

Public Benefit Cost Considerations

Nutrition information programs aim to enhance life and health through improved nutrition. The multiple inputs contributing to a final outcome—good health—complicate an attempt to value the benefits. Some of those inputs include nutrition, medical care, and lifestyle over many years as well as the genetic disposition of the individual. In addition, nutrition information programs probably interact with each other and commercial information to lead consumers along the steps of nutritional awareness.

Placing a Value on Improved Health

Because nutrition educators and advocates of other health and safety programs have found a need to place a value on health and life as they assess the benefits of their programs, two approaches have been developed to estimate these values. One approach measures the cost of medical treatments of illness and the earnings lost because of illness and premature death, while the other approach measures the amount of money people will spend for safety devices that preserve health and life and the extra wages required to induce people to take risks. The second approach is preferred because it recognizes that life and health are valued as ends in themselves, not only as a means to income or as an avoidance of medical costs.

For 1970, 1980, and 1990, Cutler and Richardson used the second approach to estimate “health capital” for individuals at birth and at age 65. They measured health capital as the expected years of remaining life, and adjusted for expected disability from chronic diseases. Expected years of life were based on death rates by age in the three years. The authors value a year of life at \$100,000, in 1990 dollars, citing economic literature that derives the value of life from the premiums required for risky jobs and the prices people are willing to pay for safety devices.

The authors used the National Health Interview Survey, which contains data on individual health from 1969 on, to estimate the effect of chronic conditions on self-reported health. A year of life as an invalid may not have the same value as a year of life in complete health. The authors derived weights for impaired years that they based on personal health reports of people with impairments. For example, a year of life for a person

with heart disease was valued at 64 percent of that of a healthy person in 1970 and 70 percent in 1990, apparently a reflection of improvements in medical treatment. The final adjustment Cutler and Richardson made was to discount the value of future years of life by 3 percent, even though such practice is controversial. They also made their calculations with rates of 0 and 6 percent. Their undiscounted estimates of the change in value of health capital for a baby born in 1970 versus one born in 1990 was \$387,000 (table 6). For a 65-year-old in both years, the change was \$247,000. Discounted at 3 percent, the values are \$95,000 and \$169,000. They conclude with a general statement that health capital in the United States improved by approximately \$100,000 to \$200,000 per person between 1970 and 1990, or \$5,000-\$10,000 per person per year.

Clearly, this is an approximation. What it does imply is that improved health and life are highly valued, a hardly surprising conclusion. The high value that consumers place on health and life means that information programs with demonstrated efficacy in improving health will offer benefits that consumers will likely feel exceed reasonable costs.

Has Knowledge Increased?

Efficacy of nutrition information requires not only increases in knowledge of nutrition information but also consequent improved eating patterns, which enhance life and health. The FDA has determined that there is scientific agreement on specific connections between diet and some diseases. Although knowledge and eating patterns have improved somewhat since the 1970's, potential improvements that remain are still large. Relaying nutrition information so that consumers understand how diet affects disease remains a challenge.

With respect to increases in knowledge, a wide range of potential and actual knowledge could be examined. Nutrition knowledge ranges from the general value of eating fruits and vegetables to understanding the consequences of eating different kinds of fats. At the most straightforward end of the continuum, a journalist reduces the necessary knowledge to a few words:

lots of fruits and vegetables and grain-based foods [that are] rich in fiber, vitamins and min-

erals and [also] low in calories, fleshed out with modest amounts of animal protein—four-ounce portions of well-trimmed meat, skinless poultry or fish—and low-fat and nonfat dairy foods (Brody, 1998).

Some research does indicate consumers are retaining nutrition information. The FDA’s Health and Diet Surveys found that the number of people who said fats and fatty food are a major cause of heart disease increased from 8 percent in 1970, to 29 percent in 1983, and to 55 percent in 1988 (Frazao). Consumers’ understanding of the sources and characteristics of fat, polyunsaturated fat, and cholesterol, however, did not improve from 1983 to 1988 (Levy et al.).

Other evidence reveals improved knowledge over time. The applied economic studies of egg consumption and cholesterol (Brown and Schrader, Chern et al.) described earlier indirectly provide evidence that more people became aware of this diet-disease connection during the period studied. Ippolito and Mathios found that consumers knew more about diet-disease connections and that they changed their diets in both of the periods they studied. The changes in responses of expenditure on different categories of food when income increased, as reported by Blisard and Blaylock, suggests indirectly knowledge has improved.

Have Eating Patterns Improved?

Putnam and Gerrior reported that in 1996 Americans consumed two-fifths more grain products and a fifth more fruits and vegetables than in 1970, ate leaner meat, and drank lower fat milk, habits that are consistent with the dietary guidelines. They are also reported to be eating fewer shell eggs (eggs sold in the shells rather than in food products). Offsetting these trends that improve diets, Americans are consuming record-high amounts of sugar and other caloric sweeteners, high-fat dairy products, and near-record amounts of added fats—including salad and cooking oils and baking and frying fats. Although consumers have reduced their intake of shell eggs, they are eating more food with processed egg products, such as baked goods. People are also consuming large amounts of fat in cheese as they eat out or buy pre-prepared food to save time. Overall consumption of milkfat did not decline between 1970 and 1996, despite the trend toward lower fat milk. Increased consumption of cheese and fluid cream compensated for the reduced fat intake from fluid milk.

Putnam and Gerrior found that Americans appear to be changing their diets based on nutrition information, but that they offset changes by consuming more calories and added fats and oils. These trends may reflect both economic forces— income and a desire to save time—and less recognized calories and fat in packaged food, despite labels, or in food eaten out. Although economic forces will persist, the NLEA may make information on calories and fat more recognizable. Limited evidence for 1993-96 does suggest the NLEA may affect consumer behavior. Putnam and Gerrior reported annual per capita consumption of added fats and oils declined at least 8 percent in those years.

Other evidence shows modest improvement in diets. Between 1989 and 1996, USDA’s healthy eating index rose from an average of 61.5 to 63.8, on a scale of 0 to 100. Scores over 80 represent a good diet so the average U.S. diet needs improvement; but the average is above the 20-50 percent range that indicates a poor diet. Consumers scored best in areas that indicated limited total fat and cholesterol consumption, scores that may reflect package and advertising claims (Bowman et al.).

Conclusion

Circumstantial evidence indicates government nutrition information and regulation may be affecting consumers’ diets. The FDA has determined that significant scientific agreement on diet-disease connections supports the health claims that are currently permitted on food packages. There is evidence of increased knowledge of these connections and of some changes in diets consistent with recommendations. Therefore, a portion of the large value of improved health could be due to nutrition information from commercial and public sources. Still, the unrealized benefits remain large.

Table 6— Change in value of health capital per person in the United States, 1970-90*

Discount rate	At birth	At age 65
0	387	247
3 percent	95	169
6 percent	38	122

*Figures are in thousands of 1990 dollars.
Source: Cutler and Richardson