

# SUPPLEMENTS

## FAST FACTS

- Up to 80% of American adults report using dietary supplements, but recent national surveys show that only about 25% do so because of a confirmed deficiency or abnormal test result.<sup>1</sup>
- About half of supplement users say their health care provider recommended the product.<sup>1</sup>
- Roughly 20–25% of U.S. adults take supplements marketed for brain health, though there is little evidence for benefit in most cases.<sup>2</sup>

## ABOUT SUPPLEMENTS

Discussing supplement use is a key part of integrative and whole person care. Today's patients can choose from a vast array of dietary supplements, including multivitamins, nutritional powders, gummy vitamins, cannabidiol (CBD) products, and herbs derived from traditional Chinese medicine or Ayurvedic (traditional Indian) medicine.<sup>3</sup>

This pocket guide is a resource for the HOPE Note, which includes questions on supplements and diet.

## MOST POPULAR SUPPLEMENTS

According to the most recent National Center for Complementary and Integrative Health (NCCIH) and Council for Responsible Nutrition (CRN) surveys, the most commonly used natural products by U.S. adults include:<sup>4</sup>

- Multivitamins and multiminerals
- Vitamin D
- Fish oil, omega-3 fatty acids, and other fatty acids
- Probiotics and prebiotics
- Melatonin
- Coenzyme Q10 (CoQ10)
- Echinacea
- Cranberry extract (pills or capsules)
- Garlic supplements
- Ginseng
- Ginkgo biloba
- Glucosamine (with or without chondroitin)

The order and prevalence of these products have shifted slightly in recent years, with vitamin D, probiotics, and CBD products rising in popularity.<sup>4</sup>

The HOPE Note includes a simple question: "Do you take any herbs or supplements? If so, which ones and how much?" In addition, you may want to ask specifically about herbal teas, nutrition powders, cannabis derivatives, topical creams and patches, and any over-the-counter pharmacy products.

## Strategies for Clinicians

We offer three clinical strategies for addressing supplements in practice in an evidence-based manner. These are a starting point for practitioners who may already be using one or more of these strategies.

### Recommending Supplements for Depletion

Many drugs can deplete the body of nutrients it needs for optimal function. For example, patients who take anticonvulsants such as clonazepam, diazepam, and lorazepam are likely to be deficient in calcium. They may need to take a supplement such as Caltrate. To

avoid interfering with medication absorption, the doses of calcium should be divided appropriately throughout the day.

Other common drugs that can cause nutrient depletion are estradiol (Estrace), which can deplete the body of folic acid and magnesium, and famotidine (Pepcid), which can cause vitamin B12 depletion. Guidelines are available that include signs and symptoms of nutrient depletion for monitoring purposes, along with recommended doses.

SGLT2 inhibitors (e.g., empagliflozin) have been associated with magnesium and potassium depletion, and GLP-1 agonists (e.g., semaglutide) may reduce B12 absorption; monitoring these nutrients is now advised.<sup>5</sup>

## Monitoring Patients Who Already Take Supplements

Chances are good that many of your patients are already taking supplements, whether or not they discuss them with you. Once you do talk with patients about which supplements they take, you can monitor them for interactions with prescription and over-the-counter drugs. For example, St. John's wort (hypericum), interacts with many medications, including but by no means limited to oral contraceptives, digoxin, HIV/AIDS medications, omeprazole, oxycodone, and warfarin. It has newly recognized interactions with SSRIs (increased risk of serotonin syndrome) and triptans (reduced efficacy).<sup>6</sup> Other patients to monitor for interactions include those taking garlic or CoQ10 along with warfarin and those taking soy along with MAOIs. Caution patients using CBD oil that it can interact with warfarin, clopidogrel, and statins, potentially altering their effects.<sup>7</sup>

## Prescribing Supplements as a Complementary or Alternative Treatment

You may also prescribe supplements as an alternative or complement to conventional drug therapy. Patients with back pain may use a capsicum plaster or an ointment containing comfrey root extract to reduce their dose of non-steroidal anti-inflammatory medications such as ibuprofen. Caffeine can help relieve headache and is more effective than placebo. Aromatherapy with lavender oils can help relieve symptoms of depression and insomnia.

## What is the Evidence?

There is good evidence that some supplements help specific conditions. Others do not help the condition for which they are advertised.<sup>8</sup> Here is a brief summary:

- Most high-quality trials, including recent meta-analyses, have not shown clear benefits of general multivitamin supplements for prevention of disease in healthy people or for people with chronic conditions.<sup>8,9</sup>
- Vitamin and mineral supplements do not reduce the risk of death from heart disease and cancer, while high doses of supplemental calcium may increase cardiovascular mortality. On the other hand, getting sufficient vitamins and minerals from foods is associated with lower risk.<sup>10</sup>
- Children should get their nutrients from food, although extra vitamin D is now recommended for breastfed infants.<sup>11</sup>
- For brain health, there is little good evidence that supplements help as we age.<sup>2</sup> Only lifestyle changes have been shown to slow Alzheimer's disease.<sup>12</sup>
- Probiotics should be selected for specific situations, such as digestive health or immune system support. Some probiotics have been studied and tested for those conditions, but others have not. Recent evidence indicates that taking specific probiotics can decrease the diversity of a person's microbiome compared to a high-fiber and vegetable diet (sometimes called prebiotics), causing problems in immune function.<sup>13</sup> Specific probiotic strains (e.g., *Lactobacillus rhamnosus* GG) are now recommended for IBS; non-tailored probiotics may reduce microbiome diversity.<sup>14</sup>

There is strong evidence for supplementation in specific situations. These include:<sup>8</sup>

- Folic acid supplements for pregnant women.
- Vitamin D and iron supplements for breastfed infants.
- Vitamin B12, D, and calcium for adults aged 50 and older, although high intake of vitamins B6 and B12 has been associated with hip fractures in women.<sup>15</sup>
- Slow-release melatonin for children with autism, for sleep. Lower doses (1–3 mg) are now recommended for safety.<sup>16</sup>

## Supplements for Specific Conditions

Below is an expanded and updated table of supplements proven helpful for specific conditions, reflecting both original and recent evidence:

Condition	Recommended Supplements
Age-related macular degeneration ("dry" form, intermediate stage)	AREDS formulation of vitamins and minerals <sup>8</sup>
Post-bariatric surgery	Vitamin supplements, including fat-soluble and B vitamins. Mineral supplementation, including iron, calcium, zinc and copper. <sup>8</sup>
Celiac, Crohn's, or other inflammatory bowel disease	B and D vitamins; iron, zinc, and magnesium <sup>8</sup>
Iron deficiency anemia	Iron
Osteoporosis	Calcium, vitamin D <sup>14</sup>
Pregnancy	Folic acid <sup>8</sup>
Pernicious anemia	Vitamin B12 <sup>8</sup>
Breastfed infants	Vitamin D and iron <sup>8</sup>
Adults 50 and older	Vitamins B12 and D and calcium; however, high B6 and B12 may increase hip fracture risk <sup>14</sup>
Children with autism and sleep problems	Slow-release melatonin (lower doses, 1–3 mg) <sup>16</sup>
Chronic musculoskeletal pain	Turmeric, cherry juice extract, omega-3 fatty acids, collagen, chondroitin, glucosamine, boswellia, capsaicin cream <sup>23</sup>

## Finding Quality Supplements

Obtaining quality supplements can be challenging because current regulations on production and sales of supplements do not ensure quality. Tips to share with your patients to increase the likelihood of quality include:

- Look for products with the NSF International, USP, or Consumer Laboratories seals. USP Verification now includes heavy-metal testing for all supplements (2022 update).<sup>24</sup>
- Check the U.S. Pharmacopoeia information on dietary supplements and food at [USP Quality Matters](#).
- See the [Dietary and Herbal Supplements](#) guide at the NCCIH.
- A subscription to the [Natural Medicines Comprehensive Database](#) may be of value to those who want detailed information and up-to-date evidence on supplements.

## What About Drug Interactions?

Supplements can interact with blood thinners, corticosteroid medications, heart medications and more. A subscription to the Natural Medicines Comprehensive Database allows you to check for the latest evidence on benefits, adverse effects, and interactions.

Electronic health record systems with drug-supplement interaction checks have been shown to reduce missed interactions by 40%.<sup>25</sup>

## Integrating with Pharmacy Care

You may be tempted to leave the issue of interactions to the patient's pharmacist, an important member of the integrative health team. Unfortunately, a Chicago Tribune investigation revealed that pharmacists missed half of dangerous drug interactions—even when patients brought two prescriptions to the pharmacy at the same time.<sup>26</sup>

A pharmacist who does not know about or ask about supplements is unlikely to alert patients to interactions. You may need to work with a specific pharmacist and ask them to get training and provide services about supplement-drug interactions and use.

Integrating the pharmacy into whole person care ideally means that patients would share any supplement use with the pharmacist, remind them of other prescriptions and over-the-counter drugs they take, and discuss whether a new prescription may interact with what they are taking.

## Precautions, Side Effects, and Safety Concerns

- Consider monitoring liver and kidney function (e.g., ALT, AST, creatinine, BUN, GFR) in patients taking supplements.
- Consider dietary supplement use in differential diagnoses of both physical and behavioral conditions.
- Counsel patients to avoid taking multiple sources of the same dietary supplement, as this increases the likelihood of herb-herb or herb-drug interactions (HDI) as well as the risk of excessive dosing.

In addition to investigating individual supplements, you and your patients can check the [FDA Dietary Supplement Ingredient Advisory List](#) and sign up for alerts when new ingredients are added.

## Questions to Ask About Supplements

- Is my patient taking any medications that deplete nutrients? Should those be supplemented?
- Are the supplements my patient takes safe and at the dose they are taking them?
- Will a supplement interact adversely with my patient's medications?
- Does the supplement contain high-quality ingredients and no dangerous ingredients?
- Has the supplement been shown to work for what my patient takes it for?
- How will the supplement likely affect my patient's health conditions?
- Is the supplement worth the cost to my patient?
- Is a prescription formulation or a medication a better or safer choice for the money?

## Supplements and Cancer

Cancer care can be affected by supplements. We offer a presentation specifically for oncologists covering myths, pitfalls, and best practices of supplementation for people with cancer. Visit [www.healingworksfoundation.org](http://www.healingworksfoundation.org) to learn more or contact us at [www.healingandcancerbook.com](http://www.healingandcancerbook.com).

Other helpful resources include:

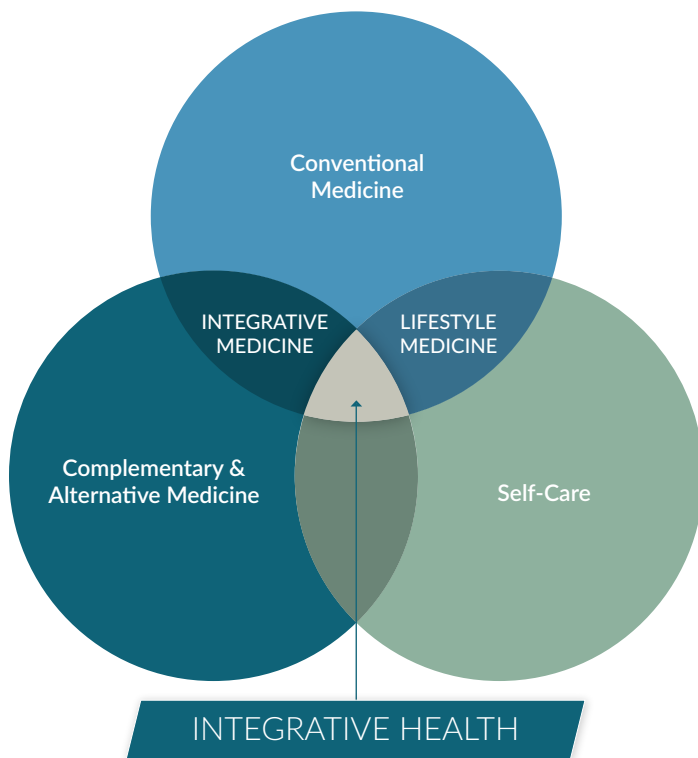
- [AboutHerbs.com](#), Memorial Sloan Kettering Cancer Center's information site covering an extensive list of drugs used by cancer patients. A user-friendly app for mobile devices is also available.
- Herb-Drug Interactions in Oncology, 2nd edition, by Barrie R. Cassileth, K. Simon Yeung, and Jyothirmai Gubili. This is an encyclopedia of supplements created by experts in botanical pharmacology.

## Resources

- [MedlinePlus](#): U.S. National Library of Medicine's compendium of information on herbs and supplements, including information on HDIs.
- [Natural Medicine](#): Therapeutic Research Center's Natural Medicines resource, with a "search for interactions" feature.
- [Drugs.com](#): Includes supplement information and an "interactions checker" feature.
- [Dietary Supplement Labels Database](#): Database of supplement information compiled by the National Institutes of Health's Office of Dietary Supplements.

## What is Whole Person Health Care?

Whole person health care is the pursuit of personal health and wellbeing, while addressing disease as needed, with the support of a health team dedicated to all proven approaches—conventional, complementary, lifestyle, and self-care.



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