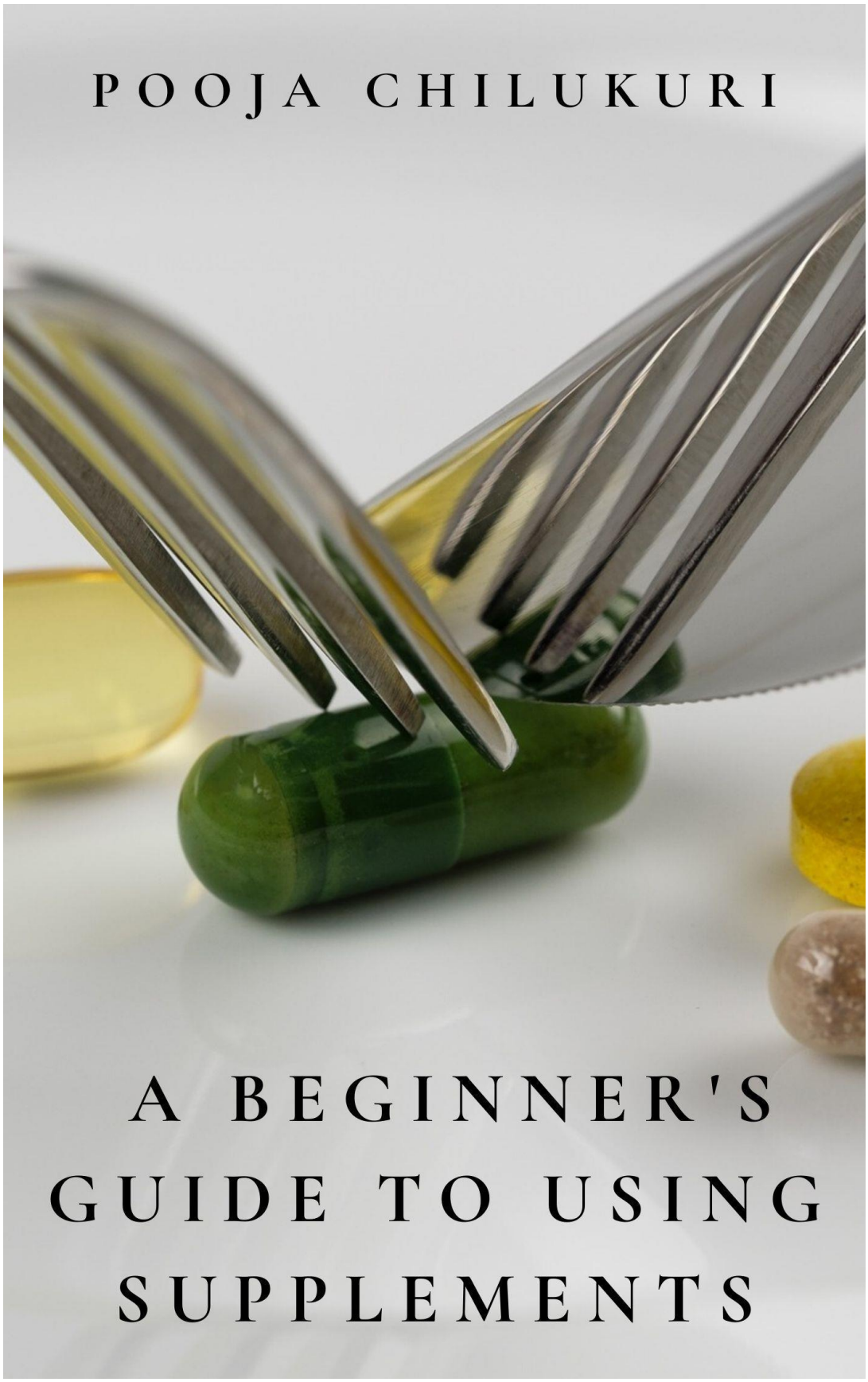
POOJA CHILUKURI



A BEGINNER'S GUIDE TO USING SUPPLEMENTS

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Before You Begin

The information in this publication is solely for educational purposes only. The information in this book is not an attempt to diagnose or treat any diseases or health conditions. If you are being treated for any health conditions, please consult with your healthcare practitioner before making any change to your health care regimen (lifestyle, exercise or nutrition).

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Introduction

Supplements are fast gaining popularity as consumers are seeking to mitigate their health issues in the most “natural” manner possible. As a Nutritional Therapy Practitioner, I find a potentially harmful mindset that prevails amongst users of natural therapies- the belief that “all natural” is always safe and devoid of side effects. Also, many individuals are unaware that high doses of multi vitamins can be toxic, and that their supplements can interfere with their prescription medications. Many wellness seekers are consuming a variety of specialty supplements such as immune boosting herbs, weight loss pills, antiaging supplements, digestive aids, probiotics, energy drinks, proteins shakes, and meal replacements. Each one holds the promise of prevention or cure. *Is it truth or hype? How are they to know?*

Regardless of their health benefits, the indiscriminate use of supplements can cause serious and potentially life-threatening issues. According to a Consumer Reports article from 2017, liver damage from supplements is on the rise. Despite this, the $38 billion dollar supplement industry is here to stay.

This guide will help you explore *what supplements are and how they came about, the benefits and risks associated with supplement use, what to look for in a supplement label, how to assess a safe dosage level, how to identify adverse reactions to supplements, and my top ten questions to ask prior to using any supplements* so you can choose and use supplements wisely. When used safely and properly, supplements can be beneficial to your integrative health-care regimen.

Chapter 1: What Are Supplements?

According to The Federal Food, Drug, and Cosmetic Act (the act) (21 U.S.C. 321), "*dietary supplements are defined, in part, as products (other than tobacco) taken by mouth, in powder, gel or pill form, intended to supplement the diet, that bear or contain one or more of the following dietary ingredients- a vitamin; a mineral; an herb or other botanical; an amino acid; a concentrate, metabolite, constituent, extract, or a combination of any ingredient mentioned above (plant extracts, enzymes, fish oil, probiotics)*"

According to this definition supplements are ingested with the primary purpose of *supplementing* the diet for balancing any nutritional deficiencies. However, many consumers use herbs and botanicals to address chronic health issues, not just nutritional deficiencies, expanding the scope of what defines *supplements.*

The supplement industry is a critical arm of the health and wellness movement. Do you know how and why it came about? Chapter 2 contains some answers from history.

Chapter 2: Supplements Come to Town

With soaring popularity trends and easy accessibility in both grocery stores and online, it is hard to imagine that a hundred years ago (at the time of this writing) vitamins had not yet been identified. However, herbs and botanical, have been around for centuries, and

in recent times have made a comeback as “supplements”. This may well be a misnomer, as their potent and powerful effect are in fact “medicinal”, and they were used throughout history as such. Vitamins, on the other hand, did not appear on the scene of human health until the early 1900s.

Our ancestors knew instinctively that prevention of disease was not just about keeping germs and poisons at bay, but also depended on certain components of food to sustain health and vitality. For instance, the ancient Egyptians would feed liver to a person with night blindness. They knew instinctively what Nutritional Science has revealed- that liver is a concentrated source of Vitamin A (retinol) which is protective of vision. Our ancestors observed that limiting the variety of foods in their diets resulted in a loss of vitality. This was evident in the ocean voyagers who went for extended periods without access to fresh fruits and vegetables resulting in Scurvy. The following is an excerpt from an article by Catherine Price, *The Age of Scurvy*[1]:

Scurvy killed over two million sailors between the time of Columbus’s transatlantic voyage and the rise of steam engines in the mid-19th century. The problem was so common that shipowners and governments assumed a 50% death rate from scurvy for their sailors on any major voyage. According to historian Stephen Bown scurvy was responsible for more deaths at sea than storms, shipwrecks, combat, and all other diseases combined. In fact, scurvy was so devastating that the search for a cure became what Bown describes as “a vital factor determining the destiny of nations.”

Who knew that solution would be Vitamin C, that we take for granted today? It was not until 1747, that the Scottish surgeon, James Lind, made the connection between citrus fruits and the prevention of Scurvy; however, ascorbic acid (Vitamin C), was not discovered until the 1930s.

Yet another impact of restricted diets was discovered in 1884 by Takaki Kanehiro, a medical doctor of the Imperial Japanese Navy. Kanehiro observed that the disease, *beriberi,* was endemic among low-ranking crew who often ate nothing but rice. We now know that this is because of a Vitamin B1 deficiency; this vitamin is present in whole grains such as brown rice but is removed when the grain is processed or polished.

Because of these observations, during the late 18th and early 19th centuries, scientists isolated and identified several vital components in food. Finally, in 1912, the Polish chemist, Casimir Funk, coined the term Vitamins (*vital amines*) and 1934, Carl F Rehnborg developed and introduced a multi-vitamin pill to the US ushering in the era of Nutritional Supplements that held the hope of removing any maladies due to malnutrition.

Chapter 2: List of References

[1] https://www.sciencehistory.org/distillations/the-age-of-scurvy

Chapter 3: Supplements- Benefits Vs. Risk

The booming supplement industry is a testament to what the consumer is seeking- a natural alternative to pharmaceutical pills for every ill ranging from digestive distress to immune help, sleeplessness to weight loss, detoxification to increased energy, blood sugar support to allergy relief. We trust that something that is all-natural food or herb based must be safer than pharmaceutical drug, but are they? This chapter is divided into two sub-chapters and examines both the benefits (the case for) and risks associated (case against) with supplements to enable the reader to make informed choices.

Chapter 3A: The Case for Supplements

Depleted Soil

Some of us are not eating the recommended seven daily servings of fruits and vegetables. Even if we are, we wonder with soil pollution and depletion, are we getting enough of the nutrients we need? According to an NBC news report[1], "*In 2004, Donald Davis, PhD, a former researcher with the Biochemical Institute at the University of Texas, Austin, led a team that analyzed 43 fruits and vegetables from 1950 to 1999 and reported reductions in vitamins, minerals, and protein. Using USDA data, he found that broccoli, for example, had 130 mg of calcium in 1950. Today, that number is only 48 mg."* This alone may require that we supplement our diets with multivitamins

Restricted Diets

A diet may be considered restricted if we cut out any of the main food groups from it; The food groups include-whole grains; fresh fruits and vegetables, meat and poultry, dairy, and nuts, seeds, oils and fats.

Those of us who are vegetarian or vegan and may not be consuming a larger variety of plant-based proteins, may become deficient in certain essential (that our bodies cannot make nor do without) amino acids, Vitamin B-12 and fatty acids (omega-3 in particular); They may benefit from fish oil supplements and protein shakes.

New dietary trends that favor certain food groups over others (examples are Keto and

Paleo diets) may inadvertently contribute to nutritional deficiencies. The same is true of food allergies and food intolerances and sensitivities, especially if it leads to excluding multiple foods from the diet.

Most people with diabetes may not tolerate fruits well and may need to rely on vitamin and mineral supplements for adequate micronutrient intake.

Picky eaters (usually children but also many adults) eat the same limited variety of foods repeatedly.

Food intolerances (grains, eggs, and dairy among others) may also limit an individual's diet. This is a potential risk for nutritional deficiencies.

While excluding different foods and food groups because of dietary restrictions, it may be necessary to consider supplementation.

Standard American Diet

Refined flour, refined sugars, trans fats, fast foods, and processed foods dominate the Standard American Diet (S.A.D). The overly processed food products are lacking in vital nutrients. They are fortified with synthetic vitamins; However, they are usually loaded with chemicals, have little nutritional value, and have been labeled as "empty calories". These are not only lacking in nutrients but can also deplete the body of critical minerals. For example, a diet high in processed sugars will deplete the mineral magnesium. These are

some major reasons most people consider supplements to be dietary “insurance.”

Digestive Dysfunction

Fresh fruits and vegetables are an excellent source of vitamins, minerals and phytonutrients, but these must be extracted from food during digestion and subsequently absorbed into the bloodstream. This is a challenge for many individuals who lack the enzymes for optimum digestive function. Using either an enzyme or a multivitamin/mineral supplement would make sense in this case. The same is true for those who have had bariatric surgery. A Vitamin B12 supplement is usually recommended postsurgery because of the loss of a portion of the intestines where this vitamin is produced by the helpful bacteria (pro-biota). These helpful bacteria also support immune function, and we are only now beginning to scratch the surface of their role in human health. These are also killed off by prolonged antibiotic use, warranting a demand for probiotic supplements.

Limited Exposure to Sunlight

Low levels of Vitamin D are implicated in a host of diseases, including cancer. So, for those of us who cannot get enough safe sun exposure or are sensitive to sunlight, supplementing with vitamin D3 pills or cream is beneficial.

Pregnancy and Lactation

Most pregnant and/ or lactating women are recommended pre-natal vitamins as the body’s nutritional requirements, particularly Calcium, iron, folate, and omega 3, increase at these times, However, some nutritional supplements may be harmful in pregnancy. An example is Vitamin A, which although needed in pregnancy to ensure proper fetal

development, may be harmful, in excess, due to teratogenic effects[2], especially in the first trimester. *It is imperative to consult your physician before taking any supplements while you are pregnant or lactating.* Do not exceed the recommended dosage (More on this in Chapter 4).

A note of caution regarding folic acid supplements- Your physician may recommend folic acid supplementation in pregnancy or if you are on pharmaceutical drugs (such as *Methotrexate*), which deplete folate. Folate is the natural form of vitamin B9, and folic acid is the synthetic form commonly used in supplements. Because of genetic variation in the population, not everyone can convert the synthetic form into the more natural form of folate. For this reason, it may be better to opt for folic acid supplements that contain the more natural form of folate (typically methyl folate version). Excess unconverted folate in the blood can have undesirable effects like raising the risk of stroke and miscarriage[3]. *According to the National Cancer Institute, folic acid is implicated as a risk factor in prostate cancer, whereas folate is considered preventive*. [4]

Pharmaceutical Drugs and Nutrient Depletion

According to an April 2017 Consumer Reports Article, at least one in two Americans take prescription medications and many of them take at least four [5]. Chronic and consistent use of some pharmaceutical drugs may also deplete certain nutrients from our bodies.[6] For example, Statin drugs used to lower cholesterol may reduce CoQ 10, a naturally occurring enzyme in the body that regulates muscle cell function. Certain blood pressure medications may lower zinc. The American Association of Family Physicians (AAFP) lists

several drug categories and their associated nutrient depletion along with some recommended doses for supplementation.[7] Although an excellent guide, I would use these doses for reference only and consult with your healthcare provider on the dose appropriate for you. This is primarily because no two individuals respond the same way and the recommendations may be subject to change based on updated research. See Chapter 4 for more information on dosage.

Chronic Illnesses /Chronic Stress

We know that nutritional demands on the body increase when the immune system is overloaded. Have we not looked to Vitamin C and Zinc supplements for relief from the common cold? Chronic illnesses such as cancer, heart disease, and autoimmune disorders also increase the body's demand for these micronutrients. An individual may require additional nutritional support post-surgery. During times of chronic stress, additional magnesium and B vitamins are needed to fulfil increased demands for energy.

Chapter 3A: List of References

[1]http://www.nbcnews.com/id/37396355/ns/health-diet_and_nutrition/t/nutritional-valuefruits-veggies-dwindling/#.VT6IeB5FDH4

[2]https://www.ncbi.nlm.nih.gov/pubmed/7477116

[3]https://americanpregnancy.org/infertility/folate-vs-folic-acid-what-you-need-to-know/

[4]https://www.cancer.gov/types/prostate/patient/prostate-prevention-pdq

[5]https://www.consumerreports.org/prescription-drugs/too-many-meds-americas-loveaffair-with-prescription-medication/

[6]https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5874849/

[7]https://www.aafp.org/dam/AAFP/documents/about_us/sponsored_resources/Nature%20Made%20Handout.pdf

Chapter 3B: The Case Against Supplements

High doses of isolated vitamins, minerals, and herbs may cost more than just money; They may cause potentially life-threatening issues. In this section, we will outline some risks associated with the indiscriminate use of supplements.

Quality, Safety, Efficacy

Where supplement quality, safety, and efficacy are concerned, one cannot be too cautious. An excerpt from a CBS news article[1] from 2015, illustrates this:

> *Numerous store brand supplements aren't what their labels claim to be, according to an ongoing investigation that subjected popular herbal supplements to DNA testing.*
>
> *The investigation, led by New York Attorney General Eric Schneiderman, focused on a variety of herbal supplements from four major retailers: GNC, Target, Walmart*

and Walgreen Co. Lab tests determined that only 21 percent of the products actually had DNA from the plants advertised on the labels.

"This investigation makes one thing abundantly clear: The old adage 'buyer beware' may be especially true for consumers of herbal supplements," Schneiderman said. His office issued cease and desist letters to the retailers on Monday telling them to stop sales of the products.

Under the Dietary Supplement Health and Education Act, the manufacturer is responsible for the safety and labeling of their products prior to marketing. The FDA is not responsible until ***after*** the supplement hits the market.[2] This means that they cannot take any action until adverse events are brought to their attention. For some, it might be too late, as with Jim McCants from Texas, who ultimately required a liver transplant following green tea supplementation.[3] According to a Harvard Health report, hospitalization due to supplement use (mostly weight loss supplements) is not uncommon. [4]

Companies like the National Sanitation Foundation (NSF) and the United States Pharmacopeia (USP) that provide “third-party” testing and ensure that the supplement meets the standard for contaminants, impurities and adheres to ingredients and amounts listed on the label. This provides the consumer with a much-needed layer of screening. Always look for this label on a supplement bottle to mitigate at least one level of risk. *However, this does not guarantee any label health claims or how your body will react to the ingredients*. (Chapter 5 has more information on potential reactions to supplements.)

Another popular category of supplements is the detox shakes and pills. These can put you in harm's way if they cause you to detox too much too soon, especially if your liver is sluggish or if you do not have regular bowel movements. I would not use these apart from a qualified professional/practitioner's guidance.

Overdosing/Interactions with Medications

You are at your annual physical and your doctor thinks you may benefit from a multivitamin; You walk out of your naturopath or acupuncturist's office with one or more bottles of herbs and other specialty supplements; Your chiropractor suggests therapeutic doses of high quality vitamins, herbs and enzymes- all with the purpose of addressing any chronic issues you may be experiencing. Your healthcare providers all have your best interests at heart, but no one is communicating with each other. You may also forget to let each one knows what other supplements you are using. This is an example of a situation that can lead to overdosing.

Anything that has the potential to do good, also has the potential to "harm". Not only can multiple supplements have similar ingredients leading to exceeding the safe limits (See Chapter 4), but they can also interact with each other. All foods, drugs and supplements that we consume must make it through the detox pathways of our liver and kidneys and might damage these organs with long term, indiscriminate use.

Apart from exercising caution with dosage, we need to understand supplement cross reactions with pharmaceutical drugs. (More information in Chapter 6)

Lack of Synergy and Antagonistic Effects

Isolated doses of highly concentrated vitamins may not be as effective as the whole foods in which we find them. This is because most micronutrients (vitamins and minerals) exist as *complexes*; They require other chemicals in the whole foods matrix, in order to be better absorbed (bioavailable) or more effective. Fortunately, some supplement companies have caught on to this and manufacture vitamin supplements staying as close to their natural state as possible. For example, some synthetic ascorbic acid (Vitamin C) supplements, have been improved to include bioflavonoids and other synergistic chemicals that increase their effectiveness However, not all synthetic supplements are sold in their most bioavailable forms. Another risk associated with isolated synthetic high dose vitamins and minerals (and also some amino acids) pertains to the fact that some work antagonistically (against each other)- e.g.: High doses of magnesium may deplete calcium from the body and high doses of one type of amino acid may lead to the deficiency of another. High levels of Vitamin D without Vitamin K2 can contribute to calcium depositing in the arteries as opposed to its desired destination, the bones.

Despite the risks associated with supplement use, the benefits cannot be ignored. In subsequent chapters, we will learn how to mitigate some of these risks so we can use supplements as safely as possible and avail of their benefits.

Chapter 3B: List of References

[1]https://www.cbsnews.com/news/herbal-supplements-targeted-by-new-york-attorneygeneral/

[2]https://www.fda.gov/food/dietary-supplements

[3]https://www.bbc.com/news/stories-45971416

[4]https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5874849/

Chapter 4: Supplements- Labels and Dosage

This chapter provides information on supplement dosage and reading labels to avoid exposure to allergens, other potentially harmful chemicals, and to *avoid overdosing on the ingredients themselves.*

Understanding Supplement Safe Limits

Before we can learn to read a label on the Supplement bottle, we need to understand supplement dosage: **Recommended daily allowance (RDA); Adequate Intake (AI); and Tolerable Upper Limit (UL).**

The Office of Dietary Supplements, a branch of the NIH defines these as follows [1]:

> *Recommended Dietary Allowance (RDA): average daily level of intake sufficient to meet the nutrient requirements of nearly all (97%-98%) healthy people.*
>
> *Adequate Intake (AI): established when evidence is insufficient to develop an RDA and is set at a level assumed to ensure nutritional adequacy.*
>
> *Tolerable Upper Intake Level (UL): maximum daily intake unlikely to cause adverse health effects.*

Despite using a safe dosage, always note any symptoms that you may experience because of taking the supplement (described in more detail in Chapter 6). *Because individual body chemistries differ, a dosage that works well for one person may not be best for another*.

While researching appropriate dosage for any supplement, pay attention to the units on the label. The RDA and UL are usually listed in mcg or IU. The conversion from one to

another is not straightforward, as it differs based on the potency of the individual vitamins. Always match the units on the RDA or UL to the units on the supplement bottle.

What to Look For in a Supplement Label

When examining the supplement label, the first step is to pay attention to the ***serving size*** and the ***directions for use***. Do not exceed the recommended dosage without your practitioner's advice. *More of a good thing is not necessarily good and can pose a threat to your health.*

The main ingredients (vitamins, mineral, or herbs etc.) are listed on the right side (to your left) of the label and its corresponding amount is usually listed beside it. Notice the left column (your right), which lists a number that is "% RDA" or % Daily Value. When the % daily value is not established, this column will contain an asterisk (*) or (+) to indicate such. ***The amount listed for each ingredient and their % Daily Value is per serving size.***

Using the picture above for reference, can you locate the directions for use, serving size, the amount per serving, the % Daily Value and the list of ingredients?

Overdosing can occur when we take multiple supplements. For instance, if you are using a multivitamin with 2000IU Vitamin A per serving and another antioxidant supplement or a supplement for eye health which also contains Vitamin A at 4000 IU each, you have exceeded the recommended UL. Vitamin A at levels 10,000 IU or more can be toxic to the liver.

Sometimes, your practitioner may recommend therapeutic dosage beyond the UL. You will need to work closely with your practitioner in this case to establish a regimen and a plan to get back on a regular dose.

A word of caution - The FDA has recently (as of 2016) updated the RDA of vitamins and minerals. If the label was manufactured prior to this, changes may not be reflected, and percentages may not be accurate. You can consult the Consumer Labs database[2], (or the NIH database[4]) for the actual RDA values and UL to determine the levels beyond which vitamins and minerals can be toxic.

The individual ingredients and fillers and binders are usually listed at the bottom of the label. Check to be sure this contains nothing you may be allergic to (including gluten, dairy).

When examining the list of ingredients, make a note the dyes and preservatives. The dyes are usually preceded with # sign. Red dye is listed as FD&C red#40. Others may contain blue, green, and yellow dyes; These are frequently found in children's multivitamins and their developing brains may be most susceptible to any adverse effects from these.

Can you identify the preservative in the ingredients list in the above picture? It is Polysorbate 60. The artificial sweetener is Acesulfame Potassium, also commonly found in protein shakes. For something which I ingest daily, these two are on my "avoid" list.

Thankfully, you are likely to find a product, clean of dyes and preservatives, right next to the ones containing them. Therefore, it is important to read the labels.

Last but not least, opt for a label that contains a third-party certification such ***National Sanitation Foundation (NSF [5]) or United States Pharmacopeia [6] (USP)*** certification. Although this does not provide any guarantee of desired outcomes for any health and wellness claims associated with the supplement, provides a layer of protection against any banned contaminants and ensures that the components match the labels. Another third-party resource for supplement testing is Consumer Labs.[2, 3]

Chapter 4: List of References

[1]https://ods.od.nih.gov/Health_Information/Dietary_Reference_Intakes.aspx

[2]http://www.consumerlab.com/RDAs/

[3]https://www.consumerlab.com/RDAs/Vitamin+A/#rdatable

[4]https://ods.od.nih.gov/factsheets/list-all/

[5]http://www.nsf.org/consumer-resources/health-beauty/supplementsvitamins/supplement-vitamin-certification

[6]https://www.usp.org/

[7]https://fullscript.com/hcp/how-to-read-a-supplement-label

Chapter 5: Supplements- Adverse Reactions

With most anything, *one size does not fit all*. Just because a certain supplement worked wonders for someone, there is no guarantee that it will do the same for us. In fact, it would behoove us to be mindful of any potential adverse reactions we could have to the supplement itself.

In this age of information, a simple Internet search will reveal any side effects associated with a supplement. The most common reactions are hives, rashes, headaches, irregular heartbeat, dizziness, swelling (especially mouth or tongue) and digestive distress, including nausea and vomiting.

If you notice these or any other undesirable changes since beginning a supplement regimen, discontinue its use to see if it resolves. ***Always be sure to check with your physician if a supplement is safe to use while pregnant or breast-feeding.***

Chapter 6: Supplement-Drug Interaction

The National Institute of Health (NIH) has urged the consumer to exercise caution regarding supplements [1] for they can both *decrease or increase the effects of pharmaceutical drugs;* Some can increase unwanted side effects of these drugs or have a potentially dangerous interaction. For instance, Turmeric can interfere with some chemotherapy drugs, rendering them less effective.

Some foods can also increase the effects of certain drugs- particularly when that food or supplement has the same effect as the drug- if someone is on blood-thinning medications like Coumadin, they are warned against consuming Grapefruit or exceeding

the recommended dose of omega-3 per day (2-3g fish oil) because of their respective anti-coagulant effects. Grapefruit may interfere with *some, not all,* statin medications (cholesterol lowering drugs) as well.

Always let doctor and pharmacist know before starting a supplement, while you are being treated with medications.

You can also check the NIH database[1] or the Medline Plus database[2] for information. Also remember to alert your dentist or hospital staff, regarding your supplements, presurgery. Some vitamins, such as Vitamin E and high dose fish oils (omega-3s), may need to be stopped prior to medical procedures; Remember, these have an anticoagulant effect, which, though great at preventing stroke, may work against us when we want to prevent excessive bleeding from a surgical procedure.

Chapter 6: List of References

[1]https://nccih.nih.gov/health/know-science/how-medications-supplements-interact

[2]https://medlineplus.gov/druginfo/herb_All.html

Chapter 7: Supplements- Quick Reference Checklist

By now you are familiar with what supplements are, their benefits vs. risks, how to read labels and understand safe dosage, how to discern supplement reactions and explore drug-supplement reactions.

This chapter contains my **top ten questions to ask yourself before using a supplement,** for use as a handy reference:

1. **Have you scanned the supplement label?**

   Always read labels- to avoid allergens, overdosing, and potential contaminants. Check both the active and inactive ingredients list and note the amounts listed to compare against recommended daily allowances (RDA) safe limits (UL) and note any ingredients you may be allergic to. (Refer to Chapter 4). *Note any preservatives, partially hydrogenated soya bean oils, colors (blue, green, red, yellow dyes),* and binder and filler metals (Titanium dioxide), Magnesium stearate (the jury is out on whether these fillers are safe if consumed daily). *Avoid the artificial sweetener Acesulfame potassium (K)* often found in protein shakes.

2. **Is the supplement verified by a third-party certification such as USP, NSF or Consumer Labs?**

Check for USP or NSF certification, particularly if you are purchasing from a store and not a trusted practitioner. When purchasing fish oils, be sure to research purity grade and contaminant levels (look for validation testing from Consumer Labs, NSF, USP). If you do not wish to pay the subscription fee for Consumer Labs, check with the reference librarian at your local library. They can help you access the information.

3. **Have you checked for interaction of the supplements with your prescription or non-prescription medications?**

Check with your pharmacist or physician for any known interaction among supplements and between your medication and supplement. They may or may not always be aware. You should also follow up with your own research. The Appendix and the individual chapters have a list of resources to assist you with your research.

If you are being treated for a health condition, it is imperative to inform your physician as some supplements may induce the same effects as medications, rendering the effect too potent. (Refer to Chapter 6) They may need to adjust the dosage of your medication or follow up with blood tests, as needed.

4. **Are you overdosing on any ingredient?**

Avoid overdose because of mixing with fortified foods and other supplements. This is described in detail in Chapter 4. Also, remember that too much of a good thing can be toxic. If you are taking Vitamin D or B-12 supplements, it is wise to have your physician monitor your blood levels routinely. It is also important to know how long to take a supplement and when to stop. Some may be required for maintaining your long-term nutritional needs, but those that are “prescribed” (I use this word cautiously since these are not regulated the same as prescription medications) need to be discontinued or adjusted as needed.

5. **Does the supplement make “miraculous” claims?**

   Exercise caution with weight loss supplements/energy drinks and anything that claims to be a magic pill for all ills. These are often linked to the most cases of adverse reactions including liver damage and death. There may be some that have yielded desired results for many, but they still warrant due diligence.

6. **Did you purchase from a trusted source?**

   Steer clear of purchasing supplements online, when possible. Many companies that pay attention to potency and quality are now selling directly to integrative health practitioners, chiropractors, and functional medicine doctors. Purchasing from them adds a layer of accountability. However, once again, be sure to do your homework and alert them if you notice any adverse reactions.

7. Do you know when and how to take the supplement?

Check with your practitioner which supplements are more effective taken together or apart from each other. Most supplements are taken with a meal, though some may be beneficial taken away from meals. Avoid taking too many at a time to reduce the risk of choking. (The same applies to medications).

8. Is the supplement in its bio-available form?

Avoid isolated synthetic nutrients that lack synergy It is best to use supplements whose ingredients are whole foods based or in their bioavailable forms For example, Vitamin E is best used as mixed tocopherols; Vitamin C is most effective as bioflavonoids; Vitamin D is better absorbed as cholecalciferol (as opposed to ergocalciferol); Magnesium citrate is much better absorbed than Magnesium oxide or sulfate. Liquids, gels and powders are also better absorbed than most tablets.

9. Are you taking too many supplements?

This may happen if you are working with multiple practitioners and there is a lapse in communication. Know when to switch from therapeutic to the maintenance dose. If you are taking ten or more supplements a day (I am not making this up, I have witnessed the same on multiple occasions), your liver or kidneys may pay the price. My preference is to not exceed three or four a day. This is not to deter you from following your practitioner’s recommendations, but

to help you understand the risks and ask the right questions, so you know when to stop.

10. **Are you using supplements as replacements?**

As we discussed in Chapter 2, depleted soils and lack of a diet based on a variety of whole and unprocessed foods leads us to opt for supplementation. However, using supplements should never be an excuse to opt out of a diet based on fresh fruits vegetables or wholesome grains and sustainably sourced meats and poultry (barring any allergies). We should strive for a whole-foodsbased diet and a healthy lifestyle as much as possible.

In Conclusion

In 2010, chronic battles with health challenges compelled me to walk away from a thriving career in research and engineering. When pharmaceutical interventions failed to alleviate my condition, I turned to the world of nutrition and health for answers and trained as a Nutritional Therapy Practiti0ner and a Health Coach. In 2014, I transferred my passion for research from the corporate world of technology to wellness education to help individuals navigate their health challenges using food and lifestyle, and to educate them on a variety of health-related topics such inflammation, nutrition, proper digestion and supplements to name a few.

With the rise in chronic illnesses, particularly autoimmune and cancer, and the increasing interest of consumers in pursuing natural and alternative therapies, the popularity of supplements is soaring. However, the indiscriminate use of “all natural” is not necessarily always “fail-safe” and requires careful research by the consumer. This book is a resource for the same.

As a wellness educator, it is my passion to share my knowledge and research to help individuals make educated choices regarding their health. *However, the information presented here may not be all-inclusive of everything there is to know about supplements and may be subject to change, especially as new research replaces the old. Also, this does not guarantee that following all the steps, listed in it, will prevent a potentially harmful reaction to a supplement since no two individuals may have the same response to any protocol (drug, supplement or any other therapies).* Therefore, I have not recommended specific brands of supplements in this book. My goal is to empower you with knowledge to help you make an informed decision regarding any supplement you may choose to use.

And finally, although the safe use of supplements can be very beneficial for your selfcare regiment, they do not and cannot replace a healthy lifestyle based on a wholefoods (as nature intended) diet, exercise, mental, social and financial well-being. Unfortunately, there is no magic pill and supplements may be used in adjunct to other therapies.

Should you use any supplements either on your own or at the recommendation of your health care practitioner, I hope this book will help you make an informed choice.

Please do not hesitate to reach out to me with any questions or comments at pooja.chilukuri@gmail.com or bemadewhole@gmail.com

For more information, go to www.poojachilukuri.com

To connect with me on Facebook: https://www.facebook.com/bemadewhole/

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Wishing you the best in health,

Pooja Chilukuri

About the Author

Pooja Chilukuri was born and raised in Kolkata, India. She is a resident of North Carolina, USA, her home for over two decades. As a Nutritional Therapy Practitioner, Pooja is committed to positively impacting the health of individuals based on their unique biological requirements. Often, nutritional deficiencies can cause a host of frustrating symptoms that mimic disease despite a lack of medical diagnoses. These include severe fatigue, aches and pains, irritability, mood swings, heart palpitations and anxious feelings, low energy, frequent headaches among a host of others. Pooja believes that proper nutrition is essential to supply the body with raw materials it needs to prevent or manage chronic illnesses, which are on the rise.

Having benefited personally from nutrition and lifestyle interventions, Pooja transferred her passion for research from the world of global semiconductor technology development to health and wellness in 2013. She teaches wellness classes, both corporate lunch and learns and private workshops, on a variety of topics including digestive wellness, how to use supplements safely, managing stress, children's health and reducing inflammation.

For more information, go to www.poojachilukuri.com

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To connect with Pooja on LinkedIn: https://www.linkedin.com/in/pooja-chilukuri/ For updates on Pooja's new books: http://bit.ly/PoojaChilukuriAuthor

OTHER BOOKS BY POOJA CHILUKURI

AND THEN THERE WAS JESUS

ONCE THERE WAS JESUS

UNVEILING JESUS THROUGH HIS PASSION

UNVEILING JESUS THROUGH HIS INCARNATION

Appendix

The research references used for this book are summarized below. The individual chapters also contain a list of references.

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