

# A Concise Nutritional Approach for Your Practice

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Unless one is a dietician or nutritionist, the typical health care provider does not make their income doing nutritional consultations. Each profession has its specialty intervention, such as performing surgery, dispensing medication, manipulating joints, releasing myofascial tissues, rehabilitation exercises, or counseling. And I suggest that each professional should practice and focus on their respective primary intervention.

Nutrition will naturally take a secondary or tertiary place to these various profession-specific treatment interventions, and this is fine and appropriate. However, it is inappropriate to ignore nutrition during care, as nutritional imbalances help to create the biochemical state that drives the expression of the diseases to which health care professionals direct those specific interventions.

The following commentary can be used to help develop a conceptual model for utilizing nutrition as complementary care to your primary intervention. Dietary and nutritional supplement suggestions are outlined briefly and additional references are provided. I recommend you acquire the citations if you would like the details.

## The Required Mindset

First and foremost, it is important to accept the fact that chronic, subclinical inflammation is the driver of most, if not all, chronic diseases. It is a fact that the same basic inflammatory state underlies heart disease, cancer, Parkinson's disease, Alzheimer's disease, osteoporosis, osteoarthritis, chronic pain, and most other conditions.<sup>1-3</sup> If you choose to view these various diseases from only a diagnostic perspective, it will be very difficult to accept that they are very similar from a biochemical perspective. References 1-3 provide the literature needed to understand the chronic inflammatory state.

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The manifestation of the chronic inflammatory state is likely to differ depending on our genetic disposition to disease expression. The term *genetic polymorphism* is used to describe the individual differences in our genes that can lead to the expression of various diseases. Consider the following statement, which comes directly from the cited paper:<sup>4</sup>

"Apolipoprotein E (apoE) was discovered as a plasma protein involved in the metabolism of lipoproteins. Recently, the apolipoprotein E (*APOE*) gene has been suggested to be a risk factor for the development of micro- and macrovascular complications in diabetic patients. The *APOE* gene is polymorphic. There are three common alleles, *E2*, *E3*, and *E4*, which code for three major isoforms, resulting in six common genotypes. Individuals with apoE2 have higher triglyceride levels and are associated with lower cholesterol compared to individuals with apoE3. Individuals with apoE4 often

have elevated plasma cholesterol levels. There is an increased prevalence of cardiovascular disease and particularly Alzheimer's disease."

In fact, research suggests the presence of the APOE 4 allele accounts for the vast majority of Alzheimer's disease risk and pathology.<sup>5</sup> In other words, if you have the APOE 4 allele, you are at risk for expressing Alzheimer's. However, this does not mean you will get the disease, and it appears that our lifestyle modifies the risk most significantly. A recent study indicates that dietary factors are likely to play a role. Preliminary evidence suggests beta-carotene intake is inversely proportional to Alzheimer's expression in those with the APOE 4 allele. In other words, those with the APOE 4 allele may in fact be protected by beta-carotene.<sup>6</sup>

Table 1	
<i>Supplement</i>	<i>Suggested amount</i>
Multivitamin/mineral	Depends on product (two to three pills per day is common)
Magnesium	400-1,000 mg per day
Coenzyme Q10	100 mg/d
Alpha-lipoic acid	200 mg bid (twice per day)
Acetyl-L-carnitine	500 mg bid
EPA/DHA (fish oil)	1-3 grams/d
GLA (borage oil)	400 mg/d
Vitamin D	1,000 IU to 2,000 IU/d
Ginger, turmeric	1-2 gram/d of powdered herb or equivalent extract
Garlic (allicin equivalents)	5 mg/d

For our purposes here, it should be understood that there are many studies which look at this type of relationship among genes and disease expression, and some examine nutritional associations. Ames, et al., recently published the most detailed review of nutritional issues related to genetic polymorphisms and the associated disease expression.<sup>7</sup> However, from a clinical perspective, this does not help us with nutritional applications. This is due to clinicians within the various health care professions who do not regularly order genetic tests to examine for disease susceptibility. And even if you did, the outcome would be simply this: "You have the XYZ polymorphism and that predisposes you to XYZ disease." In fact, we all have genetic polymorphisms that predispose us to a given disease, which is likely to be the cause of our demise, if we pursue it with poor lifestyle choices.

Clinically speaking, the big picture is as follows: We are all predisposed to contract a given chronic inflammatory disease, and through our lifestyle, we can either "pursue" disease expression or hopefully, "prevent" disease expression. Diet and exercise seem to be the most important determining factors.<sup>8-10</sup> By eating a pro-inflammatory diet and remaining sedentary, we actively pursue chronic disease expression, and over time, we will discover our individual polymorphism when we express the disease.

Fortunately for all of us, the same diet and supplements can be used to reduce the expression of chronic inflammation<sup>9</sup> and thereby reduce the expression of whatever disease we are likely to develop. While there are some disease-specific supplements, such as glucosamine and chondroitin for osteoarthritis, the majority of conditions require the same diet and supplements.

## Diet

Evidence suggests we need to eat more fruit, vegetables, and omega-3 animal products (i.e., eggs, meat, fish, poultry, and wild game). We also can add raw nuts, and if you want a starch, potatoes are the best choice.<sup>1-3, 8-9, 11-13</sup> Refined sugar, grains, soy, beans, and dairy are not recommended as primary sources of energy, and they are not comparable to fruits, vegetables, and nuts when it comes to nutritional density and phytonutrient content. And we know that lectins and other components of grains and beans make them a pro-inflammatory food.<sup>14-15</sup> Diet cannot get any simpler than this; it is just a matter of whether we, and our patients, are going to do it. I suggest we all go for it, at least 80 percent to 90 percent of the time.

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## Supplements

The evidence regarding supplements is not nearly as compelling as that for diet. In particular, there is no evidence for the new "magical" supplements that appear on the market every year; these are likely to work by using placebo mechanisms. I suggest taking supplements that are known to have an anti-inflammatory physiological effect, in addition to the placebo responses that invariably occur when substances are consumed with healing expectations in mind.

In the recent editions of Robbins' *Pathologic Basis of Disease*, we are told that disease is promoted by a reduction in ATP synthesis, an increase in free-radical generation, and a state of chronic inflammation created by excessive production of pro-inflammatory eicosanoids, cytokines and growth factors. This represents the inflammatory state discussed earlier. With this in mind, my interest is to take supplements that help to reverse this inflammatory state.

Magnesium, coenzyme Q10, alpha-lipoic acid, acetyl-L-carnitine, and the nutrients in a multivitamin/mineral are involved in ATP synthesis and the reduction of free radicals. Fish oil, borage oil, and vitamin D supplementation help to reduce the expression of chronic inflammation. Supplementation with garlic, ginger, turmeric, and boswellia, are also beneficial, as they function as natural anti-inflammatory agents.<sup>1-3</sup>

I personally take all of these supplements. My hope is that this will reduce the expression of subclinical chronic inflammation, such that I will not express a chronic inflammatory disease or develop chronic pain due to an accidental injury. Minimally, I would recommend taking at least a multivitamin/mineral, magnesium, and fish oil. Table 1 contains the supplements and their commonly suggested amounts.<sup>1-2</sup>

For patients on multiple medications and especially for those taking coumadin, it is important to make sure there are no inappropriate interactions. Several texts discuss drug-nutrient interactions; this information is available on a number of Web sites, such as [www.medlineplus.com](http://www.medlineplus.com).

Please understand there are no specific conditions that alert us to the need for these supplements. They should be recommended and taken for the purpose of reducing the expression of the chronic inflammatory state. With this in mind, I have seen numerous pro-inflammatory conditions improve, such as osteoarthritis, rheumatoid arthritis, osteoporosis, depression, fatigue, psoriasis, eczema,

obstructive sleep apnea, radicular pain, somatic pain, and more.

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