

Deprescribing: What About Vitamins, Minerals, and Other Nutritional Supplements?

By Phyllis Famularo, DCN, RD, CSG, FAND

One recommendation during the pandemic was to review and discontinue any medications that were not essential in long-term care (LTC) facilities. On the practical level, this helped reduce staff time for medication passes and decreased potential COVID-19 transmission between staff and residents; but well before the pandemic, clinicians recognized that deprescribing had other benefits, including reducing unwanted side effects and drug interactions. But what about vitamins and supplements? Should these also be deprescribed?

Many LTC residents take multivitamin and mineral supplements, but also protein, fish oil, (omega-3 fatty acids), and glucosamine plus chondroitin. Clinicians may also prescribe vitamin/mineral supplements with antioxidants such as PreserVision AREDS2 for macular degeneration or cranberry tablets for urinary tract infection (UTI) prevention. Although such supplements might not be critical for medical treatment, they may have some clinical value — for instance, to aid in wound healing, bolster immune function, or maintain adequate vitamin B₁₂ levels.

Multivitamins

Probably the most common dietary supplements taken are multivitamins. In fact, 39.4% of adults aged 60 and older take a multivitamin/mineral (MVM) supplement, as noted by the 2017–2018 U.S. National Health and Nutrition Examination Survey (NHANES) (National Center for Health Statistics, “NHANES 2017–2018 Overview,” <https://bit.ly/3xVkvVC>). This percentage may be even higher in institutionalized older adults. In a recent study of medications placed on hold during the pandemic, multivitamins were the most likely held, followed by histamine-2 receptor antagonists, antihistamines, and statins. When the medications were reviewed later, many were permanently discontinued (*J Am Geriatr Soc* 2022;70:429–438).

No evidence-based studies have shown that providing a daily MVM will reduce morbidity and mortality. Some wound care guidelines do recommend certain vitamins/minerals for healing when deficiency is suspected or if malnutrition exists (National Pressure Injury Advisory Panel, <https://internationalguideline.com/>).

It is well known that some residents in PALTC do not eat well and may have marginal intake of some nutrients. But many of these very same residents receive commercial nutritional supplements that contain a certain percentage or even 100% of the Dietary Reference Intakes (DRI) for most nutrients, depending on the amount prescribed. Additionally, nutrient recommendations have a margin of safety, with many individuals requiring less than the DRI. It is recommended to consider whether the patient is receiving oral nutritional supplements and how much they receive daily before providing additional vitamin/mineral supplementation.

Positive Benefits

Several nutritional supplements show some evidence of positive health benefits.

Vitamin D. Vitamin D may be beneficial in institutionalized older adults who do not receive adequate sunlight to aid in calcium, magnesium, and phosphate absorption, which can help to reduce bone loss as well as possibly benefit cognitive, cardiovascular, cancer risk, and immune function (see *Caring for the Ages* 2022;23[3]:10). Even with sun exposure, the conversion to active vitamin D in the skin and kidney is not as efficient as it is in younger adults.

Calcium. There have been studies related to calcium and vitamin D supplementation and fall risk, but the results have been mixed. The suggested daily calcium intake from food sources is 1,300 mg/day, although the majority of older adults do not meet this requirement (*J Am Med Dir Assoc* 2022;23:756–763). If these needs are not met by diet, up to 600 mg of a calcium supplement is recommended. Higher levels of calcium supplementation are not recommended.

Vitamin B₁₂. Some adults over age 50 may need vitamin B₁₂ supplementation if they lack adequate intrinsic factor or sufficient gastric acidity to promote its absorption (National Institutes of Health [NIH], Office of Dietary Supplements, “Vitamin B12: Fact Sheet for Consumers,” March 9, 2022, <https://bit.ly/3n3MZ9O>). Routine antacids and proton pump inhibitors (PPI) can lead to decreased gastric acid levels, which prevent adequate B₁₂ levels. Using a PPI only when the patient is symptomatic can help prevent B₁₂ deficiency. It is important to note that the only true way to determine vitamin B₁₂ adequacy is to check serum methylmalonic acid levels (MMA) to distinguish whether a folic acid or vitamin B₁₂ deficiency exists.

Protein. Protein supplements are often used for patients who have inadequate intake due to decreased protein intake or an increased need for protein for wound healing (*Adv Skin Wound Care* 2020;32:123–136). A patient may need only additional protein or a supplement that provides both calories and

protein. The latter can lead to protein being used for energy rather than as a substance that aids in building new tissue. Additionally, protein has a direct effect on the kidneys, so the presence of kidney disease should be considered before prescribing additional protein. There are also a number of protein supplements that are tailored for wound healing, and some studies have reported increased healing [*Int Wound J*, June 9, 2022; doi:10.1111/iwj.13849]. Trialing one of these supplements for 30 days and then reevaluating healing is a viable option.

Omega-3 fatty acids. Vitamin supplements containing antioxidants and omega-3 fatty acids have shown some benefit in individuals with age-related macular degeneration and glaucoma (*Surv Ophthalmol* 2014;59:532–539). With the research mixed on the topic, the benefit potentially outweighs any risk of taking the supplement. Omega-3 fatty acids may help reduce cardiovascular disease (CVD) risk. The NIH Office of Dietary Supplements recommends 1.1–1.6 g of omega-3 fatty acids per day from a variety of sources, including flaxseed, chia seeds, walnuts, and cold-water fatty fish such as salmon, mackerel, tuna, herring, and sardines (“Omega-3 Fatty Acids Fact Sheet for Health Professionals,” June 2, 2022, <https://bit.ly/3mVOyWY>). Consider an omega-3 fatty acid supplement for patients with CVD who do not consume fatty fish or do not consume the limited foods that contain omega-3 fatty acids.

Moderate Benefits

Other nutritional supplements have moderate or mixed benefits.

Glucosamine plus chondroitin sulfate. These supplements may provide relief from osteoarthritis pain, but study quality has varied (*Cochrane Database Syst Rev* 2015;1:CD00561).

Cranberry. Some studies have reported that cranberry capsules reduced the risk of UTIs by 50%; although the results have been mixed, the capsules may be beneficial in some patients (*Am J Obstet Gynecol* 2015;213:194.e1–8). For a resident who experiences frequent UTIs, a trial of cranberry tablets should be considered.

Risks of Harm

Folate. High folate concentrations combined with low B₁₂ levels may increase the risk of cognitive impairment and anemia in older adults (*Am J Clin Nutr* 2008;87:517–533). Because folic acid has been added to fortified breads and cereals since the 1990s, many older adults have high concentrations of folate. It is recommended that clinicians check and deprescribe folic acid if its levels are within the normal range.

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According to the Census Bureau, currently 24% of the U.S. population is over 60 years old, and one in every five Americans will be 65 or older by 2030. Aging Americans often experience more complex diagnoses and multiple comorbidities. Telehealth provides aging individuals and family members a versatile way to take control of their own multidisciplinary care, resulting in a higher quality of life both in a

nursing facility setting or when residing at home.

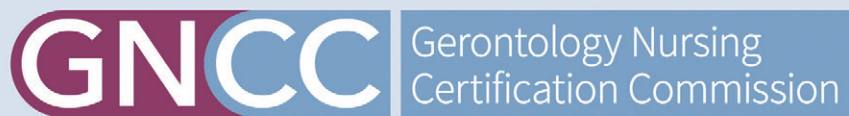
Studies by [Telehealth.org](https://www.telehealth.org) in 2021 illustrated that the implementation of a telehealth program in nursing homes can address roughly 80% of all resident issues after hours and can decrease the rate of hospital readmissions by up to 70%. Telehealth throughout the pandemic has changed the health care landscape for the better and facilitates more positive outcomes for some of the most vulnerable patient populations.

According to *McKnight's Long Term-Care News*, occupancy in skilled nursing facilities (SNF) is growing (Danielle Brown, "SNF Occupancy Growing — and So Is Level of Patient Needs," June 6, 2022, <https://bit.ly/3tInChb>). SNF occupancy in March 2022 reached 77.2%, the highest level in almost two years. With occupancy slowly increasing, staffing shortages continuing, and some facilities struggling to have adequate physician and advanced practice provider coverage, telehealth can

help to fill the gaps and meet some of the needs for nursing home residents. Using reliable and reputable telehealth providers can allow nursing homes to supplement their on-site physician and advanced practice provider services to meet many of the medical and diagnostic needs of residents on an ongoing basis. 

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Supplements

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Toxicity. Toxicity is a risk for some fat-soluble vitamins, which accumulate in the body. For instance, excessive amounts of vitamin A can lead to liver damage, and high daily doses of vitamin D can cause hypercalcemia. Symptoms of toxicity include nausea, vomiting, weakness, headaches, and skin changes.

Herbal supplements. While some herbal products may be harmless and have minor positive benefits, such as promoting relaxation (e.g., herbal tea), many herbal supplements have little to no clinical benefit, and some are even harmful. St. John's wort, for example, can interact with medications. Due to this risk for harm, herbal supplements should be discouraged.

Individual Needs

Ultimately, nutritional supplements should be determined on an individual basis after considering whether nutrient needs are being met, the dietary intake is adequate, and the person is receiving any oral nutritional supplements that may already contain vitamins, minerals, and other nutritional components such as antioxidants. Collaboration with the community's registered dietitian for nutritional supplement recommendations is advised. 

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