



**imDoingWELL**

*mind body spirit series*

Mind

Body – Workout Supplementation

Spirit

***Jeremy Buchholz and Heidi Dix***

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## Meet the Authors:



### **Jeremy Buchholz, CFT, SMAC**

Jeremy wears many hats as a father, fitness lover, martial arts expert, entrepreneur, author, outdoor enthusiast and wellness coach. His passion is to help individuals find and claim their best life! In his work, Jeremy focuses on what he calls the "trinity of wellness", he is passionate about cultivating a healthy body, mind and spirit.

While Jeremy has faced some extreme life challenges, he refused to allow those challenges define him. Instead, he has overcome them, moved forward, and developed a special empathy for people who are hurting, abused, or stuck. Now he comes alongside people offering the mindset, tools, and modalities that have helped him come from a place of despair to one of Doing WELL. Jeremy has worked extensively with people who are hurting and "at risk". He has received several awards for his work including two United States Congressional Records.

After retiring from a career in law enforcement, Jeremy became a certified fitness trainer, health coach, and mindset mentor. He is a martial arts master and self defense expert who owned his own dojo for nearly 20 years. He was inducted into the United States Martial Arts Hall of Fame in 2013.

In 2016 Jeremy sold his martial arts dojo so that he could travel the country teaching and coaching full time. He also uses the internet to coach people all across the United States as well as in other countries.

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**Heidi Dix, BS, MEd, ERYT**

Heidi is a leader in the health and wellness industry. She is dedicated to helping people make more informed health decisions with confidence. Heidi's mission is to educate, encourage, excite and empower people to live their best life and own their own health!

Heidi holds undergraduate degrees in Exercise Science and Sports Medicine with a Master's in Education. She is also the CEO and founder of her own health and wellness business.

Over the past 25 years, Heidi's passions and education have led her into a multifaceted career through congruent fields of holistic nutrition and body/mind/soul health. A major focus of her studies and profession have been focused around therapeutic and preventative health management of lifestyle disease.

It started with a text...

Hey Heidi, let's meet for coffee!  
I have an idea! 😊



*Jeremy Buchholz and Heidi Dix*



“Okay...I spent the morning at the gym and I’m so frustrated again! I keep watching these guys pounding supplements that are destroying their bodies in the long-term! It seems they are willing to take whatever fad product a company says is going to give them the big muscles or the lean midsection so they look good on the beach and get the girl that they don’t give a damn what happens to their body a year or more down the road!”

...“Anyhow, while I was there this morning, I watched this guy down a pre-workout supplement that I happen to know has ingredients directly linked to cancer and liver issues and yet he’s ingesting it consistently every time he hits the gym! I wanted to shake him and yell at him “what the hell are you thinking?”



*“Yeah, I agree with you...I know a lot of women who are taking unnatural products to get a quick fix and expect the results to last forever. Or on the other hand, they aren't even taking supplements! They spend all kinds of time in the gym thinking the more they workout, the faster the results, and then they are getting frustrated because they aren't seeing any real progress at all!”*

“Exactly! They’re are real problems. And they’re getting bigger because more and more people are wanting to get fit. I feel like maybe you and I are in a unique position where we can help more people understand that there is a healthy way to get fit and look sexy WITHOUT going to these extremes? People deserve results, but I really want to tell more people that taking these harmful substances is NOT F\*#king worth it!”

*“Wow, Jeremy!  
You’re fired up!”*



"Hell yeah I am! I'm blown away at the number of people who will consistently put terrible things in their bodies to achieve that "look," get more "gains" or lose some pounds. It's like long-term health and vitality flies out the window if they can just have some easy results now! Seriously, I've told you about working out next to these guys who are half my age...I'm out performing them! And when they ask my age

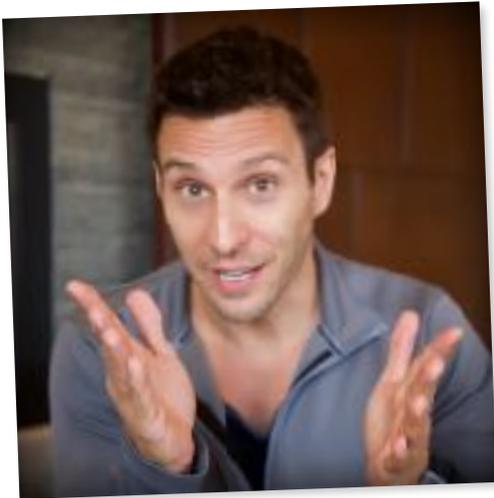
they flip! Yep, I'm in my forties! I'm healthy and strong, full of energy, and enjoying life....and I do it naturally! They ask me all the time, "how do you do it?" and "can you help me?" Heidi....you and I know there is a better way. A HEALTHY way. A scientific way. A natural way. If we are teaching that way to a few right now, why not help more people?"

*"Okay...so, what are you recommending? What's your idea?"*

"Let's write a book!"

*"Huh!?"*  
*J.... Are you serious!?"*





“Yeah I’m serious! It’s important! We already help a lot of people do this stuff....lose weight, put on muscle, up their energy, sleep better, maximize performance, recover faster....and all in a healthy way! Don’t you think we could help more people by

offering a simple book to explain how? We’re both passionate about health and fitness. We both believe people should actually feel healthy, they should be able to be active, and that they they deserve to begin feeling confident in their skin! Anyhow...it’s why I started imDoingWELL, and now I really think you and I should write a book! How `bout it? You in?”

*“Actually I really like it! We just keep doing what we’ve been doing....except on a bigger scale!  
Okay, I’m in. Let’s do it!”*



We can not expect to  
look well, feel  
well, think well,  
or live well, if we  
refuse to eat well.

—Jeremy Buchholz



## Chapter 1

# The Confusing World of Workout Supplements

This book is designed to be simple. We're going to keep it short and to the point. We are going to limit it to a very specific subject and not take on all the

elements of wellness in one document. We are not going to give you all kinds of information that, unless you're a nutritionist, is just going to muddy the waters and make this overwhelming. And we're going to end each section with an outline of what you should think about using, how much, and when. With that being said, let's get started....



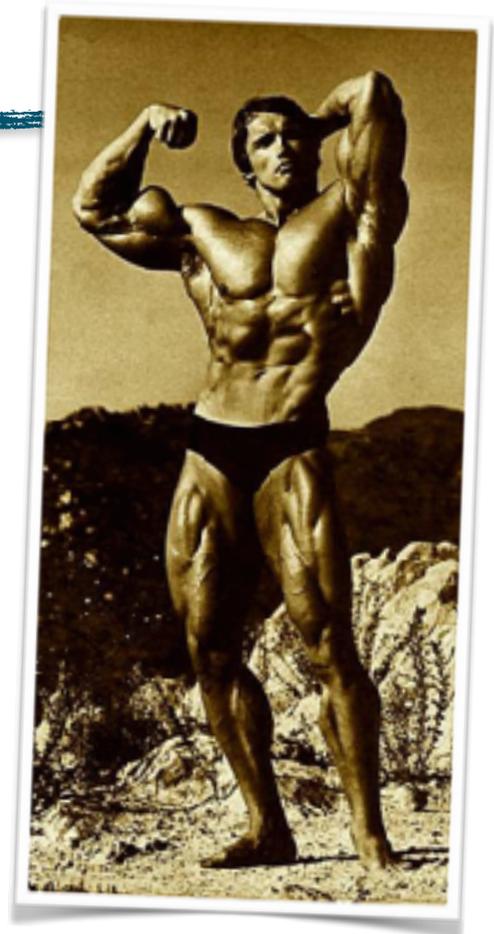
There are copious amounts of conflicting information within the current nutritional trends. How do you know what is true? What is myth? What you actually believe, and what is truly best for your health and longevity? There are A LOT of confused and misguided consumers that are desperately searching for the answers and solutions to: create better health and longevity, stronger and leaner bodies, more energy, less mental fog, and better sleep. Our goal with this book is to outline the subject matter, in a very simple way, so that it is easy for you to take action and start getting results.

## NOT Just For Bodybuilders

*"Enjoying a strong, healthy body  
is something that everyone  
deserves to feel!"*

— Jeremy Buchholz

What do you think of or visualize when you hear the word "Supplements"? Body Builders, Athletes, drug testing, illegal substance, muscles, veins popping, recover, protein...etc. The fact is, workout supplementation can benefit everyone who is living an active lifestyle.



That includes **YOU** and here's why...

# Four groups of people who benefit from proper supplementation:

The fact that you are even reading this book leads us to believe that you will fit into one of the following four categories.



## *#1 - Everyday Active*

Perhaps the largest group of people is what we call Everyday Active Adults. Everyday active adults are people who want to get in better shape and stay fit. They need a pre-workout boost before a workout, plenty of hydration during the workout, and a post-workout product to help recover after.



## *#2 - Strength, Resistance, Power*

Athletes need strength and agility to perform at high levels and use resistance training to develop strength. They require high protein diets and pre-workout supplementation to support strength and healthy blood flow during intense training sessions.



### *#3 - Build Muscle Mass*

Body Builders focus on lean muscle mass and rely on high protein diets for both building muscle as well as recovery. Pre-workout products help kick-start and sustain weight training, while postworkout products help muscles recover faster.



### *#4 - Endurance*

Endurance athletes train for marathons, triathlons, bicycle tours, and even an ironman. Their workouts can last several hours, and they need more carbohydrates to stay fueled during exercise and recover products to help reduce muscle breakdown. Even endurance athletes can greatly benefit from a pre-workout supplement when it's used for increased blood flow to bring more oxygen and nutrients to working muscles.

While there may be crossover between all these categories, the basic point we want to make is simply this...

*Proper supplementation is very important for anyone who is active and wants to enjoy the kind of lifestyle that a strong, healthy body offers.*

# Overview

While the information we provide in this book is not meant to be a cure, treatment or diagnosis for any medical disease or dysfunction, it has been compiled to inform you about the reality of the world and provide additional information such as...

- Becoming aware of the some of the risks of, and benefits to specific supplementation.
- Providing suggestions on how be an informed consumer.
- Offering specific product and ingredient knowledge for you to make educated purchases.
- Gain the knowledge to not only look your best, but feel your best and become the best (and healthiest) version of yourself both now and in the long-term.

This book, and others in the series, are designed to be simple. We're going to keep it short and to the point. We are going to limit this book to a very specific subject and not take on all the elements of wellness in one document. We are not going to give you all kinds of information that, unless you're a nutritionist, is just going to muddy the waters and make this overwhelming. And we're going to end each section with an outline of what you should think about using, how much, and when. With that being said, let's get started....

*Note: While we're not going to specifically promote our pre-designed systems in this book, we invite you to visit [www.imDoingWELL.com](http://www.imDoingWELL.com) or [contact us](#) to inquire more about what we recommend. We can help you take any guesswork out of putting together a system that will help you safely achieve your goals.*

# Fitness can be like math.

We've all been, or at least met the overzealous newbie who wants every supplement and fancy training program — and he wants them yesterday. Unfortunately, he's still eating potato chips at every meal and doing curls in the squat rack. Most of us know this guy needs to get the basics down first.

Think back to grade school, when they taught you basic math: addition (healthier food choices) and subtraction (exercise regularly). Eventually, they added in multiplication (staple nutritional supplements like vitamins and protein powder) and division (more lifting and interval training and cardio).

Next, your teachers tossed in fractions (exercise-nutrition interactions and nutrient timing) and decimals (more strength work). If they had thrown fractions at you before any of the other four topics, you wouldn't have picked them up as easily — or possibly not at all.

The math progression continues to algebra I (macronutrient rearranging), geometry (fluctuation of training stress), algebra II (heavier loading — sets of 1-5), advanced math (rest/recovery protocols), calculus (proven supplements), and statistics (supplements you think might be worth trying) depending on how far you wanted to go.

The important thing to remember is that you can't skip a step. The basics are prerequisites for the more advanced stuff, which only comprises a small percentage of what you use in your daily life. Please keep this in mind as we step over the basics here and into some more specific strategies for performance nutrition.

# Nutrient Timing

## *The Nutrition Strategy to Amplify Your Workout*

Nutrient timing is the nutritional strategy that's based on getting specific types of nutrients at specific times to maximize training adaptation or enhance performance. By timing your intake of nutrients before, during, or after your workouts, you'll amplify exercise gains and even speed your body's recovery. With this method, you can get more out of every workout and hence train more often, recover faster, and ultimately accelerate toward your fitness goals.



What you take before, during, and after your workout is just as, if not more, important than the workout itself. A strong body is built 20% with your workout and 80% with your nutrition.

“What you take before, during, and after your workout is just as, if not more, important than the workout itself.”

Just like a good workout for your body, it's important that the nutrient timing for your workout regimen is safe, well thought-out, balanced, and customized to your needs and goals. Whether you're an athlete or just someone who works out and wants to stay “in shape,” you really need to understand nutrient timing.

# The Big Three

For people striving to achieve a new strength goal, boost their exercise intensity, or take their endurance to the next level, a workout supplement may help. In this book we will focus on the big three:

- Pre-workout
- Protein
- Post-workout

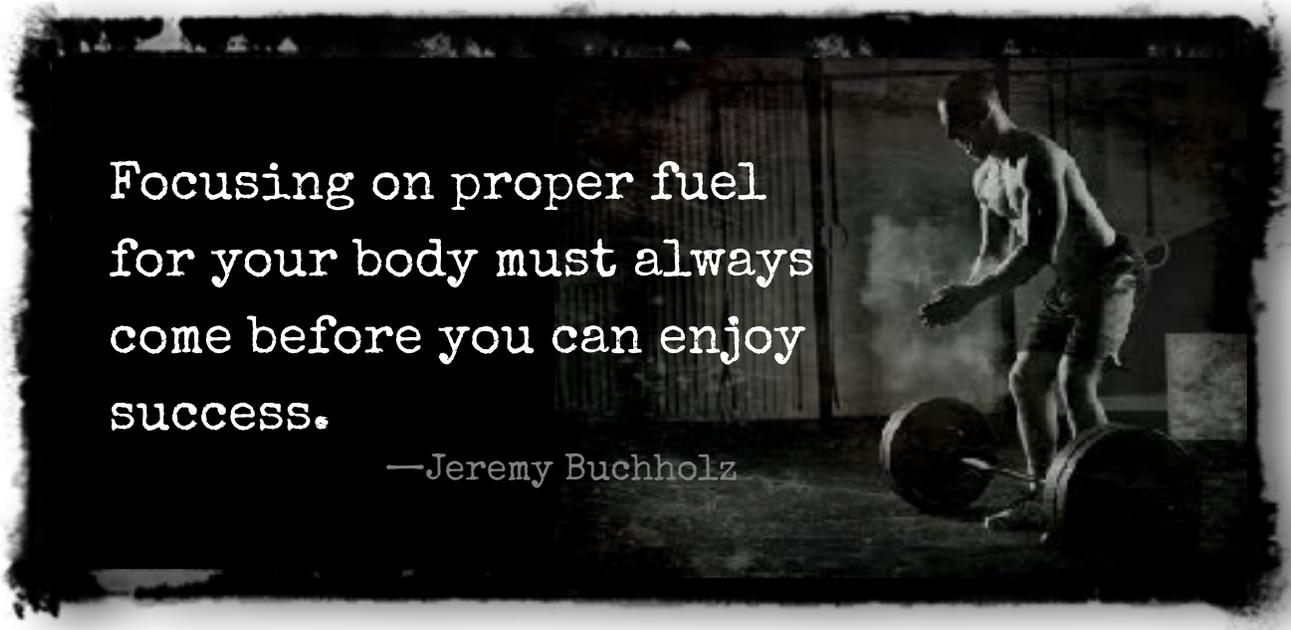


A majority of people in the gym know about and use one or all of these supplements, however, very few people really understand the ins and outs of why, when, and how much to use. These are the things we will cover in this book.



*"Sell yourself short on nutrition and you're selling yourself short on maximizing your physique development."*

*— Ernie Taylor*



Focusing on proper fuel  
for your body must always  
come before you can enjoy  
success.

—Jeremy Buchholz

## Chapter 2

# Pre-Sweat Prep

## Get your body ready!

Often the first thing to come to mind and perhaps what most people believe to be the most important nutrient to supplement when they are becoming active or working out is a protein supplement. While protein is very important, your workout nutrition needs to begin before you ever walk into the gym. We're talking about a pre-workout supplement.

Pre-workout supplementation is designed to solve a clear problem for many athletes and intense trainees—they often go into workouts lacking energy, focus, and the right fuel to maximize performance. The pre-workout period is a crucial time to not only supply the right nutrients to boost the intensity of training, but also to offer a natural and safe option to increase power, and ultimately, gains.

The right pre-workout supplements can help improve every single aspect of training including...

<b>Improve Performance</b>	<b>Increase Strength</b>	<b>Increase Endurance</b>
<b>Prolong High Intensity Training</b>	<b>Decrease Muscle Breakdown During Training</b>	<b>Increase Blood Flow Support</b>
<b>Improve Energy and Focus</b>	<b>Improve Nutrient Delivery Assimilation</b>	<b>Increase Protein Synthesis</b>
<b>Increase Metabolic Rate (Fat Burning)</b>	<b>Create an Optimal Hormonal Environment</b>	



Obviously, these improvement areas are beneficial to anyone, no matter what their training goals are. A well rounded approach to pre-workout supplementation can help you get the most out of your efforts in the gym and drive your workout routine. Anyone that is serious about training and results cannot afford to neglect this important area of nutrition.

Different ingredients will improve various aspects of your training session. With the correct actives, a quality pre-workout supplement can be one of the most effective dietary supplements for enhancing gains in performance as well as increasing lean body mass and muscle fiber size.

The active ingredients within a pre-workout supplement should work together to effectively increase blood flow and nutrient delivery to muscles, boost athletic performance, and aid in muscle contraction. Combining these non-compromised ingredients, in effective and safe doses, at the right time can be an absolute game changer in your performance and workout outcomes!



## **WARNING!**

*Unfortunately, in a comprehensive analysis of what the market currently has to offer, we were very, VERY disappointed. While the health and wellbeing of customers should be a priority, many products on the market today contain ingredients that are (and we're being WAY too nice here) not scientifically validated. When looking at what's available, many pre workout supplements contain artificial colors, flavors, and sweeteners which are ALL linked directly to many health risks including cancer! What's more, a significant number of these supplements contain insufficient dosages of key actives anyway. And then to really scare you, several that we found contain unlisted, illegal substances or dangerous stimulants. Don't put this stuff into your body!*

*By the way, it is the untested, illegal substances and dangerous stimulants that are giving pre-workout supplementation a bad rap. Your pre-workout supplement should not send you into a rage, make your heart feel like it is going to burst out of your chest, give you a headache or make you feel like you are going to throw up! If what you are currently using products that produce these symptoms, we recommend throwing the rest of it away! We don't care how much it cost. The short term effects are immediate and dangerous, and the long term effects could actually cost you your life. Throw it out!*

*On the other hand, the ingredients in any pre-workout supplement should synergistically provide energy, greater focus, reduce fatigue, improve blood flow, and accelerate gains in strength, power, and muscle mass without artificial ingredients, harmful side effects, illegal substances, or dangerous stimulants.*

# What SHOULD you be looking for?

## *Performance Focused Nutrients*

If you're new to the supplement world, it can be incredibly difficult to sort through the mountain of choices, labels, and ingredients. As you search, you'll likely scratch your head as you come across "creatine-this," "citrulline-that," and "beta-ala-what?"



To compound the problem, those ingredients are often blended into combinations with flashy names like "Ultra-Nasty Uber Pump", "AMPED Power", "Explosive Blood-Rush Blend." or "Pump Extreme".

*(We said all of these with an Arnold Schwarzenegger voice inflection by the way.)*



With all the hard-to-pronounce compounds and extreme marketing, it can feel like you're drowning—and all you wanted was a solid edge to hit some nice

personal records or increase your training energy! Well don't worry, we've got you.

# How Do I Choose My Pre-Workout?

When searching for or building your own pre-workout, focus on 4 key ingredients. While each of these ingredients has multiple benefits, we're going to focus on how important each one is to conquering your next training session.

Yes, there are many other supporting ingredients available in pre-workouts, but these four have the most documented scientific research backing their use, which is why we suggest starting with this group of ingredients above any others. Next time you hit the pre-workout market or start gathering ingredients for your pre workout concoction, reference this list first.

It will help you decide which ingredients you really want, and why you want them.



Ingredient 1:

## Nitric oxide: Primary Purpose

Increased Blood Flow and Oxygen Flow	Increase Power Output	More Nutrients to Muscles
Greater Intensity	Supports Increased Stamina	Increases VO2 Mass
Increases O2 to the Brain	Increases Cognitive Function	Helps Delay Fatigue

Any athlete or person wanting to maximize their workouts knows the feeling of all-out exertion. Lifting weights until muscle failure, sprinting all-out for 100 meters, and simply going until you can't go anymore are ways to increase exercise performance.

Nitric Oxide is a pre-workout product designed to prolong high-intensity training and provide blood flow support for any type of workout. This category of pre-workout usually contains ingredients

“With increased oxygen and nutrients being delivered to muscles, intensity and activity can be prolonged.”

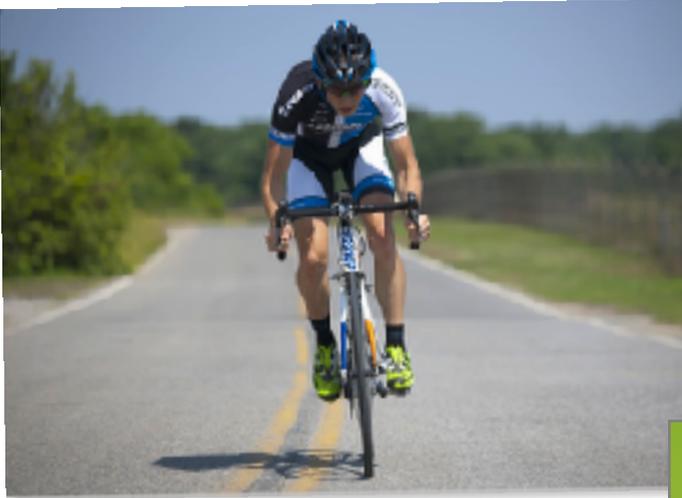
such as: beetroot, celery, and red spinach extracts, plus an additional blend of dietary nitrate-containing vegetable and fruit extracts. This particular blend of ingredients supports nitric oxide production in the body. Nitric oxide widens blood

vessels so that more oxygen-and nutrient-rich blood can get to working muscles.

By having support for increased oxygen and nutrients being delivered to muscles, intensity and activity can be prolonged since fatigue sets in when blood flow can't keep up with demand – and the more intense or extended a workout is, the higher the demand.



Nitric Oxide can be taken any time before a workout, with consistent daily use providing the most benefit. Researchers have found that nitrate-containing products can increase nitric oxide production for up to 24 hours after consuming and peak concentration of nitric oxide in the bloodstream is expressed 2 to 3 hours after taking.



Planning on a 2 hour training bike ride? Try taking a nitric oxide supplement 1 to 2 hours before you start pedaling. Planning on working out in the early morning? Take your Nitric Oxide before going to bed.

Adding Nitric Oxide into a pre-workout regimen will mean one thing – you'll be more ready to go the distance in any training session or event!

“Adding Nitric Oxide into a pre-workout regimen will mean you'll be more ready to go the distance...”

*Nitric Oxide is not only an extra pre-workout pump... it also has the added benefits of improving heart and brain health!*



## Ingredient 2:

<b>Creatine: Primary Purpose</b>		
Increases muscle mass	Improves anaerobic endurance	Improves maximal strength
Improves maximal power	Improves performance during exercise of high to maximal intensity	Promotes greater gains in increasing fat free mass (including muscle mass)
Improves Single-Effort Sprint Performance	Improves worked performance during repetitive sprint performance	Improves recovery following endurance activity
Has a neuro protective/ brain function	Enhances bone regeneration (healing)	Improves muscle and performance in vegetarians

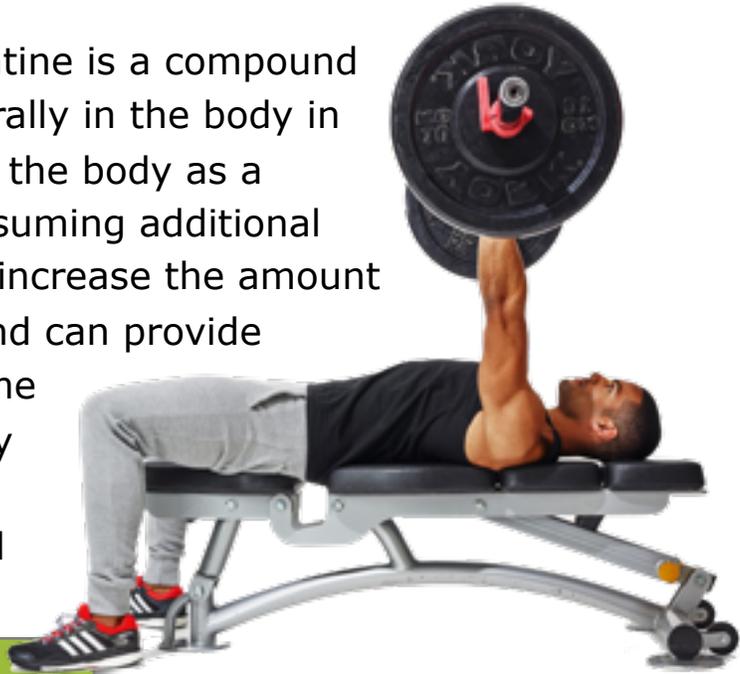
Creatine is among the best-studied sports supplements around. Creatine is one ingredient with immense popularity in the sports supplement industry used to increase strength performance. Why? Because creatine is the predominant source of immediate energy stored in your muscle tissue.

Creatine is a natural and organic acid that helps supply vital energy to muscle tissue. By increasing the availability of energy to muscle,



creatine allows you to lift more weight for longer by increasing stamina. This results in increases in muscle mass, power, strength, and speed. There is also evidence that creatine can reduce exercise-induced lactic acid buildup, thereby improving recovery.

Many may not know that Creatine is a compound that is already produced naturally in the body in small amounts and is used by the body as a source of muscle energy. Consuming additional creatine as a supplement will increase the amount of creatine in muscle tissue and can provide an edge during workouts. Some of the benefits of creatine may stem from the added muscle energy it provides. This added



“Creatine has the ability to improve the quality of training and stimulate better gains.”

energy increases resistance to muscle fatigue.

Researchers have been investigating the benefits of this natural substance since at least

the early 1970s and our knowledge of its benefits for supporting both athletic performance and overall fitness has grown substantially. The science shows that supplementation with creatine can be effective independent of age, gender, experience, or supplementation dose.

Creatine, has the ability to improve the quality of training and stimulate better gains in training adaptation, like increasing lactate threshold, is the exercise intensity at which the blood concentration of lactate and/or lactic acid begins to exponentially increase.

# Who can benefit from Creatine?

- Bodybuilders and strength athletes. *(BTW, body building doesn't always mean huge muscle-packed men in speedos striking flexing poses...building your body could simply mean working at creating a strong physique with good muscle definition.)*
- The aging population.
- Sufferers of neurodegenerative disease.
- Those with naturally lower levels of creatine  
*(This would include people such as vegetarians.)*



## Let's Dispel a Myth! And the Science Says...

Perhaps the most important information to come from many studies is that of creatine's ability to increase performance regardless of dose. The results show there is no need to mega dose or load up on creatine to see a significant effect on performance. A three-gram dose can be considered a moderate, safe, and effective dose of creatine for a pre-workout. Many companies are promoting huge doses that are simply not needed.

# Purchasing Creatine

As mentioned, the type of creatine one uses will usually determine the results they get. With more brands hitting the market every year, it is often confusing for the athlete who seeks the very best product.

## Here's what to look for:

Assuming Creatine Monohydrate (most frequently used in studies) is the standard by which to compare, no form of creatine has been shown to be more powerful or potent.

Creatine Magnesium chelate may be a bit promising for its ability to prevent water weight gain at low doses.

Creatine pyruvate also seems to produce higher blood levels of creatine, but this hasn't been shown to increase performance in any way.



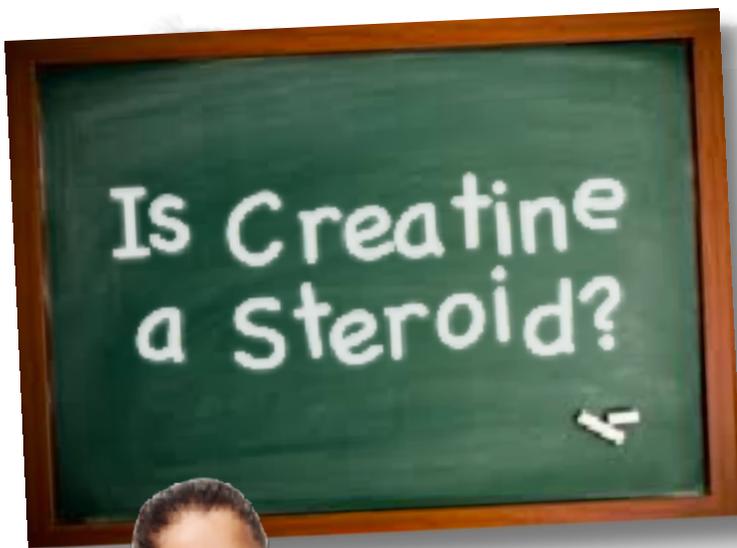
Creatine Citrate and Creapure (Micronized Creatine), although just as potent as Creatine Monohydrate, are more water-soluble and may be of interest to avoid the clumping in water. This is similar to Creatine Nitrate, which currently does not have any legitimate scientific evidence to support the claims of superiority over Creatine Monohydrate.

Buffered Creatine (Kre-Alkalyn) and Creatine Hydrochloride (Con-Cret) both are negated by stomach acid, and turn into the basic creatine molecule. They are not worse, but not better either (assuming the dose is the same). Creatine Hydrochloride may be more water-soluble than Monohydrate as well.

It should be noted that the form known as 'Creatine Ethyl Ester' is actually much worse than creatine monohydrate, and degrades almost completely into the metabolite creatinine in the intestines.

There are no significant differences between powders, tablets, or capsules. Capsules and tablets are just vessels for the powder.

Overall, we believe Creatine Monohydrate is the best 'bang-for-your-buck' form of creatine as the others tend to carry higher prices on the labels. That being said, other forms may have benefits that are not related to the creatine molecule itself but due to solubility.



**No!** Creatine has no relation to steroid hormones. Creatine is a tripeptide compound, made up of three amino acids (L-arginine, L-glycine, and L-methionine) naturally found in the diet. It does not possess the steroid

backbone and does not fall into the scientific definition. It's not illegal nor does it influence hormones in the way the above-mentioned "steroid" compounds do. If anything, creatine can be viewed as more of a vitamin because it is found in some foods and performs more like a vitamin than a steroid in the body.

# Creatine Loading

Creatine “loading” is a long-standing, common practice where the individual supplements with four to five times the amount of creatine the body needs with the purpose of rapidly saturating the muscles with the energy-producing compound. After the loading phase is complete, a maintenance phase begins with supplementation in the range of approximately 3-5 grams per day. But like we mentioned above, creatine loading is unnecessary and offers no more benefit than supplementing with the maintenance dose on a daily basis. This is because muscle tissue has an upper limit for how much creatine it



can actually store and what the body can't use it excretes in the urine. So we don't recommend it simply because the science says it's kinda a waste of your money.

Rather than creatine loading, we suggest a carefully selected dose of creatine. Using a consistent and daily dose

will ensure your muscles are getting creatine at a level that your body can use. Remember, more isn't always better; especially when you use a high-quality source of creatine like creatine monohydrate.

*(We will talk more about how important quality is later. Let's just say it completely changes the equation when it comes to your supplementation!)*

## Ingredient #3

### Nitrosigine: Primary Purpose

Provides a bioavailable source of both arginine and silicon	Improving muscle recovery after exercise	Supporting/enhancing nitric oxide production
Improving mental acuity and focus	Supporting increased muscle volume	Provides a good safety profile

Nitrosigine®, an advanced ingredient from Nutrition 21 is a unique combination of arginine and silicon. They have called the supplement, Nitrosigine in the marketplace, because of laboratory evidence that it boosts levels of nitric oxide. Nitrosigine has the same effects as previous forms of arginine—only better.



Nitrosigine® works by increasing availability of the amino acid arginine in the bloodstream. Arginine is a well-known precursor for the production of nitric oxide, which promotes vasodilation and supports blood flow, resulting in

enhanced oxygen and nutrient delivery to muscles. The more nutrients that can be effectively delivered to working muscles, the more support for intense training, recovery, and overall athletic performance.

In a recent clinical study, it was demonstrated that the Nitrosigine® supplementation significantly increased plasma arginine levels at multiple points for at least six hours, whereas arginine supplementation alone elevated plasma levels of the amino acid for only one or two hours. The study also showed a significant increase in plasma arginine levels compared to arginine, demonstrating its greater bioavailability as a precursor for nitric oxide during supplementation.

It is not surprising that Nitrosigine has been gaining attention with not only supplement formulators, but bodybuilders and fitness enthusiasts alike, as the results have spoken for themselves. Besides the fact that you get increased blood flow to power workouts, better focus in and out of the gym, and superior energy, perhaps the most important factor is that you recover faster. Thus, it stands to reason, that over time, with more efficient and energized workouts, you will not only feel better, but you will reach your goals faster.



## Ingredient #4

### L- Citrulline: Primary Purpose

Increase blood flow to tissues

Increase delivery of oxygen and nutrients that upload to the muscles

Citrulline used to go right alongside arginine in many pre-workout formulas, but arginine is increasingly left out entirely these days, and citrulline gets main billing. So what's so great about citrulline? Plenty, it turns out.



In the body, citrulline acts as an arginine precursor, meaning it's used in the production of arginine. Arginine helps stimulate nitric-oxide production, which acts as a vasodilator to open up blood vessels and increase blood flow to muscle.

So why not just take arginine instead? Simply put, arginine is subject to a more rigorous path of digestion, going through absorption in the small intestine and liver before being released into general circulation. Citrulline, on the other hand, can bypass all of this and go directly into the bloodstream, where it can boost nitric-oxide production. Can you say efficient?



But like most ingredients, not all citrulline is created equal. When checking ingredient labels, you may have noticed two types of citrulline: L- Citrulline and citrulline malate. Let's take just a second to look at the research to find if one is better suited for your specific goals.

### *What Is L-Citrulline?*

L-citrulline is the natural form of citrulline. Although your body produces its own supply, consuming extra citrulline can have significant performance benefits. Found naturally in fruits such as watermelon as well as on its own in certain supplements, citrulline plays a major part in two important processes. One, it helps boost nitric-oxide levels, which can help dilate your blood vessels, allowing more oxygen and nutrients to be delivered to your muscles. It also has a role in the removal of ammonia, a compound known to cause exercise-related fatigue, from your blood.

### *Does Malate Give Citrulline An Edge?*

The only difference between L-citrulline and citrulline malate is the addition of malic acid. That may seem like a minor detail, but it can have a significant impact on your performance. Malate serves as an important component in the tricarboxylic (or TCA) cycle, which is one way your body produces energy. When you increase malate levels, you increase energy production. Therefore, citrulline malate provides the one-two punch of bringing additional blood—and subsequently, oxygen and nutrients—to exercising muscles, as well as providing increased energy to boost performance levels.

## *And The Winner Is...*

Both have their strengths, but the win goes to citrulline malate. The key difference is its ability to increase both muscle pumps and



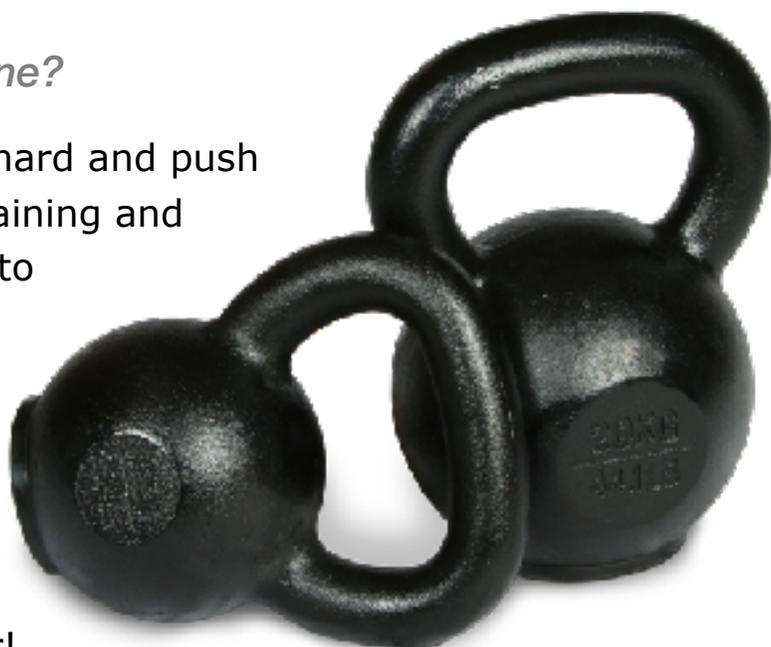
performance, meaning more reps, more effective time in the gym, and better results.

Another advantage to using citrulline malate is that you don't have to load with it, whereas L-citrulline is most effective after a

week of steady usage. That means you can take it right before your workout and experience immediate performance benefits.

### *Who Will Benefit from Citrulline?*

It will help athletes who train hard and push their physiological limits for training and recovery. If you're committed to training and improvement and aim for that extra 5, 10, 15 percent bump in performance, without having to sacrifice your health to get it, then citrulline malate could be just what you're looking for!



Citrulline has become a nearly obligatory ingredient in pre-workout supplements. It has been shown to improve exercise performance and to stimulate muscle synthesis by activating muscle-building pathways. Citrulline is well tolerated, even in higher dosages, and does not cause any gastrointestinal issues like other amino acids can. Citrulline has been noted to reduce fatigue by aiding in creatine resynthesis and enhancing the use of branched-chain amino acids during exercise.

Whether you decide on L-citrulline or citrulline malate, make sure to take the correct dosage. If you opt for L-citrulline, approximately 2.4-6.0 grams per day for a minimum of seven days. With citrulline malate, approximately 6-8 grams has been shown to yield benefits about an hour before exercise without using a loading phase.



“A good pre-workout can provide a constant supply of nutrients and remove waste buildup.”

#### *Pre-Sweat Prep Wrap Up*

Athletes need to focus on the pre-workout period so they can provide a constant supply of nutrients and remove waste buildup from muscles quickly.

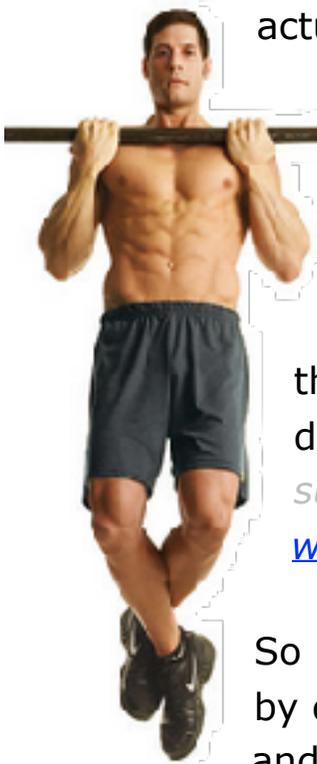
A powerful and effective pre-workout formula with should contain active ingredients that work together to support nitric oxide production, blood flow, nutrient delivery to muscles and aid in muscle contraction. Together, the combination bioactive ingredients within a nitric oxide supplementation, Nitrosigine®, creatine and citrulline will result in optimal athletic performance.

# Pre-performance Nutrient Timing

Now let's talk about timing. Nutrient timing is the process of taking in nutrients at different times around your workout to achieve the best results. Timing helps us get the most bang for our buck! Most pre-workouts should be taken roughly 30 minutes before getting to your workout. Nitric oxide supplementation should be taken 2 hours prior.

“Most pre-workouts should be taken roughly 30 minutes before getting to your workout.”

We recommend taking your pre-workout supplementation while driving to the gym or getting ready in the locker room. This ensures that all the ingredients start to metabolize and become ready for use by the last set of your first lift, which is when you really actually need it.



## *High Intensity Pre-Workout Stack*

When you want your body ready for the ultimate high-intensity workout, the right preparation can make a big difference. You want a pre-workout stack that includes the right ingredients, comes in the right dosage, and is backed by science. *(We have suggestions for these complete systems at [www.imdoingwell.com/performancestacks](http://www.imdoingwell.com/performancestacks))*

So now that you're getting an intense workout, propelled by quality nutrients, at strategic times, let's switch gears and talk about the nutrients we need to rebuild the muscle that we are tearing and stretching. It's time to talk about the very misunderstood world of Protein Supplementation.

People who think protein is a simple food are simply misled...

**PROTEIN MAY BE THE MOST COMPLICATED NUTRIENT WE EAT!**

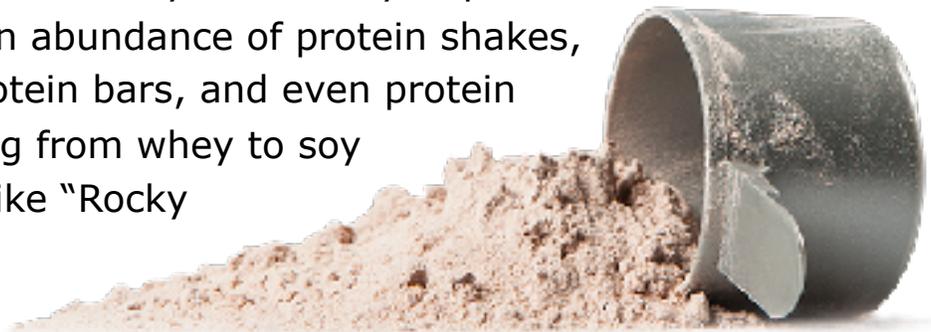


## Chapter 3

# Protein

## A Complicated and Essential Macro Nutrient

The protein supplement industry is a modern phenomenon on the rise. Walk up the aisles of any major supplement store, and you are bound to feel overwhelmed by the variety of protein available. There is an abundance of protein shakes, protein powders, protein bars, and even protein gels. Sources ranging from whey to soy to pea, and flavors like "Rocky Road", "Blueberry Muffin", "Birthday Cake" and



"Extreme Chocolate". On top of it all, consumers are presented with "premium" options like "hydrolyzed" and "isolate".

So, is it worth springing for the pricier blends of protein powder that are said to digest faster, absorb better, and deliver more nutrients to your muscles? And how do your personal goals and dietary needs factor in? Never fear, we are here to help you navigate the very confusing world of protein powders and select the right variation for you. So if you're an elite athlete or just a weekend warrior, chances are you have a tub of protein powder sitting somewhere in your house. And if



not, maybe you've gulped down a shake or smoothie at some point. But do you really know what's inside your protein powder? And do you know how use it to get the best results? To help you more effectively decide how, when and if you should use this supplement, we've created this guide. Here's how the most popular questions about protein powder shake out.

## Protein Powder: The Whys & Whats?

Body proteins are temporary. Each is being constantly rebuilt. Some enzymes last only minutes. Your skin is replaced every few weeks.

“Unlike carbohydrates and fats, your body has no store for protein.”

Your blood cells are replaced every three months. Most of your muscle cells are replaced every six months. Yet, unlike carbohydrates and fats, your body has no store for protein.

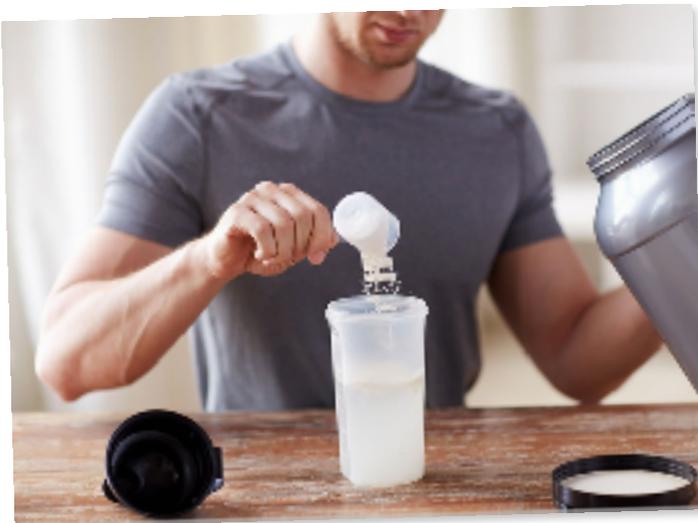
Body structure is rebuilt day-by-day, mainly from the proteins you eat, and from recycled amino acids from broken down body structures.

To grow an optimum body you need to eat the right proteins every day. If you eat garbage proteins you will grow a garbage body, no matter how hard you train. If you eat garbage proteins you will grow a inflammatory body, no matter how good the rest of your diet. Any day you eat garbage proteins they build into the structure of your body and you have to operate with them for up to the next six months.

*With garbage proteins, you cannot construct the champion whose blueprints are residing in your genes. You may want to think twice about having that next chili dog!*



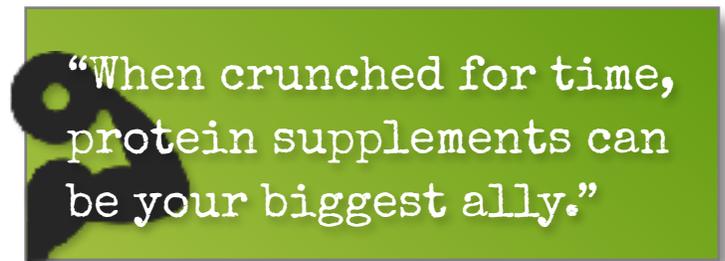
Many gym-goers just grab a tub and start adding shakes to their diet without first considering why or if they need protein powder at all. The most obvious reason to supplement with protein powder is to



reach your protein intake goal for the day. Daily protein intake averages around one gram of protein per kilogram of body weight. If you are an athlete seeking to add more muscle faster, up to 2 grams of protein per body weight is recommended.

Keep in mind that anything over 2 grams per kilogram per day is not likely to do much good. WHAT!?! You mean my 50g per serving supplement isn't needed? That's what the science says folks. Again, save your money. In fact, evidence suggests that the excess protein intake is unnecessary and potentially detrimental. Instead the body will probably use the extra protein as fuel or store it as fat! We're thinking that's probably NOT your goal?

Also, your daily intake of protein should be paced equally throughout the day. For example 4-6 meals at approximately 25g of protein/meal. Some of your protein intake can come in the form of whole food sources (lean meat, almonds, greek yogurt, eggs, legumes..etc). But when crunched for time, and we all are, protein supplements can be your biggest allies.



*When consumed in the right doses, protein has the ability to accelerate metabolism, preserve muscle mass, curb appetite, and, GET THIS....actually aid in fat loss! More on that later..*

*NOTE: Be sure to sign up to receive the free imDoingWELL email newsletter for more whole food and superfood protein sources and recipes at [www.imDoingWELL.com](http://www.imDoingWELL.com)*

## Okay Listen Up....This Is Important!

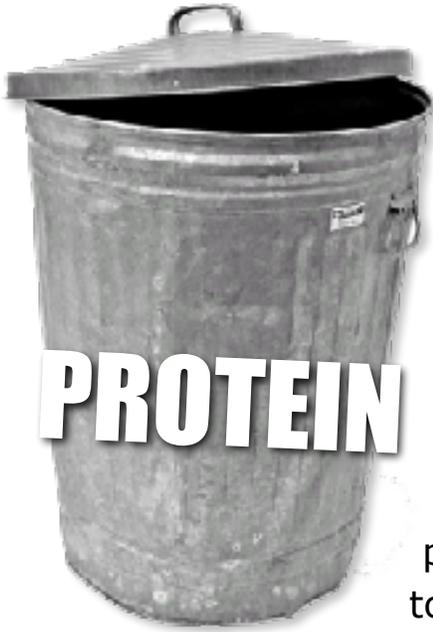
# Don't Waste Your Money!

If you want only the best for your body, then you don't want to purchase a protein supplement from a company that settles for second or third best. Especially when it is being sold to you at a premium price simply because of the name or packaging.

**“Wait a minute! Do you mean that not all protein is the same?!” That is exactly what we mean!**



The problem comes when companies do not properly evaluate the quality of ingredients because, quite frankly, saving money counts. Some companies will completely avoid analyzing their raw materials. Continual analysis is very important. Not only should companies be testing raw materials for contamination with microbes, pesticides and heavy metals, but they should also be measuring the potency of each ingredient in order to ultimately determine whether or not a finished product will actually satisfy a customer's needs and help fulfill the body's needs for overall health and well being.



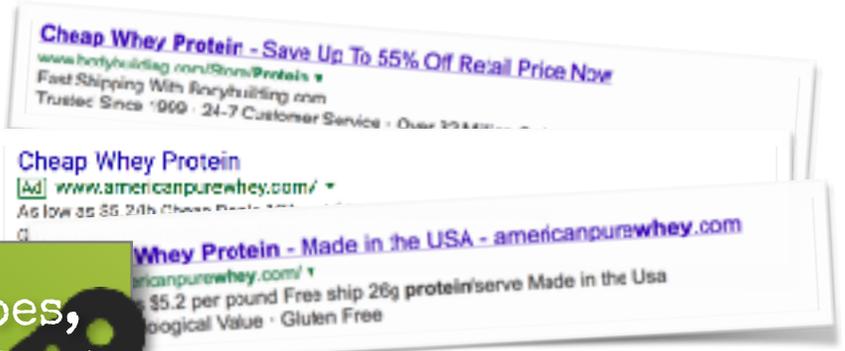
**PROTEIN**

## We (Almost) Hate To Tell You This....

### This happens all too often...

When a supplier provides a raw material for a botanical that does not meet specified potency, then it is up to a responsible company to reject that material. Sometimes companies don't reject poor quality materials from supplies, but even more shocking is when companies do reject materials, those materials rarely get disposed of or destroyed. Instead, the rejected batches just end up going to the next highest bidder who will pick up the rejected protein and sell it cheaper. And the trash they sell is often never tested beyond the federal requirement of "fingerprinting" each botanical powder to make sure it is what it is, meaning, "yep, that's

"As far as protein goes, DO NOT just put 'the best deal' into your body!"



protein". Unfortunately, some companies even avoid the fingerprinting altogether. The

same disreputable companies are also known for tainting their products making them even cheaper. Some of these products are known as "seconds" or "spiked" protein. **DO NOT just put "the best deal" into your body!**

# Types of Protein

## 1. *Whey Protein Powder*

Perhaps the most common variety of protein on the market is whey protein. Whey can be found at any supplement retailer, and even in grocery stores. Boasting an impressive array of vitamins and minerals, this dairy-based product has become a staple in the diets



of pro athletes and recreational gym goers alike. And there is a good reason whey is the way to go for many, it has been scientifically proven to significantly aid in muscle repair, recovery and growth.

Unfortunately it's not as easy as grabbing any old jug and hitting the road. Consumers have the option of "hydrolyzed", "isolate", "concentrate" and more. Whey

protein concentrate (WPC) is the best globally. Isolate is approx. 10% higher in protein but, concentrate has immune boosting properties—so if you have a choice, we'd recommend choosing WPC. Hydrolyzed means the product is broken down from whole proteins down into smaller groups of amino acids.

"Whey protein has been scientifically proven to significantly aid in muscle repair, recovery and growth."

*Here's Your Chance To Be The Informed One At The Gym.  
Denatured vs undenatured whey?*

Denatured whey and undenatured whey protein powder are included in the whey family. But, one is significantly (That means A-Lot) better and will provide you much greater results and benefits.

Remember when we mentioned quality being very important? Here is a place that it really proves important! You see, undenatured whey maintains all of its amino acids as it is cold processed. All of the helpful nutrients and organisms have

“Undenatured (cold processed) whey maintains all of its amino acids.”



not been destroyed and killed off due to the dreadful process of being heated to high temperatures like Denatured Whey is. The protein in Undenatured Whey remains bio-active as it is processed more sensitively at a those much cooler temperatures. This is a huge benefit for your body!

Undenatured whey protein can actually enhance one of the most under produced amino acids in the body (Glutathione), as this currently discovered way of extracting whey at lower temperatures. Glutathione is considered as the highest antioxidant. Also, it is naturally produced by the body through the mixture of other amino



acids in the liver. In addition to WPC immune boosting properties, the undenatured form has also been shown to improve mental focus and mood in stressful situations, contains the highest value/superior profile of essential branch chain amino acids that are not found in a typical diet, as well as help with satiety.

### *Quality, Quality, Quality!*

Did you know that half the dry weight of your body is protein? How about that there are over one hundred thousand different proteins, each of which is precisely determined by gene expression.



The quality of your proteins determines both the quality and the quantity of their effects on the genome (The nutrients you put into your body end up BEING your body!).

Well it's no different for a cow. The quality of the proteins in whey depend on the nutrition of the cows and the method of protein extraction. Cows are ruminants, continuous grazers. They have a rumen, a miraculous fermentation tank in their gut designed to digest grass and humus (grass that has died and broken down to become a stable mat for the growing grass). The rumen is designed precisely to ferment grass. In order to work properly it has to stay at a good level of fermentation continuously. Unlike the human gut, which operates intermittently by acid, the rumen is acid neutral, and

requires constant grazing and a constant level of fermentation to remain healthy and support high quality protein production.

*Here's where it's going to start to get scary....*

Over the last 50 years, the economics of commercial farming in the US has progressively eliminated most pasture feeding. To make a living, most farmers have to keep their cows in feedlots most of the time, and feed them on cheap hay, corn, barley, soybeans, fat, and even chicken feathers....yep, we said chicken feathers. Don't even ask. These feeds are much cheaper than pasture, but require an acidic gut to digest them. The feedlot cows are also fed only intermittently. So most dairy farming places a large intermittent and acid load on a rumen and liver that were not designed for it.



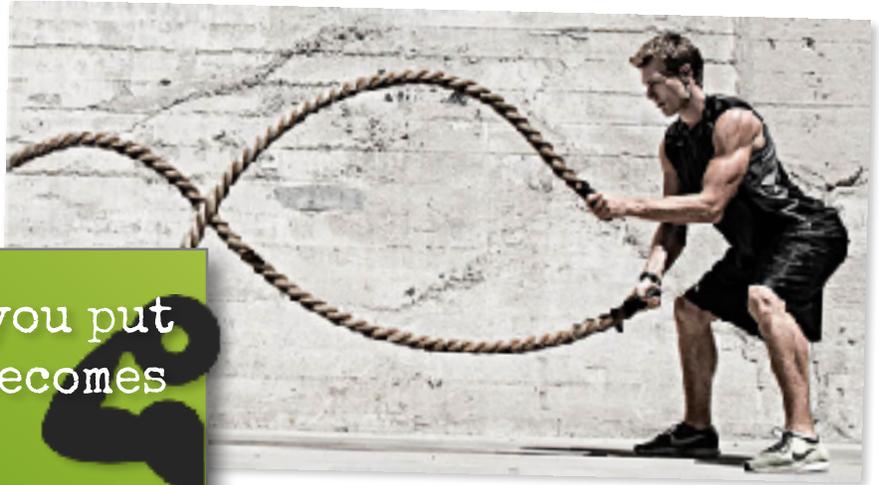
*Note: Some places, notably New Zealand, still pasture feed most of their cows. Finding sources of whey derived from these pasture fed cows is highly recommended.*



The diet and confinement of US cows has produced most of the problems that now beset American milk production. Feedlot cows rarely go four months without infection, requiring constant dosing with antibiotics. Feedlot cows

produce milk so poorly that production has to be stimulated with hormones. Feedlot cows last an average of only four years before

liver and other problems from acidic food get them switched out and turned into beef. No surprise that feedlot cows produce inferior milk. To give you a quick perspective on how bad it has become, in March 2010, the U.S. Department of Agriculture published new access to pasture rules for the best-of-the-best, organic cows producing high-quality organic milk. The new rules state that organic cows have to be out on pasture for not less than 120 days per year, and have to receive at least 30 percent of their feed by pasturing during the grazing season. At least they recognize the right way to raise cows. But what a minimal standard! And that's for the-best-of-the-best, so you can imagine what's happening to the rest of the cows (85 percent).



“Remember, what you put into your body, becomes your body.”

I hope we have convinced you to buy whey protein extracted from the milk of grazed animals for your health's sake! Remember, what you put into your body, BECOMES your body!

## *2. Casein Protein Powder*

Although it might not fly off the shelves quite as quickly as whey, casein protein is actually very similar in more ways than one. Like whey, casein protein comes from dairy and is actually the primary protein found in cow's milk. Dairy



proteins such as whey and casein have long been known for their superior nutritional profile by stimulating muscle growth, repair and recover. Whey is a protein that is quickly digested and absorbed whereas caseins are more slowly absorbed. We use whey and casein in a ratio that is studied for helping to preserve muscle, promote muscle growth if exercising, and assist in weight loss.

### *3. Pea Protein Powder*

In the land of muscle, sweat and ripped physiques, it's hard to imagine that fuel can come from the almighty....pea. The protein concentrate from peas offers a high concentration of branched-chain amino acids and lysine for a complete amino acid profile. It's also a slow-digesting protein that helps increase satiety. If you are having stomach trouble with your current protein powder, it might make sense to give a plant based protein a try. Otherwise, you could try rotating it into your supplement schedule to avoid boredom and mix up your nutritional routine.



### *4. Hemp Protein Powder*

Hemp protein is made from hemp seeds. Hemp seeds have more than just protein content. Hemp seeds are often thought of as a superfood due to their high content of omega-3 and omega-6 fatty acids. Hemp protein is completely plant based, and highly digestible, meaning less gastrointestinal distress for some users.



## 5. *Brown Rice Protein Powder*

Brown rice protein is packed with incredible antioxidants and nutrients to support weight loss. It's also the answer to the question about what do vegans eat? It's the perfect protein supplement for them. Depending on which brand of powder you choose, the nutritional value changes slightly. Whether you are vegetarian/vegan or just cutting animal products out of your diet for a day, it is still important that the body receives the same protein and amino acids that animal proteins provide. Luckily, plant-based proteins can still do just that. Alone, brown rice does not provide all of the nine essential amino acids that the body needs. That's why brown rice protein powders often also contains pea and chia proteins to compensate for what the brown rice lacks. When you are buying a brown rice protein powder, check the label for these proteins as both pea and chia proteins to complete the essential amino acid profile for a quality plant based protein.



## 6. *Soy Protein Powder*

A mainstay in the household of many vegetarians, soybeans are another form of plant based protein.

Many protein drinks use soy protein concentrate or soy protein isolate in conjunction with other proteins. Over 90% of the soy produced in this country is GMO and contaminated with Roundup herbicide, but believe it or not, that's not the only reason to avoid soy protein! When soy is looked at from a macronutrient perspective,



it can give the illusion of a very healthy food – full of plant based protein, essential amino acids and fiber. However, the soy that is grown and produced today is largely hybridized, making the amino acids largely indigestible leading to digestive issues that have caused many people to be allergic to soy. What’s worse is when soy is isolated to just its protein state, it becomes severely denatured and can cause hormonal disruptions because of the excessive amount of estrogen contained in it. Soy also has an abundance of phytic acid that leaches calcium and other vital minerals from your body. We do not believe soy is a good option for protein supplementation and the science seems to back this.

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## When to Mix It Up

So, you’ve done your research and brought home a giant tub of high-quality protein powder. What now? Figuring out the best times to supplement can be difficult. Here are the two most common uses for protein powder during the day and specific applications for each.

### *1. Meal Replacement*

Because they’re so convenient and easy to use, meal replacements are perfect tools for achieving weight-loss goals. Unfortunately, some products that claim to be meal replacements are lacking components of a healthy, balanced meal and can actually be detrimental to your health. Even when you are decreasing your overall calorie intake as a means to lose weight, your body still requires a broad spectrum of



nutrients to properly function. Whether your meal replacement is in the form of shakes or bars, you should be sure that it offers a range of essential nutrients within its fewer calories to properly replace normal food.

### *What to look for....*

Another way to look at this concept of “complete meal replacement” is to think about what it actually does. Although there is no black and white definition of a complete meal replacement, it should supply your body with adequate amounts of essential amino acids, fatty acids, carbohydrates, vitamins, and minerals to nourish your body. You also want to feel satisfied after consuming your meal



replacement, because what’s the point if you’re ready to eat your arm off an hour later?

“A meal replacement needs the right dose of macronutrients along with dietary fiber.”

The content of a meal replacement is so important.

Your body needs the right dose of each of the macronutrients (carbs, protein, fat) along with dietary fiber to fill you up. Research has shown that a higher proportion of protein (1), as well as fiber and low-glycemic carbohydrates (2) help sustain satiety. In addition to the macronutrient content, it’s equally important to have a full range of micronutrients (vitamins and minerals) in a meal replacement option. When replacing one or more meals per day, it’s essential to choose an option that has at least 30 percent of the daily value of most vitamins and minerals.



superior trigger for muscle growth. By eating about 25 to 40 grams of whey protein after your workout, muscle synthesis can be maximized. Eating carbohydrate after exercising is also important, as it will rapidly lower cortisol while refilling the glycogen tank. Not only is the body sensitive to protein after exercise, but it's also sensitive to carbohydrate (3).

The post-workout period is the perfect opportunity to refuel. By eating quality whey protein within 30 minutes of a workout, you can take advantage of your hard work, repair and gain more muscle, faster. By pairing a quality protein with a carb source such as fruit, oats, powdered greens, or powdered fruits you will help build the body you want and enjoy the energy you need.

## Risks of Protein Powders with Artificial Sweeteners...

We would be amiss if we didn't mention the dangers of artificial sweeteners. Aspartame, acesulfame and sucralose are three examples of artificial sweeteners that you might occasionally encounter in protein powder products. The following is a brief summary of their possible negative effects.

Aspartame itself is composed of two amino acids with the addition of methanol. It's this last component that can pose a health risk. When the body breaks down methanol it turns



into formaldehyde and formic acid. Both are naturally present in the body in low manageable levels but a small additional amount is all it takes for formaldehyde to start becoming toxic. Acesulfame also carries the risk of breaking down into a potentially dangerous substance when metabolized. Acetoacetamide is the resulting compound when this artificial sweetener is digested and some animal studies have looked into how it can affect thyroid glands. The safety claim is that acesulfame simply passes through the digestive tract. But this doesn't actually happen consistently, it's more of a 85 to 100% chance. The same residual issue happens with sucralose. Again about 85% passes through undigested but the remaining portion will likely be metabolized. This might still be small enough not to show any impact on calorie intake. But then again, the danger isn't so much added calories as absorption of potentially harmful chemicals that make up these artificial sweeteners. **ESPECIALLY on a consistent basis!**

**The answer....** if you're really worried about additional calories, there are so many far safer ways to adjust your daily diet in order to balance calorie intake and output. You can even simply increase your workout and burn off added calories because you used real sugar to sweeten your protein shake. On the other hand, if taste is the issue, there are also safe and natural sweeteners you can use as an alternative. Stevia is one of the more popular plant-based sugar substitutes. Just like the artificial substitutes, stevia is several times sweeter than sugar but provides lesser calories, this time without the risk of potentially harmful chemicals. You can also just take advantage of the natural sugars in fruits. You're probably going to be using a blender to thoroughly mix the protein powder into an acceptable consistency anyway. Adding a bit of fruit into your protein shake doesn't just improve the taste, it adds a host of other nutrients like vitamins and fiber to what would otherwise be a one-dimensional health beverage.

# Protein Pacing

*“Protein pacing is the scientifically proven combination of eating healthy, lean, protein foods at the right time of day to maximize health and performance.” - Dr. Paul Arciero*

*The 3 basics of Protein Pacing and how to make it work for you...*

- Consume 1.4 grams-2g of protein per kilogram daily depending on goals, body composition and activity levels as described earlier in this chapter.
- Spread your protein intake over four to six meals per day.
- Consume about 20-30 grams of protein, or 25-35 percent of your total protein intake, per each meal.



By consuming protein throughout the day, you can maximize muscle maintenance during weight loss and muscle building when combined with exercise. Even more intriguing is, for those seeking fat loss, protein pacing could actually enhance energy expenditure and improve body composition regardless of dieting. Translation? You can build muscle and burn fat without severely restricting calories! It's because protein can stimulate a greater thermogenic response compared to carbohydrates or fat, meaning it requires more energy to process. It can also increase satiation so you'll feel fuller too.

# Protein wrap up

Obviously protein is essential in our diet, not just to build muscle, but for the human body to even function. The available sources of protein range from high quality to compromised and tainted materials and it is up to you as the consumer to choose quality. Remember that what you put in, actually becomes what your body is built from. You absolutely are what you eat. As stated, protein is a vital macronutrient needed for every function of the body. It starts with your choices, and what you choose to put into your cart—whether online or at store.

“Remember, what you put into your body, actually becomes what your body is built of.”



## *Purchasing YOUR Protein Things to Remember*

- Undenatured whey protein is the highest quality and most absorbable protein you can put in your body.
- Stay away from soy if at all possible.
- No artificial sweeteners or colors.
- Make sure protein has a full amino acid profile and is combined with trace minerals and prebiotic fiber.

- Protein consumption should be paced throughout the day over 4-6 meals. 20-30g of protein each meal.
- Vegan, vegetarian and lactose free protein should consist of phyto proteins such as pea, hemp, whole grain brown rice in addition to trace minerals and a complete amino acid profile.
- For Meal Replacement Shakes— it must be 250kcal+, and should be have a full macronutrient profile of 40% protein, 30% Carbohydrates from natural sugar sources and 30% Healthy Fats.
- Athletes will need additional protein when looking to build and gain lean muscle mass. Consider adding a scoop of undenatured whey protein into a meal replacement shake for the ultimate pre-workout recovery.



*NOTE: For some protein supplements that meet these requirements that we can recommend, please visit [www.imDoingWELL.com/protein](http://www.imDoingWELL.com/protein).*

“Never underestimate  
the power of the right  
nutrients when it comes  
to your performance!”

—Jeremy Buchholz



## Chapter 4

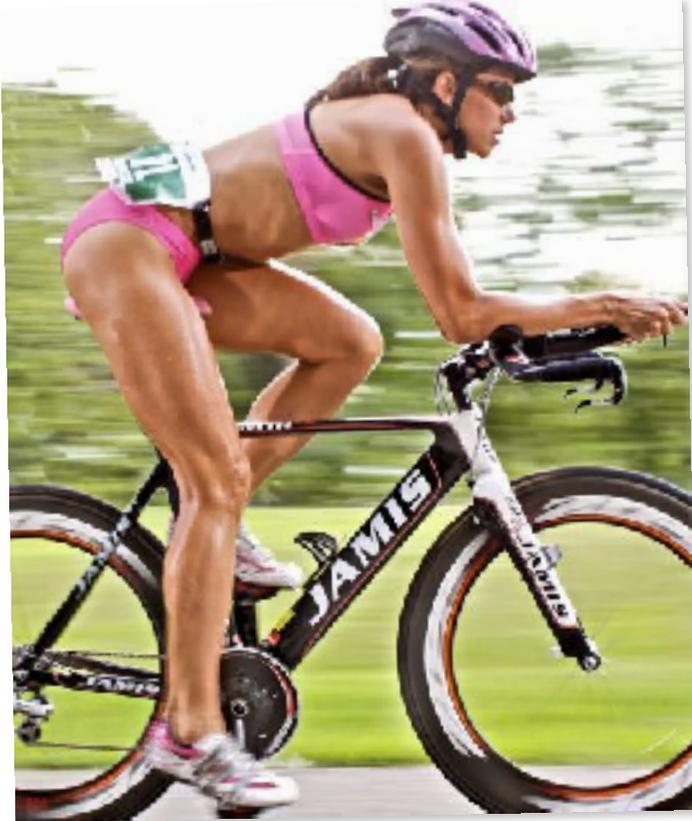
# DURING WORKOUT

The focus during of this period of a workout is to keep energy levels stable to prevent dips in performance. Endurance athletes heavily rely on carbohydrates to fuel their performance before, during, and after competition. When exercising for long periods, athletes burn quickly through glycogen (stored carbs in muscle) and the sugar in



their bloodstreams. Eventually fuel stores run low and athletes “hit a wall”, exhausting themselves while hindering their performance. Since endurance-based activity burns through your body’s stored fuel source (glycogen), replenishment midway through

your race, adventure, or ride is essential to maintaining stamina. The goal of supplementation taken during training is to provide you with immediate energy, reduce fatigue and muscle breakdown, and promote faster muscle recovery following the exercise. When



exercising for long periods, your body burns through carbohydrates stored in muscle and sugar in the blood. Eventually, after you become exhausted and performance suffers, you hit “the wall”. Simultaneously, as energy stores decline, the body begins to steal proteins from muscle to use as energy. Mid Workout supplementation supplies the body with a natural dose of carbohydrate energy in an optimal ratio with branched-chain amino acids to halt muscle breakdown.

### *Endurance Gels*

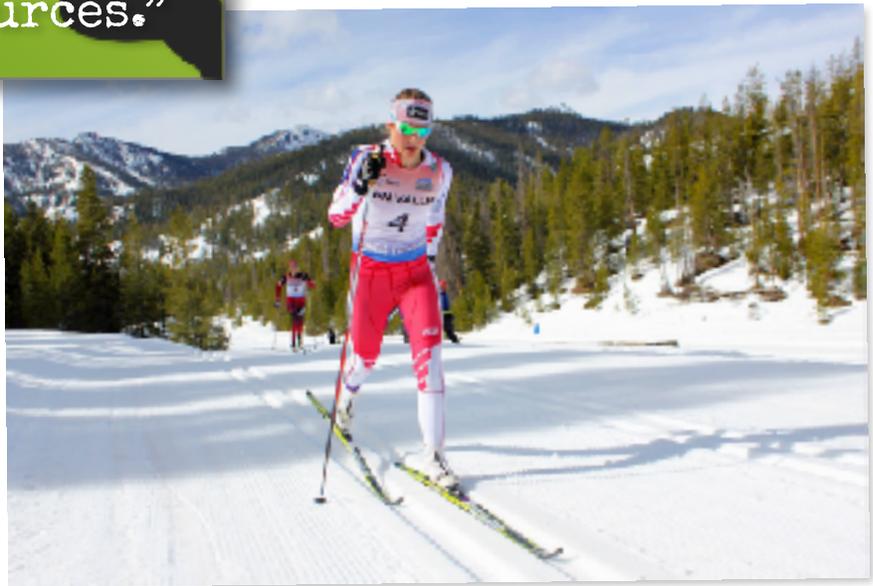
Endurance athletes rely heavily on carbohydrates to fuel their performance before and during their training. When exercising for long periods, athletes burn quickly through glycogen (stored carbs in muscle) and the sugar in their bloodstreams. Eventually fuel stores run low and athletes hit that wall. They become exhausted and their performance is hindered. Whether it be an extended intense workout, a marathon, a half-day adventure race, or a 40-mile training ride, the difference between just making it through an event and crushing it can be, more often than not, tied directly to nutrition.

More specifically, since endurance-based activity burns through your body's stored fuel source, glycogen, replenishment midway through your race, adventure, or ride can be essential to maintain stamina. It's also crucial to protect your muscles as your body burns through its protein stores.

Athletes should look for a puree that contains wholesome carbohydrate sources (example: apple, agave, and molasses) that is able to support an athlete nutritionally during endurance events like running and cycling.

“Look for a puree that contains wholesome carbohydrate sources.”

A wholesome product supplies immediate and pure energy during workouts, reduces fatigue and protects muscles, and promotes faster muscle recovery following training.



Carbohydrate gel or puree products taken during high-intensity endurance exercise significantly improve performance, according to scientific research on athletes and performance.

To maximize the availability of carbs, supply immediate energy, and minimize gastrointestinal distress, an optimal ratio of different forms of carbs should be consumed. The ideal ratio is one that allows for the quickest absorption and immediate use for energy and

maintenance of blood sugar levels with a mixture of glucose and fructose. This “sugar balance” spares existing stores of glycogen to prime the body for greater energy and performance as the endurance activity continues. Consuming carbs during exercise can also help limit the breakdown and release of protein from muscle.

“Consuming a modest dose of BCAAs during exercise can offset protein loss.”



Studies also suggest that consuming a modest dose of branched-chain amino acids during extended exercise makes additional protein synthesis available to the body helping to

reduce and offset protein loss. Supplementation during training may also suppress exercise-induced muscle damage, muscle soreness, and accelerate recovery.

Look for a gel that supplies the body with approximately 20-25 carbs and has the optimal glucose-fructose ratio along with branch chain amino acids and it will be a perfect nutritional supplement for energy replenishment and enhanced performance.

<b>Supplement Facts</b>		
Serving Size: 1 pouch (40g) Servings per Container: 24		
	Amount per Serving	% Daily Value
Calories	90	
Total Carbohydrate	22g	7%*
Sugars	13g	†
Vitamin C	60mg	100%
Proprietary BCAA Blend	1000mg	†
L-leucine, L-isoleucine, L-valine		

Other Ingredients: Apple puree, tapioca maltodextrin, evaporated cane juice, filtered water, natural flavors, citric acid, agave syrup, molasses

**SOY** SOY-FREE    **GLUTEN** GLUTEN-FREE    **DF** DAIRY-FREE

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

*This is an example of a product that falls within the optimal ranges for carbs and sugars. It also has a great blend of BCAAs.*



## *Hydration*

Another important part of your mid-workout nutrition plan is getting adequate fluids. There is little question that hydrating is one of the most important, yet overlooked, nutritional strategies for athletes.

Maintaining adequate hydration is vital for everyone, but it's especially important for people who are physically active. Even mild dehydration can have a serious impact on athletic performance. Athletes begin to experience measurable decreases in performance after a loss of just 1 or 2 percent of their body weight from dehydration. For example,

runners who were dehydrated by only 2 percent of body weight had a 7 percent decrease in speed compared to when they were well hydrated.



Physically active people can face additional challenges to maintaining good hydration compared to those with a less active lifestyle. Not only do those who train hard need to replace water, but it is also critical to replace electrolytes lost in sweat. Electrolytes are electrically charged minerals that are present in blood and body fluids. They help to regulate many functions within the body including hydration, pH, blood pressure, and nerve and muscle function. While all electrolytes are important, sodium and potassium are the two that need most attention during exercise.

Sodium and potassium work together to support peak functioning,

but are lost in the highest amounts during heavy sweating. Both physical and mental performance are impaired when sodium and potassium levels become unbalanced.



Active people can lose a significant amount of sodium in a short period of time through perspiration. For example, a study using elite soccer athletes found that the players lost an average of 2 grams of sodium through sweat during a 90-minute training session. For comparison, government guidelines recommend that most people limit daily sodium

intake to 2.3 grams. The soccer players in this study lost about a day's worth of sodium in just 90 minutes of exercise. Even though the body loses a much smaller amount of potassium through perspiration, it's still necessary to replace potassium to keep electrolyte levels in balance. Muscle cramping, weakness, and low energy levels are common when potassium or sodium levels are out of balance.

“Athletes can't simply rely on water to provide the right hydration.”

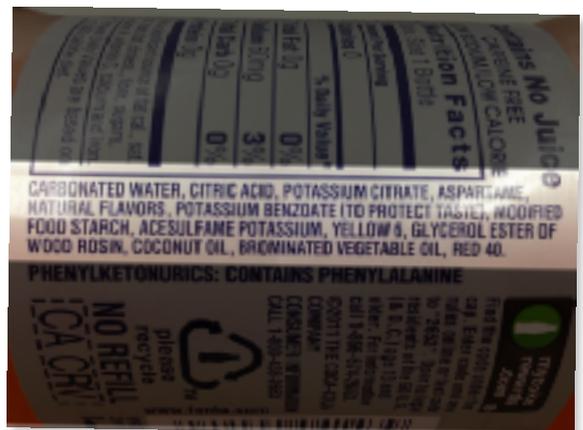
That being said, athletes can't simply rely on water to provide right hydration. Proper hydration requires the right balance of both fluids and electrolytes. When searching for a sports drink you want to find

a product that is formulated with the electrolytes an active person needs most, including sodium and potassium, to support complete hydration and optimal performance. In addition to electrolytes, it is helpful to have something that contains vitamin C and B complex as well as the right amount of



fast-absorbing carbohydrates to support performance without overloading on sugar. Water and fluids are essential to keep the body hydrated and at the right temperature, and your body can lose several liters of sweat in an hour of vigorous exercise. Therefore, consuming a natural sports drink mixture during your workout is highly important. However, beware of

the all too common ingredients that are more often than not in three sports drinks and mixes. (See section on Toxic Ingredients)



# Post Workout

Who knew? The 20-30 minutes after your workout is just as important as your workout itself! Just think about it — you just broke down and ripped your muscles! Don't miss out on this valuable time for your body to recover! Enhance lean muscle growth, slow down muscle breakdown, help with recovery, soreness, and repair faster during this time while also helping increase metabolism and fat burning.



The ability to recover from strenuous workouts is critical to anyone that exercises. Faster recovery means the ability to train more

“Faster recovery means the ability to train more frequently and more intensely...”



frequently and more intensely, resulting in greater performance and strength gains. Whether you're a runner looking to improve your marathon time or a figure athlete looking to tone your

muscle, you want less soreness coupled with fully recovered muscles. Athletes from all disciplines look for optimal performance in their sports. Building the appropriate amount of muscle and recovering

from training are major concerns. Following an intense training session, the body can move toward a catabolic state of muscle protein breakdown. This breakdown leads to micro-trauma in muscle cells and muscle soreness caused by increased tension force and muscle lengthening. The micro-trauma causes muscles cells to activate pain receptors for delayed recovery. Ever felt that?



It is because of that, that recovery supplementation should be focused on triggering the cellular mechanisms for rebuilding these proteins in your muscles. By pairing a recover supplement with a high quality

undenatured whey protein after workouts, your body will activate protein synthesis more easily and receive the supply of building blocks for the muscle growth process. The result is faster recovery so you are able to move on to your next workout more rapidly.

*“We exalt the burn and the sore, but it’s that fact that our muscles can recover faster and stronger than before that should excite us!”*

*- Jeremy Buchholz*

# Avoid!

It's pretty obvious. You are what you eat. Your workout is 20% of your game. The other 80% is nutrition and mindset. Do NOT feed your body with any artificial stimulants, sweeteners, synthetic caffeine, or additives. It's not a joke that these ingredients have been directly linked to health problems including but not limited to cancer and liver issues. We



recommend going natural! (No, we're not talking about not wearing clothes) We believe you should eat lots of good and real food, then supplement only with the proven best!

Above all, make sure that you ensure that the products you purchase and consume are products are safe, pure, and effective. Our focus and passion is helping you find a product that is not compromised in any way. It is important to find products produced by companies who test raw materials, test finished goods, and send products out for third-party testing to quantify the product is real, safe, effective and that is actually contains what it says on the label.

# Honorable Mentions

*Other Catalysts to Consider in Your Workout Supplementation:*

## 1. Quercetin

Quercetin, is a powerful antioxidant with immune supportive properties that are great for athletes (1). Found in foods like apples and green tea, quercetin is a flavonoid, which provides the various

“Intense training can make your muscles more prone to free radicals and oxidative stress...”

colors of fruits and vegetables and also serves as the defender against other environmental stressors (2). Those looking to add muscle often minimize the negative effects hard training has on the immune system. But

intense training makes your muscles more prone to free radical generation and oxidative stress, known factors that impair normal immune function. In fact, just one heavy training session can lead to physiological stress and significant changes in immunity and elevations in



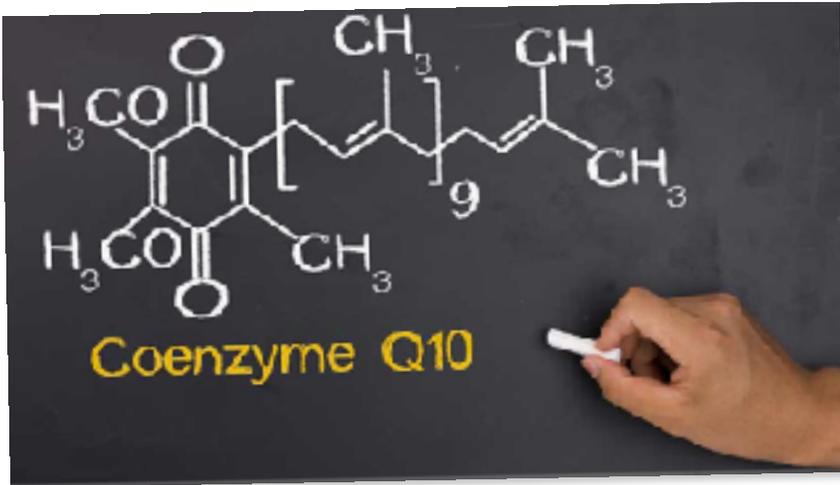
“Quercetin has been shown to bolster immune system function.”

stress hormones.

Quercetin has been shown to bolster immune function which can help avoid time off in the gym, translating into more time training and productive more workouts.

## 2. CoQ10

Coenzyme Q10, is another powerful antioxidant molecule, and one that is actually produced by the body. It is essential for energy



production in the mitochondria, the “powerhouse” of the cell, and it also promotes blood vessel health. CoQ10 can also enhance blood flow to all tissues of the body including muscle where it greatly aids in

mitochondrial function and energy production during muscular contractions. Not surprisingly, muscle fibers, with a higher oxygen requirement, also have a higher concentration of CoQ10.

## 3. Omega-3 Fatty Acids

While recognized for maintaining general health, omega-3 fatty acids also help modulate cellular signaling pathways regulating muscle building. By increasing omega-3 fatty acids in the diet, your ability to build muscle increases in response to your daily protein intake. Basically, these fats make the protein you’re consuming—either through diet or supplements—more effective. Eating more seafood rich in omega-3s and supplementing with a high quality Omega-3 on a daily basis ensures you’re getting a constant and pure omega-3 source to aid in muscle recovery.

“Omega-3 fatty acids increases your ability to build muscle in response to your protein intake.”

# Wrap Up

Because the U.S. FDA does not regulate supplements, it can be tricky to know which blends work, and which are bogus. Always look for a brand that tests its raw materials and final product. Also it is also beneficial to know that a brand/company is using third party product testing to ensure you're getting a product that actually contains what it says it does. Specifically, high level athletes may be required to consume supplementations that have been certified through NSF or Improved Sport.

In general, we advise to avoid anything that doesn't have research behind it, and to be wary of supplements with long ingredient lists, artificial sweeteners, artificial colors and mega-doses of ingredients like caffeine or other stimulants.

Still confused? Don't hesitate to consult with a doctor, holistic nutrition professional, sports nutritionist or dietician to figure out the best mixture



of ingredients for your individual needs. Heidi and I also work with people daily and give our own recommendations. Feel free to contact [imDoingWELL.com](http://imDoingWELL.com) for more information on how you can work directly with Heidi, myself, or one of our coaches.

[www.imDoingWELL.com](http://www.imDoingWELL.com)

When it comes down to it, regardless of the supplement(s) you choose, it's important to remember that they'll do little for you unless you already have a solid foundation of good health habits in place. Sleep, a nutritious diet and safe exercise habits are the most important ingredients for workout success.



Trying to take supplements when the basics are shot is like putting lipstick on a pig.

With that being said, if someone is firing on all cylinders, there are a few supplements which have some good research showing they could be useful to our workouts and overall health.

### *The Final Word*

So, you want a strong body. You want abs of steel. You want your sexy back. But how? Well, it's quite simple actually, YOU CHOOSE IT! You are the deciding factor! You choose your thoughts, you choose what you focus on, and you choose your actions. Are you really ready for change, or are your words bigger than the action you're willing to take?

*"What you focus on you find, what you focus on becomes real, what you focus on grows, and what you focus on you become."*

Do you know what happens about 80% of the time people ask me for help with fitness? You guessed it. They rarely do what I advise them to do. They don't take the very advice they asked for. Instead, they continue to complain and whine and then go on looking for magic bullets or pills or sometimes dangerous diet fads to reach their goals. They wonder why they aren't having the results they want and guess what...they come back to me again—often whining about how difficult of time they are having. The cycle usually takes about three months. Unfortunately, it is that predictable. Like clockwork.



What are most people actually looking for when they ask how to get their abs to pop, or how to lose that weight? I think, many times, they are actually asking for a magic pill. A solution that will give immediate effects with little effort, and what's scary is, most of the time

the thought of their long-term health rarely even crosses their mind. It's how our society thinks and that's scary to me! It's definitely not healthy.

Something else that people need to realize is that in order to maintain the healthy body that they want, they absolutely must maintain a healthy mindset and lifestyle as well. While the content of this book was focused primarily on physical health and nutrition, imDoingWell focuses on what we call the *Trinity of Wellness*: complete Body, Mind and Spirit Wellness.

This *Trinity of Wellness* means that our well-being comes from not just physical health, but from the mental and spiritual health as well. They are not only connected, but they are actually interdependent. You can never completely have one without the other. The Body Mind and Spirit are the components that, collectively comprise and define who we are as humans. There's nothing as rewarding as fulfilling your potential. Achieving this with performance is a multifaceted endeavor involving diet, training, lifestyle and supplementation. Leave out one of these or get them out of order and you'll never build the body you want.



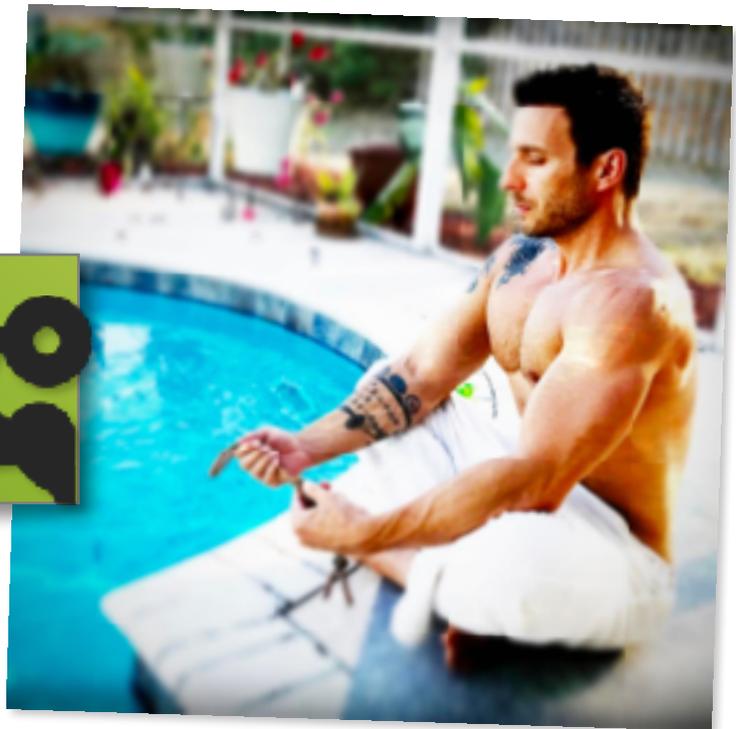
If you are sick or suffering, in any way shape or form, you must work holistically to

“You must work holistically to completely heal.”



completely heal. If you don't, you are missing the connection and in all likelihood, will never reach your potential of wellness or vitality.

If you take care of each tier, you'll not only reach your physical potential, you'll get there in half the time.



*Jeremy Buchholz in Meditation*

Heidi and I hope that you become an advocate for your health and safety based on increased awareness. We both believe that, at this time in history, supplementation is necessary in order to maintain optimal health and we hope the you begin complementing your diet with only quality nutritional supplements.

We truly hope you enjoyed the content of this book and that you will put it to good use. Be sure to sign up to receive additional free content and support through our value-packed [email newsletter](#) and by following imDoingWELL on [Facebook](#).

Be good to your body, y'all!

*—Jeremy Buchholz and Heidi Dix*



**Thank you for purchasing this book!** *We really hope that you gained some knowledge that will help you reach your goals. Be sure to be on the lookout for future titles to be released!*



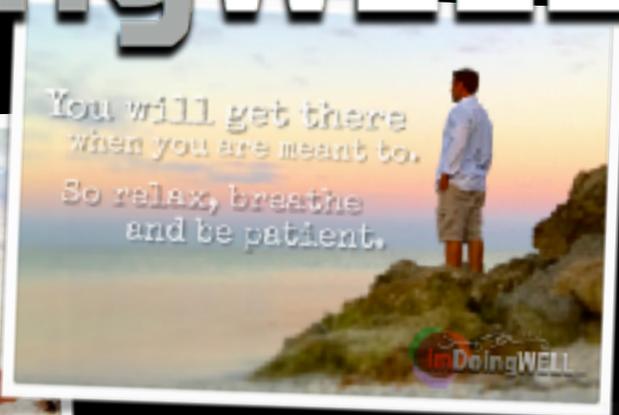
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