KRESSER INSTITUTE
FOR FUNCTIONAL AND EVOLUTIONARY MEDICINE

Summary of Supplement Recommendations

Hey, everyone. In this presentation, I'm going to summarize the recommendations that I've made regarding supplementation. So, let's review the basics for supplementation here.

Vitamin A. Adequate amounts can be obtained by consuming about four ounces of liver per week. If supplementation is necessary, 10,000 to 15,000 IU per day is appropriate for most people. The best form, I think, is cod liver oil because it also contains vitamin D, which works synergistically with vitamin A, and it's an animal source, which means that it will be preformed retinol, the active form of vitamin A, rather than beta-carotene. If for some reason the patient can't take cod liver oil, then if you do use a supplemental form, make sure that it is from an animal source and that it contains retinol or retinoic acid rather than beta-carotene.

Next is vitamin D. As we'll discuss elsewhere, the optimal blood levels of vitamin D according to the Institute of Medicine range from 25 to 50 ng/mL. My range is 35 to 60 ng/mL, especially when vitamin A and vitamin K2 levels are adequate. Sun exposure is the preferred source of vitamin D production for a number of reasons. The first is that sun exposure provides a lot of other health benefits above and beyond vitamin D that you can't get just by supplementing with vitamin D. Second, there is a much lower risk of toxicity from sun exposure than there is from vitamin D supplements. In some cases, sun exposure won't be practical if your patient, for example, works all day indoors and lives at a high or low latitude where the solar angle is low most of the year. She may need to supplement, and again, I prefer cod liver oil as a supplement because it contains both vitamins A and D that work synergistically together.

How much you supplement with depends on the level of deficiency, so the common doses might range from 1,000 to 4,000 IU per day. Sometimes up to 10,000 IU per day for a short period may be necessary, but you have to be very careful with vitamin D, as with other nutrients such as iron, because while too little is problematic, too much is also problematic. The other thing is if the patient can't get sun exposure, and if she can't supplement with cod liver oil, then certainly she can take a standard vitamin D3 supplement. Again, that dose will typically range between 1,000 and 4,000 IU per day.

Magnesium. As we discussed, most patients benefit from magnesium supplementation. Very few people actually get enough of it in their diet, even on a nutrient-dense diet, so somewhere from 300 to 500 mg per day in chelated supplemental form is ideal. Glycinate and malate are well absorbed and have fewer side effects.

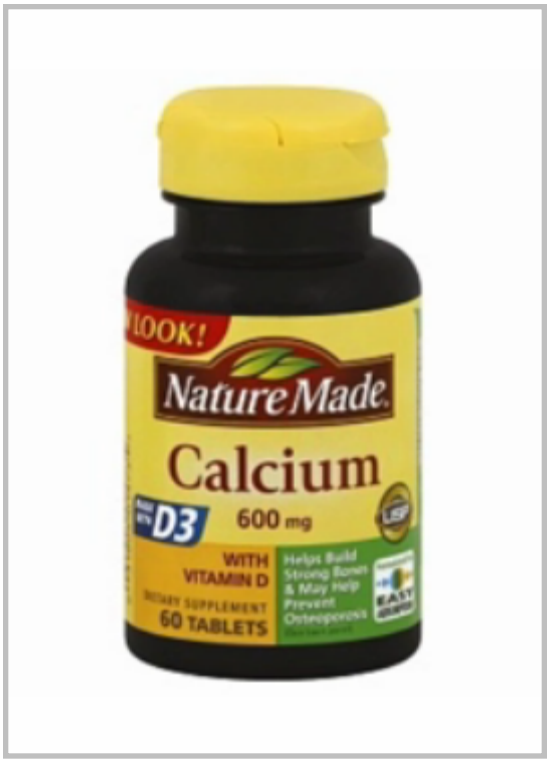
Vitamin K2. Again, the most important nutrient many people have never even heard of. The two major supplemental forms are MK4 and MK7. The supplemental dose ranges from 100 to 1,000 mcg per day for optimal health, although for those suffering from osteoporosis, doses way up in the milligram quantities, as high as 30 to 45 mg, have been used successfully in studies. There is no upper limit or toxicity threshold for vitamin K2 that we know of yet, so it's very safe, even at higher doses.

Vitamin C can benefit patients with a wide range of chronic health conditions, and 500 to 1,000 mg daily is safe and well tolerated by most people. Several grams a day can be taken without toxicity, but you need to watch out for side effects such as loose stools or diarrhea.

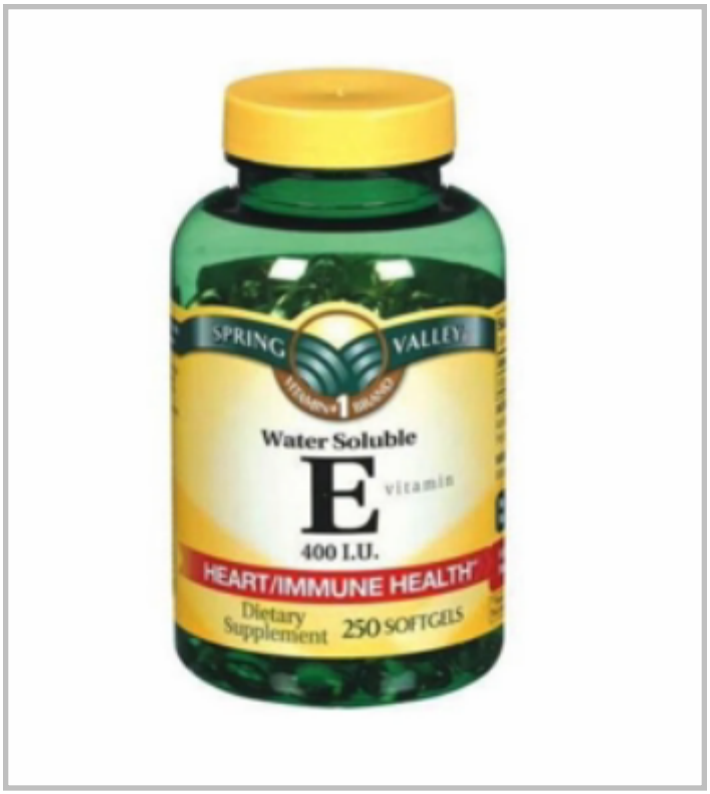
Iodine. As we discussed, many patients don't get enough iodine in their diets, especially after they remove iodized salt and other processed foods where iodine has been added. The recommended dose is 800 mcg a day, and that is safe for most people, but you want to be cautious in supplementing with iodine in patients with Hashimoto's thyroiditis or other autoimmune thyroid conditions.

The following nutrients are the ones that we discussed that you need to be cautious with or avoid supplementing with altogether.

The first is iron, which can cause inflammation and oxidative stress when it is in excess. Most patients do not need to supplement with iron if they are eating animal products and shellfish, in particular organ meats. Clams, oysters, octopus, beef liver, venison, and red meat are all great sources of iron and things to try before you consider supplementation.

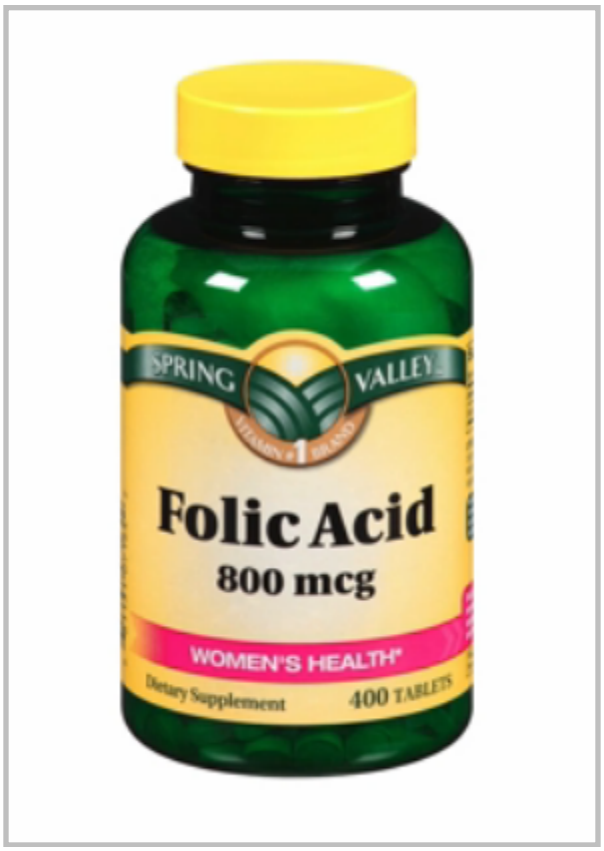


Calcium. There is a lot of misunderstanding here, as we discussed. A lot of particularly middle-aged and elderly people are taking calcium with the idea that it is going to help build strong bones. As you can see on the supplement bottle here, that's the claim, but the most recent studies suggest that there is no evidence that calcium reduces fracture rates, and it may even increase the risk of fracture, and it certainly increases the risk of heart disease. Most people do not need to supplement with calcium. If for some reason they do, you want to make sure they get adequate levels of vitamins A, D, and K2 and magnesium because those can, to some extent, mitigate the harmful effects of calcium supplementation.



Vitamin E in the alpha-tocopherol form, which is the form that is in most supplements, has shown no benefit in protecting against heart disease and may actually increase the risk of heart disease and death from all causes. I don't recommend supplementing with alpha-tocopherol. Tocotrienols, however, particularly delta and gamma isomers of tocotrienol, can be helpful in certain conditions related to the nervous system. So far, the studies have shown that supplementing with tocotrienols is safe.

Beta-carotene is a precursor form of vitamin A, so it's not a good idea to supplement with beta-carotene to raise vitamin A levels in the first place because a lot of people can't make that conversion of beta-carotene to retinol. There are also studies that have shown that beta-carotene can be converted into potentially harmful substances that interfere with active vitamin A metabolism and increase oxidative stress. If your patient needs more vitamin A, she should be supplementing with something like cod liver oil that contains natural vitamin A or a supplement that has retinol or retinoic acid, not beta-carotene.



Finally, folic acid. You've probably heard by now that it is a synthetic form. It's not metabolized well, and unmetabolized folic acid in the blood may increase the risk of cancer and mask B12 deficiency. If the patient needs more folate, you need to use natural forms of folate such as 5-methyltetrahydrofolate, folinic acid, or metafolin, or better yet increase her intake of folate-rich foods such as liver, chicken liver being the highest source of folate; dark leafy greens; or lentils, if she tolerates legumes.

That's it for now. Thanks for watching, and I'll see you next time.