

intimacy with Him, through fellowship with Him daily through prayer (1 Thessalonians 5:18) and the study of His Word (Psalm 119:105); and also, being obedient to His commands (John 14:23; 1 John 2: 3-5).

The evidence that we are in Christ is being Christ-like in our daily life, being His hands and feet, touching other people's lives with His love, and providing healing and compassion (John 15:4; Colossians 1:27).

The evidence of walking in His light is showing love to God and others (see John 1:4-5; 1 Peter 2:9). We cannot claim to know Christ by saying we are serving, evangelizing, and promoting spiritual growth while adopting a sinful lifestyle of disobedience and attachment to this dark world (see Galatians 6:7-8; James 4:4; 1 John 2:4). Spurgeon's words should echo in our mind: "You cannot send your heart at the same time in two opposite ways — towards evil and towards good;

you must make a choice between the two."³

Let us reflect and examine ourselves: Are we prepared to serve Christ based on knowing Him, being in Him, and walking in the light? What steps do we need to take to establish a stronger abiding in Him?

Let us also allow His truth to abide in us: "Therefore let that abide in you which you heard from the beginning. If what you heard from the beginning abides in you, you also will abide in the Son and in the Father. And this is the promise that He has promised us-eternal life." (1 John 2:24-25).

References:

1. *Christian Pharmacists Fellowship International (CPFI); Serving Christ and the world through Pharmacy.* www.cpfi.org. Accessed August 9, 2023.
2. *Bible Expositions Commentary* (April 30, 2001).

3. *Spurgeon's Verse Expositions of the Bible; 1 John 2.*

All Scripture references were taken from the New King James Version (NKJV).

Core Values of CPFI:

- Provide Godly encouragement and fellowship among like-minded professionals.
- Challenge and promote spiritual growth of members.
- Advance student chapter ministries to strength and equip student pharmacists.
- Encourage the advancement of knowledge and ethics in practice.
- Promote evangelism and the integration of faith into practice.
- Provide support and opportunities for Christian service and outreach.



Dr. Wahba graduated from Alexandria University, College of Pharmacy with a BS in Pharmacy and Pharmaceutical Chemistry. After his graduation, he purchased his own drug store in Alexandria, Egypt, where he practiced retail pharmacy. Dr. Wahba joined Duquesne University School of Pharmacy in Pittsburgh as a research associate and a graduate student. After earning his PhD in pharmacology and toxicology in 1972, he worked as a forensic toxicologist at the Crime Laboratory of Allegheny County, Pittsburgh, PA until August 1979. Dr. Wahba and his family moved to Hamilton Ontario, Canada, where he established and worked as a manager of the first Drug Information Center at McMaster University Medical Center. He returned to Pittsburgh in September 1997 and re-joined the Allegheny County Department of Laboratories as a forensic toxicologist. He was promoted to the position of manager of the toxicology section and continued serving there for thirteen years. During his tenure as a forensic toxicologist, Dr. Wahba

taught pharmacology and toxicology on a part-time basis at two universities and one college in the Pittsburgh area. Dr. Wahba is still available as a forensic toxicology expert witness in civil and criminal court cases. He is a life-time member of the Society of Forensic toxicology (SCOFT) and is a Diplomat of the American Board of Forensic Toxicology (Ret.).

In August 2001, Dr. Wahba joined Palm Beach Atlantic University (PBA) as an associate professor of pharmaceutical sciences and as director of Spiritual programs until he retired from full-time teaching in 2013. Currently, he is associate professor emeritus and serves as adjunct faculty at PBA. Dr. Wahba enjoys teaching at a Christian School of Pharmacy where integration of faith is an integral part of the curriculum.

Dietary Supplements to Enhance Immunity By Mary J. Ferrill

As pharmacists and student pharmacists, you have probably received questions (or have your own questions) regarding the appropriate use of natural medicines (NM) and/or dietary supplements (DS) to enhance immunity. A 2021 study showed that approximately 80% of adults living in the US use dietary supplements and consider them to be trustworthy.¹ However, a study from 2003 involving 428 registered pharmacists in California reported that only 5% considered themselves to be completely knowledgeable and 42% somewhat knowledgeable about NM; whereas 11% felt completely comfortable, and

36% somewhat comfortable in providing information about NM.² There appears to be a disconnect between the interest of the public in NM and DS compared to the knowledge and comfort level of pharmacists. Therefore, in order to better assist patients or family members with recommendations about the proper use of DS or NM, pharmacists need to be proficient in investigating and evaluating information about DS and NM products and the array of conditions that such products might be used to treat or prevent.

With the appearance of COVID in 2019, more people have become interested in ways to bolster their immune systems. The best approaches are to eat healthy, drink plenty of water, exercise regularly and get enough rest (7 to 9 hours every night), while trying to decrease stress and anxiety. However, NM and DS products can help to improve natural immunity.

Below is a list of some agents that might enhance the patient's immune system. It is not an exhaustive list. Prior to taking or recommending any of these agents, pharmacists need to conduct their own due diligence regarding safety and potential efficacy. Since most NM and DS products are considered to be nutritional supplements outside the purview of FDA, few clinical trials have been conducted to assess their therapeutic efficacy. As a result, suggested clinical applications of NM and DS are sometimes controversial and open to debate.³ Efficacy, safety, and quality of products need to be taken into account when forming a clinical judgment. In this report, recommended doses and probable mechanisms of action are taken from Review of Natural Products⁴ FLCCC,⁵ and WebMD.⁶ A table has also been included that lists the supplements and suggested dosages. This information is intended to provide a general background and serve as a starting point for more in-depth investigation.

Aloe Vera

Proposed to have anti-inflammatory, antibacterial, antiviral and antifungal properties. Although primarily known for its treatment of external wounds, it can also be taken orally.

Alpha Lipoic Acid

Alpha lipoic acid is an antioxidant and might also have immunomodulatory effects. It has been successfully used to reduce the pain of neuropathy (regardless of the cause) and has also been shown to lower HbA1c in patients with diabetes.

Bromelain

Bromelain is derived from pineapple stems and is traditionally known for its anti-inflammatory and healing effects; it also has immunomodulatory action. It is often combined with quercetin.

Coenzyme Q10 (CoQ10)

CoQ10 has several important roles in the cell that are required for optimal functioning of the immune system. It also has anti-inflammatory properties.

Echinacea

Echinacea, known for its use in the common cold, is a member of the daisy family of plants and is related to ragweed and sunflowers. It has been proposed that echinacea stimulates the immune system and decreases inflammation.

L-Glutathione Reduced

Antioxidants, such as glutathione, are important for normal immune function. It protects against inflammation and is essential for a healthy respiratory system. Glutathione is known as the principle antioxidant in the body and also helps the liver to remove toxic wastes.

Melatonin

Well known for its sleep enhancing benefits, melatonin also plays a role in immune system enhancement. It augments natural killer cells and monocytes.

N-acetylcysteine (NAC)

NAC is known for its antioxidant and anti-inflammatory effects. Once ingested, NAC is converted to cysteine, which is a precursor to glutathione, which also has antioxidant properties.

Quercetin

Studies suggest that quercetin has antioxidant, anti-inflammatory, antiviral and immunoprotective effects. Quercetin is often combined with bromelain in supplement products. Quercetin, when taken in combination with zinc, helps to facilitate

cellular zinc uptake.

Turmeric (Curcumin)

Curcumin is the orange pigment found in turmeric and is a member of the ginger family. It has antioxidant and anti-inflammatory properties.

Vitamin C

Vitamin C supplementation is thought to have an impact on the immune system and high doses of vitamin C have been shown to reduce the severity and duration of symptoms from the common cold.

Vitamin D

Vitamin D regulates immune function and reduces inflammation. The optimal blood levels of vitamin D range from 50 to 70 ng/ml; however, standard blood tests do not measure this. The required daily dosage depends on whether the patient is treating a deficiency or boosting the immune system.

Zinc

Zinc is an antioxidant and is needed for normal immune function (antibody and white cell production). Zinc increases pro-inflammatory cytokine concentrations, and prevents viral replication inside cells.

Conclusion

Pharmacists need to be confident and comfortable when discussing the role of natural medicines and dietary supplements in immune health. If patients don't feel that pharmacists are approachable on this subject, they will be forced to depend on information from unreliable sources, such as friends, infomercials, or deceptive websites. There are many reliable references that pharmacists can use to help patients make wise and informed decisions.

Table 1: Selected Supplements to Enhance Immunity

Supplements	Dosages
Aloe Vera	100 to 200 mg daily
Alpha lipoic acid	600 mg once to twice daily
Coenzyme Q10 (Co-Q10)	200 mg once or twice daily
Echinacea	300 to 800 mg three times daily
L-Glutathione Reduced	250 mg once or twice daily
Melatonin	1 to 6 mg extended release nightly
N-acetylcysteine (NAC)	600 mg once or twice daily
Quercetin	800 mg twice daily
Bromelain	330 mg twice daily
Turmeric (Curcumin)	500 mg twice daily
Vitamin C	500 to 2000 mg daily
Vitamin D	1000 to 5000 IU daily*
Zinc	30 to 50 mg daily

*See <https://covid19criticalcare.com/treatment-protocols/i-prevent-protect/> for information on dosing vitamin D whether serum levels are available or unavailable.

References

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6. *WebMD. Vitamins & Supplements*. <https://www.webmd.com/vitamins/index>.