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## Calculating the Cost of Foodborne Illness—A New Tool To Value Food Safety Risks

Seventy-six million Americans fall ill each year from eating foods contaminated with bacteria, viruses, and parasites. If you have ever been one of them, you are acquainted with some of the costs these diseases inflict. Discomfort, pain, time lost from normal activities, forgone earnings, spending on medications, long-term medical treatment, and even death are all among the possible consequences of foodborne illness.

Possible financial costs can run to millions of dollars.

ERS researchers have estimated the costs of illness and premature death for a number of foodborne illnesses. For example, ERS estimates the annual U.S. economic costs due to foodborne *Salmonella* infections at \$2.4 billion. Policymakers use such estimates to help them rank risks, focus policy, and prioritize spending. The ERS estimates, like all cost-of-illness estimates, include assumptions about disease incidence, the severity of the illness, and the costs incurred for medical care, lost productivity, and so on. Changes to any of these assumptions change the cost estimates and, as a result, could change risk rankings, spending priorities, and food safety policies.

To provide policymakers and others with information on the assumptions behind foodborne illness cost estimates—and to give them a chance to make their own assumptions and calculate their own cost estimates—economists at ERS have developed a web-based “Foodborne Illness Cost

Calculator” (available at [www.ers.usda.gov/data/foodborneillness](http://www.ers.usda.gov/data/foodborneillness)). The Calculator currently describes the assumptions and calculations behind the ERS cost estimates for one foodborne pathogen, *Salmonella*. (Four more pathogens—*E. coli* O157, *E. coli* non-O157 STEC, *Listeria*, and *Campylobacter*—will be added later.) The Calculator also describes alter-

native epidemiological and cost assumptions, including those used by the Environmental Protection Agency and the Food and Drug Administration when they calculate illness costs for policy analyses.

The Calculator allows users to create their own cost estimates by changing the ERS assumptions and to examine the impact that different assumptions have on cost estimates and risk rankings. Calculator users can change assumptions to reflect any specific information they may have about disease incidence, medical costs, productivity losses, or other costs. By changing the assumption about the number of cases, users can calculate the costs of foodborne illness for a particular State or region, or for a particular foodborne illness outbreak. A user could even calculate his or her own potential costs from a bout of foodborne illness.

**Elise H. Golan**, [egolan@ers.usda.gov](mailto:egolan@ers.usda.gov)

**For more information** on ERS research on foodborne illnesses, visit: [www.ers.usda.gov/Emphases/SafeFood](http://www.ers.usda.gov/Emphases/SafeFood)



## Emergency Food Providers Supplement Federal Aid

During times of need, many households turn to local, nongovernment emergency food providers. Yet only limited information about these organizations has been available to policymakers. A recent ERS-funded study of emergency food providers estimates that almost 33,000 food

pantries and over 5,000 emergency kitchens operate in the United States, and they provided an estimated 2.4 billion meals in 2000. The study is the first to provide a broad, national overview of these private, nonprofit organizations and their relationship to Federal food assistance programs.

Food pantries and emergency kitchens (often called soup kitchens) provide food directly to needy households. Food pantries distribute bags of food to be prepared and eaten at home. Emergency kitchens provide prepared meals that are eaten onsite. Food pantries and emergency kitchens are typically locally based and rely heavily on volunteers. Almost two-thirds are affiliated with a religious organization.

About 30 percent of food pantries and 40 percent of emergency kitchens in the 2000 survey had been in operation for more than 10 years. But, almost one in five emergency kitchens and one in three food pantries had been operating for 3 years or less.





## Dietary Differences Masked by Averages

As the rates of obesity and related health problems, such as type 2 diabetes, continue to rise, the quality of our diets is being increasingly scrutinized by health professionals in both the public and private sectors. The diets of different sociodemographic groups are of particular interest to public health officials because of the disparities among these groups in terms of incidence of diet-related deficiencies and diseases. With better knowledge of the dietary differences associated with gender, education, income, race, and ethnicity, public health officials can identify groups that are particularly vulnerable to poor health.

Looking at average intakes of dietary components such as fats, cholesterol, and calories across sociodemographic groups shows that the richer, more educated segments of society have better diets, on average, than the poorer and less educated groups. Similarly, the quality of diets tends to increase with age. But assessing dietary differences by comparing average intakes can be misleading. In fact, for many nutrients and other dietary components, most groups meet the intake levels recommended by health authorities. Comparing dietary differences between groups at different

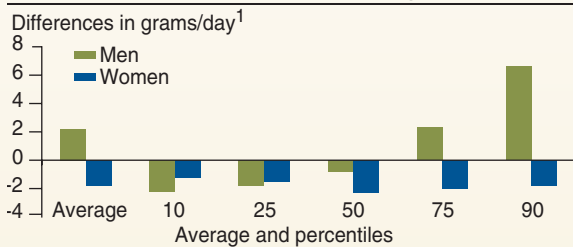
intake levels—that is, between the light, moderate, and heavy eaters in these groups—provides a clearer perspective on disparities in diet quality.

High intakes of saturated fats tend to raise blood cholesterol, a risk factor for heart disease. On average, men with less than a high school education consume 2 grams more of saturated fat per day than men with at least some college education. Because 2 grams of saturated fat is about 6 percent of a 21-50 year old male's recommended daily limit of 32 grams, this difference is not so alarming. What tips the balance is the difference in saturated fat intakes between the heavy eaters in the two education groups. Among the heavy eaters—those in the top 10 percent of intake levels (90<sup>th</sup> percentile or higher)—men with less than a high school education consume 7 grams or more additional saturated fat per day than do men with some college education. For women, the average difference does give a good indication of the difference in saturated fat intake by education level across the range of intakes. After adjusting for other socioeconomic characteristics, Black men and women consume more cholesterol per day on average than White men and women. The picture is more alarming at higher intake levels where the gap widens for both men and women.

This is a sobering message for nutritionists, dietitians, and other public health professionals. Judging disparities in diet quality based on average intakes alone may be misleading. Many of the disparities in the intakes of energy, fats, and cholesterol are more extreme at the higher, unhealthy levels. Closing these gaps in dietary quality may pose a greater challenge than we realize.

**Jayachandran N. Variyam**, [jvariyam@ers.usda.gov](mailto:jvariyam@ers.usda.gov)  
**This finding is drawn from...**  
*Factors Affecting the Macronutrient Intake of U.S. Adults: Looking Beyond the Conditional Mean*, by Jayachandran N. Variyam, TB-1901, USDA/ERS, March 2003, available at: [www.ers.usda.gov/publications/tb1901/](http://www.ers.usda.gov/publications/tb1901/)

### Differences in saturated fat intakes by education

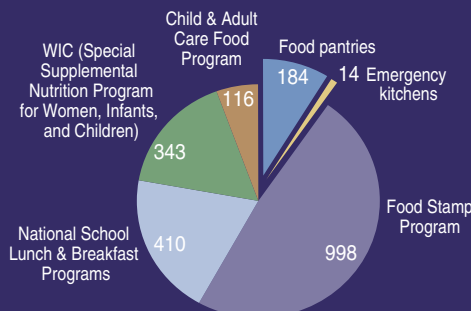


<sup>1</sup>Difference equals intakes of those with less than 12 years of education minus intakes of those with more than 12 years of education.

intake levels—that is, between the light, moderate, and heavy eaters in these groups—provides a clearer perspective on disparities in diet quality.

Most food pantries and emergency kitchens receive at least some of their food from food banks, which collect mostly nonperishable food in bulk from private and government sources. Food pantries and emergency kitchens may also receive food from food rescue organizations,

### Public programs and private organizations provide food assistance to low-income Americans



Millions of meals or meal equivalents provided to needy Americans per month in 2000

which recover perishable food from foodservice operations, food retailers and wholesalers, and farmers.

Emergency food providers offer a valuable service in many communities, but the amount of food they distribute is small relative to Federal food programs. Food pantries and emergency kitchens

provided an estimated 198 million meals per month in 2000. In contrast, the five largest Federal food assistance programs provided the equivalent of 1.9 billion meals per month in 2000.

Many emergency food providers receive and distribute USDA commodities to households, mainly through The Emergency Food Assistance Program (TEFAP). Roughly 85 percent of food banks receive USDA commodities, such as fruit, vegetables, meats, and rice, and about half of food pantries and emergency kitchens report using USDA commodities. Emergency food providers distributed about 422 million pounds of USDA commodities in 2000, which accounted for nearly 14 percent of all food distributed by them.

**Laura Tiehen**, [ltiehen@ers.usda.gov](mailto:ltiehen@ers.usda.gov)  
**This finding is drawn from...**  
*The Emergency Food Assistance System—Findings from the Provider Survey, Volume I: Executive Summary*, by James C. Ohls and Fazana Saleem-Ismael, FANRR-16-1, USDA/ERS, October 2002, available at: [www.ers.usda.gov/publications/fanrr16-1/](http://www.ers.usda.gov/publications/fanrr16-1/)