

BALTIMORE CITY SALT REDUCTION TASK FORCE

CONSENSUS REPORT AND RECOMMENDATIONS

September 30, 2009

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Cardiovascular disease is the leading cause of death in Baltimore City, and a leading source of racial disparities in life expectancy. High salt intake is associated with elevated blood pressure, or hypertension, a key risk factor for cardiovascular disease. Reducing the consumption of salt across Baltimore City could help to prevent poor cardiovascular health outcomes.

As part of the Baltimore City Cardiovascular Health Disparities Task Force's comprehensive agenda, the Baltimore City Health Department convened a Salt Reduction Task Force comprised of diverse stakeholders including academic and policy experts, community leaders, and representatives from the restaurant and grocery industries. The members of the Task Force met to examine evidence that high salt intake is a health concern for Baltimore City, and to make recommendations for action.

The Task Force included the following members:

- **Melvin Thompson**, Vice President of Government Relations for the Restaurant Association of Maryland
- **Paulette Thompson**, Health and Wellness Manager for Giant Food
- **Joyce Smith**, Executive Director of Operation ReachOut Southwest
- **Elijah Saunders, M.D.**, Professor of Medicine at the University of Maryland
- **Stephen Teret, J.D., M.P.H.**, Associate Dean for Faculty and Education, Johns Hopkins Bloomberg School of Public Health
- **Stephen Havas, M.D., M.P.H., M.S.**, Consultant

The Task Force recommended a series of strategies to increase awareness of the relationship between salt and cardiovascular disease, and to foster a healthier level of salt consumption across Baltimore City. These strategies reflect a broad consensus that addressing high salt intake is a public health imperative for Baltimore. While they do not necessarily represent an exhaustive set of options to confront high salt intake, they are clear steps forward that have unified support from a diverse set of stakeholders.

The Baltimore City Health Department is committed to following up on the Task Force's recommendations.

We thank all of the Task Force members for their interest, participation, and contributions to this report.

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EXECUTIVE SUMMARY

Cardiovascular disease has long been the leading cause of death nationally and in Baltimore City. It is also a leading cause of the 6-year gap in life expectancy between Baltimore City and the state of Maryland and a key reason for the 20-year range in life expectancy between the wealthiest and poorest neighborhoods within the City. As part of a comprehensive effort to confront cardiovascular health disparities, the Baltimore City Health Department convened the Baltimore City Salt Reduction Task Force.^a

The Task Force included academic and policy experts, community leaders, and representatives from the restaurant and grocery industries.

The Task Force reviewed scientific evidence linking high salt intake to cardiovascular disease and estimated the scope of this issue in Baltimore City. The group came to a consensus that excessive salt consumption is a serious public health concern for Baltimore.

Established medical experts have cited a link between high levels of sodium consumption and high blood pressure, a leading risk factor for heart disease and stroke.¹ The main source of sodium in food is salt, or sodium chloride.

According to the federal Dietary Guidelines for Americans, the maximum recommended daily intake of sodium is 2,300 mg per day (approximately 1 teaspoon of salt). African Americans, middle-aged and older adults, and those with hypertension are recommended to consume no more than 1,500 mg per day; these groups may be most sensitive to the effects of salt on blood pressure.²

A recent CDC report found that 69.2% of the U.S. adult population falls into demographic categories that are recommended to have a lower daily sodium intake.³ In Baltimore City, where 63.6% of the population is African American, 43.9% of the population is 40 years of age or older,⁴ and 35.6% of the population report having been diagnosed with hypertension,^{5b} it is likely that an even higher percentage of the population should be following the lower daily sodium guideline.

In 2006, the average intake of sodium among U.S. adults was 3,436 mg/day, over twice the maximum recommended level of intake for the majority of the U.S. public.⁶ A recent survey of 84 African American Baltimore City residents found that foods that are typically high in salt, such as fast-food sandwiches and chips, made up a significant portion of the energy intake reported in a 24-hour food recall questionnaire.⁷ These data and anecdotal evidence suggest that many Baltimore City residents consume a high-sodium diet.

^a The Baltimore City Health Department's comprehensive plan to confront cardiovascular health disparities includes the following five strategies: Salt Intake Reduction; Disease Management by Community Health Workers; Health Education through Faith Institutions; Blood Pressure Screening in Barbershops and Referral to Care; Smoking Cessation and Tobacco Control.

^b These categories are not mutually exclusive.

The Task Force reviewed salt reduction strategies implemented by other public health agencies nationally and globally. The Task Force then endorsed seven strategies and recommendations as options for city government to address high salt intake in Baltimore.

These include recommendations to increase public awareness of the health risks associated with excessive salt consumption, and to encourage food providers to reduce the salt content of their products.

1. **General Public Education.** The Task Force recommended that the Baltimore City Health Department educate medical professionals and the general public about the link between excessive salt consumption and poor health outcomes, and about the daily salt intake recommended by various health associations.
2. **General Food Provider Education.** The Task Force recommended that the Baltimore City Health Department's Bureau of Environmental Health write letters to all food establishments to provide information about high salt intake as a public health concern and to encourage them to consider reducing the salt content in high-sodium foods.
3. **Voluntary Nutrition Disclosure.** The Task Force recommended that city food establishments apply for the Baltimore City Health Department's Charm City Award for Nutritional Information, which recognizes establishments that disclose the nutritional content of popular prepared food items.
4. **Focused Public Education.** The Task Force recommended that the Baltimore City Health Department, in collaboration with a nutritional advisory committee, publish periodic reports that compare the sodium content of all brands and varieties of a particular packaged food type.
5. **City Purchasing Standards.** The Task Force recommended that Baltimore City government explore the possibility of setting sodium standards for the food it purchases.
6. **Participation in External Efforts.** The Task Force recommended that Baltimore City work with outside agencies' efforts to reduce sodium in the national food supply.
7. **Ongoing Assessment.** The Task Force recommended that the Baltimore City Health Department continue to assess the issue of high salt intake and the prevalence of hypertension through various means.

BACKGROUND

High blood pressure, also called hypertension, is defined as a systolic pressure consistently exceeding 140 mm Hg or a diastolic blood pressure consistently exceeding 90 mm Hg. Pre-hypertension is defined as a systolic blood pressure between 120 and 139 mm Hg and a diastolic blood pressure between 80 and 89 mm Hg. Individuals with pre-hypertension are more likely to develop high blood pressure at some point in their lives. Untreated hypertension can lead to complications including heart attack, kidney damage, and stroke.⁸

Numerous epidemiological studies have linked high sodium intake to hypertension^{9,10,11} and cardiovascular disease.¹² National and global public health organizations, including the American Medical Association and the World Health Organization, have concluded that there is conclusive evidence on the adverse effects of excessive dietary sodium consumption on blood pressure, and have called for population-wide strategies to reduce salt intake.^{13,14}

“Adequate” versus “High” Salt Intake

Dietary salt, or sodium chloride, is necessary in very small quantities. However, the amount of sodium that the body needs is much lower than the average daily intake in the United States.

The Institute of Medicine’s Food and Nutrition Board has listed an Adequate Intake quantity for sodium, the quantity needed to cover the body’s needs and to allow for sodium sweat losses due to heat or physical activity. This Adequate Intake does not apply to individuals who lose large volumes of sodium in sweat, such as competitive athletes or workers exposed to conditions of extreme heat. The Adequate Intake of sodium for young adults is set at 1500 mg per day (3.8 g of salt). The Adequate Intake of sodium for older adults and the elderly is set at 1300 mg per day for men and women 50 through 70 years of age, and at 1200 mg per day for those 71 years of age and older.¹⁵

The National Heart, Lung, and Blood Institute recommends that the maximum amount of sodium intake for African Americans, middle-aged or older adults, and those with hypertension be 1,500 mg per day; these groups are most sensitive to the effects of salt on blood pressure. The rest of the American public is advised to consume no more than 2,300 mg per day.¹⁶

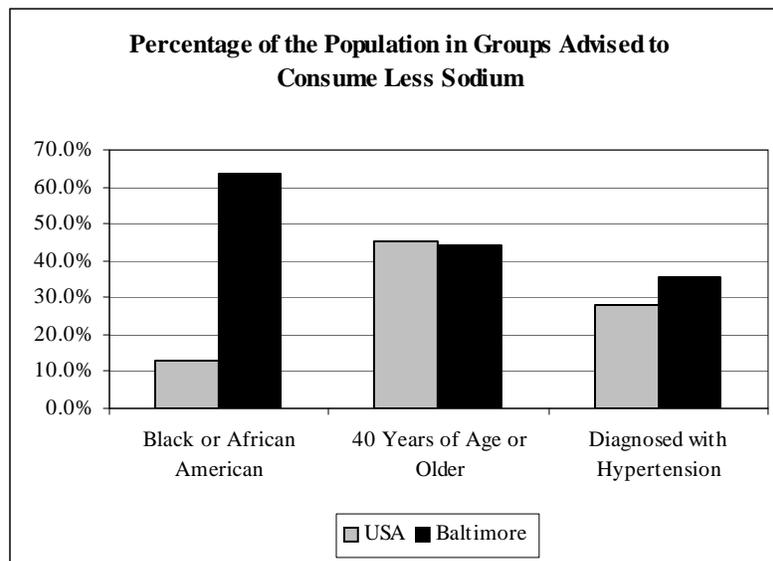
According to data from the Centers for Disease Control, average daily intake of sodium in the United States in 2006 was 3,436 mg – more than twice the Adequate Intake and well above the recommended upper level of intake for all groups.¹⁷

FINDINGS

High salt intake is a serious problem nationally, and there is particular cause for concern in Baltimore City.

A recent CDC report found that in 2006, 69.2% percent of U.S. adults fell into demographic categories that are recommended to have a lower daily level of sodium consumption: African Americans, adults 40 years of age or older, and persons with hypertension.¹⁸

Figure 1 shows the percentage of the population that falls into these groups in Baltimore City and nationwide. The groups shown in the figure are not mutually exclusive. However, given that Baltimore City has a higher percentage of adults who are African American and adults who have been diagnosed with hypertension, it is likely that a large majority of Baltimore City residents should be advised to consume less sodium.



Nationally, average daily sodium consumption is well above the maximum recommended level of intake.¹⁹ A recent survey of 84 African American Baltimore City residents found that foods that are typically high in salt, such as hotdogs, hamburgers, and chips, made up a significant portion of the energy intake reported in a 24-hour food recall questionnaire.²⁰ These data and anecdotal evidence suggest that many Baltimore City residents consume far more sodium than is recommended.

A modest reduction in city residents' daily sodium intake could have a substantial public health impact over the long term. It is estimated that a 1,265 mg/day lower lifetime intake of sodium would correspond to a 20% lower prevalence of hypertension and a reduction in mortality rates of 9% for coronary heart disease, 14% for stroke, and 7% for death from all causes. This could save 150,000 lives annually nationwide, including an estimated 700 each year in Baltimore City.²¹

STRATEGIES AND RECOMMENDATIONS

The following strategies reflect a broad consensus among all Task Force members that addressing high salt intake is a public health imperative for Baltimore. While these strategies do not necessarily represent an exhaustive set of options to confront high salt intake, they are clear steps forward that have unified support from a diverse set of stakeholders.

1. General Public Education

Background: Surveys from other countries have suggested that a significant portion of the general public may not be aware of the link between high salt intake and cardiovascular disease, the recommended daily level of salt intake, or even the relationship between salt and sodium.

In 2007, the Australian Division of World Action on Salt and Health (AWASH) conducted an online, multiple-choice consumer survey to collect information about Australians' knowledge relating to salt and health. While 71% of survey respondents chose "salt/sodium" as one of their dietary concerns, only 40% of survey respondents could correctly describe the relationship between salt and sodium, and only 14% of respondents could identify the maximum daily amount of salt recommended by the National Heart Foundation of Australia.²²

Qualitative studies conducted in the United States have shown that, even among individuals who have been cautioned by a healthcare provider to eat less sodium, there may be a great deal of confusion about how to maintain a low-sodium diet. Medical professionals who recommend dietary sodium restrictions may not provide detailed enough information about how to control salt intake, or what foods and seasonings to substitute for salt.^{23,24} Depending on their education levels, some consumers may not know how to read a *Nutrition Facts* label.²⁵

Other countries and jurisdictions that are working to lower population salt intake have included basic public education as a large program component. The United Kingdom's Food Standards Agency has produced clear, consistent, and engaging public education materials, including print and other media advertisements and a website.²⁶ The New York City Department of Health and Mental Hygiene has also distributed informational pamphlets, engaged with local news media, and created a webpage to educate the public about the risks associated with high salt intake, recommended levels of consumption, and tips for maintaining a low-sodium lifestyle.²⁷

Recommendation: The Baltimore City Health Department should integrate into its existing health education programs information about the link between excessive salt consumption and poor health outcomes, and about the daily salt intake recommended by various health associations.

The Baltimore City Health Department should develop an educational message including a few key points about the basic science behind salt and its impact on health. The Health Department should consider the educational materials, messages, and strategies used by New York City, the American Heart Association, and the United Kingdom as models.

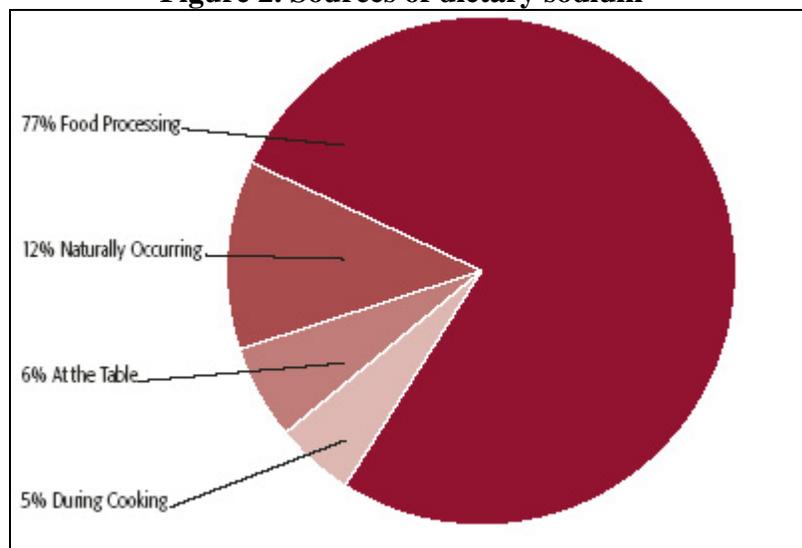
The Health Department should communicate these basic points to medical professionals through direct outreach (e.g., letter-writing), as well as partnership with professional societies and academic departments.

The Health Department should consider various avenues of outreach to the general public, including press advisories on salt-related topics, information on the Health Department website, partnership with the Enoch Pratt Library, educational programming on Cable 25 and on radio talk shows, and public health messaging through the Prevention Wednesday Program. Community Health Workers and partners in the faith-based community should also participate in salt-related educational outreach. Care should be taken to make sure that a simple, consistent message is conveyed to the public.

2. General Food Provider Education

Background: More than three-quarters of the average American’s daily sodium intake comes from processed and prepared foods.²⁸ (See Figure 2.) For this reason, the food production industry can play a large role in reducing population salt intake.

Figure 2. Sources of dietary sodium²⁹



In 2006, the American Medical Association recommended a stepwise, minimum fifty percent reduction in sodium in processed foods, fast food products, and restaurant meals, to be achieved over the course of ten years.³⁰ Local actors could contribute to progress toward this goal by voluntarily lowering the amount of sodium in their products.

Food producers have been resistant to altering their production processes, in part out of concern that consumers prefer saltier foods. However, taste research suggests that the level of sodium in prepared foods may be reduced gradually without negatively affecting consumer demand. The amount of sodium in prepared foods may be lowered without altering taste by adding salt to the outside of food, instead of dispersing it throughout the product.³¹ One experimental study found that when the sodium content of prepared food was reduced by fifty percent and subjects were allowed to salt to their food “to taste” at the table, they added less than twenty percent of the

sodium that had been removed – resulting in a roughly forty percent overall decrease in sodium intake.³² Furthermore, preference for salty foods has been shown to decline over time when less salt is ingested.^{33,34}

Through outreach, the Baltimore City Health Department could educate local food establishments about the health benefits of lowering the sodium content of prepared foods, and encourage them consider adding less salt to their products.

Recommendation: The Baltimore City Health Department’s Bureau of Environmental Health should write letters to all food establishments to provide information about high salt intake as a public health concern, to recommend alternatives to salt as a flavoring, and to encourage them to consider reducing the salt content in high-sodium foods. The Baltimore City Health Department should collaborate with the Restaurant Association of Maryland to draft and distribute the letters, so that a unified message will be conveyed.

3. Voluntary Nutrition Disclosure

Background: According to a 2002 survey, Americans consume an average of one out of five meals in a commercial setting. The same survey found that a typical American over age eight consumes an average of 4.2 commercially prepared meals per week.³⁵ There is a strong public health interest in assuring the nutritional quality of eating out. Providing nutrition information at prepared food facilities will empower consumers to make informed food decisions.

California, as well as New York City, Philadelphia, and Seattle, recently passed laws requiring chain restaurants to provide nutrition information to customers.³⁶ Menu labeling legislation has also been proposed in several other cities, counties, and states,³⁷ including Maryland.³⁸

Baltimore City has recently adopted a voluntary incentive approach to menu labeling. On January 7, 2009, the Baltimore City Health Department announced a new Food Facility Recognition Program to reward food businesses that help consumers make good nutritional choices in Baltimore. Facilities that offer prepared foods – including restaurants and many grocery stores – are eligible for the Charm City Award for Nutritional Information.

The Charm City Award for Nutritional Information will be given to food facilities that meet the following requirements:

- For facilities with 15 or more locations nationally, total number of calories, total number of grams of saturated fat, total number of grams of carbohydrates, and total number of milligrams of sodium must be provided for ALL menu items. The nutritional information must be displayed conspicuously prior to the time of purchase, through a poster, brochure, menu, menu board, display card, or any other written material that is readily visible or generally provided to customers at or near the point of purchase.
- For facilities with fewer than 15 locations nationally, the information listed above must be provided for 3 popular entrees.
- For more information, see: <http://www.baltimorehealth.org/healthawards.html>.

Recommendation: City food establishments should apply for the Baltimore City Health Department’s Charm City Award for Nutritional Information, which recognizes establishments that disclose the nutritional content of popular prepared food items. The Baltimore City Health Department should increase outreach to food suppliers, including grocery chains, to promote the award.

The Task Force is pleased that the Restaurant Association of Maryland supports the Charm City Award Program and is encouraging its members to apply. The Restaurant Association of Maryland is also providing nutrition analysis software as a benefit to their members. The Restaurant Association of Maryland should continue to encourage its members to apply for the award.

The Baltimore City Health Department should also consider developing another award program that would recognize food establishments that have demonstrated meaningful steps forward in reducing the sodium levels of their menu items.

4. Focused Public Education

Background: There is wide variation in the amount of sodium contained in different brands of similar packaged food products.

In a report comparing a limited set of brands in different food categories, the Center for Science in the Public Interest found that it was not uncommon for some brands to have at least twice the sodium content of a competing brand. The report also found that there is no clear pattern as to which types of brands are lowest in sodium: in some cases, “natural food” brands have higher levels of sodium than conventional brands, while in other cases the opposite is true. Similarly, some low-fat brands contain more sodium than their higher-fat counterparts³⁹

A focused comparison of the sodium content in all brands of a particular food type could make it easier for consumers to navigate the marketplace.

Recommendation: The Baltimore City Health Department, in collaboration with a nutritional advisory committee, should explore publication of periodic reports that compare the sodium content of all brands and varieties of a particular packaged food type. The reports could also recommend modifications to popular products to make them lower in sodium.

These reports would highlight the variation in sodium content within certain frequently consumed food categories, without targeting specific brands. The Health Department should prioritize its reports by collaborating with local grocery retailers to determine what food types are the most frequently consumed. The Health Department should convene an advisory committee of nutritionists to review each report prior to publication, in order to ensure fairness and accuracy.

Dissemination of these reports should be integrated into the Health Department’s general educational efforts, described above. The Health Department should also explore collaborating with retailers to post its reports in stores, near the point of sale.

5. City Purchasing Standards

Background: On September 17, 2008, Mayor Michael Bloomberg issued an executive order putting into place a set of formal nutrition standards for all food purchased or served by New York City agencies. Among other guidelines, the standards require that all individual items have 480 mg or less sodium per serving, and recommend the purchase of “low sodium” (140 mg or less sodium per serving) or “reduced sodium” (original sodium level reduced by 25%) whenever feasible.⁴⁰

The standards were developed by the New York City Food Policy Council’s public food procurement subgroup. This group worked with all city agencies that procure foods to set meaningful and feasible guidelines, based on what the agencies had been purchasing and what was available on the market. The group also reached out to the city’s contracted food supply companies to discuss workable food standards, in addition to considering food standards that had been set by other countries, such as the United Kingdom. The standards will be reassessed and possibly revised approximately one year after implementation.⁴¹

New York City has substantial purchasing power: it procures food for public schools, jails, and some hospitals. In addition to these agencies, the city is also working to encourage senior centers and private hospitals to adopt the new guidelines.⁴²

Baltimore City, which purchases food for Baltimore City Public Schools and for the vending machines in city agencies, could explore the possibility of setting similar procurement standards. The work done to date in New York City should serve as an illustrative model.

Recommendation: Baltimore City should explore the possibility of setting sodium standards for the food it purchases. If such standards are developed, they should be publicized widely.

6. Participation in External Efforts

Background: There are limits on the extent to which local action alone may be able to influence the salt content of the Baltimore food supply. Since many manufacturers operate on a broad scale, city authorities should continue to engage actively in other groups’ efforts to lower the sodium content of the national food supply.

The New York City Department of Health and Mental Hygiene has launched an initiative that seeks to develop a voluntary partnership with industry leaders to reduce the level of sodium in processed and prepared foods nationwide.⁴³ The Baltimore City Health Department has joined several other local agencies in this initiative and will continue to participate in the discussions led by New York City.

The United States Food and Drug Administration is currently considering a citizen petition requesting that the agency revoke the “generally recognized as safe” designation of salt, place limits on salt in processed foods, and require health messages on some salt products.⁴⁴ The Baltimore City Health Department submitted a comment to the FDA in July 2008, encouraging

the agency to develop a strategy to support a healthier level of sodium consumption in the general population. The Health Department will continue to follow this issue closely.

Recommendation: The Baltimore City Health Department should participate in outside agencies' efforts to reduce sodium in the national food supply. These efforts may be government-led or industry-led.

7. Ongoing Assessment

Background: Other countries and jurisdictions have assessed population salt intake in a variety of ways.

In the United Kingdom, national dietary surveys that include 24-hour urine collections (considered by world experts to be the “gold standard” in sodium intake evaluation)⁴⁵ have been used to measure sodium consumption in both adults and children.⁴⁶

In New York City, the New York City Department of Health and Mental Hygiene conducted a citywide receipt survey to determine the amount of sodium in meals purchased by a random sample of consumers at chain restaurants.⁴⁷

The Baltimore City Health Department is in the process of administering a Community Health Survey that includes questions related to the use of nutrition labels to guide food purchases. The results of this survey will generate a better understanding of city residents' current nutrition literacy, and whether the sodium content of purchased foods is a factor in their buying decisions.

In addition to this survey, the Baltimore City Health Department should consider conducting a receipt survey similar to that done in New York City, in order to assess the sodium content of the food that residents tend to purchase at baseline and over time.

The Health Department can also track the health outcomes associated with high salt intake. For example, it can conduct a regular review of the number of hospital admissions due to hypertension. The Health Department can also track the prevalence of hypertension over time by using data from the Maryland Behavioral Risk Factor Surveillance System (BRFSS).

Recommendation: The Baltimore City Health Department should continue to assess the issue of high salt intake and the prevalence of hypertension through various means.

In addition to assessing sodium intake and its associated health outcomes, the Baltimore City Health Department should explore mechanisms to evaluate the effectiveness of Strategies 1-7. The Health Department should collaborate with academic institutions to assess each component of the program.

CONCLUSION

Excessive salt consumption is an important public health problem in Baltimore City, and a key contributor to the City's high incidence of cardiovascular disease and stroke. The Baltimore City Health Department convened a Task Force comprised of a diverse set of stakeholders in the public health and food retail fields. After reviewing available scientific evidence and strategies adopted in other jurisdictions, the Task Force recommended the consideration of seven measures to increase awareness of the health effects of high sodium intake, and to foster a healthier level of sodium consumption in Baltimore City.

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