# Sales of Nutritionally Improved Foods Outpace Traditional Counterparts

Elizabeth Frazão and Jane E. Allshouse
(202) 219-0911 (202) 219-0901

As evidence grows about the role of diet in long-term health, consumers show increasing interest in improving the healthfulness of their diets. Consumers report that they are changing what they eat and the ways they prepare foods. According to a 1995 annual survey by the Food Marketing Institute, 63 percent of respondents reported they were eating more fruits and vegetables, 34 percent reported eating less fats and oils, and 43 percent reported eating less meat to ensure their diet was healthy.

A recent study by USDA's Economic Research Service (ERS) confirms that consumers are interested in nutrition and changing the types of foods they purchase. According to the study using data on food items that are scanned at the checkout registers, supermarket sales of nutritionally improved foods grew faster than sales of their regular counterparts in U.S. supermarkets between 1989 and 1993—despite their usually costing more than regular versions.

## Dietary Patterns Are Changing . . . But Not Fast Enough

Dietary intake surveys confirm that changes are occurring in the types of food eaten. Yet, the pace of change has been slow, with many changes offsetting other changes. At the going rate, it may take well into the 21st century before the typical American diet meets the Dietary Guidelines recommendations, such as choosing a diet that provides no more than 30 percent of total calories from fat or choosing a diet with plenty of grain products, vegetables, and fruits.

Part of the reason for the slow pace of change is that it is difficult to change dietary patterns. Although many consumers believe that their diets could be healthier, many feel that they lack the information to change their dietary behavior. Many consumers also believe that doing so costs more or requires them to give up their favorite foods.

Thus, many consumers look to the food industry to help them achieve healthier diets by changing the nutritional composition of foods. Many researchers also believe that the food industry—through its role in determining what types of foods are available, where, in what amounts, at what prices, and with what nutritional profiles—could be instrumental in accelerating the trend toward healthier diets by helping consumers improve their diets without having to make major changes in food consumption patterns and without requiring extensive knowledge about what changes to make.

The food industry has been actively responding to consumer demand by bringing to market new foods with improved nutritional profiles. In the first three quarters of 1995, there were more than 3,000 claims made about the improved nutrient content of new food products—nearly three times the number of claims made in all of 1988. In particular, there were over 1,500 claims about improved fat content in the first three quarters of 1995—over five times more than in all of 1988.

This study uses 1989-93 supermarket data on food items that are scanned at the checkout registers (see box) to evaluate the size and growth of the market for nutritionally improved foods relative to their traditional counterparts, and to determine how nutritionally improved foods compare in price with regular versions. The study analyzed the quantities and prices of 37 food categories (such as cookies, hot dogs, and ice cream). Products

Frazão is an economist and Allshouse is database coordinator with the Food and Consumer Economics Division, Economic Research Service, USDA.

## "Nutritionally Improved" Foods in the Study

This study used 1989-93 sales data of food products scanned at the checkout register from a nationally representative sample of 3,000 supermarkets with at least $2 million in annual sales. Sales volume is standardized to a 16-ounce equivalent (hereinafter referred to as "pounds," even though for beverages the standard refers to 16 fluid ounces). These data do not include sales of food items that are not scanned at the register, such as fresh produce and fresh meats, items sold in bulk, or items prepared or packaged at the store (such as bakery and deli items), or sales from stores with less than $2 million in annual sales. Prices are calculated from information available on dollar sales and do not represent shelf prices for any particular food item.

The study covered 37 food categories (such as cookies, hot dogs, and ice cream), and divided each category into two groups: "nutritionally improved versions" and "regular versions." The 37 food categories accounted for 71 percent of the food sales volume captured by the scanner data in 1993.

Individual products within each food category were designated "nutritionally improved" if they offered at least one nutritional improvement over their traditional (or "regular") counterpart, based on either the presence of a nutrition-related claim on the label (such as "low fat," "light," and "packed in water"), or some other product characteristic believed to constitute a nutritional improvement. For example, poultry-based hot dogs and lunch meats were considered a nutritional improvement over traditional versions, since they tend to be lower in fat, even if not necessarily low in fat. Similarly, canola and olive oils are perceived as being nutritionally superior to other oils due to their higher levels of monounsaturated fatty acids and lower levels of saturated fatty acids.

within each category were allocated to one of two groups: "nutritionally improved versions" and "regular versions." Products were classified as "nutritionally improved" if they offered at least one nutritional improvement over their regular counterpart. Some of those improvements included label nutrient claims such as "low fat," "light,"or "packed in water." Other improvements included poultry-based hot dogs and luncheon meats versus beef- or pork-based regular versions, or frozen yogurt versus regular ice cream.

## Nutritionally Improved Versions Take Increasing Proportion of Sales

Increased purchases of nutritionally improved foods in supermarkets translated into growing shares of sales volume among the 37 food categories. In 1993, nutritionally improved foods represented 39 percent of sales volume, up from 36 percent in 1989.

Sales volume for all 37 food categories rose 10.9 billion pounds from 1989 to 1993. Nutritionally improved versions provided 8.5 billion pounds, or 78 percent, of that increase. That translates into a 9-percent rise in sales for all 37 food categories between 1989 and 1993—a 19.5-percent increase in nutritionally improved versions and a 3-percent increase in regular versions. The large switch from whole milk to lower fat milks alone contributed 41.6 percent of the increase among all nutritionally improved versions between 1989 and 1993.

In a slightly different perspective, sales volume increased for 28 of the 37 food categories between 1989 and 1993. However, sales increased for 30 categories of nutritionally improved versions, compared with 13 categories of regular versions.

Sales volume of nutritionally improved versions increased while the market for their traditional counterparts was expanding as well as contracting (fig. 1). For example, sales of nutritionally improved baked goods expanded simultaneously with increased sales of regular baked goods—suggesting that nutritionally improved versions might be attracting new consumers. Growth in both segments of the category contributed to the expansion for the category as a whole. Among other food categories—such as bacon and cookies—growth of nutritionally improved versions took place at the expense of regular versions, suggesting that many consumers might simply be switching from regular to nutritionally improved versions. For some of these food categories, the growth in nutritionally improved versions was more than sufficient to offset declining sales of the regular versions. For example, the 250-percent increase in sales of nutritionally improved cream cheese was more than sufficient to offset the 10-percent decline in sales of regular cream cheese and net a 17-percent increase in total sales of cream cheese. Bacon, however, suffered a 5-percent decline in total sales despite the nearly 60-percent increase in sales of nutritionally improved versions.

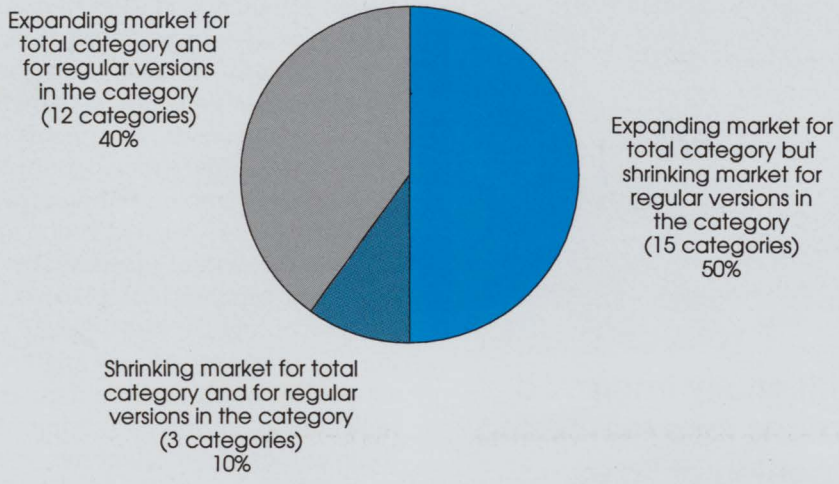
With the exception of frozen pizza, declines in sales volume of nutritionally improved versions for six categories occurred with declining sales for regular versions and for the category as a whole. With frozen pizza, sales of nutritionally improved versions declined in the presence of increasing sales for regular versions and for the entire category.

The contribution of nutritionally improved versions to a category's total sales volume ranged up to 93 percent in 1993. For 32 of the 37 food categories, the share of nutritionally improved versions increased between 1989 and 1993. This included a higher share for three food categories (cottage cheese, canned fruit, and canned tuna) for which sales of nutritionally improved versions declined in the same time period—but the decline was smaller than that for regular versions. Conversely, the share of nutritionally improved fruit juices and drinks in the category's total sales volume declined even though sales of nutritionally improved versions rose (but the 2-percent increase was not sufficiently large to maintain its share in face of a 25-percent increase in sales of regular versions).

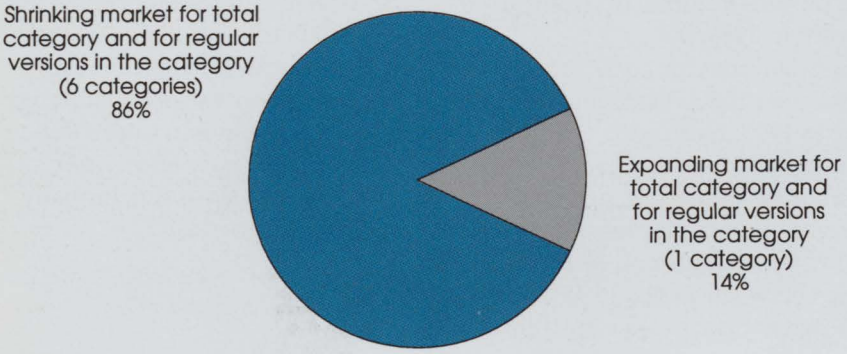
Seven food categories more than doubled their sales volume of nutritionally improved versions between 1989 and 1993 (table 1). However, the small market size of these food categories makes their contribution to total sales small. Conversely, the large size of other food categories contributed a large quantity of nutritionally improved versions, even though their growth rate was not as large. This is particularly true for three beverage categories, where nutritionally improved versions of milk, carbonated beverages, and beer contributed 71 percent of the nutritionally improved volume sold in 1993.

Figure 1
**Change in Volume Sales, 1989-93**

***Nutritionally improved versions grew under three different conditions...***




***...But declining sales of nutritionally improved versions were mostly associated with shrinking demand for the category as a whole***




## Nutritionally Improved Versions Generally Cost More

In 1993, nutritionally improved versions cost more than regular versions for 30 of the 37 food categories (fig. 2). Price differences ranged from $0.03 to $1.86 per pound, or 2-94 percent higher than regular versions (the price difference for canned pasta was $3.68—372 percent higher than regular versions—but that appears to be an exception). Furthermore, the price difference was larger than in 1989 for 17 (57 percent) of these food categories, smaller for 9 food categories, and the same for 4 categories (despite price increases for these last products).

Six food categories contained lower priced nutritionally improved

versions (priced 3-15 percent lower than regular versions) in 1993 (fig. 2). Among hot dogs, the lower price associated with nutritionally improved versions could be related to the use by manufacturers of less expensive, mechanically deboned poultry meat in many of the nutritionally improved versions. However, the price difference was cut nearly in half between 1989 and 1993, likely resulting from increased demand for nutritionally improved hot dogs. It is not clear why nutritionally improved versions of beer, frozen potatoes, canned vegetables, and crackers cost less than regular versions, and even less in 1993 than in 1989 for all but the crackers. One food category—spaghetti sauce—had the same price for both nutritionally improved and regular versions in 1993.

Although some of the observed price differences may be associated with a premium charged on so-called "healthier" food products, some may be associated with higher production and marketing costs. For example, when Taco Bell introduced its Border Lights product line, the company announced these products would cost 10 cents more than the regular versions because the low-fat ingredients cost more. For some products, increased consumer demand may make it possible for larger production runs, with subsequent economies of scale translating into price reductions that get passed on to consumers. This may have been the case for nutritionally improved versions of salad and cooking oils (olive and canola oils), for which sales more than doubled between 1989 and 1993, but prices declined 34 percent (down $0.80 per quart).

The relative price indicates how the price of the nutritionally improved version of a category compares with the price of the regular version for the same category. Measured as the ratio of the two prices, an increase in the relative price indicates that the nutritionally improved version has become more expensive compared with the regular version. This is a particularly useful measure when both prices change over a period of time.

Table 1
**Food Categories with Nutritionally Improved Versions Exhibiting the Largest Change**

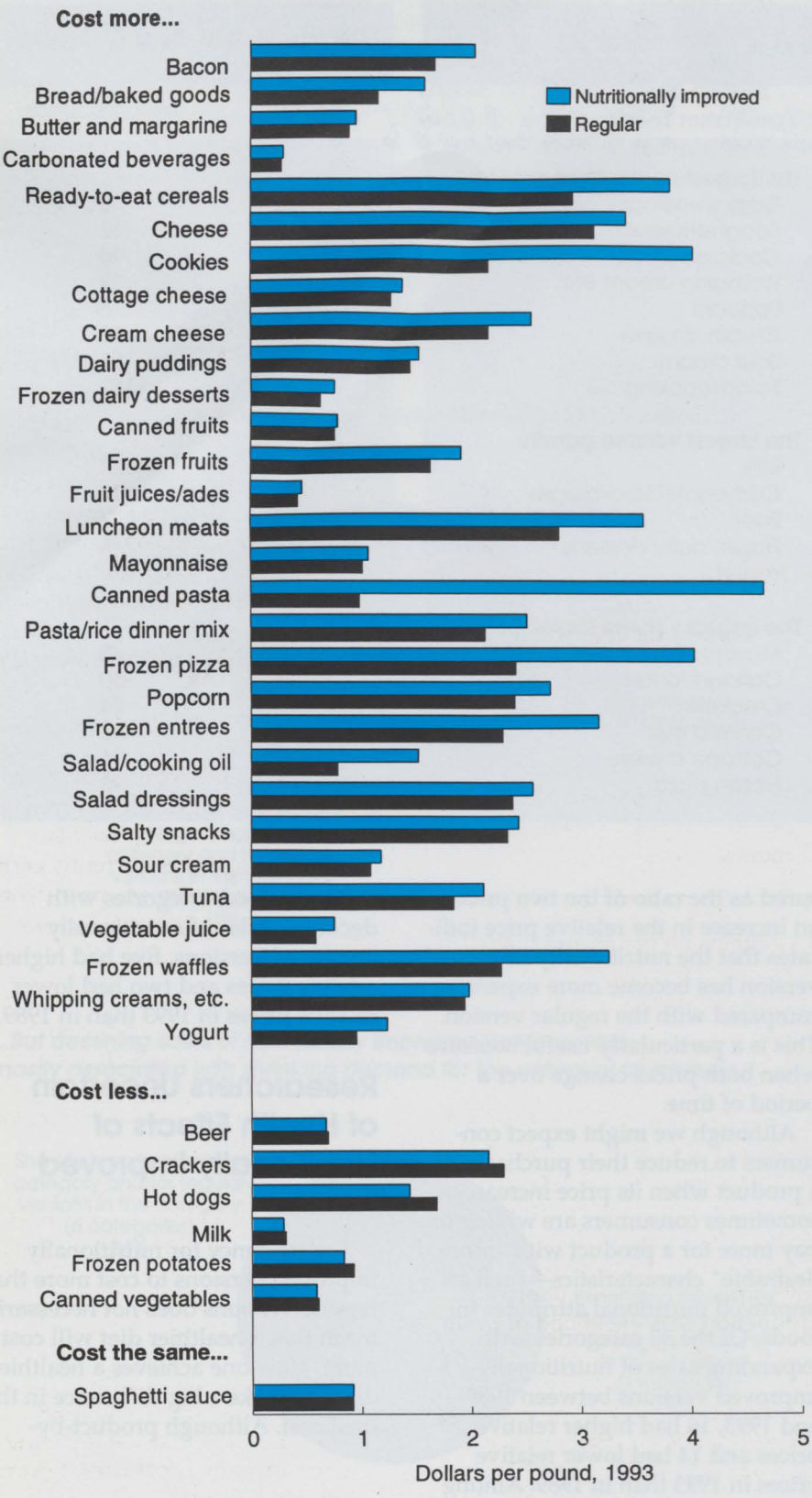
| Item | Change in sales volume, 1989-93 | |
|---|---|---|
| | *Percent* | *Million pounds* |
| **The largest percentage growth:** | | |
| Dairy puddings | 24,000 | 45 |
| Spaghetti sauce | 2,000 | 117 |
| Cookies | 1,500 | 94 |
| Whipping cream, etc. | 1,000 | 39 |
| Popcorn | 500 | 76 |
| Cream cheese | 350 | 53 |
| Sour cream | 250 | 57 |
| Salad/cooking oils | 200 | 157 |
| **The largest volume growth:** | | |
| Milk | 23 | 3,522 |
| Carbonated beverages | 19 | 2,406 |
| Beer | 36 | 812 |
| Frozen dairy desserts | 22 | 218 |
| Yogurt | 22 | 179 |
| **The largest volume losses:** | | |
| Mayonnaise | -8 | -40 |
| Canned tuna | -6 | -30 |
| Crackers | -13 | -24 |
| Canned fruit | -4 | -22 |
| Cottage cheese | -6 | -16 |
| Frozen pizza | -17 | -3 |

Although we might expect consumers to reduce their purchases of a product when its price increases, sometimes consumers are willing to pay more for a product with "more desirable" characteristics—such as improved nutritional attributes in foods. Of the 30 categories with expanding sales of nutritionally improved versions between 1989 and 1993, 16 had higher relative prices and 14 had lower relative prices in 1993 than in 1989. Among the seven food categories with declining sales of nutritionally improved versions, five had higher relative prices and two had lower relative prices in 1993 than in 1989.

## Researchers Uncertain of Health Effects of Nutritionally Improved Foods

The tendency for nutritionally improved versions to cost more than regular versions does not necessarily mean that a healthier diet will cost more. How one achieves a healthier diet can make a big difference in the final cost. Although product-by-

Figure 2
**Nutritionally Improved Versions Generally Cost More Than Regular Versions**




product substitution through the use of nutritionally altered versions may result in a more costly diet, simple substitutions in the types of foods eaten—such as by substituting carrot sticks for a bag of potato chips or a cup of milk for a can of soda—may offer larger nutritional improvements while reducing food costs.

The increased availability of nutritionally improved foods also may not represent a panacea. Nutrition experts currently disagree on the potential impact that nutritionally improved foods may have on total dietary quality. There is some concern that increased consumption of nutritionally improved foods may lead to distorted food consumption patterns—such as substituting calcium-fortified orange juice for dairy products, or over-indulging in fat-free foods that are high in calories. Researchers believe the latter partly explains why the proportion of overweight adults has increased from 25 to 33 percent while the average intake of calories from total fat has gradually declined from an average of 40 percent in 1977-78 to 34 percent in 1989-90.

Nevertheless, technological advances in plant and animal breeding and in food science will likely translate into more nutritionally improved foods with improved taste and cooking characteristics. And as nutritionists attempt to identify potentially beneficial dietary components, many researchers believe that nutritionally improved foods in the future will focus more on increasing—or adding—levels of "beneficial" elements to traditional foods rather than on reducing the levels of "undesirable" food components (such as fat).

## Reference

Frazão, Elizabeth, and June E. Allshouse. *Size and Growth of Nutritionally Improved Foods Market*, AIB-723. USDA, Economic Research Service. Apr. 1996. ■