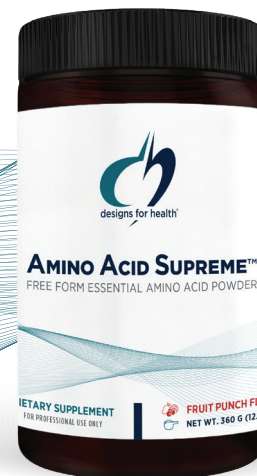


# Amino Acid Supreme™

FREE-FORM, ESSENTIAL AMINO ACID POWDER

By David M. Brady, ND, DC, CCN, DACBN, IFMCP, FACN  
and Caitlin Higgins, MS, CNS, LDN



## Benefits†

Amino Acid Supreme™ may be useful for:†

- Individuals whose diets have insufficient quality protein<sup>1,2</sup>
- Athletes that require additional amino acids to maintain or achieve greater lean body mass<sup>3-6</sup>
- Stimulating muscle protein synthesis<sup>7</sup>
- Patients who are cachexic from chronic illness or gastrointestinal (GI) malabsorption<sup>8-16</sup>
- Individuals in catabolic states due to stress or illness<sup>16-21</sup>
- Patients recovering from surgery or tissue trauma<sup>22-24</sup>
- Individuals at risk of sarcopenia due to aging<sup>25-28</sup>
- Elderly individuals with suboptimal digestive function<sup>29-31</sup>
- Patients with confirmed amino acid deficiencies based on metabolic testing

## Highlights

- Readily absorbable, free-form, essential amino acids
- Powdered form for easy and efficacious dosing
- Pleasant-tasting fruit punch flavor
- Zero grams of sugar and no caloric sweeteners; sweetened with stevia
- No artificial sweeteners or colors

## Dosing Guidelines†

Mix 12 grams (approximately one scoop) in 8 to 10 ounces of water per day, or as directed by your health-care practitioner.

More aggressive dosing may be warranted in cases where a significant addition of muscle mass is desired or in confirmed amino acid deficiency states.

## Supplement Facts

Serving Size 12 grams (approx. one scoop)  
Servings Per Container 30

Amount Per Serving	% Daily Value	
Calories	20	
Total Carbohydrate	5 g	1%**
Dietary Fiber	less than 1 g	<4%
Vitamin B-6 (as Pyridoxal-5-Phosphate)	20 mg	1176%
L-Leucine	2.5 g	*
L-Phenylalanine	715 mg	*
L-Valine	615 mg	*
L-Histidine	590 mg	*
L-Lysine	525 mg	*
L-Arginine	525 mg	*
L-Isoleucine	525 mg	*
Alpha-Ketoglutarate	470 mg	*
L-Methionine	435 mg	*
L-Threonine	385 mg	*
L-Tryptophan	120 mg	*

\*\*Percent Daily Values are based on a 2,000 calorie diet.  
\*Daily Value not established.

**Other Ingredients:** Natural flavors, partially hydrolyzed guar gum, stevia leaf extract (*Stevia rebaudiana*), citric acid, beet powder (color).

# Biological Actions

Designs for Health's Amino Acid Supreme™ is a high-potency, free-form, essential amino acid formula, including 2.5 g leucine per serving, in a delicious fruit punch flavored powder for convenient and efficacious dosing. Amino acids in their free form are immediately available for absorption and can be put to metabolic use much more readily and rapidly than amino acids in dietary protein. This may be especially beneficial for individuals with a compromised digestive function, those recovering from physical trauma, and individuals with difficulty consuming adequate amounts of complete protein. Adequate amounts of alpha-ketoglutarate and vitamin B6 (as pyridoxal-5-phosphate) are included for optimal absorption and efficacy.<sup>32</sup>

Amino acids are fundamental for a vast array of metabolic processes, as they play central roles, both as building

blocks of proteins and as intermediates in metabolism. Insufficient status may be a result of dietary and lifestyle factors or digestive dysfunction, such as those conditions that affect proper functioning of the stomach, pancreas, liver or small intestine. The precise amino acid content and sequence of a specific protein determine its biological activity. Proteins not only catalyze most of the reactions in living cells, but they control virtually all cellular processes. Humans can produce 10 (nonessential amino acids) of the 20 amino acids required by the body; the others (essential amino acids) must be supplied through food or supplementation.<sup>33,34</sup> Unlike fat and starch, the human body does not store excess amino acids for later use. Therefore, amino acids must be consumed daily; otherwise, the catabolic breakdown of body tissues that contain amino acids, such as skeletal muscle, begins to take place.

## Essential Amino Acids

**Arginine:** plays an important role in cell division, wound healing, removing ammonia from the body, immune function, release of hormones, and the production of nitric oxide.

**Histidine:** is the direct precursor of histamine and is needed to help grow and repair body tissues and to maintain the myelin sheaths that protect nerve cells. Histidine also helps manufacture red and white blood cells and helps to protect the body from heavy metal toxicity. Histamine stimulates the secretion of the digestive enzyme, gastrin.

**Isoleucine:** belongs to a special group of amino acids called branched-chain amino acids (BCAAs), which are needed to help maintain and repair muscle tissue. Isoleucine is needed for hemoglobin formation and also helps to maintain regular energy levels. It is also important for stabilizing and regulating blood sugar.

**Leucine:** is another member of the BCAA family and is considered to be the most anabolic amino acid. Leucine-enriched essential amino acid ingestion has been shown to stimulate protein synthesis in

skeletal muscle by potentially activating the mammalian target of rapamycin (mTOR) signaling pathway.<sup>35</sup> Leucine is also necessary for the optimal growth of infants and for proper nitrogen balance in adults.

**Lysine:** is needed for proper growth and bone development in children. Lysine helps the body absorb and conserve calcium, and it plays an important role in the formation of collagen.

**Methionine:** is an important amino acid that helps initiate translation of messenger RNA by being the first amino acid incorporated into the N-terminal position of all proteins. Methionine supplies sulfur and other compounds required by the body for normal metabolism, detoxification, and growth. Methionine reacts with adenosine triphosphate to form S-adenosylmethionine, the principal methyl donor in the body and key contributor to the synthesis of many important compounds, including epinephrine and choline.

**Phenylalanine:** plays a key role in the biosynthesis of other amino acids, such as tyrosine, and various neurotransmitters, including dopamine, epinephrine, and norepinephrine.

**Threonine:** is an alcohol-containing essential amino acid that is an important component in the formation of protein, collagen, elastin, and tooth enamel. It is also important for neurotransmitter production and nervous system health.

**Tryptophan:** is also critical for nitrogen balance in adults and growth in infants. Tryptophan is essential for the biosynthesis of niacin, which is critical for the production of the neurotransmitter serotonin.

**Alpha-Ketoglutarate and Vitamin B6:** Alpha-ketoglutarate is the keto acid produced by deamination of glutamate and is a key intermediate in the energy-producing tricarboxylic acid cycle (also known as citric acid cycle). Anaplerotic reactions, or supplementation, can replenish this cycle, helping to increase energy and stamina. Alpha-ketoglutarate is also one of the most important nitrogen transporters in metabolic pathways. Furthermore, alpha-ketoglutarate is transaminated, along with glutamine, to form the excitatory neurotransmitter glutamine, which can then be decarboxylated into the inhibitory neurotransmitter gamma-aminobutyric acid (GABA), a reaction facilitated by vitamin B6 in the form of pyridoxal-5-phosphate.<sup>36</sup>

**For a list of references cited in this document, please visit:**

<https://www.designsforhealth.com/techsheet-references/amino-acid-supreme-references.pdf>

**To contact Designs for Health, please call us at (860) 623-6314, or visit us on the web at [www.designsforhealth.com](http://www.designsforhealth.com)**

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Healthcare practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage.



*Designs for Health* and logo are trademarks of Designs for Health, Inc. (C) 2020 Designs for Health, Inc. All rights reserved.

**\*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.**