This module is part of the Centers for Disease Control and Prevention's Sodium Reduction Toolkit: A Global Opportunity to Reduce Population-Level Sodium Intake. The toolkit is designed to provide government agencies, international organizations, and other stakeholders with a brief overview, tools, and information necessary to inform strategies to reduce population-level sodium intake.
This module in the Sodium Reduction Toolkit covers policy interventions to reduce sodium intake. Other modules in the toolkit provide information about the global impact of sodium on health; methods to evaluate sodium intake through biomarkers, indirect estimation, and dietary assessments; analysis of sodium in the food supply, including how to create a database to assess sodium in the processed food supply; knowledge, attitudes, and behaviors related to sodium intake and health; strategies for using sodium-reduction policy interventions to reduce sodium intake; and the process of translating and sharing evidence-based research. Each module also includes examples and a list of top 10 resources.

Please note that throughout this module, the term “salt,” also known as sodium chloride, is not synonymous with the term “sodium.” Modules in this series use the term “salt” when referring to sodium chloride and sodium when referring to sodium. A list of conversions for salt and sodium is available on the toolkit web page.
The objectives of the Policy Interventions module are to:

1. Discuss opportunities for policy interventions and strategies to improve the healthfulness of food environments, encourage sodium reduction in the food supply, and increase consumer awareness about the nutrient content of foods.

2. Discuss various policy interventions and strategies used to develop sodium intake recommendations, food labeling, healthful food procurement, and regulations.

3. Discuss the importance of evaluation and of measuring progress and success.

Please note that the examples and recommendations provided should be used for training purposes only and do not necessarily imply that they are appropriate for use in your country.
Sodium reduction polices that help reduce the amount of sodium in the food supply, thereby reducing sodium intake:

- Can improve the health of the population by reducing blood pressure levels;
- Result in greater opportunities for access to healthful food choices;
- Decrease exposure to unhealthful foods;
- Improve the health of the population exposed to the policy;
- Increase awareness and knowledge among the population exposed to the policy; and
- Provide an evidence base for other jurisdictions, organizations, and associations seeking to adopt similar policies.

Evidence shows that increased access to healthful foods is linked to increased consumption of those foods—and better health.
Policy Intervention: Sodium Intake Recommendations

- Population sodium intake recommendations have been adopted by governments and by international and national public health organizations.
- When recommendations are developed, existing scientific literature is reviewed to assess appropriate levels of intake.
- Generally, a policy document is released detailing the recommendations.

Recommendations for sodium intake have been made by international and national public health organizations and by governments. When recommendations are developed, existing scientific literature is reviewed to assess levels of intake that are safe and appropriate. For example, in the United States, the science and guidelines are revisited every five years. Generally, a policy document is released detailing the recommendations.
Although specific recommendations and population sodium intakes vary slightly from country to country, excessive sodium intake is prevalent worldwide. To help reduce sodium intake, recommendations have been set by various international and national governments as well as public health organizations.

The most current World Health Organization recommendation for the general population is to reduce sodium intake to less than 2,000 milligrams of sodium per day.\(^1\)

Specific intake recommendations have also been made by individual countries. In the United States, the \textit{2010 Dietary Guidelines for Americans} recommend less than 2,300 milligrams of sodium per day for the general population and 1,500 milligrams of sodium daily for specific populations, including African Americans, adults aged 51 years and older, and those of any age with hypertension, diabetes, or chronic kidney disease.\(^2\) The latter recommendation applies to about half of the U.S. population, including children, and the majority of adults.

The American Heart Association, a voluntary, national organization within the United States, recommends an intake level of 1,500 milligrams daily for all Americans.\(^3\)

Health Canada set the maximum intake level recommended for Canadians to 2,300 milligrams of sodium per day.\(^4\) In the United Kingdom, the Scientific Advisory Committee on Nutrition recommendation is slightly higher, at 2,400 milligrams per day.\(^5\)
Several opportunities for developing sodium intake recommendations exist. The World Health Organization is the directing and coordinating authority for health within the United Nations system and is responsible for setting recommendations and standards for member states.¹

Nations that do not have their own sodium intake recommendations can adopt sodium intake recommendations set by the World Health Organization. Alternatively, a country may choose to convene its own national experts to develop recommendations that are appropriate within that country.

Nations with existing recommendations can update or expand the recommendations to support the most recent science. The United States strengthened existing recommendations for sodium intake from the 2005 to the 2010 Dietary Guidelines for Americans based on updated scientific findings, and the World Health Organization currently is undertaking a similar review and revision process, as of October 2012.

The potential benefits and limitations of sodium intake recommendations are discussed next.
There are several potential benefits of having sodium intake recommendations. They can help communicate what should be included in a healthful diet, and they can provide a basis for listing sodium content on a food label because they put individual serving sizes into the context of overall daily intake.

Recommendations can also serve as a target intake level for national population sodium reduction efforts, and they can guide and inform recommendations for specific programs, such as school lunch programs.
Potential limitations of having sodium intake recommendations include the challenge of developing new country-specific recommendations for sodium intake in nations with few resources and the difficulty of communicating new recommendations as new science emerges.

Furthermore, in many countries the majority of sodium consumed is from processed foods, leaving consumers with little control over how much sodium they eat. This situation may limit the ability of individuals to take action on the recommendation to reduce sodium intake.
Food labeling refers to the disclosure of nutrients on a food product. Labeling is more important for sodium reduction efforts because sodium content in a specific food can be shown on a Nutrition Facts panel or other display on the label. Sodium content can also be displayed as a percentage of the nutritional makeup of a food product.

Requiring labeling only on food categories that contribute high amounts of sodium to the diet can be a limited approach to food labeling. The next slide provides examples of food labeling initiatives.
In the United States, food labeling of sodium content and other nutrients is mandatory on most packaged foods as well as single-ingredient, ground and chopped meat and poultry products sold to consumers. In addition, regulations requiring labeling for meat and poultry products that have added solutions containing sodium have been proposed.

U.S. regulations allow for the voluntary disclosure of nutrient content claims describing foods that meet “low sodium,” “reduced sodium,” or “no sodium added” nutrient thresholds. And for the first time, federal regulations will soon require that specific types of restaurants with 20 or more locations provide nutrition information on the sodium content of menu items.

In France, the food industry is encouraged to adopt optional food labeling. Labels include listing sodium content in grams per serving as well as per 100 grams or 100 milliliters. Manufacturers can also include the following statement: “The salt (sodium) content of this product has been carefully studied; there is no need to add salt.”

Sodium-labeling legislation in Finland, implemented by the Ministry of Trade and Industry and the Ministry of Social Affairs and Health, requires food labeling in general and also for food categories that contribute high amounts of sodium to the diet. In Finland, examples of these foods include manufactured items and meals. Food products must display the percentage of sodium by fresh weight of the product. Foods considered high in sodium must show a “high sodium” label. Similarly, foods low in sodium may carry a “low sodium” label.
Many opportunities exist for initiating and expanding food labeling. For countries without resources to develop their own food labeling initiatives, existing food labeling polices or regulations from other countries can be a starting point for development, or they can be adopted in their entirety.

Countries with more resources can develop and implement their own labeling standards. According to the Codex Committee on Food Labeling, sodium or salt should be a mandatory part of nutrition labels that carry nutrient declarations. “Sodium” is the term currently used in mandatory or voluntary nutrient declarations, such as on the Nutrition Facts panel, whereas “salt” is typically found in the list of ingredients.

Countries with existing regulations can strengthen or expand standards to include:
- The addition of sodium as a required nutrient on nutrition labeling,
- Front-of-package nutrition labeling in addition to traditional nutrition labeling,
- Approved nutrient content claims for packages, and
- Requirements that food served in restaurants must carry a nutrition label.

For example, in 2010, the U.S. Food Safety and Inspection Service expanded food labeling regulations to include ground and chopped meat and poultry products and to require calorie labeling and the availability of additional information upon request for restaurant menu items. Food labeling has recently expanded to the front of food packages, and many products now provide a summary indicator regarding the healthfulness of the food product in addition to the nutrient listings on the Nutrition Facts panel.

The benefits and limitations of food labeling are described next.
Food labeling has several potential benefits. Comprehensive labeling that includes a wide variety of nutrients helps consumers understand the most about what is in the food they consume, and it assists them in making more healthful choices through product comparisons.

Nutrition labeling may also encourage reformulation of products to become more healthful in an effort to avoid disclosing unhealthful ingredients. For example, in the United States, much of the trans fat used in food processing was removed from packaged foods after trans fat became a required nutrient on the Nutrition Facts panel.
Food labeling initiatives also have limitations. Mandatory labeling may require development of a compliance mechanism to ensure companies are meeting disclosure standards, which may lead to greater demand on resources.

For countries in which the majority of sodium comes from table salt and not the food supply, mandatory labeling for sodium may have less impact. Even for voluntary efforts, effective initiatives would also require education of the population related to reading food labels.
For the purposes of this module, the term “food procurement policy” refers to a policy officially adopted by a state or local government, province, or region requiring that food purchased, provided, or made available contains key nutrients at levels that do not exceed standards established by public health authorities.

A policy would also encourage increased consumption of healthful foods, such as fruits and vegetables. Such a policy might, for example, define the maximum amount of sodium allowed in foods purchased, contracted for, or served by a daycare center run with city funding. Or an organizational policy could be adopted by a worksite or other venue that purchases and serves food.

Food procurement policies use purchasing power to affect food availability and add to the overall demand for more healthful food products. Such policies can facilitate and model healthier food environments, potentially drive the reformulation of foods, and have an impact on diverse settings, such as employee cafeterias, correctional facilities, schools, child care centers, public hospitals, senior centers, and parks.
The United States has several examples of food procurement policies, both governmental and organizational.

The New York City Department of Health and Mental Hygiene introduced nutrition criteria that apply to all foods purchased and served by the city.\(^6\) The standards include sodium limits for individual food items and meals, and they also address other nutrient requirements. The food standards for foods purchased and served by city agencies were introduced by Mayoral Executive Order in 2008, followed by standards for beverage and food vending machines in 2009 and 2011, respectively.

The standards cover daycare centers, schools, correctional facilities, hospitals, and other venues run or contracted by municipal agencies. In total, the standards affect more than 4,000 vending machines and more than 290 million meals and snacks served each year to New Yorkers. The health department is expanding this work to private venues by partnering with retail food outlets in hospitals and worksites, such as cafeterias.

Through Executive Order 509, the Massachusetts Department of Public Health implemented statewide food standards for food purchased and meals prepared by all state agencies within the Executive Department.\(^7\) The Department of Public Health reviews the nutrition standards every 2 years to ensure alignment with the most current nutrient intake recommendations. Food service for employees is not included under Executive Order 509, so Massachusetts is not an example of a worksite policy.

The U.S. Department of Health and Human Services adopted a worksite food procurement policy that is currently being implemented in cafeterias and vending machines within agencies under the auspice of the Department.\(^8\) This policy also affects individual foods and meals served, and it sets limits for sodium and other nutrients of concern.
Food procurement policies offer many opportunities. For example, an organization or government agency can adopt an existing food procurement policy. Massachusetts chose to do just that when it adopted nutrition standards that the New York City Department of Health and Mental Hygiene had developed for New Yorkers.

If an existing policy is not available or appropriate, a new governmental or organizational food procurement policy could be developed, such as the *Health and Sustainability Standards for Federal Concessions and Vending Operations* developed by the U.S. Department of Health and Human Services.

Finally, existing food procurement policies can be strengthened or expanded, such as adding new procurement policies specifically for food and beverage vending after introducing a policy for meals and individual foods in New York City.
Procurement policies can improve the healthfulness of food environments. They can also set a positive example for constituents and employees. Finally, procurement policies can increase demand for and purchase of healthful food products while reducing cost.
Some limitations of food procurement policies include the possibility of a short-term increase in food cost. In addition, training time and resources may be needed to educate food service personnel about new cooking methods, and food procurement officers and suppliers may also need technical assistance.

Lastly, healthful items may not be readily available to purchase in bulk when an organization first seeks lower sodium products. For example, although readily available for individual retail sale, low-sodium broth may not be available in bulk quantities. This situation may change over time as demand grows for lower sodium wholesale products and more of these items enter the marketplace.
Current sodium reduction programs are conducted mostly on a voluntary basis. In the United States, the problem of excess sodium intake is related to the food supply. The majority of sodium consumed comes from packaged, processed, and restaurant foods and is in the product already at the time of purchase. In 2010, the Institute of Medicine recommended that the U.S. Food and Drug Administration set targets for gradual sodium reduction in foods and that the food industry voluntarily reduce sodium in the interim.\(^9\)

In 2011, the Food and Drug Administration solicited comments on “approaches to reducing sodium consumption” to provide an opportunity for public input on current and emerging strategies for sodium reduction. Comments received as a part of this request will help inform future actions concerning regulation of sodium in food.
Benchmarks and targets for gradual reduction can help guide sodium reduction in the food supply.

Public health agencies and organizations can collaborate to set benchmarks for sodium reduction. The following slides provide examples of voluntary benchmarks in select countries.
In the United States, the National Sodium Reduction Initiative is a broad partnership of more than 85 national and regional health organizations as well as local and state health authorities from across the country.¹⁰ Launched in 2008 and coordinated by the New York City Department of Health and Mental Hygiene, the initiative’s goal is to lower U.S. population sodium intake by 20 percent by 2014 through a 25 percent reduction in sodium in packaged, processed, and restaurant foods. Through a process of analyzing nutrition and sales data and soliciting feedback from industry, the initiative set 2012 and 2014 sodium targets for 62 packaged food and 25 restaurant food categories. To date, 28 food manufacturers, restaurant chains, and supermarkets have publicly committed to meeting the initiative’s sodium targets.

New York City based its initiative, which invites industry to publicly commit to sodium targets and report on achievements, on the United Kingdom’s sodium reduction campaign, which included voluntary targets for sodium reduction. In 2005, the U.K. Food Standards Agency recommended population sodium reduction to 2,400 milligrams per person per day.¹¹ After consulting with public and private stakeholders, voluntary targets for sodium reduction were developed and included standards for 85 processed food categories. Recent data indicate that the average daily sodium intake in the United Kingdom between 2001 and 2011 significantly declined for men and women, from an average of about 3,800 milligrams to about 3,240 milligrams.
In 2012, Health Canada released “Guidance for the Food Industry on Reducing Sodium in Processed Foods” to assist industry in meeting the goal of reducing Canadians’ sodium intake to 2,300 milligrams per day by 2016. The guidance document focuses on a gradual, phased-in approach to sodium reduction and includes proposed sodium levels for processed foods as benchmarks. The guidance document also encourages manufacturers to focus on reducing sodium in foods targeted to children.

Similarly, the Food Safety Authority of Ireland’s Sodium Reduction Programme and the French Food Standards Agency are working with manufacturers to gradually reduce the sodium content of foods available in their respective countries, with the goal of reducing population sodium intake from 4,000 milligrams per person to around 2,400 to 3,200 milligrams.
In 2012, Argentina and Chile were in the process of negotiating large-scale voluntary sodium reduction targets and timelines with the food industry in those countries.

Argentina’s Ministry of Health, the Argentine Federation of Industry of Bread and Similars, and the National Institute of Industrial Technology worked together to reduce the sodium content of bread by 400 milligrams per 100 grams of bread.\(^\text{15}\) This reduction is not expected to change consumer taste preferences. The government is also working with the food industry to reduce sodium in packaged meat products.

Chile’s Ministry of Health, the Chilean Federation of industrial Bakers, and the Chilean Association of Supermarkets have backed a voluntary agreement to reduce the amount of salt in bread sold in Chile by 50 percent by 2014.\(^\text{16}\) It is estimated that this agreement will help gradually reduce the amount of sodium to 400 milligrams or less per 100 grams of bread. Participating bakeries and bread producers will receive a seal of distinction.
There are several ways to set sodium reduction benchmarks. Some examples are providing support and incentives for voluntary reductions of sodium in the food supply and encouraging adoption of equivalent sodium reductions across food categories in all segments of the food industry, not just in select foods or food product categories. Finally, agencies can require sodium reduction in the food supply by developing targets and benchmarks for gradual reduction.
There are several benefits for setting sodium reduction benchmarks. For instance, setting voluntary benchmarks can help drive reformulation of select products. Regulating levels of sodium in the food supply may help reduce population intake of sodium, which can reduce risk for high blood pressure. Mandatory sodium reduction programs will ensure that reductions are taking place across the food supply, not just in select categories.
For countries without benchmarks for sodium reduction, the process of setting targets can be time and resource intensive. Food manufacturers in countries with voluntary sodium reduction programs may only reduce sodium content in a limited range of products.

Despite these limitations, it is important to note that in the absence of regulation, changes in sodium levels across the food supply may be irregular and affect few product categories.
The following slides discuss the use of logic models and evaluation methods when evaluating sodium reduction policies and interventions. This information is intended to serve only as a guide.
Logic models are often used to depict the theory of change of an intervention or strategy. In this instance, the logic model above is used to determine which outcomes are appropriate to measure the effectiveness of procurement policies. The model shows possible short-term, intermediate, and long-term outcomes that can be used to assess whether enactment and implementation of procurement standards led to purchasing lower sodium foods, which can lead to lower sodium intake.

The procurement logic model can be used to determine the extent to which a procurement intervention or strategy is influencing sodium reduction in the food environment. Because procurement practices and policies have the power to change the food supply, it is critical that changes in the enactment of food procurement standards be monitored over time.

Because enacting a standard or procurement policy is just a first step in the sodium reduction process, you should monitor the progress of implementation to determine whether procurement policies and practices actually lead to changes in developing food contracts that explicitly state that standards for lower sodium foods should be met. Additionally, monitoring implementation is important to ensure that organizations are adhering to the standards set forth in the contracts or policies.

Evaluation methods that can be employed to determine the effectiveness of procurement policies and practices include policy analysis to assess existing procurement policies, assessments of vendor knowledge and intent to purchase lower sodium foods, review of food production records, pre-post assessment of the food environment, and menu or nutrient analysis. These evaluation methods can be conducted in various settings, such as worksites, hospitals, and schools, as well as among congregate populations.

Here are two options for how you might use this logic model, based on the intervention that you plan to implement. You can:
1. Choose a measure that will accurately determine if your program was successful, or
2. Choose the short-term and intermediate outcomes that you hope to accomplish through your initiative, and pick an intervention or strategy that will help you reach those outcomes.

Evaluation is often an iterative process. Preliminary logic models and evaluation plans may be modified based on evaluation findings.
When assessing the implementation of sodium reduction procurement strategies, consider both process and outcome data. For example, if you’re interested in collecting process data, you might pose the following evaluation question: “How many vendors offer lower sodium options?” However, when collecting outcome data, the following evaluation question might be appropriate: “Have the procurement strategies led to a decrease in the average sodium content in meals?”

To determine if agencies are purchasing lower sodium foods, an analysis of purchase records or a survey of food directors can help determine which foods are being purchased. The number or percentage of low-sodium meals or single items served or offered can indicate if low-sodium items are profitable compared to higher sodium foods.
Similar to the procurement logic model presented earlier, there are two options for how you might use this packaged food or restaurant labeling logic model. Based on the food labeling intervention or strategy that you plan to implement, you can:

1. Choose a measure that will accurately determine if your program was successful, or
2. Choose the short-term and intermediate outcomes that you hope to accomplish through your initiative, and pick a food labeling intervention or strategy that will help you reach that outcome.

Although food labeling initiatives are mainly aimed at influencing consumer behavior, they might also encourage the food and restaurant industries to develop healthier options for consumers. Thus, it is important to collect evaluation data at the consumer and food production levels.
Sodium Reduction Measure: Food Labeling

- **Strategy:** Mandatory food labeling of packaged food in the United States and labeling on restaurant menus

- **Potential measures:**
  - Increased consumer awareness of sodium content in foods
  - Percentage of restaurant meals that meet sodium standards
  - Average sodium content of packaged foods/restaurant meals offered

The example measures shown on this slide are for strategies aimed at making mandatory standards for food labeling of packaged foods or labeling on restaurant menus. To assess whether policies and regulations for food labeling are meeting national mandates and to what extent the food and restaurant industries are complying with the policy, you will need to collect data.

Potential measures that might be used as indicators to assess whether your intervention is making progress or reaching its desired outcome include:

- Increased consumer awareness of sodium content in foods,
- Increased consumer purchasing of lower sodium foods,
- Percentage of consumers that use food labeling to inform purchases of healthier food options,
- Percentage of packaged foods that provide sodium content on food labels,
- Percentage of restaurant meals that meet sodium standards, and
- Average sodium content of packaged foods or restaurant meals offered.

Some possible evaluation methods that might be used include:

- Restaurant observations or inspections for mandatory labeling,
- Pre-post labeling analysis for packaged food,
- Pre-post nutrient analysis of sodium content listed on food labels or in restaurant meals,
- Surveys of restaurant consumers, and
- Analysis of sales data.
Evaluation of policy-level sodium reduction efforts is fairly new to public health. Determining which type of data collection will tell you the extent to which your policy or intervention has reached its desired outcome is key to effective implementation. In 2012, data collection methods and protocols are currently being implemented to assess policy and environmental changes in the food supply, with the ultimate goal of capturing sodium reduction changes in foods.

These data collection approaches are used to gather both process and outcome measures of sodium reduction policies. When collecting process evaluation data, the purpose is to determine whether the policy was implemented as expected and to assess how it was implemented. Process-level data collection uses methods such as key informant interviews, consumer focus groups, and surveys to determine how and to what extent interventions are being implemented.

With outcome evaluation data collection, the purpose is to determine whether the policy obtained the desired outcomes—in this case, to reduce sodium in foods. To assess the outcomes of policy and environmental changes, a policy scan, menu or nutrient analysis, or sales data might be collected to determine whether the intervention met the intended outcomes.

This slide presents several data collection approaches that match sodium reduction interventions. Once you have decided which sodium intervention you want to implement, you should choose a data collection method that will best evaluate that intervention.
Considerations

- Health policy interventions can improve the health of the population and result in more widespread availability of healthful foods and environments.
- Effective policies can improve the health of the population exposed to the policy and provide an evidence base for others enacting similar policies.
- Data collection methods and protocols can be used to collect process and outcomes measures for sodium reduction policies.
- Resources and feasibility for individual countries should be assessed prior to implementation of a health policy.

Health policy interventions can improve the health of the population and result in more widespread availability of healthful food and environments. Effective policies can improve the health of the population exposed to the policy as well as provide an evidence base for others enacting similar polices.

Data collection methods and protocols can be used to collect process and outcomes measures of sodium reduction policies. Individual countries should assess resources and feasibility prior to implementing a health policy.
The resources included here provide additional background about policy interventions for sodium reduction.
Top 10 Resources


References

References for the information presented in this module are available for download. Click on the paperclip icon below.

References for the information presented in this module are available for download. Click on the paperclip icon below.
This concludes the Policy Interventions module. Please review the other modules to learn more about strategies for reducing sodium intake in your country.

We are interested in hearing your feedback on this module. Your feedback and comments will be used to make training improvements and better meet the needs of participants. Please click on the link below to provide your feedback.

www.surveymonkey.com/s/GlobalSodiumReductionPolicyIntervention
Sodium Reduction Toolkit: A Global Opportunity to Reduce Population-Level Sodium Intake

Policy Interventions: References


