How Can We Best Communicate Our Understanding of the Elements of Bioavailability to the Consuming Public?¹ Summary of Workshop Discussion

Discussion Group Leader: Paul R. Thomas
The Dietary Supplement LLC, Rockville, Maryland

Rapporteur: David Schmidt
International Food Information Council, Washington, D.C.

Overview

The public communications discussion group was composed primarily of nutrition scientists and educators, researchers and clinicians from government, industry, academia and numerous organizations.

At the outset of their deliberations, the Working Group agreed that dietary supplement use was widespread in the United States. People take not only supplements of nutrients, but increasingly botanical products and other substances, such as melatonin, creatine and chondroitin/glucosamine. This is one of the many forms of so-called alternative medicine practiced by consumers, often on their own, and sometimes with the knowledge, acceptance and, in some cases, support of their healthcare providers. Many consumers take one or more supplements daily, and most use these products at least occasionally. Generally, these products are used as dietary insurance, as a means of achieving a better or optimal state of health, and to treat a wide variety of complaints, disorders and diseases.

Consumer use of supplements and issues of bioavailability

Numerous surveys of consumer use of supplements have been conducted and published. The best ones have been nationally representative surveys conducted by government agencies, but the majority of published studies focus more narrowly on supplement use among specific groups of people in one or more communities. A common limitation of these studies is that they have been focused on nutrient supplements only, to the exclusion of other bioactive compounds or botanicals. Furthermore, much of these available data are old and outdated given the rapid growth and changes in supplement use (especially with a more permissive regulatory environment as a result of the Dietary Supplement Health and Education Act of 1994).

In addition to the data collected via national surveys conducted through the National Nutrition Monitoring System, data on consumer usage patterns are collected by dietary supplement companies and their market research firms. However, these data are rarely published in traditional biomedical journals, and they are generally not made available even upon request except to the entity that commissioned the survey.

Given the focus of this workshop on bioavailability issues related to supplements, it is appropriate to ask whether bioavailability concepts are even germane to consumers. The primary questions related to consumer use of supplements are properly centered on issues of the safety, quality and effectiveness of the products that they use. Of course, concepts of bioavailability are built into each of these areas of emphasis. If supplement ingredients are not bioavailable, they will not produce the desired (or undesirable) results, and issues of safety become moot. Poor quality products may not disintegrate and dissolve expeditiously after ingestion to deliver their contents to the gut for absorption, or the forms of the ingredients used may have poor bioavailability. Thus, the concern becomes more one of consumers wasting their money and disappointment over the lack of efficacy.

It is far from clear whether consumers consider issues of bioavailability in deciding which supplements to take or, if they were interested in doing so, what types of information they would need to help them to make more informed and sensible choices. To the Working Group’s knowledge, these questions have not been researched. As this workshop has clearly demonstrated, the bioavailability of constituents found in food and in dietary supplements is an extremely complicated issue even for nutrition scientists, involving digestion, intestinal absorption and the distribution and uptake of these constituents by cells. Furthermore and unfortunately for the public, there are few good, credible and comprehensive sources of information on the wide variety of supplements in the

¹ Summary of workshop discussion held at the conference “Bioavailability of Nutrients and Other Bioactive Components from Dietary Supplements” January 5–6, 2000 in Bethesda, Maryland. This conference was sponsored by the Office of Dietary Supplements, National Institutes of Health and the Life Science Research Office, American Society for Nutritional Sciences. Conference proceedings are published as a supplement to The Journal of Nutrition. Guest editors for the supplement publications were Mary Frances Picciano, Pennsylvania State University, University Park, PA and Daniel J. Raiten, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD.
marketplace, especially in regard to bioavailability and supplement quality overall.

**Recommendations**

The working group developed five recommendations that in its view would help the nutrition community to better communicate its understanding of the elements of bioavailability of dietary supplements to the public.

1. Pool data from private and public sources on consumer use of dietary supplements.

A comprehensive report should be developed that includes a summary of all available survey data on consumer use of supplements, reasons for use, patterns of use, etc. Obviously, the published data available in journals should be collected. But it is also important that the compilers of this report contact major dietary supplement companies, supplement trade associations and market research firms that track the supplement industry to assemble the relevant unpublished survey data available that these entities can be persuaded to provide. Such a report will help the nutrition community understand just how widespread supplement use is; the types of products, ingredients and amounts being consumed; how they are being used; and the purposes for which consumers are using these products.

2. Nutrition scientists and healthcare providers must become partners with consumers in their self-care practices regarding supplements.

Many consumers do not report their supplement practices to their healthcare providers because they believe that these practices will be dismissed at best or criticized and denounced at worst. Consumers are more likely to be honest and open with their providers as well as researchers when they come to believe that these experts are more open minded about supplements and both respect and sincerely try to understand the choices made by consumers. By obtaining more accurate information about consumer supplementation practices, it will be possible to learn more about the potential benefits and risks to health that specific supplements pose. Physician medical histories of patients should include questions about supplement use. In addition, the dietary supplements Adverse Event Monitoring System of the U.S. Food and Drug Administration should be improved and adequately funded, and healthcare providers and consumers should be encouraged to use it to report possible harms from supplements.

3. Help the public discern facts versus fiction about supplements.

The nutrition community along with relevant partners should develop guidelines for consumers, as well as for its own members, on the kinds of questions to ask and information to evaluate in making decisions of whether to take supplements. If consumers decide to use dietary supplements, they need to have some guidance as to what types of products to use, how to use them, when to take them, etc. Consumers, nutrition professionals, the media and others need to develop better critical thinking skills about supplements to be able to make more informed decisions about these products. The nutrition community, with the help of appropriate partners, should also develop a list of credible information sources on supplements (that address all sides of the issue) that could be widely disseminated in various media and be permanently available at authoritative websites. Key messages need to be developed for key groups.

4. Develop a database of methodologies to evaluate consumer beliefs and practices regarding supplements.

There is little consistency in the kinds and wording of questions in questionnaires that researchers use to elicit data from the public on supplement use, reasons for use and results of use. This makes it difficult to synthesize data from various studies and compare results or even to combine intake data with physiologic and disease parameters. The various assessment tools currently in use should be collected and made available in some central source. The National Institutes of Health, for example, could collect and make available the questionnaires used in federally funded studies. Then it might identify and develop guidelines for the type and wording of questions as well as algorithms that would help researchers in the methodological designs of their studies (especially clinical trials) to produce results that are more comparable among studies.

5. Develop a communications agenda to help the public with dietary supplement issues.

Clearly, the nutrition community needs to communicate more frequently, openly and effectively with the general public on the safe and responsible use of supplements and how to identify good quality products whose contents are bioavailable. One way to start this communication would be to take the technical proceedings of this conference (published in The Journal of Nutrition) and prepare a consumer friendly version for dissemination and for posting on appropriate websites such as the website of the National Institutes of Health Office of Dietary Supplements. Given the public’s interest in supplements and the widespread public dissemination of the Dietary Guidelines for Americans of the federal government, consideration might even be given to preparing a companion Dietary Supplement Guidelines for Americans or at least including more discussion of supplements in future editions of Dietary Guidelines for Americans or at least including more discussion of supplements in future editions of Dietary Guidelines for Americans.