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THE LANCET

Are the clinical effects of homoeopathy placebo effects? A meta-analysis of placebo-controlled trials

Klaus Linde Nicola Clausius Gilbert Ramirez Dieter Melchart
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July 2000

FOOD SAFETY

Improvements Needed in Overseeing the Safety of Dietary Supplements and “Functional Foods”



G A O

Accountability * Integrity * Reliability

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Abbreviations

DSHEA	Dietary Supplement Health and Education Act
FDA	Food and Drug Administration
FFDCA	Federal Food, Drug, and Cosmetic Act
FTC	Federal Trade Commission
GRAS	generally recognized as safe
NLEA	Nutrition Labeling and Education Act
USDA	U.S. Department of Agriculture



United States General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-285147

July 11, 2000

Congressional Committees

In 1999, U.S. consumers spent about \$31 billion for dietary supplements and certain food products (termed "functional foods") that claim to have health benefits beyond basic nutrition. Consumers are expected to spend even more on these products over the next 10 years. With the increased use of dietary supplements and functional foods have come questions about whether these products are safe to use and actually provide the health benefits they claim.

New, so-called functional foods are entering the market that provide the basic attributes of traditional foods—taste, aroma, or nutritive value—and that claim to provide an additional health benefit. For example, recently marketed butter-like spreads include an added ingredient designed to reduce cholesterol levels in the bloodstream. In contrast, dietary supplements generally are available in pill, capsule, tablet, or liquid form; are not used primarily for their taste or aroma; and cannot be represented as a conventional food. Supplements include vitamins, minerals, herbs, amino acids, and other dietary substances that are used to enhance the normal dietary intake of nutrients or for more specialized purposes, such as relaxation or stimulation. On their labels,¹ both functional foods and dietary supplements can make health claims and/or so-called structure/function claims. Health claims state that an ingredient may reduce the risk of a disease.² For example, a product containing soy protein can have a health claim on the label stating that a certain amount of soy protein every day, as a part of a diet low in saturated fat and cholesterol,

¹In this report, we use the terms "label" and "labeling" interchangeably to describe the written, printed, or graphic matter on any article, its containers or wrappers, or accompanying material.

²Currently, the Food and Drug Administration has only authorized health claims that claim to reduce the risk of a disease. However, the issue of whether health claims can include claims to treat or mitigate disease is now being litigated in *Whitaker v. Shalala*, No. 1:99cv03247, (D.D.C., filed Dec. 7, 1999).

may reduce the risk of heart disease.³ In contrast, structure/function claims state that an ingredient in the product will benefit a body's structure (such as the skeletal system) or function (such as the circulatory system).

The Food and Drug Administration (FDA), under the Federal Food, Drug, and Cosmetic Act (FFDCA), as amended, is the federal agency primarily responsible for regulating the safety and claims made in the labeling of both functional foods and dietary supplements. FDA regulates functional foods, which have no legal definition or separate regulatory category, under the rules it applies to conventional foods. These rules require that ingredients added to the basic food item be either "generally recognized as safe" (GRAS) or approved by FDA. On the other hand, FDA regulates dietary supplements under the provisions set out in the Dietary Supplement Health and Education Act (DSHEA) of 1994, which amended FFDCA and created a new regulatory category, safety standard, and other rules for supplements. While FDA regulates product labeling, the Federal Trade Commission (FTC) enforces consumer protection laws on advertising (including television, radio, the Internet, and print media) for both functional foods and supplements. Finally, the U.S. Department of Agriculture (USDA) regulates product label claims for functional foods containing over a certain percent of meat or poultry.

To provide the Congress with information about key issues related to functional foods and dietary supplements, we examined the extent to which agencies' efforts and federal laws ensure the (1) safety of functional foods and dietary supplements and (2) accuracy of health-related claims on product labels and in advertising.

Results in Brief

FDA's efforts and federal laws provide limited assurances of the safety of functional foods and dietary supplements. While the extent to which unsafe products reach consumers is unknown, we believe weaknesses in three areas of the regulatory system increase the likelihood of such occurrences. First, potentially unsafe products may reach consumers for a variety of reasons, including the lack of a clearly defined safety standard for new dietary ingredients in dietary supplements. Second, some products do not have safety-related information on their labels, which could endanger some

³To qualify for using the health claim for soy protein, the product must meet certain nutritional requirements such as, among others, one 8 ounce serving of the product must contain at least 6.25 grams of soy protein.

consumers. This occurs because FDA has not issued regulations or guidance on the information required. For example, according to the National Institutes of Health, St. John's Wort may decrease the efficacy of a drug used to treat HIV infection, but consumers may not be able to determine this from the dietary supplement label. Finally, FDA cannot effectively assess whether a functional food or dietary supplement is adversely affecting consumers' health because, among other things, it does not investigate most reports it receives of health problems potentially caused by these products. FDA officials recognize these weaknesses but say a lack of resources has precluded them from taking actions to correct them.

We also found that agencies' efforts and federal laws concerning health-related claims on product labels and in advertising provide limited assistance to consumers in making informed choices and do little to protect them against inaccurate and misleading claims. FDA has not clearly established the nature and extent of evidence companies need to adequately support structure/function claims and has taken no actions against companies making claims that the agency believes to be questionable. According to an FDA official, the agency has chosen to use its limited resources on regulating product safety rather than on taking enforcement actions against problematic label claims. Furthermore, federal agencies operate under different statutes for regulating claims on product labels and in advertising, which has led to claims being made in products' advertisements that were not allowed on product labels. For example, a product that FDA does not allow to claim to lower cholesterol on its label is permitted by FTC to make this claim in its advertising, provided the claim is truthful, not misleading, and supported by reliable scientific evidence. Finally, consumers may not understand the different purposes of health claims and structure/function claims. As a result, they may incorrectly view structure/function claims as claims to reduce the risk of or treat a disease.

We are making recommendations to the Congress and FDA aimed at improving federal oversight of safety for dietary supplements and functional foods and at ensuring that these products provide the health benefits they claim on their labels and in advertising. We provided a draft of the report to FDA, FTC, and USDA for their review and comment. In commenting on the draft report, FDA agreed with the need for most of our recommended actions but disagreed with our recommendation that the agency identify target dates for taking these actions. We believe, however, that FDA should identify target completion dates because, among other

things, such information will help FDA and the Congress track FDA's progress in implementing these actions. Therefore, we did not change our recommendations. FDA did not comment on our recommendations to the Congress. FDA also made note of various actions it has already taken and intends to take this fiscal year to address issues related to functional foods and dietary supplements. FDA, FTC, and USDA suggested technical clarifications, which we incorporated into the report as appropriate.

Background

Advances in science have recently allowed companies to begin marketing functional foods that claim to improve health or reduce the risk of disease because of substances that have been added. Although the market for functional foods is relatively new, several different types of products have emerged. Some traditional foods have been fortified with additional vitamins or minerals—for example, orange juice has been fortified with calcium and companies claim this juice will help maintain bone density. Also, existing dietary supplements, such as echinacea, ginkgo, and ginseng, are being added to drinks, nutrition bars, and snack foods to provide the various health benefits attributed to these herbs. Elements in nontraditional food sources have also been isolated and then added to a traditional food, such as stanol esters⁴ used in a butter-like spread to reduce cholesterol. Natural elements in traditional foods that have health benefits are also being identified. For example, lycopene⁵ in tomatoes and isoflavones⁶ in soybeans may help protect against various forms of cancer. If scientific research establishes the safety and benefits of these substances, companies could add them to a soup, a cereal, or some other food product to create a functional food.

The market for dietary supplements and functional foods is large and could grow significantly over the next decade. According to industry sources, consumer sales of supplements increased from \$9.8 billion in 1995 to an estimated \$14.7 billion in 1999, while functional food sales increased from \$11.3 billion to an estimated \$16.2 billion during the same period. Sales of

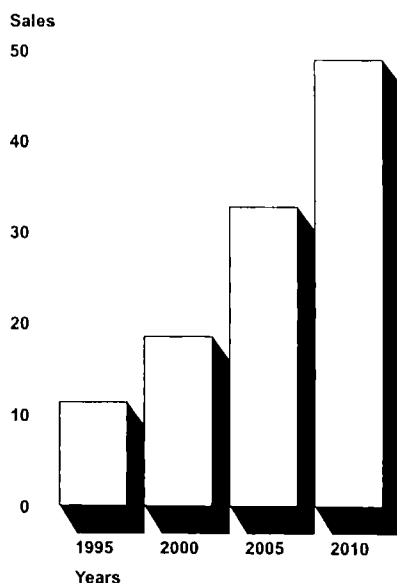
⁴ Stanol esters are derived from plant extracts and work as part of the digestive process to help block the absorption of cholesterol.

⁵ Lycopene is the chemical compound primarily responsible for the red color in tomatoes and is being studied for its role in cancer risk reduction.

⁶ Isoflavones are compounds that bind to estrogen receptors and block estrogen activity in cells, potentially reducing the risk of breast and ovarian cancer.

functional foods are projected to reach \$49 billion by 2010.⁷ (See fig. 1.) Several factors account for the projected growth in the market for these products as well as for supplements: (1) the aging of the baby-boom generation, (2) an increased interest in self-sufficiency and prevention in health care, and (3) advances in science that are identifying new relationships between diet and disease.

Figure 1: Historical and Expected Growth in Sales of Functional Foods in the United States, 1995 to 2010



Source: Nutrition Business Journal, San Diego.

Under FFDCA, FDA is the federal agency primarily responsible for regulating the safety of foods, including functional foods and dietary supplements. To ensure the safety of these products, FDA, among other activities, conducts plant inspections about once every 5 years, on average. FDA's plant inspections generally focus on plant sanitation and good manufacturing practices.

⁷ These figures come from the Nutrition Business Journal, which provides strategic information to decisionmakers in the nutrition industry.

In addition to conducting plant inspections, FDA attempts to ensure that the ingredients making up a food product are themselves safe for their intended uses. In this regard, when a company adds an ingredient to a food to change its color or taste, FFDCA requires that the ingredient either be determined to be generally recognized as safe by qualified experts or go through FDA's review and approval process as a food additive. Because there is no legal definition or separate regulatory category for functional foods, FDA regulates these products under the rules that apply to foods in general. As such, if a company adds an ingredient with health benefits beyond basic nutrition to create a functional food, the company is responsible for determining that the ingredient meets the GRAS standard or, failing this, for having it approved as a food additive.

The GRAS standard is defined by regulation as a reasonable certainty in the minds of competent scientists that the substance is not harmful under its intended conditions of use. The standard also requires that the data used to provide evidence of safety be generally available and that a consensus exist among qualified experts about the safety of the substance for its intended use. Companies are not required to notify FDA of their GRAS determinations, although some do so voluntarily.

If a company determines that an ingredient it plans to use in a functional food is not generally recognized as safe, under FFDCA it must petition FDA for approval of the ingredient as a food additive. The petition must contain convincing evidence that the added ingredient meets the safety standard for food additives, which requires producers to demonstrate to a reasonable certainty that no harm will result from the intended use of the additive. Before approving an additive, FDA evaluates the amount of the additive individuals are likely to consume, the probable long-term effects on them, and other safety factors. If FDA finds the additive to be safe, the agency issues a regulation specifying the conditions for safe use. According to FDA, meeting the safety standard for a food additive requires the same quantity and quality of scientific evidence as is needed to satisfy the GRAS standard. The principal difference between the two is that because food additives are reviewed and approved by FDA, companies do not have to demonstrate the general recognition element of the GRAS standard.

In contrast, FDA regulates the safety of dietary supplements under the provisions set out in DSHEA, which amended FFDCA and created a new regulatory category, safety standard, and other rules for supplements. DSHEA exempted new dietary ingredients in supplements from the safety requirements that apply to food additives.⁸ It stipulated that companies must have a basis for concluding that a supplement containing a new dietary ingredient is reasonably expected to be safe under the conditions of use recommended or suggested in the product's labeling. In addition, DSHEA requires companies to notify FDA of their evidence for determining the safety of a new dietary ingredient in a supplement 75 days before marketing the supplement.⁹ The companies do not have to obtain FDA's approval of their supplements before marketing them. Furthermore, DSHEA allows dietary supplements to be marketed in conventional food form, for example, as a liquid or a bar, as long as they are labeled as a dietary supplement and not represented as a conventional food.

Table 1 provides a comparison of the safety-related requirements for functional food and dietary supplements.

⁸ Under FFDCA, as amended, any ingredient added to a food is subject to the safety requirements for foods. DSHEA established safety provisions for "new" dietary ingredients in dietary supplements, defined as those that had not been marketed as dietary supplements for use in the United States prior to Oct. 15, 1994. The concept of a "new" ingredient, as defined in DSHEA, does not exist for foods.

⁹ No notification is required if the new dietary ingredient has been "present in the food supply as an article used for food in a form in which the food has not been chemically altered."

Table 1: Safety-Related Requirements for Functional Foods and Dietary Supplements

Safety-related requirements	Functional foods	Dietary supplements
An added ingredient must be generally recognized as safe by qualified experts. If not, the ingredient must be approved by FDA as a food additive before marketing.	X	
Company must have a basis for concluding that a supplement containing a "new" dietary ingredient is reasonably expected to be safe under the conditions of use recommended or suggested in the product labeling. The new ingredient is legally exempted from the requirement to be approved as a food additive.		X
Company must notify FDA regarding the basis for concluding a new dietary ingredient is safe for its intended use at least 75 days before marketing.		X
Company required to list on the label safety-related information that is considered "material" with respect to consequences that may result from the use of the product.	X	X

FDA is also responsible for ensuring that the product labels for food, functional foods, and dietary supplements are accurate and not misleading. In 1990, the Nutrition Labeling and Education Act (NLEA) significantly changed food labels by allowing them to contain scientifically valid information regarding the relationship between a food substance and a disease. In effect, NLEA allows functional foods and dietary supplements to carry FDA-approved claims, known as health claims, that would otherwise define the product as a drug under FFDCA. Health claims must be supported by extensive evidence and are subject to a lengthy and costly FDA review and authorization process before they can be used on labels. To obtain authorization for a new health claim, a company must file a petition with FDA that includes the scientific evidence supporting the proposed claim.¹⁰ FDA authorizes the health claim through a rule if, after

¹⁰ The FDA Modernization Act of 1997 contained a provision that permits companies to use health claims on food products if the claims are based on current, published, authoritative statements from certain federal scientific bodies, as well as from the National Academy of Sciences. In lieu of a petition, a company submits a notification to FDA regarding the claim. If neither FDA nor a federal district court objects, the claim may be used 120 days after it is submitted. The intent of this provision was to allow some claims to be authorized more quickly than under the process originally established in the NLEA. FDA has proposed but not yet issued final regulations to expand this provision to supplements.

reviewing the evidence, it finds “based on the totality of publicly available scientific evidence” that there is “significant scientific agreement” that the claim is supported. When FDA authorizes a claim, any company can use it on any product that meets the nutritional criteria, not just the individual or company that submitted the petition to FDA. If a food label carries an unauthorized claim—relating a food substance to the reduced risk, prevention, or treatment of a disease—FDA considers the product to be an unapproved new drug and asks the company to change the product label. If the company refuses, FDA has to take legal action through the courts.

Functional foods and dietary supplements are also allowed to carry label claims, known as structure/function claims, that describe how consuming the product will affect the structure or function of the body or a person’s general well-being. For example, echinacea added to a conventional food, such as tea, to create a functional food may carry a structure/function claim that the product “supports the body’s defense system” as long as there is evidence to show that the claim is truthful and not misleading. Unlike health claims, structure/function claims cannot claim to reduce the risk of disease, and FDA does not validate or authorize them before they can be used. Table 2 provides a comparison of the claims-related requirements for functional foods and dietary supplements.

Table 2: Claims-Related Requirements for Functional Foods and Dietary Supplements

Claims-related requirements	Functional foods	Dietary supplements
Structure/function claims cannot be false or misleading	X	X
May use FDA-authorized health claims or structure/function claims on product labels	X	X
Must notify FDA within 30 days after marketing a product that contains a structure/function claim		X
Must include a disclaimer on product labels that contain structure/function claims that states the claim has not been evaluated by FDA		X

While FDA is responsible for regulating the claims made on labels for both functional foods and dietary supplements, FTC enforces consumer protection laws regarding the claims made in advertising (including television, radio, the Internet, and print media) for both of these products. FTC evaluates claims of health benefits in advertising under the provision of the Federal Trade Commission Act that prohibits "unfair or deceptive acts or practices" and any false advertisement that is "misleading in a material respect." Finally, USDA regulates product label claims for functional foods containing over a certain percent of meat or poultry.¹¹ These products include, among others, pot pies, soups, and prepared meals. USDA regulates functional foods, which have no separate regulatory category, under the rules it applies to conventional foods.

FDA's Efforts and Federal Laws Provide Limited Assurances of Safety

FDA's efforts and federal laws provide limited assurances that functional foods and dietary supplements are safe because of weaknesses in three areas. First, potentially unsafe products may reach consumers for a variety of reasons, including the lack of a clearly defined safety standard for new dietary ingredients in dietary supplements. Second, some products do not have safety-related information on their labels, which could endanger some consumers. Finally, FDA cannot effectively assess whether a functional food or dietary supplement is adversely affecting consumers' health because it may not know the extent of health problems and does not investigate most reports of health problems believed to be linked to these products.

Weaknesses in Controls Could Allow Potentially Unsafe Products to Reach the Consumer

The laws governing the safety of functional foods and dietary supplements, as well as FDA's implementation of these laws, may allow products of questionable safety to reach the market. This can occur in several ways.

First, in the case of functional foods, since FFDCA allows companies to market a product if they determine that ingredients in it meet the GRAS standard, these companies do not have to notify FDA before selling the product to consumers. FDA may only become aware of the product after it enters the market. This was the case, for example, for several functional food products containing such herbs as echinacea, ginkgo, and St. John's

¹¹ USDA is responsible for regulating food products containing 2 percent or more cooked or 3 percent or more raw meat or poultry.

Wort. Since these products were already on the market, FDA learned of them only through complaints from individuals or other companies. FDA notified these companies that it was unaware of a basis for determining that these herbs are generally recognized as safe in food. If FDA wanted to remove these products from the market, and the company did not do so voluntarily, FDA would have to initiate enforcement actions.

Second, for dietary supplements, FDA has not defined in regulations nor provided other guidance to companies on the evidence needed to document the safety of new dietary ingredients in their 75-day pre-market notification. In the absence of such guidance, companies must make their own best estimate of how much evidence is adequate to ensure safety. While some supplement companies may thoroughly evaluate and document the safety of new dietary ingredients, others may not, which may allow some products with limited evidence of safety to reach the marketplace, thus endangering the health of consumers.

Moreover, to remove a dietary supplement containing a new dietary ingredient from the market, FDA may be required to show in court that the supplement contains a "new" dietary ingredient for which there is "inadequate information" to provide "reasonable assurance" the new ingredient does not present a "significant or unreasonable risk of illness or injury." In the absence of guidance on the type and amount of evidence to be included in the pre-market notification to demonstrate safety for new dietary ingredients in supplements, FDA does not have a clear, consistent standard for identifying and then pursuing through the courts, the removal of unsafe products. In its 10-year plan to implement DSHEA, issued in January 2000, FDA recognized the need to develop guidance on the safety substantiation needed in the pre-market notification for new dietary ingredients in supplements but did not establish a date for meeting this goal.

Finally, the DSHEA provision that allows supplements to exist in conventional food form, as, for example, a nutrition bar, has blurred the boundary between foods and supplements. As a result, some products may be incorrectly marketed and not held to the standards applicable to them. Because FDA has not clarified whether the safety standard for new dietary ingredients in dietary supplements is an equivalent or a lesser standard than GRAS, some companies may assume that if their product is marketed as a supplement it will be held to a lower safety standard.

In the course of our review, we encountered several drinks, teas, and other products, some produced by large companies with national distribution, that contain herbs, such as St. John's Wort, ginkgo biloba, and echinacea. Some of these products appear to be functional foods that have been incorrectly marketed as dietary supplements. In order for these herbs to be legally marketed in food products, the producers would either have to determine that they are generally recognized as safe for use in food or have them approved as food additives. FDA told us that it has not approved these herbs as food additives and further stated that the agency is unaware of any basis for concluding that these herbs are generally recognized as safe for use in food.

The following two examples illustrate the difficulty of determining the boundary between functional foods and dietary supplements. In 1998 and 1999, two companies proposed marketing what they believed were dietary supplements in food form. However, FDA determined that these products were foods, not supplements. Specifically:

- One company proposed marketing a butter-like spread designed to help control cholesterol as a supplement in food form. Although the prototype package identified the product as a dietary supplement, the package also included statements promoting the flavor and texture of the product, along with pictures of it in uses common for butter or margarine. As a result of these and other representations, FDA concluded that the product was represented as a food. The company ultimately marketed its product as a food, after determining that the added ingredient was generally recognized as safe; but it informed FDA that it still believed the product could legally be marketed as a dietary supplement in food form.
- Another company marketed a line of soups that contained herbs, such as St. John's Wort, as dietary supplements. Again, FDA concluded that even though the product was labeled as a dietary supplement, it was represented as a food because of references on the label to traditional soup ingredients and taste characteristics. Although the company told FDA it believed the soups were in fact dietary supplements, the company chose to discontinue marketing them.

FDA's actions regarding the butter-like spread and the line of soups have established regulatory precedents, but the agency has not issued policy guidance to clarify the circumstances under which it believes that supplements can legitimately be marketed in food form. Several companies told us they need clarity on this issue to guide them in the development and

marketing of their products. For example, one company told us that FDA needs a more transparent policy on what constitutes representation as a food so that companies know when it is appropriate to market a product in food form as a dietary supplement.

In addition, some groups have questioned the justification for having different safety standards for dietary supplements and functional foods. For example, according to the Research-based Dietary Ingredient Association, which represents a group of large food and supplement companies, "there is no scientific reason to support different standards of safety for foods and dietary supplements, even though the approval processes are different by statute."¹² The Association believes that "the same ingredient, whether it goes into a dietary supplement or food should meet the same standard of safety."¹³ Similar sentiments regarding the desirability of a single safety standard have been expressed by representatives of the American Dietetic Association, which represents nutrition professionals, and the Center for Science in the Public Interest, which represents consumer interests.

FDA recognizes that the definitional boundary between functional foods and dietary supplements is not clear. In its 10-year plan to implement DSHEA, issued in January 2000, the agency identified the need to clarify the boundary between conventional foods, including functional foods, and dietary supplements; however, the plan does not state when or how the agency will address this issue.

FDA Has Not Developed Regulations or Provided Guidance to Companies on the Safety-Related Information Required on the Labels of Supplements and Functional Foods

FDA has not developed regulations or provided guidance to companies on the type of safety-related information that should be included on their labels for functional foods and dietary supplements. The absence of such safety information poses a significant safety risk to some consumers. For example, research by the National Institutes of Health, published in February 2000, showed that St. John's Wort may decrease the effectiveness of a drug used to treat HIV infection. This finding prompted FDA to issue a public health advisory to health care professionals on the dangers of using the drug and the supplement at the same time. Nevertheless, FDA did not

¹² The members of the Research-based Dietary Ingredient Association include Cargill, Galagen, General Nutrition, Monsanto, and Novartis.

¹³ Comments dated May 7, 1999, submitted to FDA Docket No. 99N-0554.

require companies that produce products containing St. John's Wort to warn consumers of this interaction on product labels.

FDA could issue regulations requiring such information. FFDCA requires dietary supplements and functional foods to disclose "facts that are material in the light of representations made about the product or with respect to consequences that may result from the use of the product." However, FDA has not prescribed by regulation or clarified in guidance what information is "material" or provided guidance on when or if certain safety-related information should be included on labels, such as information on the maximum safe dosage of the ingredients in the product, possible interactions between the ingredients and drugs, or the need for certain groups, such as pregnant women, to avoid ingesting them. As a result, some producers of dietary supplements and functional foods are not including important safety information in their labeling.

FDA May Not Know the Extent of Health Problems Associated With Functional Foods and Dietary Supplements and Does Not Fully Evaluate Reported Problems

Once functional foods and dietary supplements are marketed, FDA becomes aware of health problems potentially associated with these products only when consumers, health professionals, or others contact FDA to alert the agency. Since 1993, FDA has received 2,797 reports of adverse effects, including 105 deaths, potentially associated with dietary supplements.¹⁴ Supplements containing ephedrine alkaloids, which are promoted for such effects as losing weight and increasing energy levels, have accounted for about 1,173 reports of adverse effects, more than any other type of dietary supplement. As of February 29, 2000, FDA had not received any reports of health problems associated with functional foods, although the herbs most frequently associated with adverse reactions in supplements, according to a 1999 nationwide consumer survey—ginseng, St. John's Wort, echinacea, and ginkgo—have begun to appear in functional foods and beverages.¹⁵

FDA's count of reported adverse effects from dietary supplements is at odds with other information. The 1999 nationwide consumer survey found that 12 percent of all consumers who have used an herbal dietary

¹⁴ According to FDA, about 40 to 50 of the reports in its database were received prior to 1993.

¹⁵ *The 1999 Prevention Magazine National Survey of Consumer Use of Dietary Supplements* (Rodale, Inc., Feb. 2000).

supplement, about 11.9 million people, said that they had experienced an adverse reaction.

The lower number of adverse events received by FDA is not surprising, given the limitations of FDA's adverse event monitoring systems for both functional foods and supplements. These are voluntary reporting systems, which, as we reported in 1999, have serious limitations.¹⁶ For instance, in voluntary reporting systems, the number of health problems is significantly underreported, and the reports do not have to follow a standard format and may be incomplete.

Even if FDA had a better system for capturing adverse events, it would not necessarily know whether these reports justified taking action. Reports of health problems are subjective, so a causal connection between the observed event and a particular product cannot be assumed. Such reports need to be analyzed to identify the potential magnitude of the problem and investigated to clearly establish a link between an adverse event and a product or ingredient.

According to FDA officials, the computer system they use to monitor reports of health problems associated with dietary supplements is severely limited in its ability to effectively track and analyze these reports. FDA cannot, for example, use the computer system to identify trends in the data and must therefore conduct such analyses manually. FDA recognizes the limitations of this system and has sought funds from the Congress, so far unsuccessfully, to improve its systems for tracking adverse events.

Furthermore, FDA officials told us that only three staff are available part-time to investigate reports of health problems associated with dietary supplements. According to FDA officials, the agency conducts a preliminary screening of all the reports related to supplements to identify the most significant ones, such as those resulting in death or disability. However, resource limitations allow them to perform detailed reviews of only some of the most significant reports, or less than 40 percent of the total reported health problems. For example, the reports for St. John's Wort include problems such as difficulty breathing, throat constriction, headaches, dizziness, convulsions, rash, and vomiting. Yet FDA officials told us that a lack of resources precluded them from taking any action to

¹⁶ *Dietary Supplements: Uncertainties in Analyses Underlying FDA's Proposed Rule on Ephedrine Alkaloids* (GAO/HEHS/GGD-99-90, July 2, 1999).

investigate these reports beyond the preliminary screening. Without further investigation, FDA cannot know why these health problems occurred, whether they were in fact caused by St. John's Wort, or whether FDA should take any action to protect the public's safety.

Federal Agencies' Efforts and Federal Laws Provide Limited Protection Against Inaccurate or Misleading Health-Related Claims

Agencies' efforts and federal laws concerning health-related claims on product labels and in advertising provide limited assistance to consumers in making informed choices and do little to protect them against inaccurate and misleading claims. First, FDA has not clearly established the nature and extent of the evidence companies need to adequately support structure/function claims and has taken no actions in court against questionable claims. Second, federal agencies operate under different statutes for regulating claims on product labels and in advertising, which has led to advertising claims that are not allowed on product labels. Finally, consumers may not understand the different purposes of health and structure/function claims. Consequently, they may incorrectly view structure/function claims as claims to reduce the risk of or treat a disease, rather than their more limited purpose of describing how consuming a product affects a structure or function of the body (such as the circulatory system) or a person's general well-being.

FDA Has Defined Evidentiary Standards for Health Claims but Not for Structure/Function Claims and Takes No Action Against Questionable Structure/Function Claims

Under FFDCA, both health claims and structure/function claims can be used on the labels of functional foods and dietary supplements. While FDA has evidentiary standards for health claims, it has not clearly defined its standards for structure/function claims. Furthermore, it has taken no enforcement actions against questionable structure/function claims.

Health claims

Health claims state that an ingredient or product may reduce the risk of a disease. Before a health claim for an ingredient or a product can be used, it must go through a rigorous FDA review of the scientific evidence supporting the claim. As of March 2000, FDA had authorized 11 generic health claims for use on functional foods or dietary supplements. (See table 3.) For example, products that are low in sodium can claim they may reduce the risk of high blood pressure, and products that are low in fat, saturated fat, and cholesterol can claim they may reduce the risk of heart disease. Health claims are primarily used on food product labels; only four

of the authorized health claims—for calcium, folic acid, psyllium husk, and soy protein—apply to substances that are available as dietary supplements.

Table 3: FDA-Authorized Health Claims

Health claims	Attribute of food or supplement
Helps maintain healthy bones and may reduce risk of osteoporosis	High in calcium
May reduce risk of high blood pressure	Low in sodium
May reduce risk of some cancers	Low in fat
May reduce risk of heart disease	Low in saturated fat and cholesterol
May reduce risk of some cancers	Fiber containing fruits, vegetables, and grain products
May reduce risk of heart disease	Fiber containing fruits, vegetables, and grain products
May reduce risk of some cancers	Fruit or vegetable
May reduce risk of brain and spinal cord birth defects	Supplying folic acid
May reduce risk of tooth decay	Uses dietary sugar alcohols
May reduce risk of heart disease	Contains soluble fiber from whole oats or psyllium husk
May reduce risk of heart disease	Contains soy protein

Note: The table is a simplified presentation of the dietary attributes and health effects associated with authorized health claims. The product may have to contain additional food attributes, and the company may have to provide additional information in the claim for the claim to be permitted.

Structure/function claims

Structure/function claims describe how consuming the product will affect a structure (such as the skeletal system) or function (such as the circulatory system) or a person's general well-being but do not claim to reduce the risk of, prevent, or treat a disease. For example, structure/function claims state that the product "supports the immune system" or "helps support cartilage and joint function."

While FDA has established evidentiary requirements for health claims, it has not done so for structure/function claims. Under FFDCA, structure/function claims on functional foods and dietary supplements cannot be false or misleading. However, the law does not define the nature or extent of the evidence necessary to adequately support structure/function claims, and FDA has not provided detailed guidance to industry on what constitutes appropriate documentation. FDA recognized

the need for guidance on the evidence needed to support structure/function claims in its 10-year plan to implement DSHEA; however, the plan does not state when or how the agency will address this issue.

Furthermore, the evidence available to support structure/function claims varies widely because some ingredients have been thoroughly studied while others have not. For example, there is strong evidence in the medical literature that St. John's Wort can be useful in treating mild depression. On the other hand, according to BioValidity, the publisher of an on-line encyclopedia that grades the quantity and quality of scientific research available to support benefit statements for over 200 vitamin, mineral, and herb supplements, there is little evidence available to support many claims that are made. According to BioValidity, there is only minimal evidence that ginseng may help to overcome fatigue, but such claims are made. In addition, some structure/function claims, for example, "cleanses the blood," are so vague or general that they have little or no scientific meaning and would be very difficult to prove.

Companies have recognized the need for guidance on the evidentiary requirements for structure/function claims. For example, during the 1996-97 public hearings held by the Commission on Dietary Supplement Labels,¹⁷ several manufacturers asked the Commission to clarify the type of information needed to substantiate structure/function claims.

Enforcement

While NLEA requires FDA to rigorously review health claims before authorizing their use on product labels, there are no such requirements for structure/function claims before they are used on product labels. For dietary supplements, however, DSHEA requires companies to notify FDA of their products' structure/function claims within 30 days after marketing the product. FDA reviews these notifications to determine that the claim is actually a structure/function claim and not a claim to reduce the risk of, prevent, or treat a disease. FDA does not have a similar mechanism for identifying whether structure/function label claims for functional foods are actually unauthorized disease-related claims because FFDCA does not

¹⁷ The Commission on Dietary Supplement Labels was established by DSHEA to develop recommendations for regulating label claims on supplements and was made up of seven presidential appointees with expertise and experience in the manufacture, regulation, distribution, and use of supplements. The Commission completed its duties with the issuance of its 1997 report.

require makers of these products to notify FDA regarding the structure/function claims they are making.

For example, if FDA determines that a dietary supplement label inappropriately claims to treat, prevent, or reduce the risk of disease, it issues a letter to the company objecting to the claim. As of January 6, 2000, according to FDA, the agency had received and reviewed about 5,200 notifications of structure/function claims on dietary supplement labels and had sent out 336 letters objecting to the proposed claims.

However, according to FDA officials, the agency's review of dietary supplement labels does not address whether the company has adequate evidence to support the structure function claim in the first place. Concerns have been raised that because of the limited amount of available research, some structure/function claims on products in the marketplace are not supported by adequate scientific evidence. In addition, both food and dietary supplement industry associations have said they believe it is important for FDA to take enforcement actions against unsupported claims. Nonetheless, FDA has never asked a company marketing dietary supplements or functional foods with structure/function claims to voluntarily provide the agency with the evidence supporting the claim, nor has FDA ever initiated an enforcement action to obtain access to the information through the courts. According to FDA, one of its priorities for fiscal year 2000 is to develop effective enforcement procedures to respond to significant or precedent-setting discrepancies in food labeling, including trade complaints.

Federal Agencies Have Different Mandates for Addressing Health Claims on Product Labels and in Advertising

Three different federal agencies—FDA, FTC, and USDA—share responsibility for determining which health claims are allowed in labeling and in advertising for functional foods and dietary supplements. Because these agencies enforce different laws, a product's claims of health benefits might be allowed by one agency but denied by another.

FDA and FTC have different legislative standards for approving claims:

- FDA-authorized health claims are "based on the totality of publicly available scientific evidence" that there is "significant scientific agreement" that the claim is supported, as authorized under the Nutrition Labeling and Education Act of 1990.
- Advertising claims of health benefits are subject to the provision of the Federal Trade Commission Act that prohibits "unfair or deceptive acts

or practices" and any false advertisement that is "misleading in a material respect."

FTC attempts to harmonize its enforcement of claims in advertising to the extent possible with FDA's enforcement of label claims. However, FTC recognizes that because it and FDA are charged with enforcing different laws, there are certain situations in which a qualified health claim is allowed in advertising, even though FDA has not authorized the claim. For example, FDA currently does not allow functional foods or dietary supplements containing stanol esters to carry labels that make claims to lower cholesterol. However, these products are permitted to make this claim in their advertising as long as the claim is truthful and not misleading and is supported by competent and reliable scientific evidence.

Some groups have raised concerns about the difference in the types of health claims FDA and FTC allow, while others believe the differences are appropriate. The Center for Science in the Public Interest, a group representing consumer interests, believes that food advertising and labeling claims should be treated consistently so that only FDA-authorized health claims would be permitted in advertising. In contrast, some industry groups we spoke to found FDA's approach to authorizing health claims overly restricts what companies are allowed to say and, given FTC's legal mandate, believed that it was appropriate for FTC to take a different approach to claims made in advertising.

A recent court decision may result in changes to FDA's current approach to authorizing health claims in labeling.¹⁸ In 1994, a lawsuit was filed against FDA charging that the agency had inappropriately denied several health claims petitions. In this lawsuit, the plaintiffs argued that the health claims should be authorized even if in FDA's view they did not meet the standard of "significant scientific agreement" as long as they could be made truthful and not misleading with the addition of a disclaimer. In January 1999, the U.S. Court of Appeals for the District of Columbia decided in favor of the plaintiffs and ordered FDA to reconsider the health claim petitions after the agency better defined the standard of "significant scientific agreement" and evaluated the use of disclaimers in creating truthful health claims. FDA is currently in the process of reexamining the proposed health claims in response to the court's instructions.

¹⁸ *Pearson v. Shalala*, 164 F. 3d 650 (D.C. Cir. 1999), *reh'g en banc denied*, 172 F. 3d 72 (D.C. Cir. 1999).

While FDA has authorized 11 generic health claims, USDA has not issued regulations to adopt these claims for use on the products it regulates, such as pot pies, soups, and prepared meals containing over a certain percent of meat or poultry. According to a USDA official, the Department reviews requests to use a health claim on a case-by-case basis. For example, FDA recently authorized a health claim that soy protein may reduce the risk of heart disease, but even if a USDA-regulated product contains enough soy protein to qualify for the claim, the claim could only be used if a company asked USDA to review and approve it. According to an official of the National Food Processors Association, USDA should develop a comprehensive approach to the use of health claims on products containing meat or poultry rather than regulate on a case-by-case basis.

The Differences Between Health Claims and Structure/Function Claims Are Not Apparent to Consumers and Can Lead to Possible Misuse

According to preliminary FDA research, consumers do not understand the intended differences in meaning between health claims and structure/function claims. As a result, they may incorrectly view structure/function claims as claims to reduce the risk of or treat a disease.

In August 1999, FDA conducted nine focus groups on dietary supplement labeling in three cities around the country. Among other things, this research found, "there was no indication that participants differentiated at all between structure/function claims and health claims." In addition, FDA received comments on its proposed rule on structure/function claims from dietary supplement manufacturers, consumer groups, health professional groups, and others stating that the distinction between health and structure/function claims is artificial and that consumers view both types of claims as disease treatment or prevention claims. As such, consumers incorrectly view claims to maintain health (structure/function claims) as claims to reduce the risk of, or treat a disease. Consequently, we believe that consumers may attempt to treat a disease with a product not capable of producing this benefit.

To help consumers make informed choices, DSHEA mandates that companies using structure/function claims on dietary supplements include the following disclaimer on the label regarding the claim: "This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease."

However, this disclaimer requirement does not exist for functional foods that carry structure/function claims, even if the same ingredient is the basis of the label claim. For example, a dietary supplement that uses a

structure/function claim related to maintaining a healthy circulatory system would have to include the disclaimer on its label, but a functional food containing the same ingredient and claim would not. (See fig. 2.)

Figure 2: Hypothetical Comparison of Two Products Using the Same Structure/Function Claim—a Functional Food Without a Disclaimer and a Dietary Supplement With a Disclaimer



In enacting DSHEA, the Congress recognized that providing information to consumers on labels or by other means was important in helping them make informed and appropriate health care choices for themselves and their families. Studies of consumers' understanding of label claims on foods and supplements, however, have shown that consumers may not fully understand the information they receive. The Commission on Dietary Supplement Labels also recognized "the potential for miscommunication despite the efforts of policy makers to establish clear labeling guidelines and of manufacturers to comply with them."¹⁹ As such, given the significance of consumer understanding of label claims and the potential for miscommunication, the Commission urged that consumers' understanding of structure/function and health claims receive continued assessment. In this regard, FDA officials said that if a panel is established to further assess labeling issues, it should be independent of FDA because the agency may not be viewed by some as an independent arbiter.

Conclusions

Consumers' continuing interest in preventive health care means the consumption of dietary ingredients with health benefits beyond basic nutrition is likely to increase, whether in the form of functional foods or dietary supplements. However, along with this increased consumption, consumers face health risks because current federal laws and agencies' efforts do not effectively and consistently ensure that these products are safe. Furthermore, consumers do not consistently receive clear, scientifically supported information concerning products' health benefits so they can make informed dietary choices. While we cannot estimate the extent to which unsafe products reach the market, we believe that weaknesses in the regulatory system increase the likelihood of such occurrences. In this regard, since 1993, FDA has received 2,797 reports of adverse effects, including 105 deaths, associated with dietary supplements.

More particularly, there are weaknesses in the current measures for ensuring safety before products are marketed and for monitoring the hazards of products already on the market. The lack of a safety notification requirement for functional foods limits FDA's ability to review safety evidence before these products arrive on grocery shelves. At the same time, FDA has not developed and promulgated regulations or guidance on the amount and type of evidence needed to demonstrate the safety of new

¹⁹ *Report of the Commission on Dietary Supplement Labels* (Commission on Dietary Supplement Labels, November 1997).

dietary ingredients in dietary supplements. Finally, the boundary between functional foods and dietary supplements is not clear. As a result, unsafe products could come to market because companies did not develop a sufficient level of evidence on their safety. Once products reach consumers, FDA lacks an effective system to track and analyze instances of adverse effects. Until it has one, consumers face increased risks because the nature, magnitude, and significance of safety problems related to consuming dietary supplements and functional foods will remain unknown.

Meanwhile, consumers are faced with a confusing array of claims—some that require rigorous scientific support and others that can be made with less evidence—with no clear way to distinguish between them. Even when products have made what some believe to be unsupported structure/function claims, FDA has taken no enforcement action. As a result, consumers may make inappropriate dietary choices and rely on ineffective products to treat their health problems. In addition, the absence of notification requirements for functional foods making structure/function claims limits FDA's ability to identify inappropriate claims. At the same time, the absence of disclaimer requirements for structure/function claims on functional foods limits consumers' ability to distinguish FDA-authorized claims from other claims that have not been reviewed and authorized. While near-term actions can be taken to help ensure that structure/function claims are accurate and not misleading, a longer-term independent review is needed to determine whether the fundamental differences between these claims and health claims can be made clear to consumers.

Recommendations to the Congress

To help ensure that functional foods and dietary supplements are safe and that consumers receive accurate information about them, we recommend that the Congress

- amend the Federal Food, Drug, and Cosmetic Act to require makers of functional foods to meet the same requirements that currently apply to dietary supplements: (1) advance notification to FDA regarding ingredients that companies have determined are safe, (2) notification to FDA regarding the use of structure/function claims, and (3) disclaimers of FDA approval on product labels containing structure/function claims.
- establish an expert panel to reexamine the current approach to labeling, which distinguishes health claims from structure/function claims, to determine whether the intended distinctions can be made clear and meaningful to consumers, or failing this, to identify other changes needed to improve consumers' understanding of health-related claims.

Recommendations to FDA

While FDA has recognized in its 10-year plan to implement the Dietary Supplement Health and Education Act the need for many of the actions we are recommending, the agency has not stated when or how it will address these issues. Therefore, to help ensure that functional foods and dietary supplements are safe and that consumers receive accurate information about them, we recommend that the Commissioner of FDA establish firm time frames in its plan and take other necessary steps to

- develop and promulgate regulations or other guidance for industry on the evidence needed to document the safety of new dietary ingredients in dietary supplements;
- clarify the boundary between conventional foods, including functional foods, and dietary supplements, particularly the circumstances under which dietary supplements may be marketed in food form;
- develop and promulgate regulations or other guidance for industry on the safety-related information required on labels for dietary supplements and functional foods;
- develop an enhanced system to record and analyze reports of health problems associated with functional foods and dietary supplements;
- develop and promulgate regulations or other guidance for industry on the evidence needed to support structure/function claims; and
- develop and implement a strategy for identifying and taking appropriate enforcement actions against companies marketing products with unsupported structure/function claims on their labels.

Agency Comments and Our Response

We provided FDA, FTC, and USDA with a draft of this report for their review and comment. FDA welcomed the report as a means of calling attention to the challenges it faces in regulating functional foods and dietary supplements. However, FDA believed that the report should note that it has already begun taking steps to implement the 10-year Dietary Supplement Strategic Plan and cited several specific enforcement and other activities targeted for completion by the end of this fiscal year. While FDA's planned actions targeted for this fiscal year appear worthwhile, only one of the actions is directly related to the issues we raised in the report. As such, we revised the report to note that in fiscal year 2000, FDA intends to develop effective enforcement procedures to respond to significant or precedent-setting food labeling problems. We believe the other actions FDA cited, such as alerting the public to potentially unsafe dietary supplements and attempting to enhance the adverse event reporting system, are positive but do not warrant modifying the report.

FDA generally agreed with the need for the report's recommended actions but did not comment on our recommendations to the Congress. Specifically, FDA said that all but one of the recommended actions were included in its 10-year Dietary Supplement Strategic Plan and that it will add the remaining recommended action—to develop guidance for industry on the safety-related information required on product labels—to the plan next year. However, FDA did not agree with the report's recommendation that it should establish firm time frames for all of the activities in its plan. FDA said resource limitations prevented it from setting such time frames. Rather, FDA will provide details on when and how a given item in the plan will be accomplished in the fiscal year that resources become available to take action. FDA believes that because of the potentially long lead time before some of the less significant items can be addressed, the agency's limited resources would be better spent in working on current priority concerns rather than in long-range planning. We understand FDA's desire to focus on current priority concerns. Nonetheless, we believe that FDA should provide more detail, as well as target completion dates, for the actions outlined in its 10-year Dietary Supplement Strategic Plan. Such information will help clarify for the Congress and other interested parties the nature and extent of FDA's planned actions, as well as their priority in relation to other planned activities, and aid in tracking FDA's progress toward implementing its plans. In addition, this information would be useful to the Congress in making decisions regarding future FDA appropriations.

FDA, FTC, and USDA also provided technical clarifications, which we incorporated into the report as appropriate. FDA's comments and our responses are appendix II.

Scope and Methodology

To determine the extent to which federal laws and agency efforts ensure the safety of functional foods and dietary supplements, we reviewed the safety provisions for dietary supplements contained in the Dietary Supplement Health and Education Act of 1994. We also reviewed the safety provision for food and food additives contained in the Federal Food, Drug, and Cosmetic Act, as amended. In addition, we reviewed FDA regulations implementing the safety provisions of these laws as well as FDA's proposed regulations regarding the safety of supplements. Besides reviewing the laws and regulations, we interviewed representatives of, and obtained documents from, a wide variety of organizations regarding safety concerns related to functional foods and dietary supplements. These organizations included (1) FDA; (2) food companies, including Nestle USA, Lipton, and

Kellogg; (3) two major food industry associations—the Grocery Manufacturers of America and the National Food Processors Association; (4) dietary supplement industry associations, including the Council for Responsible Nutrition and the National Nutritional Foods Association; (5) the Center for Science in the Public Interest, a consumer group; (6) the American Dietetic Association, a nutrition group; and (7) academic institutions, including the Nutraceutical Institute at Rutgers University. See appendix I for a complete list of the organizations we spoke with.

To determine the extent to which federal laws and federal agencies' efforts ensure the accuracy of health-related claims on product labels and in advertising, we reviewed the health-related claims provisions of DSHEA; the FDA Modernization Act of 1997; the Federal Food, Drug, and Cosmetic Act, as amended; and the Federal Trade Commission Act. In addition, we reviewed FDA's proposed and final regulations regarding health-related label claims and FTC's guidance to industry on advertising for foods and dietary supplements. Furthermore, we interviewed representatives of, and obtained documents regarding labeling and advertising concerns related to functional foods and dietary supplements from, FDA, FTC, USDA, and the food companies, food and dietary supplement industry associations, consumer and nutrition groups, and academic institutions listed above, among others.

We conducted our review from July 1999 through June 2000 in accordance with generally accepted government auditing standards.

We will send copies of this report to the congressional committees with jurisdiction over the safety and labeling of foods and dietary supplements; the Honorable Dan Glickman, Secretary of Agriculture; the Honorable Jane Henney, Commissioner of the Food and Drug Administration; the Honorable Robert Pitofsky, Chairman of the Federal Trade Commission; and other interested parties. We will also make copies available to others on request.

If you have any questions about this report, please contact me at (202) 512-5138 or Keith Oleson at (415) 904-2218. Key contributors to this report are listed in appendix III.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Lawrence J. Dyckman". The signature is fluid and cursive, with the first name "Lawrence" and last name "Dyckman" clearly distinguishable.

Lawrence J. Dyckman
Director, Food and Agriculture Issues

List of Committees

The Honorable Richard G. Lugar
Chairman

The Honorable Tom Harkin
Ranking Minority Member
Committee on Agriculture, Nutrition,
and Forestry
United States Senate

The Honorable Thad Cochran
Chairman

The Honorable Herb Kohl
Ranking Minority Member
Subcommittee on Agriculture, Rural
Development and Related Agencies
Committee on Appropriations
United States Senate

The Honorable John McCain
Chairman

The Honorable Ernest F. Hollings
Ranking Minority Member
Committee on Commerce, Science, and Transportation
United States Senate

The Honorable James M. Jeffords
Chairman

The Honorable Edward M. Kennedy
Ranking Minority Member
Committee on Health, Education, Labor, and Pensions
United States Senate

The Honorable Larry Combest
Chairman

The Honorable Charles W. Stenholm
Ranking Minority Member
Committee on Agriculture
House of Representatives

The Honorable Joe Skeen
Chairman

The Honorable Marcy Kaptur
Ranking Minority Member
Subcommittee on Agriculture,
Rural Development, Food and
Drug Administration, and Related
Agencies
Committee on Appropriations
House of Representatives

The Honorable Tom Bliley
Chairman

The Honorable John D. Dingell
Ranking Minority Member
Committee on Commerce
House of Representatives

Agencies and Organizations Contacted

Federal Agencies

Food and Drug Administration
U.S. Department of Agriculture
Federal Trade Commission
National Institutes of Health, Office of Dietary Supplements

State Agency

California Department of Health Services, Food and Drug Branch

Food Industry Associations

Grocery Manufacturers of America
National Food Processors Association
Research-based Dietary Ingredient Association

Food Companies

Archer Daniels Midland Company
Kellogg Company
Lipton
McNeil Consumer Healthcare
Nestle USA
Protein Technologies International
The Hain Food Group

Dietary Supplement Associations

Council for Responsible Nutrition
Consumer Healthcare Products Association
National Nutritional Foods Association

Nutrition Groups

American Dietetic Association
International Food Information Council

Consumer Group

Center for Science in the Public Interest

Appendix I
Agencies and Organizations Contacted

Academia

University of Illinois, Functional Foods for Health Program
Rutgers University, The Nutraceuticals Institute
University of California, Berkeley, Nutrition Sciences Department

Comments From the Food and Drug Administration

Note: GAO's comments supplementing those in the report text appear at the end of this appendix.



DEPARTMENT OF HEALTH & HUMAN SERVICES

Food and Drug Administration
Rockville MD 20857

JUN -9 2000

Mr. Lawrence J. Dyckman
Director, Food and
Agriculture Issues
U.S. General Accounting Office
441 G Street N.W. Rm 2T23
Washington, D.C. 20548

Dear Mr. Dyckman:

Enclosed are the Food and Drug Administration's comments on the GAO draft report entitled, FOOD SAFETY: Improvements Needed in Safety of Dietary Supplements and "Functional Foods", GAO/RCED-00-156

If we can be of further assistance, please call Ms. Lois Adams at (301) 827-0125.

Sincerely,

A handwritten signature in dark ink, appearing to read "Melinda K. Plaisier".

Melinda K. Plaisier
Associate Commissioner
for Legislation

Enclosure

Appendix II
Comments From the Food and Drug
Administration

FOOD AND DRUG ADMINISTRATION COMMENTS ON THE GENERAL
ACCOUNTING OFFICE DRAFT REPORT ENTITLED, FOOD SAFETY:
Improvements Needed in Safety of Dietary Supplements and "Functional Foods"
(GAO/RCED-00-156)

GENERAL COMMENTS:

The Food and Drug Administration (FDA) welcomes the GAO report as a means of calling attention to the challenges we face with respect to regulating dietary supplements and conventional foods formulated to provide a health benefit beyond basic nutrition.

The report should note, however, that FDA already has taken steps to implement the Dietary Supplement Strategic Plan cited in the draft report. The Fiscal Year 2000 Program Priorities document targets for completion by the end of this fiscal year certain enforcement activities for conventional foods and dietary supplements that are part of the Dietary Supplement Strategic Plan ("A" list items). Indeed, for dietary supplements, FDA listed taking action against unsafe products as an "A" list item to be accomplished this fiscal year. Similarly, FDA listed as an "A" list item for Nutrition, Health Claims, and Labeling, the development of effective enforcement procedures to respond to significant or precedent-setting discrepancies in food labeling, including trade complaints.

In addition to the enforcement activities listed above, FDA has targeted several other conventional food and dietary supplement activities for completion by the end of this fiscal year. Further, FDA has targeted activities for significant progress, but not completion, during this fiscal year ("B" list item). Listed as a "B" list item, for example, is developing a strategy based on input from the Institute Of Medicine (IOM) Food Forum Symposium on Functional Foods (which was held on April 26 with FDA participation) and Keystone (which has just been initiated) regarding the most appropriate scientific and regulatory framework for structure/function claims on conventional foods.

As a part of its responsibility to protect the general public from unnecessary risks associated with FDA regulated products, FDA has taken action to alert the public to potential problems associated with products marketed as dietary supplements. Last year, for example, FDA warned consumers not to purchase or consume Triax Metabolic Accelerator, which contains the active ingredient tiratricol, also known as triiodothyroacetic acid (TRIAC), a potent thyroid hormone. FDA has also initiated regulatory action against gamma butyrolactone (GBL), which had been marketed as a dietary supplement and is converted in the body to gamma-hydroxybutyrate (GHB), a drug of abuse associated with coma and severe respiratory depression. FDA had received reports of adverse events associated with the use of these products. FDA determined that both of these products are unapproved drugs and not dietary supplements, and contacted firms known to manufacture or distribute the products. The firm that manufactured the product Triax agreed to stop distributing any product containing the ingredient TRIAC. FDA issued warning letters to firms known to manufacture or distribute GBL who were not voluntarily recalling their products.

Appendix II
Comments From the Food and Drug
Administration

See comment 4.

Further, on May 16, 2000, FDA issued a letter to the interested persons from consumer groups, academia, the health care profession and industry communicating its concern about the marketing of dietary supplements or other botanical-containing products (such as traditional medicines) that may contain aristolochic acid. The use of products containing aristolochic acid has been associated with reports of nephropathy (kidney disease) and end-stage renal disease requiring, in many cases, dialysis or transplantation. FDA also publicly announced its intention to issue an import alert providing for automatic detention of dietary supplements or other products containing certain botanicals that may be adulterated with aristolochic acid.

Finally, FDA continues to make progress toward accomplishing other related tasks for which funding is limited. For example, steps are underway to enhance FDA's adverse event reporting system, which includes reports regarding conventional foods and dietary supplements. As the draft report notes, FDA continues to conduct an initial clinical review of all adverse event reports received. Furthermore, for all serious adverse events reported, FDA seeks additional information from consumers and health care providers to aid in proper assessment. Because of resource constraints, FDA is able to perform risk assessments of only the most significant public health issues associated with the use of the products. To date, the only dietary supplement public health issue for which an extensive risk assessment has been performed is for ephedrine alkaloids. These adverse events account for around 40% of the adverse events received. FDA has, however, conducted Health Hazard Evaluations on a number of other dietary supplement products such as chaparral, lead contaminated bee products, selenium overdosage, and digitalis-contaminated plantain. The Administration has requested \$2.5 million dollars for enhancements to FDA's dietary supplement adverse event reporting system in the Fiscal Year 2001 budget now before Congress.

As GAO notes, FDA's efforts to assure the safety of functional foods and dietary supplements have been limited by its legislative authority. The differing legal requirements for conventional foods and dietary supplements dictate that FDA's approaches for regulating dietary supplements and functional foods must differ unless the law is changed.

In view of the above, a key to addressing the issues related to conventional foods and dietary supplements successfully is FDA's new and continued partnerships with other governmental agencies, academia, health professionals, industry, and consumers. Last year, for example, FDA held several public meetings to solicit stakeholder input on several of the issues presented in the draft report (e.g., structure/function claims). Much of the input from these meetings is reflected in FDA's strategic plan. FDA looks forward to continued dialogue and further collaboration on how best to leverage resources.

GAO RECOMMENDATION

While FDA has recognized in its 10-year plan to improve DSHEA the need for many of the actions we are recommending, the agency has not stated when or how they will address these issues. Therefore, to help ensure that functional foods and dietary supplements are safe and that consumers receive accurate information about them, we recommend that the Commissioner of FDA establish firm timeframes in its plan and take other necessary steps to

develop and promulgate regulations or other guidance for industry on the evidence needed to document the safety of new dietary ingredients in dietary supplements,

clarify the boundaries between foods and dietary supplements, particularly the circumstances under which dietary supplements may be marketed in food form,

develop and promulgate regulations or other guidance for industry on the safety-related information required on labels for dietary supplements and functional foods,

develop an enhanced system to record and analyze reports of health problems associated with functional foods and dietary supplements,

develop and promulgate regulations or other guidance for industry on the evidence needed to support structure/function claims, and

develop and implement a strategy for identifying and taking appropriate enforcement actions against companies marketing products with unsupported structure/function claims on their labels.

Appendix II
Comments From the Food and Drug
Administration

FDA COMMENT

Most of the elements of the recommendation have been identified in the Agency's Dietary Supplement Strategic plan, including the need to clarify boundaries between foods and dietary supplements. When the plan was released in January 2000, FDA acknowledged its inability to set timeframes for all of the activities listed in the plan because of resource limitations. Instead, the Agency stated that it would identify annually specific actions to be accomplished that year, based available resources. It is our intention to continue along this path. As resources become available, FDA will undertake additional activities until the Dietary Supplement Strategic Plan is fully implemented. Because of the potentially long lead time before some of the less significant items can be addressed, we believe that our limited resources can be better spent working toward accomplishing the targeted items than in fleshing out exactly how all the issues will be addressed, which will be done when each individual item is targeted for accomplishment in a given fiscal year.

The one element of the recommendation not reflected in FDA's strategic plan is that FDA develop and promulgate regulations or other guidance for industry on the safety-related information required on labels for dietary supplements and functional foods. FDA will add this activity to the Dietary Supplement Strategic Plan next year.

FDA also will continue to seek additional resources for initiatives identified in the plan through the established budget process. It should be noted that the House Appropriations Committee has requested that FDA, within 6 months of enactment of the appropriations bill, report the dollar cost to implement the Dietary Supplement Strategic Plan.

See comment 5.

GAO's Comments

1. We support the Food and Drug Administration's (FDA) plans to take enforcement actions against unsafe dietary supplements. However, because the draft report did not raise concerns about this issue, we did not revise the report to reflect FDA's planned actions. The draft report does raise concerns about the lack of enforcement actions against unsupported claims in product labeling. Therefore, we revised the draft report to note that in fiscal year 2000 FDA intends to develop effective enforcement procedures to respond to significant or precedent-setting discrepancies in food labeling.
2. FDA did not specify the nature of the additional activities related to conventional foods, including functional foods, and dietary supplements the agency plans to complete by the end of this fiscal year. However, we reviewed the activities listed in FDA's Center for Food Safety and Applied Nutrition 2000 Program Priorities and found that they do not relate directly to the issues raised in our draft report. Therefore, we did not revise the report to reflect FDA's planned actions. Furthermore, while we support FDA's efforts to develop a scientific and regulatory framework for structure/function claims for conventional foods, we continue to believe that a broader review of health and structure/function claims for both functional foods and dietary supplements is needed to help ensure that consumers receive accurate information about these products.
3. We support the actions FDA has taken to alert the public to potential safety problems associated with products marketed as dietary supplements. However, we continue to believe that the additional actions we have recommended—for example, developing guidance for industry on (1) the evidence needed to document the safety of new dietary ingredients and (2) the safety-related information required on labels—are needed to help ensure the safety of functional foods and dietary supplements.
4. We recognize that FDA has recently completed an extensive risk assessment for ephedrine alkaloids and has taken other actions to improve its ability to track and evaluate reports of adverse events related to functional foods and dietary supplements. While FDA's comments provide additional details about the agency's activities in this area, we do not believe this information warrants changing the draft report. In addition, we still believe that the absence of an effective system to analyze reports of health problems associated with functional foods and dietary supplements continues to hamper FDA's ability to clearly establish links between an adverse event and a product and to take action to protect public safety.

5. We continue to believe that FDA should provide more detail as well as target completion dates for the actions outlined in its 10-year Dietary Supplement Strategic Plan. This information will help clarify for the Congress and other interested parties the nature and extent of FDA's planned actions as well as their priority in relation to other planned activities and aid in tracking FDA's progress toward implementing its plans. In addition, we believe this information would be useful to the Congress in making decisions regarding future FDA appropriations.

GAO Contacts and Staff Acknowledgments

GAO Contacts

Lawerence J. Dyckman, (202) 512-5138
Keith W. Oleson, (415) 904-2218

Acknowledgments

In addition to those named above, Stephen D. Secrist, Roderick T. Moore, John M. Nicholson Jr., Jonathan M. Silverman, and Carol Herrnstadt Shulman made key contributions to this report.

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Discussion Group Questions

Divider Title: _____

Information Development and Dissemination

March 26, 2001

Workgroup #1 - CAM Information on the Internet and in the Media

Facilitator: Veronica Gutierrez

This workgroup will:

- 1) Identify 3-5 issues related to CAM information development and dissemination on the internet and in the media based on the testimony provided.
- 2) Develop 2 or more recommendations for consideration by the full Commission to address the issues identified.

Workgroup #2 - Advertising & Marketing of CAM Information

Facilitator: George DeVries

This workgroup will:

- 1) Identify 3-5 issues related to the advertising and marketing of CAM information based on the testimony provided.
- 2) Develop 2 or more recommendations for consideration by the full Commission to address the issues identified.