

PROTEIN SHAKES & SUPPLEMENTS

Written by Julie Cottrell, MS, RD, LD

Protein shakes can be a convenient way to get your protein and a meal all at once. They may also serve as a quick snack, or as a pre- or post-workout tool. They can be tasty and filling, and made “on demand” with little risk of food waste. They may also help with weight loss when used as a meal replacement or calorie-management strategy. For these reasons and more, it is important to consider them as a menu option.

A recent concern, however, as highlighted in this [Consumer Reports](#) article, is **the amount of heavy metals** (lead, inorganic arsenic, cadmium and other potential contaminants) that may be found in higher or concentrated doses in protein shakes. **Lead** is the most concerning contaminant but several others were named, and were found in varying amounts in most of the products tested. These concerns must be taken seriously. For these reasons, the number of shakes that will “make the list” of acceptable options is a small handful. **These few outstanding options will be highlighted on the next few pages.** If you are in the market for a shake, these are the ones to choose from. Below are some additional guidelines to follow.

TO SELECT THE HIGHEST QUALITY SHAKE OPTIONS:

❖ Look to organizations that certify products meeting stricter guidelines.

- [Informed Sport](#) certified and [NSF Certified for Sport](#) options are often used by athletes, but can be used by anyone. See [list](#)*.
- The [Clean Label Project](#) promotes transparency and clean ingredients in a variety of products, including protein shakes. Here is their list of [16 shake options](#)*.
- The [Consumer Reports](#) article named above included a list of ones to completely avoid versus ones to use occasionally and/or possibly daily.

**Note that these lists include options with [sucralose](#). Our list will exclude this ingredient as well.*

❖ General recommendations to help avoid lead and other contaminants:

- **Choose flavors other than chocolate.** [Dark chocolate](#) has independently been found to contain higher levels of lead and cadmium. However, any flavor found on the next few pages can be used.
- **Go for whey-based, not plant-based options.** Plant-based options were found to be higher in lead across the board, largely due to the soil that plants are grown in. Pea protein was found to be a concentrated source of lead and other contaminants. Be very selective with plant-based options.
- **Since lead bioaccumulates in our bodies, an overall goal is to minimize intake from ALL sources.** The same goes for other toxic heavy metals and contaminants. Minimize them as much as possible!

❖ Daily versus occasional use.

- It may also help to use protein shakes just a few times per week rather than as a daily option.

❖ Short ingredient lists.

- As with all processed foods, shorter lists are usually best, with ingredients you can pronounce.

❖ Acceptable sweeteners.

- **Sucralose** is the main one to look out for and avoid. It is in many products, including ones that are Informed Sports Certified or on the Clean Label Project list. Instead, look for ones sweetened with **stevia, monk fruit or allulose**. Options in this handout do not contain sucralose.

❖ Protein: Source and Amount

- **Whey/dairy** is more favorable than plant-based sources in terms of potential for heavy metals.
- **Animal-based** proteins also have a more complete array of amino acids (what makes up protein).
- Look for shakes with 20-30 grams of quality protein. We want to encourage skeletal muscle protein synthesis; shakes with high quality protein at these levels will accomplish this.
- If you don't tolerate dairy, you might opt for an egg white or beef-based protein shake versus plant-based like soy or pea protein. Or consider **Essential Amino Acid** products (see page 7).

Direct Access MD/Julie's Nutrition Consulting/Protein Shakes and Supplements/06/21/Updated 10.25


ANIMAL-BASED PROTEIN POWDER

The **ASCENT** product line (this page) is a great one to consider; all products are all **Informed Sport** certified.

ASCENT - 100% Whey Protein Blend

Buy from Amazon, Costco, Walmart (online), Sams Club, Whole Foods or ascentprotein.com.

- A powder you can mix with water, milk or milk alternative.
- Calories are reasonable at 120/scoop.
- Protein source is a whey protein blend.
- **There's 25 grams of protein per scoop.**
- Carbs are only 2 grams/scoop.
- The ingredients list is minimal.
- Sweetness comes from stevia.
- **MANY flavors: chocolate, vanilla bean, lemon sorbet, peanut butter, mint chocolate chip, brownie batter, unflavored and mocha cold brew.**
- *Due to the accessibility, moderate price, quality of the protein and variety of flavors, this is Julie's top pick.*
- \$46 per bag of 25 scoops (**\$1.84/serving**).



INGREDIENTS: Whey Protein Isolate Blend (Native Whey Protein Isolate, Whey Protein Isolate), Whey Protein Concentrate, Natural Flavors, Lecithin, Stevia Leaf Extract, Sea Salt.
Contains: Milk And Soy

NUTRITION FACTS

Servings Per Container: 25
Serving Size: 1 Scoop (31g)


Amount Per Serving	Calories
	120
	% Daily Value*
Total Fat 1g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 30mg	10%
Sodium 65mg	3%
Total Carbohydrate 2g	1%
Dietary Fiber <1g	0%
Total Sugars 1g	
Includes 0g Added Sugars	0%
Protein 25g	50%
Vitamin D 0mcg	0%
Calcium 138mg	10%
Iron 0mg	0%
Potassium 151mg	4%

*Percent daily values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

ASCENT - Micellar Protein

Buy @ www.ascentprotein.com or Amazon

- A powder you can use as a shake or perhaps use to make a pudding. Mix with milk or milk alternative.
- Protein source is casein, which comes from dairy. It is a type of protein that digests more slowly and is promoted by the manufacturer as a good choice for nighttime to help with recovery.
- **There's 25 grams of protein per scoop.**
- All versions are low in carbs, have short ingredient lists and use stevia to sweeten.
- A bonus is the calcium content: ~50% of daily needs/serving!
- Flavors: chocolate, chocolate peanut butter, vanilla bean.
- \$45 for 28 servings (**\$1.61/serving**).



INGREDIENTS: Micellar Casein Isolate, Cocoa (Processed with Alkali), Natural Flavors, Gum Blend (Guar, Acacia, Xanthan), Sea Salt, Stevia Leaf Extract.
Contains: Milk

NUTRITION FACTS

Servings Per Container: 25
Serving Size: 1 Scoop (36g)


Amount Per Serving	Calories
	120
	% Daily Value*
Total Fat 1g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 25mg	8%
Sodium 150mg	7%
Total Carbohydrate 4g	1%
Dietary Fiber 1g	4%
Total Sugars 1g	
Includes 0g Added Sugars	0%
Protein 25g	50%
Vitamin D 0mcg	0%
Calcium 661mg	50%
Iron 1mg	6%
Potassium 197mg	4%

*Percent daily values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

ASCENT - Iced Coffee

Buy @ www.ascentprotein.com, Amazon or Walmart (online)

- A powder you can use to make a shake or an iced coffee.
- Protein source is whey (concentrate and isolate).
- **There's 20 grams of protein per scoop.**
- It is low in carbs and uses stevia to sweeten.
- 100 calories per scoop; additional calories may come from the liquid you mix it with, if not water.
- 100 mg caffeine per serving
- Flavors: iced coffee and pumpkin spice (note that pumpkin spice gets low ratings)
- **Although pricey, it may be less expensive than Starbucks!**
- \$35 for 15 servings (**\$2.33/serving**).



NUTRITION FACTS

Servings Per Container: 15
Serving Size: 1 Scoop (27g)

Amount Per Serving	Calories
	100
	% Daily Value*
Total Fat 1g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 30mg	10%
Sodium 70mg	3%
Total Carbohydrate 3g	1%
Dietary Fiber <1g	0%
Total Sugars 1g	
Includes 0g Added Sugars	0%
Protein 20g	40%
Vitamin D 0mcg	0%
Calcium 115mg	8%
Iron 0mg	0%
Potassium 115mg	2%

ANIMAL-BASED PROTEIN POWDER (continued)

CLEANSHAKE
Buy @ www.cleanshake.com

- This is a powder you can mix with water, milk or milk alternative.
- Each shake contains 30 grams of ultra-premium whey, 23 essential fruits, vegetables, vitamins, minerals, fiber and probiotics.
- **30 grams of protein per serving (2 scoops)**
- Higher in fiber than most shakes: 6 grams per 2 scoops.
- 9 grams carbs - 6 grams of fiber = 3 grams net carbs
- Flavors: chocolate, berry, vanilla.
- *If you are looking for a COMPLETE SHAKE (that may even replace the need for a multivitamin and mineral supplement) this is Julie's recommendation. The price is high but might be worth it. Many extras included!*
- **Informed Sport** certified
- \$54 for 15 servings (\$4.50/serving).



ISOPURE - Clear Protein Powder
Buy @ GNC, Target, Walmart, Amazon and from theisopurecompany.com.

- This is a clear, low-carb, protein-based water enhancer that comes in several fruity flavors.
- **There's 20 grams of whey protein per scoop.**
- All flavors are low in carbs, have short ingredient lists and use stevia to sweeten.
- Flavors: citrus lemonade, mango lime, pineapple orange banana, mixed berry, tropical punch and watermelon lime.
- **This may be a good option to flavor your water while also helping to hit your protein target.**
- *Isopure Unflavored Whey Protein (a similar product by the same company) has a Clean Label Project certification.*
- \$30 for 16 servings (\$1.88/serving).



MIXED BERRY

Nutrition Facts
About 16 servings per container
Serving size 25g (About 1 Scoop)

Amount per serving		% Daily Value*
Calories	90	
Total Fat	0g	<1%
Cholesterol	10mg	2%
Sodium	15mg	1%
Total Carbohydrate	2g	1%
Total Sugars	1g	0%
Includes 0g Added Sugars		0%
Protein	20g	40%

Not a significant source of saturated fat, trans fat, dietary fiber, vitamin D, calcium, iron and potassium.

*The % Daily Values tell you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

MOMENTOUS - Whey Protein Isolate
Buy @ www.livemomentous.com or Amazon

- This is a powder you mix with liquid to make a shake/drink.
- Protein source: grass-fed whey protein isolate
- **There's 20 grams of protein per scoop.**
- Only 90 calories/scoop and just 2 grams carbs
- Sweetened with stevia and monk fruit
- 100 mg calcium per serving (more if mixed into milk)
- Flavors: chocolate, vanilla, strawberry, and unflavored (in a 25-serving jar). Mint chocolate, spiced chai, chocolate fudge and chocolate coconut available in a 12-serving jar.
- **A lower calorie, protein-focused option with a full complement of amino acids for building skeletal muscle.**
- **NSF Certified for Sport**
- \$55 for 25 servings (\$2.20/serving).



Whey Protein Isolate
Vanilla Flavor

Supplement Facts
Serving Size: 1 Scoop (25g)
Servings Per Container: 25

	Amount Per Serving	% Daily Value
Calories	90	
Cholesterol	<5mg	<1%
Total Carbohydrate	2g	<1%
Total Sugars	<1g	†
Protein	20g	40%
Vitamin D	0.4mcg	2%
Calcium	100mg	8%
Sodium	120mg	5%
Grass-fed whey protein isolate	23.5g	†
ProHydrolase® a proprietary blend of proteases from Bacillus sp. and Ananas comosus	200mg	†

† Percent Daily Values are based on a 2,000 calorie diet. † Daily value not established.

Other Ingredients: Natural Flavors, Salt, Monk Fruit Extract, Stevia Contains Milk.

Typical Amino Acid Profile

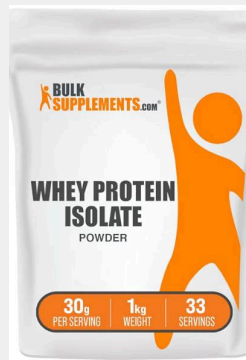
Amino Acid	Amount in Product (per serving)	Amino Acid	Amount in Product (per serving)
Alanine (mg)	1,199.23	Lysine (mg)	2,239.15
Arginine (mg)	489.81	Methionine (mg)	513.14
Aspartic Acid (mg)	2,565.70	Phenylalanine (mg)	808.74
Cysteine (mg)	513.14	Serine (mg)	1,072.93
Glutamic Acid (mg)	4,221.73	Theonine (mg)	1,562.74
Glycine (mg)	326.54	Tryptophan (mg)	326.54
Histidine (mg)	386.62	Tyrosine (mg)	808.44
Isoleucine (mg)	1,482.77	Valine (mg)	1,376.15
Leucine (mg)	2,472.40		

ANIMAL-BASED PROTEIN POWDER (continued)

BULK SUPPLEMENTS - Whey Protein Isolate

Buy online @ bulksupplements.com and Amazon

- This is an unflavored powder you mix into any liquid or into foods like soup, stew, or even a casserole or baked good.
- Protein source: whey protein isolate
- There's 26 grams of protein per scoop.**
- 110 calories/scoop and zero carbs
- No sweeteners (unflavored)
- 118 mg calcium per serving
- Clean Label Project certified; per their website, they are also routinely inspected by the FDA and use Third Party Testing to ensure quality.**
- This is an economical choice and very versatile!**
- \$55 for 33 servings (\$1.67/serving).



NUTRITION FACTS	
Serving Size: 4 tbsp (about 30g)	
Servings per container: About 33	
Amount Per Serving	
Calories	110
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	0%
Cholesterol 10mg	2%
Sodium 21mg	2%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Total Sugar 0g	0%
Includes 0g Added Sugars	0%
Protein 26g	52%
Vitamin D 0mg	0%
Iron 0mg	0%
Calcium 118mg	10%
Potassium 125mg	2%

TYPICAL AMINO ACID PROFILE	
Amount Per 100g	
Alanine	4.4g
Arginine	1.6g
Aspartic Acid	9.9g
Cystine	2.0g
Glutamic Acid	15.0g
Glycine	1.4g
Histidine	1.4g
Isoleucine	5.8g
Leucine	9.2g
Lysine	8.5g
Methionine	1.9g
Phenylalanine	2.5g
Proline	4.5g
Serine	3.8g
Threonine	6.1g
Tryptophan	1.7g
Tyrosine	2.4g
Valine	4.9g

PLANT-BASED PROTEIN POWDER

If you prefer a *plant-based powder*, here is a high quality option to consider.

TRUVANI

Buy @ truvani.com, Amazon or Walmart.com, Target, Whole Foods

- A powder you mix with water, milk or milk alternative.
- Protein comes from organic peas and pumpkin seeds.
- 20 grams plant-based protein per serving
- 130 calories per scoop
- Only 7 grams of carbs and 5 grams of fiber = 2 g net carbs
- Truvani products are top-notch in terms of being organic and using the highest quality ingredients. However, there is some lead in the plant-based shake as disclosed in the pic (far right, very bottom). This is almost unavoidable. If you prefer plant-based, maybe use just a few times per week rather than daily. A whey-based powder is also available from this company.
- MANY flavors: chocolate, vanilla, banana cinnamon, chocolate peanut butter, vanilla chai, peanut butter, unflavored, matcha, strawberry, chocolate strawberry, lemon cookie, pumpkin spice.
- \$60/20 servings (\$3.00/serving)



Nutrition Facts	
About 20 servings per container	
Serving size 1 scoop (33.7g)	
Amount per serving	
Calories	130
% Daily Value*	
Total Fat 2g	3%
Saturated Fat 0.5g	3%
Trans Fat 0g	0%
Cholesterol 0mg	0%
Sodium 290mg	13%
Total Carbohydrate 7g	3%
Dietary Fiber 5g	18%
Total Sugars 1g	0%
Includes 0g Added Sugars	0%
Protein 20g	27%
Vitamin D 0mg	0%
Calcium 0mg	0%
Iron 0mg	0%
Potassium 0mg	0%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

INGREDIENTS: ORGANIC PEAS, ORGANIC STRAWBERRY EXTRACT, ORGANIC VANILLA POWDER, ORGANIC STRAWBERRY JUICE POWDER, ORGANIC MCT OIL POWDER, ORGANIC PUMPKIN SEED, ORGANIC MONK FRUIT EXTRACT, ORGANIC CHIA SEED PROTEIN.




WARNING: CONSUMING THIS PRODUCT CAN EXPOSE YOU TO LEAD, WHICH IS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. FOR MORE INFORMATION GO TO WWW.PCSWARNINGS.CA.GOV/FOOD.

MILK ALTERNATIVES (to mix with protein powder)

Look for options **without Carrageenan**, and with as little carbs/sugars as possible. Unless you have an allergy to nuts/nut milk, I am not a fan of oat milk (it's higher in carbs/sugars).

- ❖ **ALMOND MILK** - Good Choices: **Blue Diamond Almond Breeze, Great Value, Silk, Califia Farms**
- ❖ **COCONUT MILK** - Good Choices: **Silk, So Delicious, Thai Kitchen Organic, Goya** **Avoid: Simple Truth**

PROTEIN SHAKE RECIPE

	<p>1. Select your protein powder. Best choices are on this handout (above).</p> <hr/> <p>2. Choose your base: Start with 8-10 oz water (the most simple strategy) or use unsweetened almond or coconut milk (get one <u>without</u> Carrageenan as an ingredient; see page 4 for options). Add the liquid to a single-serve or large blender (or shaker cup), then add the protein powder.</p>
	<p>3. Optional Mix-Ins: I like to add 1/4 of a large avocado or half of a smaller one; this makes the shake rich and creamy. I also like to add unflavored collagen. And lots of ice! You can read more about these below.</p>
	<p>4. Blend and enjoy! You can simply shake your ingredients in a shaker cup (especially if you like a thinner shake); or you may blend in a large or single-serve blender. The one I use (Ninja brand) is similar to the one shown (left). Here is a link to check this one out. I like a larger shake (with lots of ice); this particular model works great because the blender cups are 24-oz size.</p>

MIX-INS

These are options when you make your own shake, rather than using a ready-to-drink option. It can be fun to personalize your shake; it's also a way to get some **collagen, fiber or other nutrients** that you might miss if you don't add them here. Try not to over-complicate it though! If you are adding too many things to your shake, you may want to investigate a ready-to-drink shake or powder that has some "bonus" ingredients already built in. **Also, beware of the urge to add a bunch of fruit to your shake.** Fruit sugar is quickly absorbed and can cause a blood sugar spike. If you use fruit at all, please limit the amount to ½ cup max.

Examples of mix-ins:

AVOCADO	COLLAGEN	GREENS Fresh or Powdered	FIBER POWDER	POWDERED NUT BUTTER	SEA SALT
					
<p>This is a smart ingredient to add to your shake. Use these links to learn more:</p> <p>7 Benefits of Avocados</p> <p>How to Cut an Avocado (video)</p> <p>How to Store Avocados</p>	<p>Vital Collagen (unflavored) is found at many stores. This is a good one to compare yours to; there are plenty of other great brands to consider! Learn more about potential health benefits of collagen.</p>	<p>There are many green powders available. The powdered version may be easiest to mix into your shake (or you may opt to drink it separately, mixed with water). Use this guide to help select one: The Ultimate Greens Powder Test.</p>	<p>There's a variety of fiber powders you could mix into your shake. Supergut is one option. Also note that avocado (see left) provides fiber without the "grit" that you may get from some powders.</p>	<p>May be a fun flavor addition; using a powdered version will help it mix in better.</p> <p>Beware: These are a source of extra sugar; use as a treat!</p> <p>Two options:</p> <p>PB2 Flavored PB Co.</p>	<p>Salt is a flavor enhancer and a source of electrolytes; it's best to use a minimally processed one like Real Salt. This is an optional add-in; not appropriate for all. Read more in this Dr. Axe article.</p>

READY-TO-DRINK SHAKES

Ready-to-drink shakes are easy to tote along with you, requiring no preparation. They are usually a bit pricier per serving, partially due to the cost of individual packaging. However, the convenience factor may be valuable enough to you that it's worth it. As with protein powders, the goal is to have as much protein as possible while minimizing carbs and sugars, and to be sure the sweetener is an acceptable one (stevia, monk fruit or allulose). Additionally, we want options with the least potential for contamination with lead and other toxic metals or substances. The following shakes are examples of options that meet these criteria.

<u>CHOBANI</u> 30G SHAKE	<u>ICONIC</u>	<u>OIKOS PRO</u> 30G SHAKE	<u>OWYN PRO ELITE</u>
<i>(Animal-Based Protein)</i>	<i>(Animal-Based Protein)</i>	<i>(Animal-Based Protein)</i>	<i>(Plant-Based Protein)</i>
			
30 grams of protein from yogurt and skim milk.	20 grams of grass-fed milk protein per serving.	30 grams of milk protein per bottle.	32 grams of plant-based protein per container.
Sweetened with stevia and monk fruit.	Sweetened with stevia and monk fruit.	Sweetened with stevia.	Sweetened with monk fruit.
<i>Contains lactase to help digest lactose. Includes <1 gram chicory root fiber per bottle.</i>	<i>Lactose-free; no hormones or pesticides. Includes chicory root fiber. 100 mg caffeine/bottle.</i>	<i>5 grams prebiotic fiber 1000 IUs vitamin D; 720 mg calcium; 180 mcg vitamin A;</i>	<i>Contains a greens blend. 3 grams fiber. Protein comes from peas and organic pumpkin seeds.</i>
18 g carbs (17 g net carb)	8 g carbs (4 g net carb)	8 g carbs (3 g net carb)	3 g carbs (0 g net carb)
Vanilla Ice Cream, Strawberries & Cream and Mango.	Chocolate truffle, Cafe Latte, Vanilla Bean and Cacao + Greens	Vanilla, Chocolate and Salted Caramel.	Vanilla, Chocolate, No Nut Butter Cup and Salted Caramel.
Buy individually at Kroger or Target. <i>Keep refrigerated.</i>	Buy @ drinkiconic.com or Amazon <i>Shelf-stable.</i>	Buy @ oikos.com , Amazon, Walmart, Target, Costco. <i>Shelf-stable.</i>	Buy @ liveowyn.com , Amazon, Walmart, Target. <i>Shelf-stable.</i>
\$3.79/bottle	\$54/12 bottles (\$4.50/svg)	\$23/12 bottles (\$1.92/svg)	\$50/12 bottles (4.17/svg)

PROTEIN SUPPLEMENTS

The following section will explore two additional protein supplements that you may want to consider: **Essential Amino Acids (EAAs)** and **creatine**. Both have potential health benefits and are free from some of the concerns associated with protein shakes. Both are calorie-free ways to support your daily protein needs. Both can help create and/or maintain valuable skeletal muscle. They come in flavors that taste pretty good and/or are flavorless, and may be added to any liquid. You may also opt for capsule or tablet form. For this discussion, we will stick mostly with brands we have named previously in this handout to simplify your shopping.

ESSENTIAL AMINO ACIDS (EAAs)

Dietary protein is made up of **20 different amino acids**. Amino (uh-me-no) acids can be further classified as **essential** and **non-essential**, which refers to whether the body **can** or **cannot** make them on its own. Ones that cannot be made by the body are called **essential amino acids** - these must be obtained through the diet.

There are nine essential amino acids: valine, isoleucine, leucine, methionine, phenylalanine, tryptophan, threonine, histidine, and lysine. These amino acids are critical for various bodily functions, including protein synthesis and metabolic processes. You can find essential amino acids in both animal and plant-based foods, such as meat, dairy, eggs, and certain legumes and grains.

➤ See this Healthline article to learn more: [A Guide to Essential Amino Acids and Your Health.](#)

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EAA SUPPLEMENTS

There are **SUPPLEMENTS** you can buy that contain these 9 **essential amino acids** (EAAs). Examples of high-quality supplements are shown in the table at the bottom of the page. The supplement facts for one is listed below, right. You can see all 9 amino acids listed on the label.

Studies have shown that EAA supplements can **effectively stimulate muscle protein synthesis (MPS)** and can be an excellent way to maintain lean body mass, along with a balanced diet. Maximum MPS benefits occur when EAAs are combined with **resistance-type exercises** (building material + stimulus).

Many **protein shakes** contain a full complement of EAAs - so you don't necessarily **need** this supplement if they are already in your protein shake (check your shake label). However, these EAA supplements may be an **alternative to a shake** that is easy to use and **calorie-free** with similar results.

A usual daily dose is one small scoop of powder mixed into any liquid (or several capsules or tablets) taken all at once. A great strategy is to use this first thing in the morning, with or without a breakfast to go along with it.

KION AMINOS MIXED BERRY POWDER

Supplement Facts		
Serving Size: 1 Scoop (6.60g)		
Servings Per Container: 30		
	Amount Per Serving	%DV
L-Leucine	2,000 mg	†
L-Lysine HCl	850 mg	†
L-Isoleucine	550 mg	†
L-Valine	500 mg	†
L-Threonine	475 mg	†
L-Phenylalanine	350 mg	†
L-Methionine	200 mg	†
L-Histidine	71.5 mg	†
L-Tryptophan	3.5 mg	†
† Daily Value (%DV) not established		

Other Ingredients: Citric Acid, Natural Flavors, Malic Acid, Stevia Leaf Extract, Monk Fruit Extract.

PRODUCTS TO CONSIDER. A label showing what is in the Kion product is above, right. These other products should be similar, but sometimes the label doesn't list specific amounts of each one. Prices are listed below when purchasing from the company website, without shipping & handling, taxes or other discounts.

KION <i>POWDER & CAPSULES</i>		PERFECT AMINOS <i>POWDER & TABLETS</i>	
			
The powder is sweetened with stevia and monk fruit. Flavor options include: Mixed Berry, Mango, Watermelon and Cool Lime. Also comes in capsule form (7 capsules = 1 serving). Third-party tested for impurities + honest label policy showing exact amounts of EAAs. \$50/30 servings; \$1.67/serving		The powder comes in two NFS Certified for Sport flavors: Mixed Berry & Vanilla. There's additional flavor options, but others are not NFS certified (<i>but still likely to be good choices if you prefer those flavors</i>). A tablet form is also available & NFS Certified for Sport. 5 tablets = 1 scoop powder - a great option for travel. \$84/66 servings; \$1.27/serving	

CREATINE

Creatine is a natural substance made by the body. It is also available as a **supplement** that is sold as an unflavored powder or capsules.

The body makes creatine from dietary protein. The main sources of creatine in the diet are animal-based proteins: pork, beef, fish, shellfish and animal milk (from cow, sheep and goat). People following a vegetarian or vegan style of diet, or anyone who consumes lower daily amounts of dietary protein may specifically benefit from supplementation. However, there are potential benefits for many/most people.





Supplementation has been found to have a wide variety of health benefits. It may boost athletic performance, enhance muscle recovery, help to build and maintain lean body mass, improve blood sugar regulation, provide benefits for neurologic and brain health and more. The body of literature continues to grow in support of a variety of potential uses and health benefits. There are few, if any, negative effects.

- See this Healthline article: [10 Health and Performance Benefits of Creatine.](#)
- And this NIH research article: [Common questions and misconceptions about creatine supplementation: what does the scientific evidence really show?](#)

GENERAL CREATINE SUPPLEMENT INFO

- ❖ Creatine is a fairly inexpensive supplement (see price comparison below).
- ❖ **Creatine monohydrate** is the form of creatine supported by [research](#). On the label, look for “*creatine monohydrate*” or “*Creapure*” as the only ingredients. Also choose brands that are third-party tested for purity. Examples that meet these standards are shown below.
- ❖ Not just for athletes! Anyone can use this supplement for a variety of health goals.
- ❖ Greatest benefits occur when used along with [resistance-type exercises](#) (at least 2-3x/week).
- ❖ Use it daily, any time of day. Creatine needs to build up in the body over time - so it will not be effective if not used consistently.
- ❖ A dose of 3-5 grams (daily) may be used for muscular benefits. An additional daily dose of 3-5 grams (10 grams total/day) may be used to promote cognition and brain health.

HIGH-QUALITY OPTIONS:

ASCENT	KION	THORNE	NOW SPORTS
<u><i>CLEAN CREATINE</i></u>	<u><i>CREATINE POWDER</i></u>	<u><i>CREATINE POWDER</i></u>	<u><i>CREATINE CAPSULES</i></u>
			
Per scoop: 5 g creatine monohydrate as <i>Creapure</i> . <u>Informed Sport Certified.</u> \$30/45 = \$0.67/svg \$40/100 = \$0.40/svg	Per scoop: 5 g creatine monohydrate as <i>Creapure</i> . Honest Label policy. \$20/30 = \$0.67/svg	Per scoop: 5 g creatine monohydrate. <u>NSF Certified for Sport.</u> \$43/90 = \$0.48/svg	Per 6 capsules: 4.5 g creatine monohydrate. <u>Informed Sport Certified.</u> \$10/120 = \$0.50/svg

There are MANY other reputable brands of creatine.

For any option you are considering, check the ingredient label to be sure that the only ingredient is creatine monohydrate (or Creapure). A bonus is if it is third-party tested or is certified for sports.

DIRECTIONS FOR USE OF POWDER FORMULATIONS:

- ❖ Mix 1 small scoop of creatine powder (5 grams) into any beverage; or take an equivalent amount in capsule form. This can be done once or twice daily, depending on your health goals.
- ❖ Note that when you first begin to take it, you *may* hold on to some additional water (in your muscles). For this reason, it is best to start with 2-3 grams daily for a week, then bump up to 5 grams as tolerated. Add a second daily dose, if desired, after the first dose is established.
- ❖ *Be sure to consult with your medical practitioner before beginning this supplement. The use of creatine may alter some of your blood work, which must be interpreted with this supplement in mind. The NIH article listed above can help explain some of the ways in which blood metrics may be altered.*



Note from Julie:

- ❖ I use **Essential Amino Acids (EAAs)** and **creatine** daily. I usually add 1 scoop of each to about 4 ounces of very cold water, shake it up, and drink it. It's easy to do, and it provides my body with the building blocks for maintaining skeletal muscle (something I encourage for all of us!).
- ❖ I was using a **protein shake** pretty regularly (various brands) - but given this new information, I plan to scale this back to 3-4 times per week. I will use it in conjunction with my weight lifting (3x/week) since it makes me feel energized and ready to exercise.
- ❖ I will be **choosing my protein shake from this list** - I was already using the **ASCENT Lemon Sorbet** flavor, and plan to explore other Ascent flavors. This brand is reasonably priced and very accessible so it makes sense to me to use as my primary option.
- ❖ I do plan to **try some of the other protein shake options** on this handout as well so I can get familiar with them. These are all good options, so compare them to see which one makes sense for you, if you are in the market for one.
- ❖ I have encouraged many of you to consider a protein shake option for various reasons. Sometimes it's because you are looking for a simple way to get protein into your *breakfast* or perhaps as an easy snack. You can still continue to do this if it appeals to you. If you are a **daily shake user**, try to select a couple of flavor options so you aren't always using chocolate. For those who use it less frequently, any flavor on this handout will work.
- ❖ I have been using **Kion** brand of **EAAs** (mango flavor) but I plan to try the **Perfect Aminos** brand since it is a better price and **NFS Certified for Sport**. For my **creatine**, I have been using **Naked Creatine** brand but will switch to **ASCENT Clean Creatine** since it is **Informed Sport Certified** and I can get the more economical option of 100 servings.