

Nutrition vs. Rx Treatment

Most practitioners realize the effects of a proper diet on ocular and systemic health. But, is there enough scientific evidence that nutritional supplementation is beneficial in disease prevention, treatment and management?

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Nutrition

The continuing expansion of eye care has shown that, as practitioners, we are capable of dealing with myriad eye disorders. Although we can manage various diseases with the help of drugs, we still see chronic eye conditions that continue to affect our aging population with increasing frequency. Some view our current health care system as less “health care” and more “disease management.” But, over the past two decades, research on ocular health has shown that nutrition has a significant effect on many eye disorders, and eye care practitioners are in a perfect position to embrace this treatment protocol.

Regulation Standards

Should we approach nutrition with caution? Without a doubt! Much the same way we approach pharmacological agents with caution, nutrition must be recommended with scientific support and logical application. While nutritional products are not controlled with the same protocol as pharmaceutical agents, they are very well regulated. Take a look at the different levels of approvals of drugs, foods and supplements (see “*Regulation of Products by the U.S. Food and Drug Administration*,” pg. 22). As you can see, the supplements are closely related

to food and only differ from drugs in the pre- vs. post-market approval.

The Dietary Safety and Health Education Act (DSHEA, 1994) defines nutritional products and what controls the FDA has over them. It is true that dietary supplement products do not have to undergo the same pre-market approval process as that required for drugs; however, pre-market approval does not guarantee safety. Pharmaceutical products in the past, have been granted FDA approval, only to later be removed from the market for safety reasons. In addition, dietary supplement manufacturers adhere to a variety of other requirements to help assure product safety. For example, if serious adverse events are reported, supplement manufacturers must notify the FDA within 15 days. This is a requirement comparable to prescription and some over-the-counter drugs, but not conventional foods.

Efficacy of Nutritional Supplements

The gold standard for establishing the efficacy of pharmacological agents is the randomized controlled trial (RCT). However, this is poorly suited for the evaluation of nutritional effects for several reasons. Chronic diseases have long



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Regulation of Products by the U.S. Food and Drug Administration.

FDA-regulated products	New Drug Application	Pre-market notification	Labeling	Mandatory adverse event reporting	CGMPs	Facility registration	Advertising (FTC or FDA)
Foods		✓	✓		✓	✓	✓
Dietary supplements		✓	✓	✓	✓	✓	✓
Drugs	✓		✓	✓	✓	✓	✓

latency and multi-factorial causation, so it is difficult to determine exactly when a disease process begins and how long it has been developing.

For the most part, nutrients interact with one another, whereas drugs are designed to work solo. All foods contain a variety of nutritional ingredients that are designed to work synergistically. And lastly, we would like there to be only one target tissue with drug therapy, but side effects do occur. While nutrients act in modest beneficial ways in virtually every body system, drugs act potentially on single targets (the RCT is designed for single outcomes).

Many studies performed on nutrients are considered “observational” studies. There are, however, limits to observational studies as well. In an observational study, there is the absence of a no-exposure group. (One cannot require subjects in a study to not take a specific nutritional product for an extended period of time; there can only be different levels of intake.) Uncertainty in quantitative measures of food intake due to inaccurate reporting and recall bias is often the case. Either the subject fails to accurately record the type and amount of food eaten, or they forget and attempt to recall at a later time. Some studies actually record food intake at the beginning and end of a particular

study and assume that the subjects are eating similarly throughout the entire duration of the study!

There is also uncertainty in the translation of food to nutrient intake. Inaccurate food composition tables, natural variability, processing effects and poor correspondence between nutrients in certain foods are common problems in determining the actual nutrient intake.

This is not to say that there are no unscrupulous manufacturers and suppliers in the nutritional product industry. There may be misleading ads for weight loss, miracle cures and unfounded effects of any product, but these claims are under the regulation of the Federal Trade Commission. It is incumbent upon the practitioner to research the companies that make supplements (including their advisory board members as well as the ingredients in their products) and confirm that they have legitimate science behind their formulations.

In addition, practitioners must decipher between the myriad multi-level marketing (MLM) programs in the marketplace. While there are some good products that are marketed this way, MLM tends to promote the advantages of generating income over the concept of good health, so the MLM does not necessarily fit into the professional image of the eye care practitioner.

The Nutritional Link

We started as a “drugless” profession more than 100 years ago. And, while we have progressed in the depth and breadth of our scope of practice, we should not forget our roots. The body is a great healer and might simply require additional “support” to re-balance itself. I do not mean to take away from the power and necessity of our medical treatments; the fact remains that an acute eye condition requires immediate attention. Nutrition will not be appropriate for this type of treatment, but it is very appropriate for the support of human health and should be a part of the primary care practitioner’s armamentarium of products for eye health. A classic example is dry eye syndrome.

While this is certainly a significant issue for millions of patients, it is usually a slow-developing, chronic condition that is rarely sight-threatening. Over the years, we have recommended over-the-counter drops and other palliative treatments, but nutrition has found its way into this treatment plan. Why? Because it works! Oral nutrition supplementation is becoming well recognized in the medical and eye care professions as an effective way to alleviate the symptoms of dry eye syndrome.

Considering some specific eye diseases, we can find several studies with a nutritional link.

The “gold standard” study is the Age-Related Eye Disease Study (AREDS), which was published in 2001.¹ While it was a positive step toward using nutrition to slow the progression of AMD, the science that was used to develop the formula was from the mid-1980s. We now realize that there are several other nutrients involved with macular health, and thus AREDS 2, with a more elaborate formula, is now under way.

A 1998 study in *Ophthalmology* indicates that a vitamin A deficiency (more prevalent in developing countries) can be a predisposing factor in microbial keratitis.² Another study on retinitis pigmentosa suggests that vitamin A can have a beneficial effect on this condition as well.³ Several studies have also shown that vitamin A is a factor in the health of epithelial tissue (such as the corneal epithelium). Vitamin C, magnesium and several other nutrients have been shown to lower eye pressure.¹ A nurse’s study in 2009 showed a reduced risk of AMD with an increase in certain B vitamins.⁴

Furthermore, most eye care practitioners are aware of the influence of omega-3 and omega-6 essential fatty acids (EFAs) on cellular function, especially when it comes to dry eye. This is particularly significant in the eye and nervous system because the retinal cells contain the highest level of docosahexaenoic acid (DHA) in the body. The EFAs are derived from ingesting fish oils; they support cellular energy levels and are critical in cellular function.⁵ The FDA has regulatory responsibility over the import of fish oils, and an independent evaluation by Consumer Labs (www.consumerlab.com) of more than 50 brands of fish oil has shown that none are contaminated with any toxic levels of mercury or PCB, which can be

poisonous to humans. Therefore, taking fish oil capsules is a safe way to get the EFAs we need on a daily basis.

Integrative Medicine

Practitioners must realize that recommending nutrition and dietary supplements can be a safe and effective tool in the prevention and treatment of chronic eye disease. (When recommending products, be sure to check out the manufacturer. Reputable companies have their board of directors, as well as their product’s ingredients, openly listed on their websites.) It is up to us to know which supplements to recommend because consumers can easily get confused. So, taking some extra time to learn about nutrition and supplementation will advance your understanding of your patients’ needs and potential resolutions to their eye care concerns.

Talk to your patients. The benefits of nutritional counseling are many. The practitioner is addressing the patient’s main problem. Since we are now becoming more aware of the link between chronic disease and eye disease, we are using a more universal approach. In patient education, the practitioner gains an insight into the patient’s overall health. Nutritional counseling will bring patients back to the office frequently, and it is better

that they receive this information from you, rather than the health food store clerk or the hairdresser. This enhances your reputation as a primary care provider.

Supplements are here to stay. More than half of the U.S. adult population uses dietary supplements, and most supplement users take them every day. Supplements can fill gaps in nutrient intake, and the potential health benefits are substantial. Integrative medicine takes account of the whole person, including all aspects of lifestyle. It emphasizes the therapeutic relationship and makes use of both appropriate conventional and alternative therapies. It is a philosophy that neither rejects conventional medicine nor accepts alternative therapies uncritically and uses natural, effective, less-invasive interventions whenever possible. I hope that eye care practitioners are ready to embrace this healing approach.

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4. Christen W, Glynn R, Chew E, et al. Folic acid, pyridoxine, and cyanocobalamin combination treatment and age-related macular degeneration in women: the Women’s Antioxidant and Folic Acid Cardiovascular Study. Arch Intern Med. 2009 Feb 23;169(4):335-41.

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Follow These Simple Rules in Nutritional Supplementation

- **Balance.** The body uses nutrition to fuel and heal itself, but it will not always respond to excessive amounts of one nutrient. Overuse of one ingredient can create a deficiency in another.
- **There is no “single bullet.”** One specific nutrient will not cure any one particular condition.
- **Consistency.** It matters not what you do once in a while, but what you do every day. If you stray from your diet and eat too much of the wrong foods one day, don’t worry! Just get back to your sensible diet the next day.
- **Moderation.** If 10mg of a supplement is effective, it does not mean that 100mg is 10 times more effective! This is especially true with herbal remedies, which can create more severe reactions than vitamin supplements.