A New Nutrient Label?

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USDA and the Food and Drug Administration (FDA) are studying several new nutrition label formats which would give consumers information in a form that is easier to read and understand.

Formal discussion about the need for nutrient labeling began at the 1969 White House Conference on Food, Nutrition and Health. Regulations were drafted over the next few years and went into effect in 1975. FDA requires nutrient labeling only on products to which nutrients are added or about which claims relating to nutrition are made. Other products may voluntarily include nutritional information on their labels.

USDA does not have its own nutrient labeling regulations for processed meat and poultry products, but uses FDA's format or an abbreviated version on a voluntary basis. USDA maintains the same nutrient labeling regulations as FDA's for egg products.

Nutrient labels on products regulated by FDA must list serving size, number of servings per container, number of calories per serving, the quantity of macronutrients (protein, fat, and carbohydrate) expressed in grams per serving, and the amount of eight nutrients (protein, vitamin A, vitamin C, thiamine, riboflavin, niacin, calcium, and iron) expressed as percentages of the U.S. Recommended Daily Allowance (U.S. RDA). Declaring quantities of 12 additional vitamins and minerals is voluntary (figure 1). USDA uses this same format and also allows an abbreviated one listing just the quantities of macronutrients and calories on meat and poultry products.

In 1978, FDA's Food Labeling and Package Surveillance Survey found that over 44 percent of the dollar volume of packaged processed foods sold in retail stores carried nutrient labeling. Approximately one-third of all national brands of those products surveyed had nutrient labeling.

Current Label Flaws

In 1979, USDA, FDA, and the Federal Trade Commission (FTC) concluded that the current nutrient label could be more understandable and useful to consumers. Several problems with the nutrient label have been pointed out by experts and confirmed by recent consumer surveys:

- Many concepts on the label are complex. Terms such as riboflavin, thiamine, niacin, and U.S. RDA are not likely to be understood by most consumers.
- The different measurements (household measures, grams, percentages of U.S. RDA) used on the label may be confusing or make the comparison of nutrients complicated.
- The quantity of information presented on the label may be an overload for most consumers. If too much information is presented, consumers are unable to absorb, comprehend, and use it in making nutrition-related product evaluations.
- The information on the label is not organized for optimal communication. It is not grouped by type of information, and elements of public health concern are not emphasized.

Creating a simple and effective nutrient label is complicated for several reasons. Nutrition is a young science and, therefore, much disagreement exists among professionals. New discoveries, ideas, and possible links of various dietary elements to health problems are constantly coming to light. But nutrition is an area where many factors interact and it may be difficult to prove cause and effect. While an average or optimal intake can be suggested, a large number of variables play roles in any given individual's nutrient needs, including age, sex, body size, metabolism, genetic makeup, state of health, and degree of physical activity.

Still, an individual consumer wants the nutrition information that relates to his or her specific health needs and concerns. For example, consumers with heart disease may be particularly concerned with a food's fat and cholesterol content, while those with hypertension may be concerned with sodium content.

The problem of selecting information to present is compounded by the varied audience receiving the information. Consumers have different degrees of concern and expertise about nutrition and varying abilities to read, understand, and incorporate nutrition information into their behavior patterns.

Designing A New Label

Since 1978, USDA, FDA, and the FTC have conducted a series of opinion surveys of food industry people, professional nutritionists, and consumers, to better understand problems with the current food labeling, including the nutrient label, and to get suggestions for changes. In 1979, the three agencies published tentative positions on food labeling in the Federal Register and requested written comments from the public.

In 1980, Robert P. Gersin Associates, a New York design firm, was awarded a contract by FDA to design an array of nutrient labels that are simple, clear, and easily understood. The firm designed several formats after consultation with nutritionists and experts in the food industry. The goal was to devise technically accurate formats that minimize presentation cost, invite use by consumers, are applicable to all food products and packages, and are adaptable to future needs. A final decision about a design will be made later after further research.

Proposed Changes

The sample label used to display the suggested modifications was the nutrient label from a frozen pizza (figure 1).

The specific changes that were recommended to correct the flaws of the existing label include:

- Combine "nutrition information per serving" and "serving size-¼ pizza" to "nutrients per ¼ pizza," and eliminate statement of "servings per container" from nutrient label.
- List protein content only once. Currently, it is listed in both grams and percentage of U.S. RDA.
- Change the term "percentage of U.S. Recommended Daily Allowances" to "percent of daily allowance."
- Make optional the listing of some micronutrients that are now mandatory—riboflavin, thiamine, niacin, and those present in the product at less than 2 percent of the U.S. RDA.
- Add information of public health

Figure 1. Present Format for Nutrient Label . . . and Format with Suggested Changes

Nutrition Information Per Serving	
Serving Size	¼ Pizza
Servings per Container	4
Calories	240
Protein	9g
Carbohydrate	35g
Fat	7g
Percentage of U.S. Recommended Daily Allowances (U.S. RDA)	
Protein	20%
Vitamin A	15%
Vitamin C	8%
Riboflavin	10%
Thiamine	8%
Niacin	10%
Calcium	10%
Iron	6%

Present Format

Nutrients Per ¼ Pizza

Calories	**240**
Fat	7g
Protein	9g
Carbohydrate	35g
Sodium	640mg
Percent of Daily Allowance	
Vitamin A	15%
Vitamin C	8%
Calcium	10%
Iron	6%

Simplified Numerical/Numerical (Format 1)

Figure 2. Other Alternative Formats Being Considered

Nutrients Per ¼ Pizza

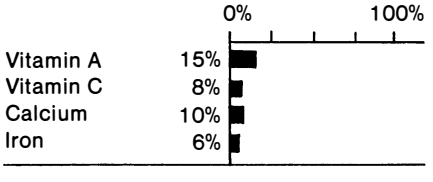
Calories	**240**
Fat	7g
Protein	9g
Carbohydrate	35g
Sodium	640mg
Rating of Daily Allowance	Rating:
Vitamin A	Good
Vitamin C	Fair
Calcium	Fair
Iron	Fair

Simplified Numerical/Verbal (Format 2)

Nutrients Per ¼ Pizza

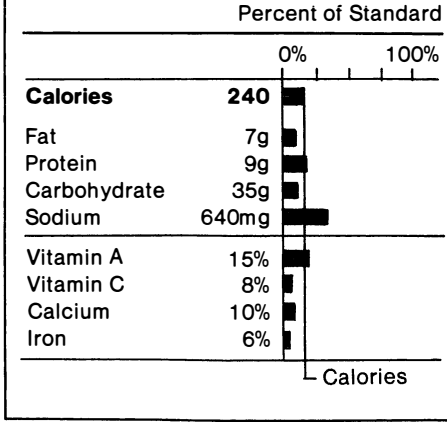
Calories	**240**
Fat	7g
Protein	9g
Carbohydrate	35g
Sodium	640mg

Percent of Daily Allowance



Simplified Numerical/Graphical (Format 3)

Nutrients Per ¼ Pizza



Simplified Graphical/Graphical (Unitary Nutrient Density) (Format 4)

concern to the label, such as the sodium content of the food.

- Rearrange some information. For example, put calories and fat at top of label.
- Group information by category, perhaps using lines to separate, making individual nutrients easier to find.
- Encourage the emphasis of high priority items such as calories by perhaps using bold face print.

In addition to considering these modifications, the design firm also looked at several methods of presenting the information using different combinations of words, numbers, and graphs, as well as different bases of calculating the amounts of various nutrients contained in products—the amount of iron per serving, per calories, or per 100 grams. A verbal scale as used in format 2 (figure 2) might rate the "daily allowances" of various nutrients by using terms such as none or trace, fair, good, very good, and excellent. Graphic displays like the one used in format 3 (figure 2) might use pie charts or bar graphs.

Problems arise with the current method of expressing nutrients per serving because serving sizes vary. The other two systems of expressing nutrient content, "nutrients per calories" and "nutrients per 100 grams" of the food, are somewhat more complicated. The "nutrients per calories" approach is a nutrient density method which relates a food's content of each of several different nutrients to its calorie content. This should let the consumer know whether the food contains "empty" calories or whether those calories are "full" of the vitamins and minerals required by the body. Expressing the amount of nutrients contained in 100 grams of a food seems inappropriate in the United States where the metric system is not in common use and most consumers would find it difficult, if not impossible, to even conceptualize 100 grams of food.

One option incorporates a nutrient density approach while disclosing the absolute amounts of the nutrients in the food (in grams, milligrams, and percentages of U.S. RDA). In proposed format 4 (figure 2), horizontal bars are drawn parallel to a standard and a vertical line is drawn through the whole label where the calorie line hits the standard. Thus consumers can easily compare the calories provided with the nutrients provided. While this approach may give consumers an idea of which nutrients may be found in good supply in different foods, it also has at least one drawback. Consumers would have to be educated that for some nutrients listed on the label, such as sodium and fat, limited consumption may be desirable. Therefore, the consumer's aim is not necessarily to meet 100 percent of the standard for all of the nutrients listed on the label.

There is also a problem with presenting nutrient information as a percent of a "standard," since a U.S. RDA does not exist for some nutrients. Format designers suggested augmenting the U.S. RDA with standards for fat, carbohydrates, and sodium from the National Academy of Sciences. However, the same confusion could arise over these standards as consumers have already expressed about U.S. RDA's: Where do they come from? What do they mean? How do they apply to me?

Testing Proposed Formats

FDA and USDA plan to test the four experimental nutrient labels on panels of consumers to determine if they are significantly easier to understand and use than the present label. A major related concern is that of information overload—too much information may be presented on the present label. One objective of FDA's planned consumer research is to determine the optimum amount of information consumers can absorb.

The consumer testing phase of the research plan includes the use of an eye camera to measure the effectiveness of various formats by determining what the eye focuses on, the length of fixation, and the sequence of fixations. This will disclose whether double checking of information occurred, and which information was not focused upon at all. To aid in understanding the information obtained from the eye camera experiments, participants will be questioned on nutrition knowledge and interest, diet-related health problems in the immediate family, use of nutrition information, and perhaps other health or lifestyle questions that could provide insight.

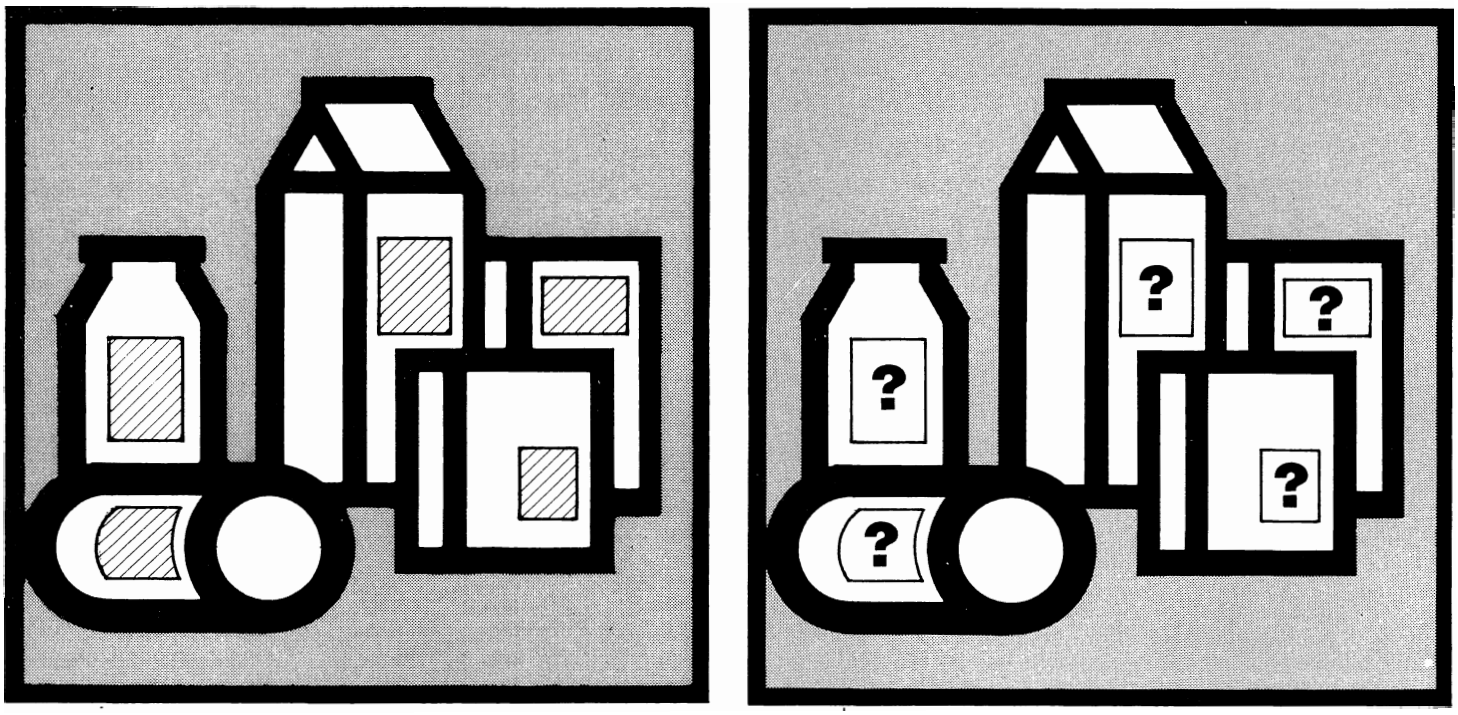
Approximately 800 consumers will be tested, including people with urgent health-related needs for nutrition information, those with a high interest in nutrition, those with a limited ability to process and use the information, and people who have a "typical" interest in nutrition.

Current plans are to finish the consumer research phase of the project around the fall of 1984. At that time, if one or more alternative formats are found to be significantly better than the current one, FDA and USDA will begin to work with food processors to test market the format or formats. It will be 3 to 4 years before a formal proposal for a new format is issued and perhaps several years before it is put into general use, if at all. If the results of this research indicate that the current label is more comprehensible and useful than any of the alternatives proposed, no change will be made.

Economic Considerations

It is difficult to estimate the cost of implementing a new format for nutrient labels. One important consideration is the length of time food processors have to comply with a new regulation. If a new format was required on all nutrient labels within a few months, costs could be up to five times more than if food processors were allowed to phase in the new label over several years.

It would be far less expensive if food processors were allowed to implement the new design as they routinely change their product labels. Meat and poultry processors do this once every 2 years on average, with all labels being changed within 8 years. If processors are changing labels to meet their own needs, the marginal cost of adding or changing the nutrient format at the same time could be a small fraction of the base cost. Redesigning labels and recasting the plates used to print the labels is estimated to cost between $300 to



$500 per label for meat products. Each additional change made at the same time can increase costs by another $100 to $200 per label.

Other factors that play a role in determining the costs of any nutrient labeling system include the number of different nutrients listed, which specific nutrients are to be listed, and the required accuracy of the information. The more nutrients listed, the more expensive the program becomes. The cost of analyzing food for nutritional content varies, with some nutrient tests being more expensive than others. Greater accuracy in nutrient declarations raises the cost of nutrient labeling by requiring more frequent product sampling and testing and increased record keeping. However, new and less expensive techniques for measuring nutrient content are being introduced on the market. But, many small-scale food processors may find nutrient analysis extremely expensive for the small volumes of specific products processed at one time.

An alternative to the continuous testing of products by each processor is using information from nutrient data banks. The establishment of such banks is initially costly. Information in data banks is pooled from a variety of sources. Nutrient content analyses are done on the same products grown or processed in various locations by different farmers and manufacturers. Average values for the nutrient content of these foods are established and entered into the bank for common use by all processors. One problem is that there are so many different food products that it would be a nearly impossible task to include information on all of them. Information from data banks would not be as accurate as that obtained from continuous monitoring of specific products, but it would be much cheaper over the long run, especially for small-size food processors. Several nutrient data banks currently exist at universities, in governments, and in industry, but at this time they are not yet generally used for nutrient labeling.

Any system of nutrient labeling, especially one with a simpler, more comprehensible format, provides benefits to the consumer, the processor, and perhaps even to the retailer. Consumers benefit in different ways depending on how they use the information. Some would benefit economically by using specific information to help prevent or control the severity of certain health problems, such as obesity or hypertension. Others may simply want to comparison shop to get the most nutrients for their food dollar or choose the more nutritious from two similar food products.

Processors and perhaps retailers could merchandise products on the basis of their nutrient content or the part they could play in a balanced diet. Firms providing such information may benefit from an image of caring about the public health, as seems to be happening with voluntary sodium labeling. Also, consumer confidence in a firm's products may be enhanced by the amount of nutrient information provided by the processor or retailer about these products.

However, findings from the current research on label formats will determine whether shoppers will see a new nutrient label in the grocery store sometime in the next 3 to 5 years. □