear, we advise that saturated fat and cholesterol be as low as possible, with average upper limits of 6% of calories for saturated fat intake and 50 mg per day for cholesterol intake from school breakfast and lunch. In addition, we advise an average daily fiber intake of 22 grams from school breakfast and lunch.

SATURATED FAT

There is a robust causal link between saturated fat intake and elevated LDL cholesterol levels, a well-established marker for risk of heart disease and cardiovascular events. The Dietary Guidelines for Americans Committee advises that saturated fat intake be less than 10% of daily calories and preferably less than 7%, but that further reductions confer additional health benefits.



In a 14-year follow-up to the Nurses' Health Study, findings revealed that reducing total energy intake from saturated fats by five percentage points could lower risk of developing coronary heart disease by 42%. That such a relatively modest drop in saturated fat intake can substantially lower heart disease risk speaks to the potency of saturated fat's toxic effects on the body. Both saturated and trans fats—found most commonly in animal-source and processed foods—damage the lining of blood vessels, and consuming either in significant quantities creates unhealthy blood lipid profiles

Reducing total energy intake from saturated fats by five percentage points could lower risk of developing coronary heart disease by 42%.

In addition to increasing risk for cardiovascular diseases, higher saturated fat intake is a significant risk factor for systemic inflammation, insulin resistance, and obesity. Moreover, biochemical pathways involving saturated and trans fats implicate both in the progression of chronic inflammatory diseases, including autoimmunity, allergies, cancers, hypertension, atherosclerosis, enlarged heart, and neurodegenerative diseases. Higher saturated fat diets also produce unhealthy changes to the gut microflora make-up, which were associated with elevated endotoxin levels, fat mass, weight gain, liver fat content, insulin resistance, and risk of diabetes

CHOLESTEROL

Per the USDA DGAs and American Heart Association, individuals should limit cholesterol intake to 300 mg per day, and individuals at risk of cardiovascular diseases (CVDs) should limit cholesterol intake to 200 mg per day. These are not recommended intakes, but rather thresholds beyond which acute risk of chronic disease can be expected.

Our bodies naturally produce all the cholesterol we need to be healthy, and dietary sources are nutritionally unnecessary.



Furthermore, the oxidation of dietary cholesterol, through cooking or metabolic processes once ingested, poses significant potential health risks. Cholesterol oxidation products (COPs) are likely involved in both initiation and progression of chronic diseases, including atherosclerosis, neurodegenerative disease, kidney failure, and diabetes.

Cholesterol intake, an indicator of animal product consumption generally, has also been associated with greater risk of numerous cancers, including stomach, pancreas, colon, rectum, kidney, bladder, breast, and lung cancers and non-Hodgkin's lymphoma.

Given that one in five teenagers today has abnormal blood lipid profiles, and given that half of 2- to 15-year-olds already have fatty streaks in their arteries, it makes sense to restrict dietary cholesterol more stringently in school meals across the board as both a precaution and an intervention.

LACK OF FIBER

In a meta-analysis evaluating the relationship between dietary fiber and health, researchers found that individuals consuming the most fiber were significantly less likely to die from cardiovascular diseases, cancers, and all causes of death combined. The higher the fiber intake, the greater the benefits, particularly for cardiovascular health. These findings are unsurprising given that dietary fiber is linked to improvements in blood cholesterol levels, immune function, and blood sugar and insulin sensitivity and has a general anti-inflammatory effect on the body. Higher fiber intakes are also inversely associated with weight gain, obesity, and constipation.

***Underconsumption
of fiber may
constitute the most
widespread nutrient
deficiency in the
United States.***

Regrettably, less than 3% of Americans meet and exceed the minimum adequate intake of fiber per day, which may constitute the most widespread nutrient deficiency in the United States. The average American only consumes half of the minimum required fiber, a fact which contributes to our pandemic of poor health.

This profound lack of dietary fiber—as a constituent of phytonutrient-rich, whole plant foods but not highly refined foods or animal products—is a clear indicator of the gross imbalance between health-promoting and health-harming foods in our diets.





Important notes on **sodium,** **TMAO,** and **processed meats**



Sodium

There is a vast amount of research linking dietary sodium to cardiovascular diseases like high blood pressure and to increased risk of stroke, heart attack, and other cardiovascular events. Consumption of high-sodium meals results in oxidative damage throughout the circulatory system, in the stiffening and constriction of blood vessels, and in impaired blood flow—all of which characterize the initial development of atherosclerosis. In interventional studies, dietary salt reduction improves blood vessel dilation and blood pressure in subjects with and without hypertension.

Research suggests that “modest and long-term reduction in population salt intake” could cut stroke deaths immediately by about 14% and cardiovascular deaths by about 9% in those with hypertension; in those without hypertension, stroke and cardiovascular deaths could decrease by approximately 6% and 4%, respectively.

The average sodium intake in industrialized countries—between 2800 and 4000 mg per day—far exceeds the AHA limit of 1500 mg. Researchers have implicated our high-salt diets in a number of autoimmune and inflammatory conditions, including asthma, multiple sclerosis, type 1 diabetes, and rheumatoid arthritis, among many others. Similar to the interventions described above, low-sodium diets maintained over a period of just a few weeks have been shown to improve lung function in asthmatics, whereas high-sodium diets were shown to worsen asthma symptoms. Further, researchers have mapped out pathways in the body through which high sodium intakes cause inflammation and foster conditions favorable to the development of autoimmunity.

In the American diet, the **largest sources of sodium come from processed and prepared foods containing meat and cheese, as well as from breads and processed meats in general.** As such, more than 70% of the sodium we consume is “hidden” within these products and beyond our control. Therefore, avoiding processed and restaurant-style foods that contain hidden sodium and replacing them with salt-conscious, scratch-made foods are the best ways to lower the sodium burden in food service.

TMAO

The regular consumption of animal-source proteins within a diet that lacks sufficient fiber—in other words, the Standard American Diet (SAD)—promotes the growth of gut bacteria that are capable of metabolizing specific dietary components found largely in animal products. Simultaneously, SAD discourages the growth of gut bacteria that preferentially digest plant matter. As a result, people who regularly consume animal proteins and those whose diets are low in animal proteins have marked differences in gut bacteria composition.

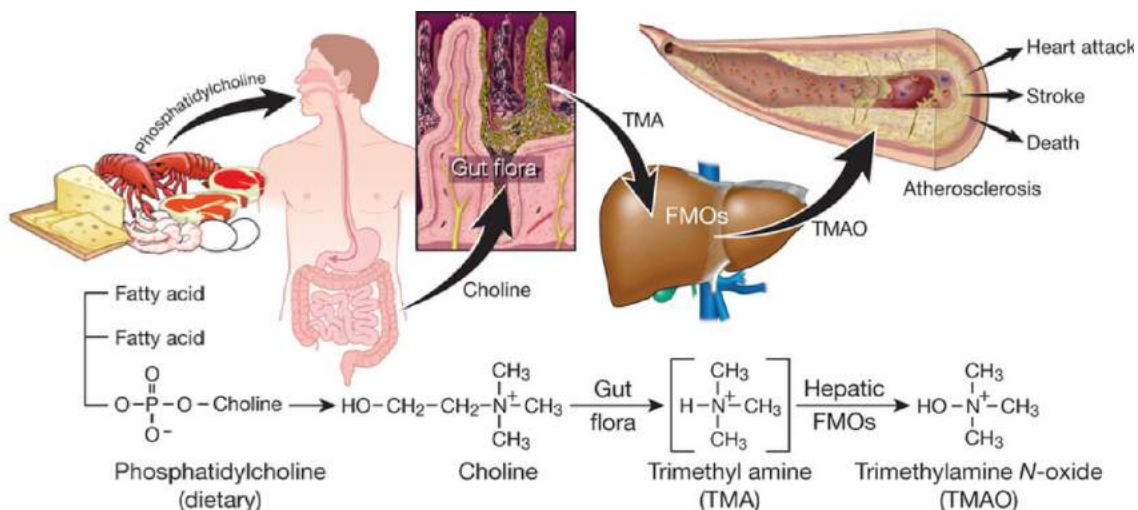


Image source: Wang et al. (2011)

Emerging research reveals how SAD contributes to the development of vascular diseases through this manipulation of gut bacteria composition. People who consume SAD metabolize the nutrients choline, lecithin, and carnitine differently from those consuming a fiber-rich, balanced diet. Specifically, the gut bacteria in those eating SAD convert these nutrients into a substance called TMA, which is later oxidized in the liver to TMAO. Through its toxic and inflammatory effects on the body, TMAO directly contributes to the formation of atherosclerotic plaques. In fact, TMAO levels in the body are associated with an increased risk of having a major cardiovascular event, such as heart attack.

Further complicating these metabolic changes is the fact that animal proteins—meats, seafood, dairy, and eggs—tend to be rich in choline, lecithin, and carnitine relative to plant-source foods. Not only do consumers of SAD have higher levels of disease-promoting bacteria in their guts, but they also consume more of the specific nutrients these bacteria metabolize into toxic TMA. We can only stop this vicious circle when the balance in our diet shifts toward fiber-rich plant proteins like 100% whole grains, legumes, nuts, and vegetables. Such a shift promotes the growth of beneficial fiber-fermenting bacteria and reduces the overall dietary burden of choline, lecithin, and carnitine.

PROCESSED MEATS

Across dozens of studies, the preponderance of evidence strongly suggests that consuming processed meats contributes to heart disease and increases the risk for a long litany of chronic illnesses, including type 2 diabetes and cancers of the throat, esophagus, stomach, colon, rectum, lung, pancreas, breast, prostate, and bladder, among others. Researchers conclude that processed meats—those cured, smoked, and treated with nitrates or other preservatives—constitute a “powerful multi-organ carcinogen” and that “clinical and public health guidance should especially prioritize reducing processed meat consumption.”

Among the many public health authorities that have called on institutions and individuals to eliminate and avoid processed meats are the American Medical Association (AMA), the American Academy of Pediatrics (AAP), the World Health Organization (WHO), the World Cancer Research Fund, and the Harvard School of Public Health.



The AMA passed a resolution urging hospitals to begin “(a) providing a variety of healthy food, including plant-based meals, and meals that are low in fat, sodium, and added sugars; (b) eliminating processed meats from menus; and (c) providing and promoting healthy beverages” for the benefit of their patients, visitors, and employees. Similarly, AAP released a statement advising that children not eat processed meats because the nitrate and nitrite additives “interfere with thyroid hormone production and the blood's ability to deliver oxygen in the body.” The AAP also noted that “children are more sensitive to chemical exposures because they eat and drink more, relative to body weight, than adults do, and are still growing and developing” and that the endocrine-disrupting effects of these and other additives have potential lifelong consequences to children’s health.



Case study

SCHOOL MEAL NUTRIENT ANALYSIS

The following data were taken from real menus in January 2019 from a randomly selected high school in a randomly selected district among the 25 largest in the United States.

All breakfast and lunch options **were selected to make reimbursable meals per federal mandates.**



ORIGINAL MENU

Table 1. Nutrient content for one week of complete, reimbursable breakfast and lunch meals

	Meal	Calories	Total Fat (g)	Sat. Fat (g)	Cholesterol (mg)	Sodium (mg)	Fiber (g)
Monday	<i>Breakfast</i>	425	11.0	6.5	28	644	3
	<i>Lunch</i>	899	30.0	15.5	80	1304	11
Tuesday	<i>Breakfast</i>	550	21.5	7.5	16	971	3
	<i>Lunch</i>	996	49.2	14.5	141	1581	5
Wednesday	<i>Breakfast</i>	262	6.0	1.4	45	430	2
	<i>Lunch</i>	830	12.5	5	25	1477	14
Thursday	<i>Breakfast</i>	393	5.0	1.5	10	231	5
	<i>Lunch</i>	621	16.5	4.3	60	748	7
Friday	<i>Breakfast</i>	451	16.5	5.5	231	789	3
	<i>Lunch</i>	694	24.9	5.5	40	1217	11
Daily Combined Average	<i>Breakfast + Lunch</i>	1224	38.6	12.6	164	1878	13

Although school breakfast and lunch combined met just **60% of high-schoolers' calorie needs**, school meals provided **just 40% of fiber needs**, on average, and provided **more than 80% of their daily sodium maximum intakes** based on even the most lax standards. Saturated fat contributed approximately 10% of total calories, 3 percentage points above the American Heart Association's (AHA) recommendation of less than 7% of total calories. Total fat intake contributed approximately 30% of calorie intake, a relatively high figure; **average cholesterol intake was more than 80% of the AHA recommended maximum of 200 mg per day.**

NUTRITIONALLY ENHANCED MENU

After replacing the least healthy lunch entrée in the week with a plant-forward alternative, the daily averages of total fat, saturated fat, cholesterol, sodium, and fiber changed favorably for the entire week.

Table 2. New daily average and percent change after replacement with plant-based lunch swap

	Meal	Calories	Total Fat (g)	Sat. Fat (g)	Cholesterol (mg)	Sodium (mg)	Fiber (g)
Tuesday	<i>Lunch with Swap</i>	902	21.1	5.2	14	631	29.1
New Daily Average	<i>Breakfast + Lunch</i>	1205.4	33.0	10.7	138.2	1688.4	17.6
% Change	<i>Breakfast + Lunch</i>	-1.5%	-14.5%	-14.8%	-15.5%	-10.1%	37.7%

Note: The percent change is between the daily average before versus after the plant-based lunch swap.

This simple substitution led to a **15% reduction in total fat, saturated fat, and cholesterol average daily intakes**; a **10% reduction in average daily sodium intakes**; and a **38% increase in average daily fiber intakes**.



In a similar nutrient analysis using a different high school's breakfast and lunch menus, we replaced two conventional lunch entrées in one week with plant protein-based alternatives, which yielded the following changes in average daily nutrient intakes:



16%

reduction in total fat

18%

reduction in sodium

30%

reduction in saturated fat

30%

reduction in cholesterol

75%

75% increase in dietary fiber



This example is further proof that meaningful change won't come in the form of adding a side salad to the lunch line, as it exposes the flaw in the false notion that we can meaningfully balance unhealthy entrée items with a small side of vegetables that may or may not even be consumed.

When health-promoting proteins and produce are not incorporated into the main entrée itself, our healthiest foods are too frequently destined for the trash or left off the tray entirely. **But even when the side of vegetables or fruit is eaten, the saturated fat, cholesterol, and sodium in a conventional entrée will overwhelmingly negate the health benefits plant foods confer.**

That is why our definition of "balance" requires (1) that there be alternative plant-rich entrées to replace the most harmful conventional proteins on a given menu and (2) that every potential opportunity to make conventional items healthier be taken.



HIGH-IMPACT OUTCOMES

COST SAVINGS,
STUDENT SATISFACTION,
AND **ACADEMIC SUCCESS**



COST

In a pilot study conducted in concert with Friends of the Earth, Oakland Unified School District saved \$42,000 dollars in one year after reducing its meat purchases by 30%. On the whole, students consumed 10% more legumes, fruits, and vegetables, and most surprisingly, student satisfaction with meals increased. A number of Florida school districts have found similar success with an average savings of ten to 20 cents per meatless meal.

So the question for most isn't how much these changes cost, but really how much money is your district losing by not shifting to more balanced, plant-rich menus?



ACHIEVEMENT

According to a Brookings Institution study, schools with healthier menus tended to have more academically successful students. Moreover, schools whose menu healthfulness improved over time saw a concurrent improvement in overall academic performance. This gain was most pronounced among students who depend more heavily on school breakfast and lunch programs and who experience food insecurity outside of school.

Per the USDA's own nationally representative study, schools with the healthiest meals did not spend more money per meal than did schools with the least healthy meals. Moreover, schools offering the healthiest meals also enjoyed the highest participation rates. The study further noted that plate waste was comparable pre- and post-implementation of the guidelines. These findings indicate that (1) higher nutrition standards are not cost-prohibitive, (2) more healthful eating is not what deters children from finishing their meals, and (3) engagement is highest when meals are more nutritious.



HIGH-IMPACT OUTCOMES

COST SAVINGS,
CUSTOMER SATISFACTION,
AND IMPROVED HEALTH



According to an analysis from the Johns Hopkins Center for a Livable Future, four hospitals in the San Francisco Bay Area collectively saved over \$400,000 after reducing meat purchases by 28%.

Over half of these savings came from Santa Rosa Memorial Hospital, which made the deepest cuts to meat and poultry purchases as well as to dairy. In total, this hospital reduced beef purchases by 60%, pork purchases by 50%, poultry purchases by 80%, and lunch meat by 77%.

Anecdotal evidence from the managers at all four participating hospitals reported enthusiastic support for the menu changes from employees and patients alike, driven frequently by an increase in the availability of meatless and plant-based options.



What's more, it reported a 30% increase in vegetables served on patient menus as well as a 24% increase in patient meal satisfaction ratings.



HIGH-IMPACT OUTCOMES

COST SAVINGS,
EMPLOYEE SATISFACTION,
AND IMPROVED PRODUCTIVITY

COST

Four of the ten most expensive health conditions for U.S. employers are related to heart disease, diabetes, and stroke, all of which are diet-related diseases. Combined, the lost productivity cost of these four conditions amounts to \$525 billion annually, and employees with diet-related diseases also file twice as many workers compensation claims.



ABSENTEEISM

Absenteeism, intimately bound up with poor employee health, costs American employers a total of \$225.6 billion per year. In fact, unhealthy employees miss an average of 27% more work than do healthy ones, and nearly two-thirds of employers say employees' health habits are a top challenge to controlling health care costs.

RESEARCH

Emerging research is demonstrating how a plant-rich shift in diet can enhance cognition, mood, and productivity while reducing absenteeism and boosting physical health. In a study on obese and overweight adults, one year on a low-fat, high-carbohydrate diet (i.e., a diet rich in plants) significantly improved feelings of depression, anxiety, anger, fatigue, vigor, confusion, and general mood in comparison to one year on a low-carbohydrate, protein-rich diet (i.e., a diet rich in animal products).

In a study conducted in a corporate office setting, overweight and obese employees receiving nutrition education on whole, plant-based eating reported significant improvements in overall health, physical functioning, mental health, vitality, and satisfaction with diet after 22 weeks in comparison to a control group receiving no instruction. Impressively, employees receiving instruction reported a 40-46% decrease in health-related productivity impairments during work hours. This group also lost an average of nine pounds per person, and the more classes an employee attended, the more weight she or he tended to lose. What's more, they even reported a significant decrease in spending on food. With these benefits in mind, it's easy to see how this low-cost intervention could pay for itself many times over in stimulated productivity and wellbeing.

Expanding upon the previous study, researchers conducted an intervention study involving nutrition education and the addition of low-fat plant-based meal options in worksite cafeterias over a period of 18 weeks. Compared to the control groups, which received no instruction and no access to plant-based meals in their worksite cafeterias, the groups receiving the intervention noted significant improvements in:

- All impairments due to health
- Overall work impairments due to health
- Non-work-related activity impairments due to health
- Depression
- Anxiety
- Fatigue
- Emotional well-being
- Daily functioning due to physical health
- General health



From these data, it's clear that investing in the physical health of your employees in making cost-effective, innovative changes to worksite food environments can lead to better productivity, better quality of work, lower expenses in the long run, and a more convivial atmosphere given what we know about the intimate links between diet, physical health, mental health, and the associated costs to businesses of managing chronically ill employees.

In the next part of the guide, we'll dive into the goal-setting process, then cover capacity-building and planning.

With menu design tools and inspiration for meal development, you'll be well on your way toward laying the groundwork for successful menu updates.

For any additional support, get in touch with us at menus@balanced.org.

