

# Alln1 SuperBlend - Nutrition Science Guide

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## Purpose & Rationale

The goal of supplementing one's diet is to help establish and preserve health, support fitness goals, and contribute to healthy aging by delivering important nutrient compounds that may be unattainable from food alone. This may be due to any of the following reasons:

- Insufficient food intake
- Increased needs that are not met by diet alone
- Special populations, age-related requirements or practicality of foods sources
- Lack of interest in or avoidance of essential food groups
- Low body fat maintenance
- Variability of actual nutrient content of food
- Inability to move enough to eat enough
- Eating too few calories to obtain proper nutrition through food in an effort to maintain a healthy weight in today's world, where many people maintain a sedentary lifestyle
- Low sun exposure
- Inability to define the perfect diet.

The bottom line is that the vast majority of—if not all—Americans do not meet established nutritional guidelines with food alone. Vitamin mineral supplementation is a viable way to fill the gaps.

## Why don't Americans get enough nutrients?

“Why don't we get enough? I wouldn't say that it's because foods now are nutrient deficient. It's because we are not eating what we are supposed to eat. There are these dietary guidelines, and they are very nice, but no one is following them. To assume that everyone is on an ideal diet is naive and I think in fact irresponsible.”

The above statements were authored in an article by four nutrition experts: Balz Frei, PhD, chairman of the Linus Pauling Institute at Oregon State University; Bruce Ames, PhD, of the Children's Hospital Oakland Research Institute; Jeffrey Blumberg, PhD, of Tufts University; and Walter Willett, MD, of the Harvard School of Public Health.

## Vitamin and Mineral Blend

The vitamin and mineral blend is designed for active individuals and provides essential nutrients without additional calories. It helps fill common nutritional gaps from suboptimal diets. This allows the body to function at its full vitamin and mineral level potential as opposed to down-regulating to the often-unavoidable limitations from food alone. This is important among physically active people seeking to reach and maintain relatively low body fat while increasing or sustaining lean body mass. Studies demonstrate that athletes and exercisers require additional vitamins and minerals due



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to increased energy demands and proper recovery from exercise, including maintaining or increasing lean body mass compared to less active or sedentary counterparts.

Unlike other vitamin and mineral formulas, the Alln1 SuperBlend contains the nutrients typically lacking in Western diets. For a more detailed discussion on vitamins and minerals and accompanying references, please refer to the nutrition science provided by dotFIT [here](#).

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## Antioxidants

This product supplies important natural compounds, often limited in human diets, that are not only necessary constituents of vital tissues but also have been shown to possess antioxidant and anti-inflammatory properties in specific areas that support everyday health and healthy aging. Intense, prolonged exercise and normal biological processes, including aging, can increase free-radical production and inflammation and associated body damage. The goals of these combined ingredients are to 1) supply structural components limited by diet or age; 2) contain *excess* free radicals caused by normal biological processes, stress, aging, exercise, and the environment, which is thought to be a major contributor to the aging process; and 3) help reduce harmful inflammation.

The antioxidants included in the Alln1 SuperBlend include alpha lipoic acid, co-enzyme Q10 (Co-Q10), lycopene, lutein, and zeaxanthin.

These ingredients may enhance daily recovery and performance and subsequent healthier aging by adding vital nutrition that is part of structural and functional components that naturally decrease with age and/or diet. Daily addition of these critical bio-actives supports energy production along with eye, cardiovascular, skin, immune, and brain health by also helping manage normal free radical damage and common inflammation, the cycle that becomes overwhelmed from stress, environmental and physical insults that also lead to accelerated aging.

Exercisers may benefit from improved recovery between exercise bouts by helping manage increased free radical production and resulting tissue damage associated with intense and lengthy training sessions, thus helping facilitate a longer-term cumulative recovery effect to help prolong performance gains throughout the lifespan.

For a detailed review of antioxidants with scientific studies, refer to the nutrition science provided by dotFIT [here](#).

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### Ashwagandha

Ashwagandha is considered by many to be the king of Ayurvedic herbs. In fact, it is often touted as a miracle ingredient. While it does not have magical properties, it does possess many benefits for overall health when consumed on a regular basis. To that end, Alln1 SuperBlend provides an effective dose in every scoop.

This traditional herb is composed of multiple active compounds (Mishra, et al 2000). The alkaloids such as isopelletierine, anaferine, cuseohygrine, anahygrine, and others (Mishra, et al 2000) help with inflammation and pain relief and possess antimicrobial and antifungal properties. Additionally, withanolides and withaferins are steroidal lactones (Mishra, et al 2000) and are responsible for reducing inflammation, providing metabolic support, and stress reduction. Finally, Ashwagandha has saponins (Mishra, et al 2000) which are responsible for improving metabolic activity as well as exerting an anabolic/androgenic effect. Each of the constituents has been shown to interact with various pathways in the body and solidify ashwagandha's claim as one of the cornerstone herbal ingredients (Tandon and Yadav 2020). Over the past decades, clinical trials have demonstrated ashwagandha's ability to support healthy mood, sleep performance, and hormonal balance and promote athletic performance while being shown to be safe for consumption across multiple dosing protocols, supporting centuries of traditional use (Singh et al 2011). Most notably, Ashwagandha is considered an adaptogen which is important for aiding in the reduction of overall body stress (Javad et al, 2021)

### Ashwagandha and Mood Support

Preclinical work has exhibited ashwagandha's ability to mediate stress responses through various pathways. Multiple animal models have demonstrated changes in markers of physiological stress after supplementing with ashwagandha (Jain et al 2001) and its active compounds (Kuboyama et al 2005, Bhattacharya et al 1987).

These findings have been further supported through clinical trials with various intervention protocols (Choudhary et al 2017, Salve et al 2019, Akhgarjand et al 2022 and Lopresti et al 2019). Specifically, Lopresti et al (2019) showed that 60 days of supplementation with 240 mg of a standardized ashwagandha extract once daily elicited significant changes in testing methods examining stress in healthy stressed adults when compared to placebo (Pla:  $7.37 \pm 0.41$  v Ash:  $6.07 \pm 0.38$ ;  $p=0.04$ ). Further, this same study demonstrated that supplementation helped reduce morning cortisol levels, a physiological marker of stress, when compared to the placebo group (Pla:  $14.07 \pm 1.04$ mcg/dl v Ash:  $10.84 \pm 1.04$ mcg/dl;  $p<0.001$ ). Together these data suggest that ashwagandha's ability to help mediate stress comes at the psychological and physiological levels.

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Similar results were seen when healthy, chronically stressed individuals supplemented with 300 mg of standardized ashwagandha extract twice daily for eight weeks. Those supplementing with ashwagandha saw a significantly greater (-32.7%) reduction in stress scores compared to the placebo (-11%) ( $p < 0.0001$ ) (Choudhary et al 2017).

### Ashwagandha and Sleep

While the mechanisms of actions are not fully understood, a 2021 study by Cheah et al, suggests that various ashwagandha dosing protocols can elicit significant improvements in sleep performance compared to the placebo ( $p < 0.001$ ).

Specifically, these results have been demonstrated in elderly individuals supplementing with 600mg of standardized ashwagandha extract a day for 12 weeks. By the end of the trial, the treatment group demonstrated significantly lower sleep quality scores compared to the placebo, suggesting a higher quality of sleep (Pla:  $4.3 \pm 0.657$  v Ash:  $2.47 \pm 1.073$ ;  $p < 0.0001$ ) (Kelgane, 2020). Interestingly, one aforementioned study (Salve et al 2019) examining stress demonstrated significant improvements in sleep quality when supplementing with 250mg and 600mg of a standardized ashwagandha extract for eight weeks. Together, the Kelgane and Salve studies demonstrate a significant improvement in stress/psychological scores and sleep performance/quality, suggesting a link between the two outcomes.

### Ashwagandha and Hormonal Support

As previously mentioned, supplementation with 240mg of a standardized ashwagandha extract once daily has been shown to significantly reduce cortisol concentrations in mixed groups of both men and women when compared to baseline and the placebo. Furthermore, differences between the placebo and the treatment group maintained significance once these groups were analyzed across gender lines (Lopresti et al 2019).

Much like cortisol, testosterone has also been shown to respond to ashwagandha supplementation in male participants. Lopresti et al 2019 demonstrated that 16 weeks of supplementation with 600mg of a standardized ashwagandha extract elicited significant increases in testosterone concentrations during the intervention period than the placebo (PLA:  $309.99 \pm 15.29$  pmol/L v  $355.57 \pm 22.02$  pmol/L ;  $p = 0.01$ ) in overweight men.

### Ashwagandha and Physical Performance

Ashwagandha's ability to mediate stress is not limited to psychological sources. There is also evidence that ashwagandha helps support the body during times of physical stress like exercise (Mehta 2022, Wankhede et al 2015, Pérez-Gómez 2020). Notably,

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supplementation with ashwagandha has been shown to significantly help strength (Wankhede et al 2015) and aerobic (Shenoy et al 2012) performance.

In a 2015 clinical trial by Wankhede et al, healthy men underwent an eight-week strength training regimen. One group supplemented with 300mg of standardized ashwagandha extract twice a day, while the other took a similar placebo. At the conclusion of the study, those supplementing with ashwagandha saw significantly different increases in bench press (Pla:  $26.4 \pm 16.72$  kg v Ash:  $46.05 \pm 23.00$  kg;  $p = 0.001$ ) and leg extension (Pla:  $9.77 \pm 6.27$  kg v Ash:  $14.5 \pm 9.04$  kg;  $p = 0.04$ ). Additionally, those in the treatment group saw significantly greater increases in chest (Pla:  $1.43 \pm 1.45$  cm<sup>2</sup> v Ash:  $3.37 \pm 1.89$  cm<sup>2</sup>;  $p < 0.001$ ) and arm size (Pla:  $5.3$  cm<sup>2</sup> v Ash:  $8.6$  cm<sup>2</sup>;  $p = 0.01$ ) and reduction in fat percentage (Placebo:  $1.5 \pm 2.58\%$  v Ash:  $3.5 \pm 3.58\%$ ;  $p = 0.03$ ).

Additionally, improvements in aerobic performance were seen in elite cyclists supplementing with 500mg of standardized ashwagandha twice daily for eight weeks. Supplementation was shown to elicit significant changes in VO<sub>2</sub> max ( $p < 0.001$ ), METS ( $p < 0.001$ ), and time to exhaustion ( $p < 0.001$ ) (Shenoy et al 2012).

### Safety

Many of the aforementioned studies also examined ashwagandha's safety. Tandon and Yadav 2020 examined 30 viable studies and found that no serious adverse events had been reported. When taken into consideration the aforementioned studies, ashwagandha has consistently been shown to be safe for consumption across multiple dosing protocols. Effective dosages range from 240 – 600mg a day in healthy adults to 500mg twice a day in aerobic athletes.

It is clear by its many favorable benefits and the numerous studies supporting efficacy and safety, that Ashwagandha should accompany other ingredients alongside a healthy diet to support overall health.

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### Chaga & Reishi Mushrooms

The consumption of mushrooms has recently made it to the forefront of the nutritional space. While many benefits have been attributed to a multitude of species, two have solidified their place as potent immunomodulators: chaga and reishi mushrooms. Both of these mushrooms are rich in antioxidants and polysaccharides among their other constituents, providing benefits in overall health. They have been chosen for the Alln1 SuperBlend as they appear to have the greatest benefit of any of the mushroom species for supporting healthy inflammation and immune function.

While many of the studies supporting supplementation with chaga mushrooms have been performed in either cellular or animal models, there is a great deal of promise in its potential benefits across many functional health components. For example, Park et. al (2004) had shown that cells treated with chaga extract demonstrated a 40% reduction in DNA damage when compared to the positive control. Additional immunomodulatory benefits have been demonstrated in a chemotherapy animal model (Kim, 2004). Oral administration of chaga mushroom extract helped maintain normal cytokine levels compared to the placebo. Cytokines are signaling proteins that help control inflammation, providing support for your body in defense of harmful substances.

In particular, chaga mushrooms have exhibited enormous potential in immunity enhancement, and antitumor, antioxidant, anti-fatigue, blood sugar regulation, and cholesterol lowering activity. This evidence has led to the suggestion that these particular mushrooms may provide an alternative treatment for serious health conditions (Arata et al 2016) and glucose regulation (Lu, et al 2021) down the road. While more research is needed to further flesh out all of the benefits of this powerful mushroom, there is evidence suggesting chaga supplementation can play a role in modulating the immune system (Basal et al 2021), while promoting healthy blood glucose and cholesterol levels (Zu et al 2010), and potentially improving physical performance (Yue et al 2015).

The reishi mushroom is another medicinal fungus that has exhibited promising results in the literature. Its potential for immuno-modulatory effects has been demonstrated several times in animal models and then later in human cells (Cheng et al 2010). Its main activity helps to suppress the inflammatory response through its rich stores of triterpenes (Dudhgaonkar, 2009). Often this mushroom is referred to as the immortality mushroom and appears to play a potential role as a calming agent (Cui et al 2012). Reishi's rich beta-glucan content aid in its powerful activity in immune response (Batbayar et al, 2011). Interestingly, Wachtel-Galor et al (2004) demonstrated reishi's ability to increase antioxidative capacity in healthy volunteers 90 minutes after ingestion. These results were repeated after 10 days of supplementation. Reishi has demonstrated numerous benefits when consumed daily at therapeutic doses.

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Further, Gao, et al (2003) examined the effect of a 12-week supplementation protocol with reishi polysaccharide extract on markers of immune function. The protocol demonstrated significant increases in mean plasma concentrations of interleukin (IL-2), IL-6, and interferon (IFN)-gamma when compared to baseline. Supplementation also results in significant decreases in levels of IL-1. While much research is still underway on reishi's effect on cancer, this does suggest the potential for its use to support immune and overall health.

Reishi mushrooms have also been shown to elicit positive effects on blood glucose (Wińska et al, 2019) and to potentially support sleep (Chu, et al 2007).

Both Chaga (Debnath et al, 2013 and Zhong et al, 2015) and Reishi mushroom species have been shown to be effective at 500 mg or more up to about 2000 mg per day using standard dose conversion practices between animals and humans (Nair and Jacobs, 2016).

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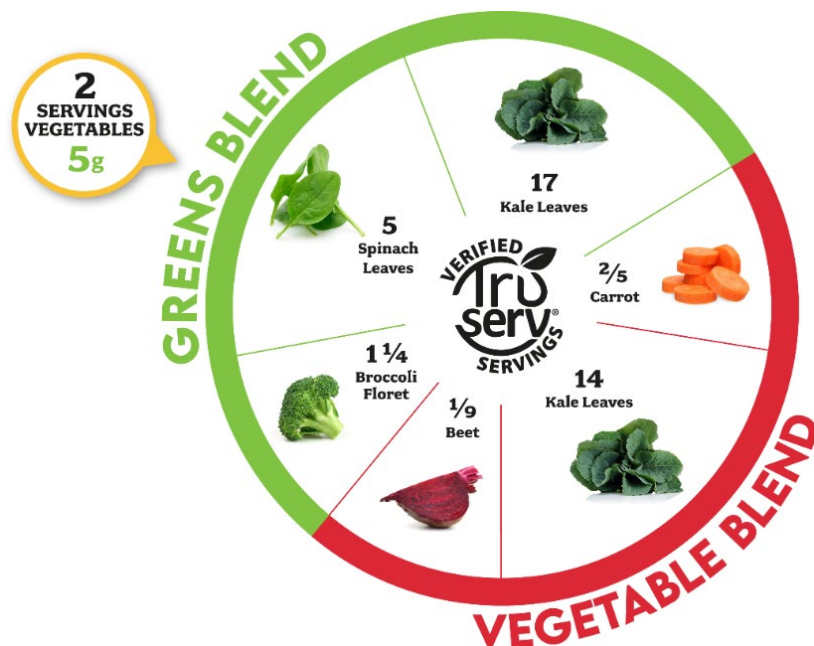
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## Greens and Vegetable Blends

Green leafy vegetables have long been known as the most nutrient-dense vegetables available for consumption (Roberts and Moreau, 2016), with kale often being touted as the leader and spinach and broccoli following close behind. Wheat grass has been cited as being nutritious, yet when compared to leafy greens, besides its high fiber content, it often falls short in most other areas. However, almost all vegetables are high in fiber. Kale, broccoli, and other hard-to-flavor greens are typically left out of formulas due to their particularly pungent and bitter nature. If they are included, they are generally micro-dosed. To that end, Alln1 SuperBlend delivers the highest quality of greens on the market packaged with decidedly palatable flavoring with the use of TruServ® Greens and Vegetable Blends offered by Futureceuticals. Each blend has been meticulously crafted to ensure that all of the vital nutrients are being delivered in a single serving.

The TruServ® Greens and Vegetable Blends deliver equivalent nutrients of two whole servings of organic vegetables in just five grams. The Greens Blend features nearly 50% of its formula from kale and then equal doses of spinach and broccoli, while the Vegetable Blend adds another 38% of its formula from kale and loads in beets and carrots (non-green super veggies). This variety of greens and vegetables has been shown to help with inflammation, deliver key rich vitamins, minerals, and antioxidants (Holt, et al 2009), and play a significant role in other bodily functions including cognition, memory, and overall heart health (Morris et al 2018). Together, these blends help individuals achieve better nutrition by providing a variety of nutrients that are missing in typical diets.





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TruServ® technology is a revolutionary nutrient delivery program that aids in delivering a full dose of the key nutrients found in everyday fruits and vegetables. Based on an extensive data collection system, the TruServ® ingredients have been shown to offer substantial nutrient content per serving ([www.futureceuticals.com](http://www.futureceuticals.com)).

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### Agave Inulin

Inulin from organic agave is an indigestible carbohydrate known as a fructan (Kaur and Gupta 2002) and is often used as a food additive to increase dietary fiber content. While dosing strategies in various populations has been the subject of ongoing studies, fiber has been looked to for healthy weight management support and to promote regularity of bowel movements and improved digestive health.

Work performed in an animal model by Delzenne et al 2005 demonstrated some of the potential benefits of inulin consumption. Male Wistar rats ate either a standard diet or a standard diet supplemented with 10% inulin-type fructans with different degrees of polymerization for three weeks. Those in the treatment group exhibited a decrease in mean daily energy intake and epididymal fat mass. Additionally, inulin ingestion promoted appetite-regulating hormones.

Many of these findings were later supported in human models (Perigue et al 2009, Tulk et al 2013, Salmean 2017). Many studies have been conducted consuming doses between a few grams up to more than 20g of inulin per day. Salmean 2017 demonstrated that the addition of 16g/day of inulin type fructans for eight days elicited lower scores for hunger (20 minutes ( $p=0.044$ ) and 50 minutes ( $p=0.042$ ) post breakfast) desire to eat (50 minutes after breakfast ( $p=0.05$ )), and higher ratings of satisfaction (155 minutes post breakfast ( $p=0.031$ ) and fullness (95 minutes ( $p=0.037$ ) and 155 minutes ( $p=0.021$ )). Additionally, those supplementing with inulin type fructans consumed less Calories ( $453 \pm 47$  Cal) from food than their placebo counterparts ( $571 \pm 39$  Cal) ( $p<0.05$ ), a 21% difference.

Inulin has also been shown to affect feelings of appetite at lower doses (6g/day). Heap et al 2016 examined the effects of morning consumption of yogurt combined with 6g/day of inulin on ratings of “satiety”, “fullness”, “prospective food consumption”, “desire to eat.” and energy intakes. Ratings were determined using a visual analog scale with questionnaires taken every 30 minutes for 180 minutes. At the completion of the study, researchers demonstrated that inulin elicited a lower area under the curve for “desire to eat” ( $p=0.04$ ) and “prospective food consumption” ( $p=0.02$ ) but not for ratings of “hunger” ( $p=0.15$ ) or “fullness” ( $p=0.07$ ). While hunger or fullness may not have been reported at lower doses, a regular intake of inulin fiber likely will help improve overall healthy eating when combined with a nutritious diet.

In other studies examining mood, well-being, and cognitive performance, researchers found that acute consumption of inulin at 5g per day resulted in happier and more comfortable participants, while exhibiting less hunger as well as improved performance in memory tasks (Smith 2015). Additionally, a study by Holscher, et al (2015) examined fecal end product to determine the effect of different doses of agave inulin on

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gastrointestinal microbiota (known as gut microbiome activity). The researchers noted trending shifts of the microbiome favoring the 5g and 7.5g doses versus that of the placebo. In a previous study by Holscher, et al (2014) the researchers found that doses of both 5g and 7.5 were well-tolerated by participants with respect to bloating and flatulence. As the dose increased to 7.5g, while still within a tolerable framework, the 7.5g group did see slightly increased pain and rumbling. So while there may be benefits to consuming larger doses of inulin to avoid overdoing it in a single serving, the midpoint of 6g was selected for the Alln1 SuperBlend.

Collectively, the research supports the use of inulin, particularly, agave, as a viable aid for healthy weight management and as a prebiotic to support gut health.

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## Gut Health Complex

Traditionally, the nutraceutical industry has focused on the creation of supplements with a very specific view – ingredient matches function. Once the ingredient, or combination of ingredients, was orally ingested, the supplement was en route to promote the desired effects and that was it. Recently, that mind-frame has started to shift towards a more holistic view. The industry no longer simply focuses on the end target of the active compounds, but their delivery as well. This includes the digestion and absorption of those compounds and the health of the organs through which they travel. Further, newer thinking has suggested that gut health may be linked to far more than just “an upset stomach” and some even believe that a healthy gut serves as the foundation for everything you do. While research is still evaluating these claims, there is certainly data to suggest that a healthy gut improves immune health and potentially a host of other quality of life functions (Wang et. al 2021). As such, ingredients such as digestive enzymes and probiotics have started to take a strong foothold in the health and wellness space and are now considered to be one of the prime cornerstones of overall wellness.

### Digestive Enzymes

Digestive enzymes are compounds that aid in the digestion of foodstuffs that already occur naturally in the body. Each enzyme works to digest a specific compound that has been ingested (Whitcomb 2007).

Amylase is a digestive enzyme that helps break down carbohydrates.

Protease aids in the digestion of proteins.

Cellulase specifically aids in the breakdown of cellulose into beta glucose.

Lactase helps break down lactose (a sugar found in dairy products) into glucose and galactose.

Together these compounds help facilitate the absorption of key nutrients and maintain optimal health. The digestive enzyme complex in AllnOne was designed to help aid in the digestion of the greens, fibers and other ingredients while helping to maintain a healthy gut environment.

### Probiotics

The gut biome is a delicate balance between what is considered to be “good” and “bad” bacteria. Probiotics are living microorganisms that are ingested with the intent of promoting a positive gut environment by contributing more “good” bacteria to the gut.

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Research has started to suggest that when this environment gets out of balance, complications can start to present themselves.

Gut microbiota has been shown to be intricately involved in mediating healthy body weight (Liu 2021), balancing mood (Clapp 2017), and supporting heart health (Lye 2009) and immunity (Wu 2012). Supporting this environment with dietary supplementation of probiotics such as *Bacillus Subtilis*, *Bacillus Clausii*, and *Bacillus Coagulans* will not only benefit general gut health and performance but also support almost every operating system in the human body.

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### Omega 3 Powder

Alpha Linoleic Acid (ALA), not to be confused with alpha lipoic acid, is a type of omega-3 fatty acid found in plants (Sujatha 2014). Flaxseed is one of the highest ALA-containing plants available and when extracted it has shown to have many benefits. Overall, many of the benefits of omega-3 fatty acids are attributed to consumption of marine based fatty acids (eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)) because of evidence found in both epidemiological studies and randomized placebo-controlled clinical trials. However, there is also a body of evidence that demonstrates the positive effects of ALA consumption, and its ability to convert to EPA and DHA.

Of these multiple benefits, omega-3 fatty acids are probably best known for their promotion of cardiovascular health (Wei 2018). Recently, Hashimoto et al (2020) examined the effects of supplementation with *Perilla frutescens* leaf (a source of ALA) on oxidized low density lipoprotein (LDL) and blood pressure in healthy Japanese individuals for six months. At the conclusion of the study, plasma oxidized LDL was significantly decreased in the intervention group but not the placebo. Further, in individuals with prehypertension (systolic blood pressure greater than 120 mmHg) supplementation elicited significant decreases in blood pressure compared to the placebo group. These data reflect the findings of an earlier study examining the effects of walnut consumption (another excellent source of ALA) which demonstrated that walnut consumption helped lower 24-hour systolic blood pressure (Domènech et al. 2019).

Additional support was found in results from the Walnuts and Healthy Aging study (Rajaram et al. 2021) which demonstrated that those who ingested walnuts for two years had significantly lower total cholesterol and LDL. Notably, this study was conducted in two different sites, further strengthening the generalization of the benefits of walnut (and ALA) consumption.

There is also evidence to suggest that ALA can support healthy inflammatory responses. Indeed, epidemiological evidence suggests an inverse association between omega-3 consumption and plasma markers of inflammation. The evaluation of 727 women from the Nurses' Health Study I cohort demonstrated that those who were in the highest quartile of total omega-3 intake had lower markers of C-reactive protein (29%) and interleukin-6 (IL-6) (23%). More specifically, intake of ALA was inversely related to concentrations of C-reactive protein and IL-6 (Lopez-Garcia et al 2004).

These reports have been further supported in the recent substudy of the previously mentioned Walnut and Healthy Aging Cohort (Cofán et al 2020). After two years of walnut consumption, the intervention group demonstrated significant reduction in multiple inflammatory biomarkers. While much ALA research has been done on

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walnuts, flaxseed data has been improving. Parikh and colleagues have noted: “We now know the health impacts dietary flaxseed can provide, the bioactives within flaxseed that provide these health-related effects in many cases and the forms of flaxseed that are required to provide these bioactives to the body.” Goyal et al (2014) also noted several benefits in both human and animal studies using diets rich in flaxseed.

Finally, omega-3 intake has been shown to have positive effects on markers of obesity. A study examining the influence of ingestion of various fat sources over a four-year period demonstrated an indirect association between omega-3 ingestion and weight gain. Specifically, 1% increase in percent energy intake that was ALA was associated with less weight gain (Liu et al. 2018). These results reflect earlier findings suggesting the importance of ALA intake and its positive effects on obesity (Lund et al. 2013, Nimptsch et al. 2009). Specifically, a study consisting of 1,212 healthy individuals showed an inverse relationship between absolute n-3 polyunsaturated fatty acid intake and body fat. When these fatty acids were divided into subgroups, only ALA was inversely related to body fat measures (Lund 2013).

225 mg of the omega-3 fatty acid, ALA from flaxseed is contained in the Alln1 SuperBlend to enrich the total content of the essential ingredients needed to help reach daily optimal amounts of nutrients and support overall health and fitness.

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## Turmeric

Turmeric, a common Indian spice, has been used as a medicinal botanical for thousands of years. Many of turmeric's benefits have been linked to its main active compound, curcumin, which has been heralded as a powerful multifunctional ingredient. Its main functional properties have been linked to its ability to help regulate anti-inflammatory (Peng et al 2021) and antioxidative (Jakubczyk et al 2020) pathways. Together, these properties help curcumin interact with multiple molecular targets of the body and produce a wide array of benefits such as brain, joint, and cardiovascular health.

### Brain Health

Brain health has become a leading topic when it comes to overall body health and wellness. Interestingly, research suggests that consuming curcuminoids helps support healthy brain function. Pre-clinical data (Hurley et al 2012) found in an animal model examining the anti-depressive characteristics of different doses of curcumin demonstrated significant decreases in forced swimming test immobility, suggesting antidepressant-like physiological interaction. Researchers went on to examine the effects of this same dosing protocol on brain and neuron biochemistry. The analysis revealed a dose dependent response in brain derived neurotrophic factor (BDNF), a protein that has been linked to maintaining brain health, cognitive function, learning and memory.

Additional clinical trials in humans seem to support this notion. A recent systematic review (Seddon et al 2019) of five clinical trials suggested that supplementation seems to help cognitive performance. Three of the five studies examined, demonstrated that supplementing with curcumin resulted in improved markers of cognitive function. Notably, authors mention the differences in the dosing protocols. Additionally, Saraff, et al (2019) also performed a meta-analysis on randomized controlled trials with respect to BDNF and found similar and impressive dose-response characteristic increases in BDNF activity from the consumption of curcumin.

### Joint Health

Curcumin's anti-inflammatory characteristics have made it a popular supplement to aid in joint health and function. Joint inflammation, pain, and soreness are common in aging populations but also in those who are inactive (Geneen, 2017). It is a circular issue in that inflammation and pain adds to inactivity and vice versa. Improving musculoskeletal strength and fitness keeps people active and healthy and thus supplementing with curcumin has found itself front and center as part of a nutritional intervention strategy. A 2021 systematic review (Paultre, et al 2021) examined 10 studies and found that all of them demonstrated an improvement in markers of pain for individuals with knee osteoarthritis when consuming curcumin. These findings were

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further supported in the same year by another systematic review (An-fang et al 2021) examining similar outcomes of curcumin supplementation.

### Cardiovascular Health

Finally, the consumption of curcuminoids has demonstrated promising effects concerning cardiovascular health. A study by Oliver et al (2016) examining the effects of curcumin supplementation at 50mg or 200mg per day demonstrated a dose-mediated improvement in endothelial function while showing no statistical change in the placebo group. These findings confirm that low doses of curcumin show trends towards improvement, however, at 200mg statistically significant changes were seen. This and similar studies suggest that regular curcumin supplementation may help reduce the risk of various cardiovascular health concerns.

### Absorption of Curcumin

Researchers have often drawn attention to curcumin's low bioavailability and suggest that this may have played a significant role in the outcomes of their reviews. To that end, various combinations have been employed to ensure the absorption of the active compounds in curcumin. A favorable method noted in the research, was to include Black Pepper Extract, containing piperine, a compound shown to improve absorption of many ingredients. Shoba et al (1998) examined the effects of consuming high doses of curcumin with piperine. Researchers had previously found that the consumption of curcumin alone resulted in very low concentrations of curcumin being absorbed even with higher doses. However, the addition of piperine resulted in an increase in concentration by 2000%. Black pepper extract has been added to Alln1 to help increase the bioavailability of curcumin in turmeric.

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## Supplement Facts Panel

### Supplement Facts

Serving Size: 1 Scoop (21.5g)

Servings Per Container: 30

**DIRECTIONS:** Take 1/2 serving for first 2-weeks; then start full serving as directed.  
**Adults 18 years and over,** take one serving daily with ~12 oz of fluid  
**Children 12-17 years** take ½ serving daily with ~6 oz of fluid

- ✓ Take once daily or divide as desired.
- ✓ Drink it anytime with or without food.
- ✓ Add to a smoothie or protein shake mix.
- ✓ Recipes available at [www.alln1superblend.com/recipes](http://www.alln1superblend.com/recipes)
- ✓ **NO REFRIGERATION NEEDED**

#### Calories

**35**

Amount Per Serving	% Daily Value	Amount Per Serving	% Daily Value		
Total Fat	1 g	1%	Magnesium (from magnesium citrate)	160 mg	38%
Saturated Fat	<1 g	<1%	Zinc (from zinc citrate)	12 mg	109%
Trans Fat	0 g		Selenium (from Selenomethionine)	100 mcg	182%
Cholesterol	0 mg	0%	Copper (from copper gluconate)	800 mcg	89%
Total Carbohydrate	9.5 g	4%	Chromium (from chromium polynicotinate)	100 mcg	286%
Dietary Fiber	6 g	21%	Organic Inulin (from Agave)	6000 mg	**
Total Sugars	1 g		<b>Truserv® Organic Vegetable Blend:</b>	2500 mg	**
Includes 0g added sugar		0%	Organic beet (root), organic kale (leaf), organic carrot (root)		
Protein	<1 g		<b>Truserv® Organic Greens Blend:</b>	2500 mg	**
Vitamin A (from beta carotene)	1920mcg RAE (6400 IU)	213%	Organic kale (leaf), organic broccoli (whole), organic spinach (leaf)		
Vitamin C (from ascorbic acid)	640 mg	711%	High omega flaxseed (containing 330 mg of essential omega 3 fatty acids)	1000 mg	**
Vitamin D3 (from cholecalciferol from organic algae)	25 mcg (1000 IU)	125%	Ganoderma lucidum (mushroom) extract (30% polysaccharide)	600 mg	**
Vitamin E (from d-alpha tocopherol succinate)	161 mg	1073%	Chaga (mushroom) extract (30% polysaccharide)	600 mg	**
Vitamin K (as K1, phytonadione and as K2, menaquinone-MK7)	80 mcg	67%	Ashwagandha (root) extract 4:1	500 mg	**
Vitamin B1 (from thiamine mononitrate)	8 mg	667%	Alpha lipoic acid	200 mg	**
Vitamin B2 (from riboflavin)	4 mg	308%	Turmeric (root) extract (95% curcuminoids)	200 mg	**
Vitamin B3 (from niacinamide)	24 mg NE	156%	CoEnzyme Q10	100 mg	**
Vitamin B6 (from pyridoxine 5 phosphate)	4.8 mg	282%	<b>Digestive Enzyme Blend:</b>	10 mg	**
Folate (200mcg, from calcium L-5-methyltetrahydrofolate)	333 mcg DFE	83%	Amylase, Protease, Cellulase, Beta-D-Galactohydrolyase, Lipase		
Vitamin B12 (from methylcobalamine)	25 mcg	1042%	Lycopene	10 mg	**
Biotin	200 mcg	667%	<b>Probiotic Blend:</b>	100 mg	**
Vitamin B5 (from d-calcium pantothenate)	5 mg	100%	Bacillus coagulans - SNZ-1969, Bacillus clausii - SNZ-1971	10 B.CFU	
Choline (from choline bitartrate)	160 mg	29%	and Bacillus subtilis - SNZ-1972		
Iron (from iron amino acid chelate)	8 mg	44%	Lutein	6 mg	**
Iodine (from iodine amino acid chelate)	40 mcg	27%	Zeaxanthin	4 mg	**
			Black pepper (fruit) extract	5 mg	**

\*The % Daily Value (DV) established based on a 2,000 calories a day diet. \*\*Daily Values not established.

**Other ingredients:** Citric acid, natural flavors, stevia (leaf) extract, and pink himalayan salt.

**Contains No:** Sugar, salt, dairy, gluten, yeast, fish, crustacean shellfish, tree nuts, peanuts, preservatives, artificial colors or flavors.