

Webinar 7 Handout:

UNDERSTANDING SUPPLEMENTS: PART II

So, I'm calling these supplements **“additional recommendations”** because they are not recommended, safe or appropriate for everyone all the time. They are all well researched and, when used appropriately, have been proven beneficial. I recommend these based on needs of the individual, and reevaluate them often, because they may not need to be taken on a daily or long term basis. Remember to have your client journal their supplements on their food journal so that you can track any changes that may affect them. Below we will also touch on a few facts about supplement regulation and list some trustworthy resources for supplement information.

CALCIUM:

I do not believe in prolonged calcium supplementation. We store a lifetime of calcium in our bones by the age of 30, so we really need to make sure that we get it in early in life. After the age of 30, we are no longer storing calcium in our bones, which is our main reservoir for calcium in our bodies. We need to continue to get calcium through our diet (and include weight-bearing exercise) to keep our skeletons strong.

We already know that calcium is essential to our skeletal and bone health. Osteoporosis causes 1.5 million hip fractures every year in the U.S. Consuming adequate calcium over a lifetime will help prevent bone loss and fractures. Research has shown appropriate calcium intake in the first two or three decades of life will help achieve maximum peak bone mass, which decreases the likelihood of osteoporosis later in life. Lesser known is that calcium is most important in our blood, where it regulates our heart and balances blood pH. We will always draw calcium out of our bones to meet the needs of our blood if there is insufficient calcium in our diet available. On the flip side, too much calcium consumed in a supplemental form can throw off our pH and tax our bodies. Our kidneys are constantly balancing our plasma pH and any excess calcium is taxing to the renal system.

In addition to these vital calcium needs, there is also a strong relationship between calcium intake and maintaining a lower body weight. In a two-year study of women conducted at Purdue University, researchers found a relationship between higher calcium intakes and a loss of body weight. They also found less of an increase in body weight relative to the control group who consumed less calcium.

Make sure clients are eating calcium-containing foods including dairy, calcium fortified dairy substitutes, kale, sesame seeds, white beans, figs, tofu and fish. While dairy is the most calcium dense option, you do not have to consume dairy to meet your calcium needs. If you feel your client really isn't getting enough, start by adding more calcium rich foods to his/her meal plan before suggesting supplements. Research finds calcium from food is more beneficial than calcium from supplements.

Current recommendations for daily calcium for men and women ages 19 - 50 is 1000 mg/day, and in some cases it's appropriate to recommend this as a supplemental dose. Because absorption decreases with intakes higher than 500 mg, it is recommended that the dose be split into two. I recommend the form calcium citrate over calcium carbonate because it is more easily absorbed. People tend to like the chewable calcium supplementation, but they are often full of junk ingredients and stimulate a sweet tooth. Populations who may benefit from occasional calcium supplementation include postmenopausal women, amenorrheic women and people who do not eat calcium-rich foods.

Note that some research has linked calcium supplementation to risks such as heart issues and prostate cancer, but the science is not conclusive. Currently, most experts support the use of calcium supplementation for generally healthy people who are not meeting their needs through diet alone. Still, you may want to consider recommending calcium supplementation only on days when calcium intake has been especially poor for clients who come close to meeting calcium needs.

MULTIVITAMIN:

Think of a multivitamin as insurance. You may not need one every day. Every other day can be perfectly acceptable. Sometimes you may not need a multivitamin at all or sometimes you may know you are going into a period of stress or flu season and feel that a multi for a few days is a good idea because it is difficult for you to access the healthy foods you'd like to be eating. Like all vitamins, look for and recommend a multivitamin that has been standardized, which means that every pill is the same and comes from a reliable source. If you don't find one with the GMP seal (there are several seals, double check with your pharmacist if you are in doubt), recommend one from a large company -- even a generic version sold at most pharmacies will do because they tend to follow the standards for safety and have a stronger reputation to stand behind. Steer clear from the fancy, unsubstantiated bottles you may see from a small, no-name brand; even if the packaging is appealing, the contents may not be what you think they are. As discussed, nothing replaces the good nutrients and phytochemicals that come from eating healthy foods, so do your best to keep up your good work and have your clients do the same! Taking a multi is a personal decision and should depend on your needs; your age, gender, medical conditions, and lifestyle.

B VITAMINS:

Rarely do I recommend B vitamin supplementation, and when I do it is with care. B vitamins are in so many foods that they should be easy to get in. Here's the list of B's: B1, B2, B6, B12, niacin, folic acid, biotin and pantothenic acid. They are all important in metabolic activity — this means that they help make energy and set it free when your body needs it. This group of vitamins is also involved in making red blood cells, which carry oxygen throughout your body. Every part of your body needs oxygen to work properly, so these B vitamins have a really important job. You may consider recommending short term B supplementation for:

- Older adults and vegetarians/vegans: B12 is found in animal products and may be low in non-meat eaters (recommend nutritional yeast!). Elderly people have trouble absorbing the vitamin B12 found naturally in food. If there is documentation of B12 deficiency, it is recommended that the client consults with their doc -- the pill form B12 is not as readily absorbed as an injectable administration. Others who might have trouble getting enough vitamin B12 include people who have had weight loss surgery; and people with digestive disorders, such as celiac disease or Crohn's disease.
- Depression: people struggling with depressed mood may benefit from a B complex of B6, B12 and folate to help alleviate symptoms. While I do try this with some of my clients, it doesn't take the place of consulting with a therapist.
- Back in the day we used to recommend a B complex to manage PMS symptoms. There is no evidence that supplemental B vitamins help alleviate symptoms, but there is strong evidence that a diet rich in riboflavin (fish, eggs, beef, almonds, mushrooms, sesame seeds) and thiamin (fish, nuts, pork, seeds, peas and beans) helps to alleviate symptoms.

SPECIAL POPULATIONS:

Certain populations may need to look into additional supplements based on their needs. If you have any of the following clients, make sure they are under the care of a physician and taking reputable supplements.

- Women who may become pregnant:
 - Folic acid is needed to reduce the risk of fetal development issues. The daily recommended amount is 400 micrograms.
 - Calcium and vitamin D are important to build stores of calcium since bones absorb less after their twenties. Since vitamin D is needed to absorb calcium, women need to always be sure they are getting enough of both. The RI for calcium is the same for men and women: 1000 mg/day under age 50 and 1200 mg/day over age 50.

- Pregnant women:
 - Folic acid increase to 600 micrograms
 - Calcium needs increase to 1200 mg calcium/day (women 24 and older) and 1200 - 1500 mg/day (women under 24)
 - Prenatal multivitamins: recommended for all pregnant and breastfeeding women:
 - Folic acid: 400 to 800 micrograms
 - Calcium: 250 milligrams
 - Iron: 30 milligrams
 - Vitamin C: 50 milligrams
 - Zinc: 15 milligrams
 - Copper: 2 milligrams
 - Vitamin B6: 2 milligrams
 - Vitamin D: 400 international units
 - DHA: 300 milligrams

- Vegetarian/vegan clients may need no supplementation at all, but there are a few nutrients to be especially mindful of:
 - **Iron** is a crucial component of red blood cells. If your client is iron deficient, remind him/her to use ferrous (more bioavailable) not ferric (less readily absorbed) iron, take it in the presence of vitamin C (water with a squeeze of lemon should do the trick) and take it separately from calcium, since they compete for binding and absorption. Best vegetarian food sources include: soybeans, pumpkin seeds, quinoa, blackstrap molasses, tomato paste, white beans, spinach, prune juice and lentils.
 - **B12** is essential in making healthy nerves and blood cells. It is used in the creation of DNA and prevents megaloblastic anemia. Find B12 in fortified foods, such as cereals and nutritional yeast.
 - **Calcium** (see calcium above). Best vegetarian calcium food sources include: dark green leafy vegetables, tofu made with calcium sulfate, beans, calcium fortified milk alternatives such as almond and hemp milks and orange juice.
 - **Omega-3** (see omega-3 above). Best vegetarian omega-3 food sources include: chia, flax and hemp seeds, seaweed, leafy greens, berries, and cabbage.

These are the most common “additional supplements” that I recommend as needed. As a rule of thumb, I do not recommend them until I get a chance to give the client his or her meal plan and review a few weeks of food journals. Your client may believe he/she needs a calcium supplement, for example, but after reviewing a few weeks of representative food journals, you may decide together if that is a good idea.

REGULATIONS AND RESOURCES:

If you are recommending supplements to your clients, it is important to have an understanding of how supplements are regulated because supplement regulation is different from that of food. Here are some facts to know:

1. Supplements are regulated by the Food and Drug Administration (FDA) and the Federal Trade Commission (FTC). However, FDA is not authorized to review dietary supplement products for safety and effectiveness before they are marketed. Manufacturers and distributors are responsible for making sure products are safe BEFORE they go to market. FDA is responsible for taking action against any unsafe supplement that goes to market. If the supplement contains a new ingredient, manufacturers must let FDA know before the product goes to market, but the notification will only be reviewed by FDA (not approved) and only for safety, not effectiveness.
2. Marketers of dietary supplements must provide any product claims to the FDA within 30 days of commercialization. Unlike drugs, supplements cannot claim to treat, diagnose, prevent, or cure diseases. Permitted claims include health claims (describes relationship between ingredient and reduced risk of a disease), nutrient content claims (describes percentage level of a dietary ingredient), and structure/function claims (describes role of ingredient intended to affect the normal structure or function of the human body, such as “calcium builds strong bones”). If FDA can prove that claims on supplements are false and misleading, they may take action. The label also needs to include a "disclaimer" that FDA has not evaluated the claim.
3. Supplement manufacturers in the U.S. are held to government regulated good manufacturing practices (GMPs) which safeguard the identity, purity and potency of supplements. Manufacturers are required to produce supplements in a quality manner and ensure that they do not contain contaminants or impurities. GMPs are the minimum expectation for supplement regulation.

4. Supplement manufacturers must register with the FDA and are regularly subject to unannounced FDA inspections of their facilities, manufacturing procedures, quality control, record keeping and adverse event reporting. This process helps regulate the supplement industry and helps ensure supplement companies are abiding by guidelines.

TRUSTWORTHY SOURCES OF INFORMATION

When looking for information on supplements, noncommercial sites as opposed to product company websites are most reliable. Look for sites that aim to educate, not sell a product.

- Office of Dietary Supplements (<https://ods.od.nih.gov/>)
- Council for Responsible Nutrition (<https://www.crnusa.org/>)
- Institute For Functional Medicine: Find a Practitioner (<https://www.functionalmedicine.org/practitioner>)
- Cleveland Clinic Wellness Institute (<http://www.clevelandclinicwellness.com/pages/SupplementReview.aspx>)