



MACROS EXPLAINED:

Your ultimate guide to macronutrient prescription for health, performance and aesthetics

by Jason Phillips and Mike Kesthely

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HOW TO USE THIS BOOK:

The iN³ Approach rarely involves a diet “prescription.” Instead, our aim is to educate you on how to properly structure your eating choices WITHIN your current lifestyle.

We recognize that there are lots of popular “diets” out there, but the lack of true education has left you—the consumer—frustrated. This book will not favor one method over another; rather, it will serve as a set of objective, no-nonsense facts to help you move forward in your own individual journey.

The following information has helped people across the world in their fitness journeys, and we’re confident that it will help you, too. However, you must be ready to take action. While knowledge is the missing ingredient *publicly*, implementation is often what is missing *personally*. Be ready to make the necessary changes and **you WILL find success!**

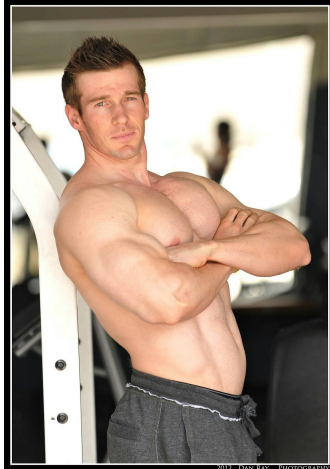
First, before reading any of this book, we recommend that you log your food for 3 - 4 days. Be sure you track your food intake, total calories, macronutrient breakdown, fluid intake, supplementation, and any biofeedback markers (e.g., sleep quality, performance, overall feeling, hunger, etc.) associated with these 3 - 4 days. You will need to use a calorie or macro-counting app such as MyFitnessPal to do this.

As you move forward, read each chapter and make the changes that best suit your goals and lifestyle. Be patient, and understand that true change takes time. We are never about “quick fixes”—and you shouldn’t be, either.

Remember that everyone’s body responds differently to change. Therefore, when you make a change, track your own personal feedback and response. If this is in line with the progress you desire, continue on your way. If not, re-read the given chapter and make the appropriate change.

In the end, several small-scale changes will lead to a much better overall LIFESTYLE. We firmly believe—and have proven—that **this is a recipe for SUCCESS in any nutritional endeavor.**

ABOUT THE AUTHORS



From cover model to professional athlete, Jason Phillips has “been there and done that,” and always helped his peers along the way. Jason has written for several publications, including *Men’s Fitness*, and has been a sponsored athlete in the fitness industry for over 6 years.

Jason’s fitness journey began when he was a teenager battling anorexia. Today, it has landed him in a position where he has helped (and continues to help) thousands of people achieve their fitness and nutrition goals. His formal background comes from Florida State University, where he majored in exercise science with a concentration in fitness and nutrition. Throughout the years, he has consulted for weight-loss reality TV shows, traveled with the PGA tour, and most recently, helped several functional fitness athletes improve their performance.

Current Certifications/Education:

- BS, Exercise Science, Florida State University
- Certified Strength and Conditioning Specialist, NSCA
- Functional Diagnostic Nutrition Practitioner, pending
- Published Author



Mike Kesthely has been involved in athletics across diverse domains for his entire life; his endeavors have included box lacrosse, martial arts, rock climbing, mountain biking, and CrossFit. He has worked as a Firefighter/Paramedic for the Lethbridge Fire Department since 2000, and once served as the Health & Fitness Coordinator for the department. His passion now lies in nutrition and functional lab analysis, with the goal of improving client performance, health, and longevity through dietary augmentation.

Current Certifications/Education:

- Former lead instructor for the OPT (now OPEX) CCP Nutrition Level 1 in Scottsdale, AZ, at the International Center for Fitness, 2011-2014
- Former trainer with CrossFit Lethbridge
- Optimum Performance Training Certified Coaching Program Nutrition, Level-1 (under James Fitzgerald and Mat Lalonde, Ph. D.)
- Functional Diagnostic Nutrition Practitioner
- Precision Nutrition Certification in Sport & Exercise Nutrition (through Dr. John Berardi)
- CrossFit Nutrition Certification (under Robb Wolf)
- CrossFit Trainer, Level 1 Certification
- Functional Movement Screen (under Tim Takahashi, M.Kin., CAT(C), CEP, CK, CSS).

The iN³ Approach

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- CHAPTER 2: HYDRATION
- CHAPTER 3: FOOD QUALITY
- CHAPTER 4: FATS
- CHAPTER 5: CARBOHYDRATES
- CHAPTER 6: PUTTING IT ALL TOGETHER &
TIMING
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- CHAPTER 9: TEST, RE-TEST

GETTING STARTED...ALMOST

WELCOME! At this point, you should have logged your food intake for 3 - 4 days; accompanying this, you should have an accurate record showing how many calories and how much of each macronutrient you consumed on those days. In the following chapters, you will read the facts about several crucial facets of nutrition; finally, we will conclude with some implementation pieces that you can use moving forward.

Before continuing, we find it prudent to give you time to examine your "why."

Why are you reading this book? That is, what do you want to achieve? What will achieving these goals do for your life?

From our experience, we believe your goals will fall into one of three categories: lose weight, gain weight, or perform better.

However, through decades of working in the fitness and nutrition industry, we've also come to recognize that these goals typically produce a much deeper impact on a person's life. Do you want to podium at your local competition? Do you want to have more energy for your kids? Maybe you want a better sex life? These major life impacts are what truly defines your "why," beyond simply losing fat or gaining muscle. So take a moment to reflect, and then let's get started!

CALORIES

Calories are the basis for all things diet-related. As such, they are their own entity in this book, and do not even require a chapter number.

Despite so much conversation in the fitness world right now being centered around “macros,” calories are still king. A proper macronutrient prescription will always add up to an appropriate amount of calories - **period!** In fact, no macronutrient prescription can be given without first establishing an appropriate number of calories, so logically, calories are our starting point.

While the old “calories in vs. calories out” adage holds true, it’s important to note the following: calories themselves will determine weight loss or gain, but **the composition of those calories (macros) will determine the type (i.e., fat or muscle) of weight lost or gained.** Yes, the Twinkie diet *does* produce weight loss; but no—it does *not* produce a great physique.

That being said, how do we determine our calorie needs?

The iN3 Approach answers this question in a couple of ways.

TRACKING AND MONITORING

Although tracking and monitoring is the most precise method to determine your calorie needs, we understand that not many people will prefer it, as it require patience and diligence for a minimum of a week. (Yes, we understand you bought this book and want results yesterday — we do too!) Still, we recommend it, as it will be a great help in formulating your precise nutritional plan.

Tracking and monitoring involves precisely measuring your caloric intake and body weight over a week. To start, track your food/calorie intake and body weight every day for 7 straight days. Then, at the end of the week, you determine your average caloric intake for those 7 days, as well as the difference in body weight from the start to the end of the week.

If you lost weight, we know that you are in a calorie deficit. But further, we can even accurately measure the *extent* of that deficit. On average, each pound can be attributed to approximately 3500 calories. So if you lost 2 pounds in that week, this means you're in a deficit of approximately 7000 (3500 x 2) calories for the week, or 1000 calories daily. (7000 calories ÷ 7 days = 1000 calories per day). If your goal is to *lose weight*, you will have to be in a calorie deficit.

If you gained weight, we know that you are in a calorie surplus. Suppose that you gained 1 pound in that week. This means that you are in a surplus of approximately 3500 calories for the week, or 500 calories daily (3500 calories ÷ 7 days = 500 calories per day). If your goal is to *gain weight*, you will have to be in a calorie surplus.

Finally, if you didn't lose or gain weight, we know that you are eating at approximately maintenance-level calories. So, if you consumed 3500 calories daily for 7 days and didn't gain or lose a pound, we know that 3500 calories is your base for determining weight change. If your goal is to *keep your current weight*, you'll have to find and maintain this caloric baseline.

Once you complete your week of tracking and monitoring, you'll have a good understanding your current calorie needs, and we'll know how to move forward appropriately based on your personal goals.

FORMULAS

As we stated before, when it comes to assessing your calorie needs, there's no beating tracking and monitoring. Therefore, using formulas to determine your individual needs is never the preferred method; however, as noted above, we respect the desire to get started *now*. Given that the following formulas have been proven over thousands of data points to have a very high degree of accuracy, we recommend using formulas if tracking and monitoring is not an option.

There are two very simple formulas that we have used with success and thus recommend to you. The first is derived from a formula proposed by Alan Aragon, a fitness guru who we highly respect:

Calories = Target Bodyweight x (intensity training factor + number of training sessions per week). The intensity training factors are **8/9/10 for women and 9/10/11 for men.**

The other formula is a very simple "multiplier" formula, which traditionally has been used with an old-fashioned "bodybuilding" style of training. However, based on our own independent data, we've found these numbers to be inaccurate. Therefore, we propose an updated multiplier formula, with our own unique twist.

The classic "multiplier" formulas are as follows:

- BW x 10 to 12 = fat loss calories (you'll lose weight if you consume this many calories)
- BW x 13 to 15 = maintenance calories (you'll maintain your current weight if you consume this many calories)
- BW x 16+ = weight gain calories (you'll gain weight if you consume this many calories)

We still find these numbers to be accurate if you adopt a classic "bodybuilding" style of training, or a body part split workout with added traditional cardio.

However, in a CrossFit setting, we have found these numbers to be insufficient—leading to a lack of energy and recovery, as well as a host of other metabolic complications and adrenal issues.

Instead, we have found the following multipliers to be more accurate:

- **BW x 12 to 14** = fat loss calories
- **BW x 15 to 16** = maintenance calories
- **BW x 17+** = weight gain calories

By either of these formulas or by tracking or monitoring, we should now have a pretty good idea of what your caloric intake should be. Now comes the fun part: it's time to move onto the macronutrient prescription.

CHAPTER 1 – PROTEIN

It seems a bit redundant to sit here and explain the importance of protein in resistance-trained individuals, but for the sake of being thorough, we will touch upon it anyway.

As you are probably aware, the act of *training* in and of itself is catabolic. We are literally breaking down tissue in an effort to create adaptation—whether that be through strength, hypertrophy, or other means. While the training stimulus will go a long way in creating that adaptation, recovery between sessions is paramount. And this is where dietary protein comes into play.

Before we move forward, it is important to note a couple things:

- Ladies, protein does not “make you jacked.”
- Gentlemen, there *is* such thing as “too much protein.”

Now, for the purposes of this guide, we will make the general recommendation that every meal you consume contain a protein source. Aside from the post-workout shake (which will be discussed later), this protein should preferably come from an animal source—chicken, fish, eggs, beef, etc.

There several reasons we start with protein, and why it is so important:

- **Protein has a very high thermic effect.** By *thermic effect*, we’re referring to the energy required to digest, absorb, and distribute nutrients. Foods and nutrients with a high thermic effect, such as protein, require more energy—i.e., calories—to digest. Therefore, foods with lots of protein burn more calories in digestion.
- **Protein is a very satiating nutrient.** Eating is a hormonally-driven behavior, and fats, carbs, and proteins all produce different hormonal responses which can leave us feeling hungry or full. It’s important to know that, when it comes to satiety, *protein is king!*
- **Protein is responsible for the repair of skeletal muscle tissue.** If your goal is to achieve higher levels of performance (which we’re assuming it is—after all, you bought this book, right?), then you are

most likely doing a decent amount of resistance training. While this is certainly in line with your goals, it can also become detrimental without adequate protein intake.

- **Training is simply an act of breaking down lean muscle tissue.** But without adequate nutrient (protein) intake to repair this tissue, over the long term, your body won't be able to create the adaptive response we are after. In this case, protein is ESSENTIAL to making progress.
- **Protein is a major factor in maintaining or adding lean body mass.** As an athlete, there will be times when you are looking to shed fat or add muscle. Regardless of the goal, proper protein intake will be essential.
- **Protein stimulates the release of glucagon, the "release" hormone.** Unlike insulin, the "storage" hormone, glucagon will allow us to *release* stored energy for use. Clearly, releasing stored energy (and not storing new calories) will prove favorable to body composition and aesthetics.

IMPLEMENTATION

Look back at your food log, and more specifically your protein intake. How much protein are you getting? We generally recommend that each individual get between 1 and 1.25 grams of protein per pound of body weight. For a male weighing 200 pounds, then, this would be between 200 and 250 grams of protein daily ($200 \times 1 = 200$; $200 \times 1.25 = 250$).

How do you figure out where you place within this continuum? For the purposes of this book, we will recommend the following: if you're after *fat loss*, then you should sit at the higher end of this range, thus decreasing the proportion of carbs or fats in your diet. However, if you are after *improved performance*, we will recommend that you sit closer to the lower end of the spectrum, thus allowing you to eat more fats and carbs for energy.

LIFESTYLE HACKS

Gone are the days of “dieting” being about carrying your Tupperware everywhere to squeeze in your 6 meticulously-prepared, pre-measured meals per day. However, that “old school” methodology has certainly left us with some valuable ideas as to how we can best prepare ourselves to ensure that we meet our protein requirements.

We all have one or two nights per week that are less busy than others. We recommend using these times to pre-cook your meats. While nothing tastes as good as freshly prepared meats, very few of us have a lifestyle that allows us to cook all of our meals fresh at every sitting. Spending an hour or two grilling several chicken breasts, steaks, or burgers can go a long way in making sure you’re prepared all week.

Meats that don’t require cooking, such as beef jerky and pepperoni, are also great protein sources. While mainstream media has vilified these products due to their sodium nitrate content, these are empty claims. Instead of worrying about sodium nitrate, make sure that you are purchasing high-quality products that do not contain high fructose corn syrup (HFCS). If possible, check with your local butcher, as they are usually a great source for these products.

Protein powders are a common “staple” for most fitness-oriented individuals these days. Indeed, they can be of great utility in upping your protein intake, but should always be treated as a *supplement*, instead of a replacement for quality meals. We will explore this further in the “Supplementation” chapter.

Protein bars should be used sparingly. Unfortunately, due to lack of regulation in the fitness supplement industry, many protein bars are not accurate in terms of labeling their macronutrient and calorie content (though some are viable). Additionally, the sources of protein in protein bars are rarely high-quality, and the amount of additives and artificial sweeteners that they often contain makes protein bars a less preferable, last-resort option.

SUMMARY

By now, you should understand the role of protein, how it can help you with your goals, and where it fits in your diet. You should also know exactly how much protein you should be consuming on a daily basis moving forward. If not, please re-read this chapter and establish this number before proceeding. It will serve as the foundation from which we continue to build.

CHAPTER 2 – HYDRATION

Hydration is easily one of the most overlooked parts of a nutrition plan. It is EXTREMELY important to improving body composition, as well as to overall health and wellness. As a nation, we are chronically dehydrated, which is a problem that anyone serious about their fitness needs to address.

Specifically, hydration assists with digestion and mental clarity, and increases the removal of byproducts from metabolism. And those who are reading this book will be interested to know that **hydration is key to proper recovery from heavy, intense training!**

Last but not least, maintaining adequate hydration can lead to better cosmetics. When your body is even slightly dehydrated, it senses that it must “hold” water for future survival. However, when hydration is adequate, your body will more quickly turn over its water stores, allowing for a leaner (and often times more vascular) appearance.

In Chapter 1, we discussed the thermic effect of protein. Now, not only does protein require more energy to digest, it also requires more *water* to metabolize. Based on our protein recommendation earlier being higher than what is traditionally suggested by common nutrition plans, we also suggest a corresponding elevation in water intake, too.

HOW MUCH TO DRINK

As a rule of thumb, you should drink **half your bodyweight in ounces per day**, where 1 ounce equals 29.5 ml. For a 200 pound male, this would be 100 ounces or 3 liters ($0.5 \times 200 = 100$).

Important: THIS DOES NOT INCLUDE WATER CONSUMED DURING TRAINING. We recommend adding another 500 ml (17 oz) of water per hour when training.

As an athlete, you need to consider the following key facts when it comes to hydration:

- **At just 1% dehydration, you are looking at a performance decrement of up to 10 - 12%.** In case it isn't obvious: this is HUGE! Now, most people will use thirst as a regulator for hydration, but *when thirst kicks in, it means we're already dehydrated* and losing performance. Don't lose performance for something so easy to fix!
- **The environment you train in can also impact your needs regarding water intake.** At higher training temperatures, the amount consumed per hour must increase due to elevated sweat loss and increased body heat/cooling rates. Intake per hour can increase to upwards of 800 ml (27 oz) per hour of training.
- **Water is essential to performance, but it is also essential to recovery.** By remaining hydrated we will replace lost fluids, and we will also remove metabolic waste byproducts.
- **Dehydration is harmful both physically and mentally.** Decreased performance is a sign of dehydration, but dehydration can also cause mood swings, decreased mental focus, and lethargy.

TIMING YOUR WATER INTAKE

While getting the right amount of water is important, *when* you drink your water can be equally important.

Large amounts of fluid intake during meals can cause inefficient digestion due to diluted gastric acids and enzymes, and this is especially true of people with IBS, Crohn's, Colitis, Hypochloridia, and GERD. Therefore, we recommend reducing water intake *during* the eating process, and instead waiting until 30 minutes *after* a meal to best optimize digestion.

Remember, we can eat all the steak and broccoli we want, but it won't do a bit of good if it is poorly digested and absorbed!

OTHER FLUIDS

Coffee: If you know us, you know we love our coffee. Coffee has gotten a bad rap in the public eye as being an unhealthy diuretic, but we can assure you that it is not! In fact, there are numerous nutritional benefits to coffee, including its antioxidant profile and the thermogenic effect of its caffeine

content. Not only that, it is (and has been repeatedly proven to be) an ergogenic performance-enhancer.

Of course, despite all of these benefits, quantity must be considered. Dependence on coffee is something we see quite often, along with the ability to drink copious amounts and not be “wired.” This is a classic sign of adrenal dysfunction, which needs to be addressed promptly! For more information on adrenal dysfunction, we suggest checking out www.maxadrenal.com.

Teas: If you’re trying to decrease caffeine intake or just want an alternative to coffee, tea is a great option. Our three favorites are green, white, and rooibos.

Green tea is commonly thought of as a “fat burner” due to compounds found within it called *catechins*. Combine this with its high antioxidant profile and you’ll see why green tea has become a very popular beverage! Catechins are also found in white teas.

Rooibos is an African bush, and comes in red and green varieties. It does not contain caffeine, but it is very high in antioxidants and has a great taste.

Alcohol: While alcohol’s role in nutrition warrants its own book, we will only touch on it briefly here.

First, the good news: alcohol—specifically, red wine—has been proven in studies to bear general health benefits *for the average person*. But if you’re reading this book, we assume that you’re not seeking “average.” As an athlete or someone seeking performance and/or cosmetic enhancement, it is important to recognize that alcohol consumption does have some negative repercussions. Specifically, alcohol consumption negatively affects hydration status, fatty acid synthesis, hormone production, and quality of sleep.

We do not officially take a stance on alcohol consumption; rather, we seek only to create awareness about its effects. You are an adult; you make your own decisions—now, you can do so in an informed manner.

IMPLEMENTATION

Look back at your food log. Did you even track fluid intake? We recognize that this is often one of the most overlooked pieces in creating a nutrition plan. Earlier, we gave the formula to figure out what your fluid intake should be, and also provided recommendations to take into consideration for the impact that your local climate might have.

Moving forward, it is important to be aware of this. By nature, we are diligent about our training (and to some extent, our food intake), so let's not overlook something so simple but important as staying hydrated!

LIFESTYLE HACKS

On average, we see most of our clients falling into the range of 2.5 - 4 liters per day of water intake. A simple way to ensure that you are meeting this number is to carry around a liter-size bottle of water with you, and refill it the appropriate number of times.

We also highly recommend including water-dense vegetables (cucumbers, celery, radishes) in your nutrition plan. These will serve as a "backup plan" for those days when you fall short in terms of hydration, but should not in any way be considered a viable substitute for drinking water.

CHAPTER 3 - FOOD QUALITY

In the “macros” world, food quality tends to get overlooked. This is contrary to the goal of The iN³ Approach, which is to blend the lines of the “clean eating” camp and the “flexible dieting” camp. No, we don’t believe it’s necessary to consume *only* foods deemed as “clean,” but we’re not on board with some of the current trends that not only allow but actually *promote* the inclusion of “shitty foods.”

As with everything, **balance is key**. The iN³ Approach to nutrition entails an equal emphasis on food QUANTITY as well as food QUALITY.

This chapter is intended to simply raise your awareness regarding food quality. You, the individual, can make your own choices as to which foods you include among your macronutrients. However, you also need to be conscious of how you feel after consuming certain types of food. Just because you’re “allowed” to eat candy doesn’t mean you *should* eat it, if it leaves you bloated and feeling like crap.

When we say “high-quality” foods, what exactly do we mean? Indeed, the concept of high-quality foods is open to interpretation, and for some, it can be utterly confusing. To demystify this concept a little, we’ll break it all down into two main points: **nutrient density** and **potential dietary offenders**.

NUTRIENT DENSITY

Nutrient density is officially defined as “the micronutrient profile, in amount and quantity, that is included in a food item.” Or, in English, this simply translates to: the vitamins and minerals in food. We spend a LOT of time focusing on macronutrients (carbs, fat, protein), but it is *just as important* to consider the *micronutrient* density of what you’re eating, too.

In fact, some authorities ONLY consider micronutrient density. While we think that doing so is extremely shortsighted, we agree that micronutrient density is highly important to your health, performance, recovery, and

longevity. Just how important, you might ask? Consider the following scenario.

Imagine you have two separate meals. They are isocaloric (they both have the same amount of calories) and have exactly the same macro makeup.

The first meal consists of:

1. Soy protein isolate
2. Ramen noodles
3. Corn oil

The second meal consists of:

1. Eye of round steak
2. Broccoli
3. Butter

Which of these meals is “healthier”? Your kneejerk reaction would be the latter, right? But the question that begs to be asked is: *Why?!* Some folks can’t answer that, but we can: without a shred of doubt, the answer is **nutrient density**. Even if we don’t pull the specific micronutrient data on all the foods, we can easily say off the top of our heads that the iron, B vitamins, vitamin K, vitamin C, zinc and selenium are OFF-THE-CHARTS high in the second meal. The first meal? Not so much!

So how do we go about incorporating nutrient density into our daily nutrition? We’ve spent many, many years focusing on this, so we know the answer is a lot less complex than a lot of people make it. We tell our clients this: **keep your food real**. Think in terms of protein from animal/ocean-based sources; carbs from starches like potatoes, oatmeal, rice, and quinoa (in addition to fruits and veggies); and fats from extra virgin olive oil, real butter, and coconut oil.

Don’t pigeonhole yourself to a restrictive diet, as so many others have; instead, focus on keeping your food real, fresh, and nutrient-dense. Your body NEEDS those vitamins and minerals just as much as it needs the carbs, fats, and proteins. Neither works without the other!

Implementation: Make sure your nutritional intake consists predominantly of fresh, whole foods. Animal- and ocean-based proteins should be purchased as fresh as possible, and cooked on low heat. Include a variety of

fruits and vegetables in as many meals as possible. Opt for low-processed fat sources. Expect to shop every few days, or buy in bulk and freeze, especially for your proteins.

POTENTIAL DIETARY OFFENDERS

While we aren't against folks consuming *some* processed food items in moderation, there are a few specific foods that we like to steer clients away from. But before getting into this, as a disclaimer, we'd like to point out that this is also VERY individually dependent. We have some clients that cannot even LOOK at gluten without having serious health issues, and some clients that can consume take-out pizza without any problem whatsoever. It can often take the assessment and oversight of a well-trained nutrition coach to pick out potential dietary offenders specific to a client, but some can be avoided from the start.

Gluten: Gluten is the protein prolamin found in wheat. All grains have protein prolamins; gluten just happens to be the most reactive to our immune system. In fact, it's so reactive that 100% of the population is intolerant to gluten—to some degree.

We can think of this as a pyramid, where diagnosed Celiacs are at the tip, and everyone else is below (less reactive) to some degree. Some folks may be so low on the pyramid that they never have a perceptible reaction at all, while others may only notice GI (gastrointestinal) issues after multiple days of consumption.

But the fact remains: we were never designed to digest gluten completely. Now, that doesn't make it a hard-and-fast rule NOT to consume gluten. Indeed, we weren't exactly meant to fly to the moon—but we did! Humans are amazing.

Still, in terms of gluten here on earth, the potential will always exist for possible autoimmune reactions, or at the very least, increased systemic inflammation. Whether you're a podium-seeking athlete or just looking for improved body composition, increased inflammation definitely won't help you achieve that goal.

Today, it is VERY easy to eliminate gluten—switching out wheat-based food items for GF (gluten free) alternatives is completely doable.

Soy: Soy is an extremely popular food item in North America today. Why? It's cheap, and it grows *fast*. It's pitched as a health food, and is an excellent source of protein. Unfortunately, soy is neither healthy nor packed with protein. Consider the following:

- **Soy contains trypsin inhibitors** that block digestion and impair pancreatic function (which in turn causes digestive distress).
- **Soy increases our need for Vitamin D**, which up to 50% of the population is already deficient in.
- **High levels of phytic acid in soy** reduce the assimilation of calcium, magnesium, copper, iron, and zinc, and inhibit GI enzymes.
- **Soy contains phytoestrogens that disrupt endocrine function** and raise estrogen levels in both men and women.
- **Soy contains Vitamin B12 analogs that are not biologically active**, and thus actually increases the body's requirement for true B12.

This is actually just an abbreviated list of the issues with soy; it's a very problematic food item. In fact, some tolerate soy even more poorly than they tolerate gluten. And as with gluten, there is no reason at all why soy should be included in one's diet—there are many animal-based and even *vegan* proteins that are much safer and more nutrient-dense than soy.

Implementation: Make an effort to remove both gluten and soy (optimally both at the same time) from your diet, even if you don't have any current problems with them. See how you perform, recover, and feel. Then, re-introduce one of them and gauge your response. If you have zero negative effects, consider yourself "resilient," but always keep in mind that the potential for issues will always be there. If you do have negative effects, remove it completely, and don't re-introduce it.

CHAPTER 4 - FATS

As our general of knowledge of nutrition continues evolving, I don't think we still need to point out that fat does NOT make us fat. But at one point in our history, this was the common belief. Despite fat being calorically dense at 9 calories per gram, it is hormonally *neutral* in regards to insulin, the master "storage" hormone. In fact, fats are an essential nutrient—without them, we would eventually break down and die.

For the purposes of this book, we will examine all types of fats, and the benefits of certain types. As you will see, dietary fats play a great role in various bodily processes—including hormone control and production, lean tissue acquisition, reduction of inflammation, and, paradoxically, fat loss.

TYPES OF FATS

Let's first examine the four major types of fats:

Polyunsaturated Fatty Acids: These come from fish, flax, canola, and other industrial seed oils, among other sources. Polyunsaturated fatty acids oxidize (become rancid) very easily, and can be either inflammatory (omega-6) or anti-inflammatory (omega-3). As much as possible, we should always be looking to maintain a favorable ratio of omega-3 to omega-6 fats in our diets (i.e., more omega-3 fats consumed compared to omega-6 fats).

Monounsaturated Fatty Acids: These come from olive oil, certain tree nuts like macadamia nuts, and avocados, among others. It is also important to note that the fat composition of red meat is 50% monounsaturated.

Saturated Fatty Acids: Saturated fatty acids are found in coconut, butter, and animal fats. While saturated fats have been vilified in the public eye, this is mostly unfair and baseless. These fats are essential for the production of certain hormones like testosterone, as well as a host of other bodily processes.

Trans-fatty acids: We've all heard how awful trans fats are, but once again, the media isn't telling us the whole truth. There are certain types of trans fats like CLA (conjugated linoleic acid) that actually confer huge health benefits (and potentially fat-burning effects, too).

In both sports and life, inflammation is often one of our biggest enemies. While inflammation can stem from many things other than diet (e.g., overtraining, chronic stress, lack of sleep, etc.), the biggest *dietary* cause of inflammation is *linoleic acid*, which is found in things like grains, breads, seed oils and nuts. Along with the linoleic acid consumption, we often see inflammation accompanied with a high ratio of omega-6 (inflammatory) to omega-3 (anti-inflammatory) in people's fatty acid profiles, when in an ideal world this would be reversed.

ANIMAL FATS

Animal fats are often thought of as consisting entirely of saturated fat, and with the terrible misinformation that exists surrounding saturated fat, people avoid them. However, consider the following: **Red meat is 50/50 monounsaturated and saturated**, with the **saturated fats coming primarily from very healthy sources** like conjugated linoleic acid (CLA) and vaccenic acid.

Conversely, chicken—which is often thought of as being “low fat”—consists primarily of omega-6 fats relative to other type of fats, which is not healthy by any means. Yes, we are advocating being aware of the quantity of chicken you consume, as we've already discussed the problems of omega-6 fats, such as their pro-inflammatory properties.

Note that we staunchly refuse to participate in fearmongering in our industry, so we say this only as a call to be *aware* of what you're eating—not to avoid certain types of food entirely!

And finally, there is bacon—we all love bacon, right? The good news here is that bacon is 50% long-chain saturated fatty acid, 40% monounsaturated fatty acid, and 10% polyunsaturated fatty acid, making it a very healthy source of fat!

FATS TO BE INCLUDED IN YOUR DIET

Coconut oil: Coconut oil is a medium chain triglyceride (MCT). MCTs are preferentially used as energy instead of simply being stored, making them a good energy source, especially for those looking to lose weight. In fact, MCTs are believed to have thermogenic (fat-burning) properties.

Butter (REAL butter!): Butyric acid (from which butter gets its name) is a great saturated fatty acid that is beneficial to GI health. As mentioned earlier in our discussion about food quality, GI health is essential! Remember, we can eat all the red meat and broccoli in the world, but if we don't digest it well, then it isn't doing us any good!

Avocado and extra virgin olive oil (EVOO): Both of these foods are great sources of monounsaturated fats. As noted earlier, these are important for hormone production as well as fuel after exhaustion of glycogen reserves, and offer many general cardiovascular benefits. They also assist in the uptake of micronutrients—specifically, fat-soluble vitamins from foods like spinach, almonds, and berries.

Fish: Fish is a great source of high-quality protein, but it's also an excellent whole-food source of omega-3 (anti-inflammatory) fatty acids. It is also very rich in micronutrients, which are often overlooked in nutritional prescription.

Flax and chia seeds: Truthfully, we put these on here for reasons other than their fat content, as flax and chia seeds are rich in many nutrients. However, speaking purely about their fat content, they consist primarily of polyunsaturated fatty acids, but convert very poorly to EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid), which is why they are not high on our list.

IMPLEMENTATION

The ideal proportion of fat in your diet can vary greatly depending on your individual goals. Typically, you will see the prescription for fats range from 20% to 60% of total calories consumed for an individual.

“So where do I sit on this scale?” you might ask. While we’d need much more information to answer this with confidence, we can give you some pointers. First, 20% is on the low end, and will typically apply to those individuals who are in a fat-loss stage, where performance is of less concern (e.g., a bodybuilder, model, or other physique athlete). This may also be in the range of fats that some competitive CrossFit athletes get to when they’re “in season” and a higher proportion of carbs are needed to continue high-level performance in glycolytic exercise.

60% is the high end, and will typically be part of a ketogenic diet. For instance, in a ketogenic diet, 60% of calories could come from fats, whereas 30% come from protein, and 10% from carbs. This keeps the body in a state of ketosis, using ketone bodies as fuel.

Of course, this leaves a large range in between. Typically, most people will want to start by getting between 30 and 40 percent of their calories from fat. If you have more body fat you want to lose, you should be closer to 40%; if you’re a slimmer individual, you should lean towards 30%. However, any amount within this range will still provide plenty of room for calories from carbohydrates, leaving energy for the demands of your training.

When it comes to fat consumption, we strongly advise starting on the high end of where you think you should be, as you can always transition yourself lower if necessary.

SUMMARY

At this point, you’ve learned the ideal quantity of two of your three macros that you will be consuming, as well as the importance of these nutrients. We have covered the ESSENTIAL nutrients—protein and fat—as well as the quality of food within these groups. In addition to this nutritional information, we have also established a daily hydration need. If you have any lingering questions about your protein need, fat need, water intake, or the quality of the foods you’re eating, please review Chapters 1 - 4.

CHAPTER 5 - CARBOHYDRATES

In the media, carbs seem to be the source of most controversy, and are the most misunderstood macronutrient in the nutritional world. They come in all forms; they're in fruits, vegetables, and of course the ever-popular starches.

Here's a very quick look into different types of carbs:

- **Glucose:** The most basic and most easily utilized sugar. Glucose is broken down from starches like potatoes, rice, etc.
- **Fructose:** This is the simple carb found in fruits. Fructose is preferentially stored as liver glycogen, *not* as skeletal muscle glycogen.
- **Lactose:** This is found in dairy, and is derived from glucose and galactose. As we know, dairy (specifically, its lactose) can cause problems in certain populations.

We could keep going into other carbohydrates like maltose, dextrans, maltodextrans, and beyond, but the purpose of this book to educate you *and* teach you to implement, so let's keep moving. For your diet, the most important thing you will want to note from above is the difference between FRUCTOSE and GLUCOSE.

While carbohydrates are NOT an essential nutrient (meaning we can live without them), they ARE essential to the performance population. The simple act of CrossFitting (or doing other high-intensity activity) is glucose-dependent, meaning we must be ingesting enough carbohydrates in order to have sufficient energy to perform.

To illustrate this point further, consider the following. Carbohydrates consumed throughout the day are stored in both the muscles and the liver in the form of glycogen, which is preferentially used in glycolytic activity (e.g., CrossFit). Inadequate glycogen will lead to a host of problems, including (but not limited to) adrenal fatigue.

Contrary to the common Paleo belief, fruits and vegetables will *not* provide us with enough carbohydrates to meet these demands. Starches such as rice

and potatoes are an essential part of a nutritional plan for anyone performing even a moderate amount of exercise. In fact, even in a fat loss setting, starches are still needed to fuel intense training that will help yield the desired fat loss.

Carbs are also necessary to facilitate recovery. We will cover this in more detail in the next chapter under the “Timing” section, but for now, it’ll suffice to say that post-workout carbs are ESSENTIAL to a performance crowd. This is not necessarily because of glycogen replenishment—glycogen resynthesis actually takes place over period of 18 - 24 hours—but rather to attenuate the central nervous system (CNS) response.

While you are actively training, you are living in your sympathetic nervous system (SNS), which is responsible for your fight-or-flight instinct. However, upon the conclusion of training, we want to get back to our parasympathetic nervous system—which is responsible for rest and repair—as fast as possible. This is aided by the ingestion of fast-digesting (usually high molecular weight) carbs.

So, you might be wondering: what kind of carbs should you be consuming?

First of all, in reference to hitting your macros, at the end of the day, any carb is a carb. Still, we can’t help but note that the more nutrient dense a carb source is, the better it will be for your health in the long term. Rice and potatoes seem to work best for an active population, followed closely by oatmeal. Beyond that, it truly is individual—find out which carbs work well with your body, and stick to those.

As an example of this individuality: I (Jason) can eat white rice all day with zero issues, but if I ingest a just a little bit of sweet potato, I am instantly bloated and tired. Is this the fault of the sweet potato? NO. But I certainly am an idiot if I continue to consume them with the knowledge of the effect it will have on me.

YOUR CARBOHYDRATE REQUIREMENT

At this point, we know three things. First, we know the total number of calories we need to consume to achieve our goals. Second, we learned in Chapter 3 how many of these calories should be devoted to protein. And third, in Chapter 4, we discovered what proportion of these calories should come from fat. Finding your **carbohydrate requirement** will be the final piece to the puzzle.

Luckily, by knowing our protein and fat numbers, we know exactly how many calories we have remaining in our diet, and by process of elimination, we can easily find exactly how many carbs we need.

For example, suppose that your diet set-up calls for 3000 calories with 200 grams of protein (800 calories) and 100 grams of fat (900 calories). Your remaining calories would be 1300, and these are all devoted to carbs.

To find how many *grams* of carbs this figures to, divide this number 4; this will give you the total number of carbohydrates you will consume within your nutrition plan moving forward.

Example: The 1300 calories from the previous example will yield 325 grams of carbohydrates ($1300 \div 4 = 325$). So, this hypothetical person's daily caloric breakdown in terms of macros would be as follows: 200 grams of protein, 325 grams of carbs, and 100 grams of fat.

When prescribing carbohydrates, we must also take fiber into account. A safe generalization for daily fiber intake is 20 grams per day for females and 25 - 30 grams per day for males. As an upper limit, no more than 20% of your daily carbohydrates should come from fiber.

Yes, we know: your body might not completely digest fiber to use as energy. We *do* count fiber towards your daily carbohydrate goal, however, because we don't know the exact degree to which fiber is assimilated and used as energy. Therefore, instead of guessing, we play it safe and count it all.

The timing of your daily carb intake will be covered in the next chapter.

SUMMARY

By now, you should know exactly how many calories to consume each day in order to achieve your goals. You should also know the macro breakdown of these calories in terms of protein, carbs, and fat. If you do not know what your macros should be, please review the information in the previous chapters before moving on to the topics of timing and supplementation.

CHAPTER 6 - PUTTING IT ALL TOGETHER & TIMING

Now it's time to get the party started!

You now have the essentials to structure a proper nutrition plan that suits your particular goals. This chapter will serve as a quick guide to setting up your plan, as well as structuring it around the times that you train, work, and sleep.

This chapter will serve you as an important reference guide; you may find yourself reviewing it several times.

Here's how to get started on your plan:

- 1. Begin with CALORIES.** You can determine your daily caloric needs by either tracking or using a formula. This information is found on pages 7 - 10 of this book.
- 2. After determining your daily caloric need, PROTEIN will be the first macronutrient to consider.** To determine your protein intake, start with a baseline of 1 gram of protein per pound of body weight (see Chapter 1 for more information about assessing your protein needs). People who are obese and looking to lose weight will want to start with 1 gram of protein per pound of lean body mass.
- 3. FAT is the second macronutrient that you will assess.** You find your ideal fat intake as a percentage of your total calories. The typical range of fats that we prescribe will fall anywhere from 20 to 60 percent of total calories. The lower end (20%) will be for those individuals seeking solely body fat loss or those athletes who are deep into "competition season." The higher end (60%) will be for those individuals on a ketogenic diet (moderate protein, high fat, low carb). Finding where you fit into this spectrum will be determined by the following:

What is your training age? If you've been training for a while, you're pretty efficient in most of your movements, and you don't have tons of body fat to lose, you'll fall on the lower end of this spectrum (around 30%). If you're relatively new to training and have more body fat to lose, you will start on the higher end of the spectrum (40 - 45%).

What does your previous dietary history look like? For instance, if you are someone who has dieted Paleo (low-carb) for years, you shouldn't immediately jump to a low-fat/high-carb diet right away. It's better to transition slowly.

Once you establish the percentage of your daily calories that will come from fat, divide this number by 9 to determine how many of grams of fat you will consume on a daily basis.

- 4. CARBOHYDRATES are the final piece of the puzzle.** By knowing your protein and fat macros, by process of elimination you can easily figure out the number of carbs you will need to consume to hit your caloric goal. Here's how to do this: First, take your target protein number (in grams) and multiply it by 4, which will determine your daily number of calories from protein.

Then, take your target fat number (in grams) and multiply it by 9: this will determine your daily number of calories from fat. Add these two numbers together, then subtract this sum from the total number calories assessed in step 1, and *voila*: the difference is the number of calories you need to consume from carbohydrates. Divide this number by 4, and you will have the number of *grams* for your carbohydrate macronutrient.

Example: Suppose you are a 200 pound male.

Calories: Using a formula established in the Calories section, we multiply your body weight by 14 to arrive at your total number of daily calories.
 $200 \times 14 = 2800$ daily calories

Protein: 1 gram of protein per pound of body weight = 200 grams of protein.
 $200 \times 4 = 800$ calories from protein.

Fat: 30% of calories from fat = $2400 \times 0.3 = 840$ calories from fat. $840 \div 9 = 93.33$ grams of fat (we will round up to 95 for the purposes of this example)

Carbohydrates: 800 calories from protein + 855 calories from fat = 1655 calories. 2800 total calories - 1655 calories from fat and protein = 1145 calories from carbohydrates. $1145 \div 4 = 286.25$ grams of carbs (we will round down to 285 for the purposes of this example)

Overall macro prescription: 200 grams of protein, 285 grams of carbs, 95 grams of fat

Important note: This is a starting prescription only, and will need to be updated frequently to ensure consistent progress. More on this will be covered in the Chapter 9, "Test, Re-Test."

THE IMPORTANCE OF PLANNING

The next step is often overlooked, but it can be one of the most important ones in ensuring SUCCESS in your dietary endeavors.

We understand that meticulously planning out your calorie and macro intake is probably not what you're used to. Still, we can't stress enough that **waking up and simply "winging it" is a sure recipe for DISASTER.** I can't begin to count the number of times I have received texts from clients at 7pm saying "OMG, I already hit my fat number but I still have 70g protein and 90g carb left to eat . . . what do I do?"

So instead of "winging it," we suggest taking some time and **planning out your meals the night before.** While this may not be necessary in the long term, the first time you do it will likely prove to be eye-opening. In fact, you'll probably find yourself saying "I have to eat *that much* food?!"

This may seem like a basic step, but we can assure you that **it has repeatedly provided a higher level of success for our clients.**

THE IMPORTANCE OF TIMING

Okay—so you have agreed to plan ahead. But *when* should you be eating? What considerations should you take with respect to TIMING?

When working with clients, we have identified two or three critical times that need to be addressed to maximize both performance and body composition.

These times are:

- pre-workout
- post-workout
- the meal following post-workout (if using liquid nutrition for post-workout)

The pre-workout window is often misunderstood. While eating before exercising certainly contributes to increased energy during the workout, it is not the sole energy source. This mistake is most commonly illustrated by people attempting to “cram in” a pre-workout meal/snack on their way to the gym or shortly before exercising. All this does is put food in the gut—and when mixed with high-intensity exercise, it’s a recipe for terrible breathing and potential vomiting.

Instead of trying to eat (or drink) something immediately before training, consider **moving your pre-workout meal to approximately two hours prior to training**. Also, remove any direct fat sources from this meal; ideally, this meal consists of a whole-food protein and an easily-digested carbohydrate source. When done properly, this pre-workout meal will leave you feeling slightly hungry upon entering the gym. Don’t worry: this hunger is actually a good sign, and is indicative of a proper hormonal environment to allow maximal levels of performance.

So far, we’ve been assuming that your training isn’t being done immediately after you wake up. However, a large percentage of you reading this *do*, in fact, train first thing in the morning—typically after you’ve just fasted. Contrary to popular belief, fasted training isn’t bad, but it does require appropriate fueling. In this case, given that you won’t be consuming any food in the typical pre-workout window, **your dinner the night before actually will serve as your pre-workout meal** in terms of fueling your

training the next day. With this in mind, we suggest that you consume approximately 35 - 40% of your daily carbohydrate allowance at this dinner.

Post-workout nutrition will be the most variable and will range from a solid food meal to a protein (or protein & carb) shake.

For those with a low training age (i.e., you're new to training) or those who are obese, a solid, low-fat food meal within 45 minutes of training is adequate.

Another option is a protein-only shake post-workout. In an ideal world, this would consist of a high-quality whey protein isolate mixed with water. However, we understand dairy allergies and vegetarian/vegan preferences, so we find it prudent to include that beef protein isolate and rice/pea blends are also acceptable here. This type of post-workout shake will be for individuals who have passed the "neurological adaptation phase" of training (usually the first 6 - 8 months), or those undertaking a fat loss endeavor with a significant amount of fat to lose.

If you are someone with performance goals, or are deep into a fat loss phase, you should consider a protein & carb shake immediately after your workout. This will come in the form of the powders listed above, as well as an added carbohydrate powder. Recently, the world of carb powders is rapidly evolving; however, at the time of this book's publication (early 2016), we strongly recommend that you use a *highly branched cyclic dextrin*.

The ratio of carbs to protein in this shake will vary from person to person, but can range from 1:1 carbs-to-protein to 3:1 carbs-to-protein. A higher ratio of carbs to protein will be advantageous for more elite athletes, or those athletes training with very high volume.

The third critical time to eat is exclusively for those who have already consumed a shake immediately after exercising; it's the meal that you consume about 60 - 90 minutes after consuming the shake (if you train very late in the evening, this meal can be as close to 45 minutes after the shake). Our typical recommendation is that this be a "complete meal," which includes a protein source, a carb source, and a fat source. Consuming this meal is *extremely* important, as it is an extension of your recovery—and as

we know, recovery is essential not only to improvements in performance, but to fat loss, as well.

Aside from these three times, there is no science to support that any specific meal timing throughout the day is more beneficial than another. So NO—you do not have to eat every 3 hours. In fact, feel free to eat more or less frequently as you see fit! This is YOUR diet; eat in a manner that suits you and your schedule.

CHAPTER 7 – SUPPLEMENTATION

As nutritional consultants, it seems that *all* of our clients want to start here, and out of any topic in fitness and nutrition, we get the most inquiries regarding supplementation. But here's something that the aspiring athlete needs to keep in mind: **supplements are a billion-dollar industry, and this isn't because they all work; in fact, few do.** But the human desire to find a shortcut to goals in pill or powder form is massive, and manufacturers capitalize on this. *That said*, there are some supplements with a proven track record that we approve.

Important: You must sequence and titrate supplements appropriately; that is, start with a single *new* supplement, document your response at a specific dose for the week, then add in another. This way, if adverse responses occur, you can easily identify and deal with it.

For the purpose of this book, we will list supplements as **essential**, **recommended**, or **optional**.

Essential: These are good for every athlete; they are geared towards generalized health and longevity, and may confer ergogenic benefits as well.

Recommended: These have a proven track record for either generalized health/longevity or performance, but you may be able to obtain the same nutrients just from your diet.

Optional: The cost/benefit ratio may not be in every athlete's best interest, but the science is there to back the benefits.

FISH OIL: Essential (Health) - For a well-written article that covers some of the science behind fish oil, check out [The Definitive Guide to Fish Oil](#). In a nutshell, fish oil reduces inflammation, enabling athletes to recover faster. However, there are about 10,000 other things that it helps with, so if you have time, check out the above guide.

We recommend a dose of **0.25g EPA/DHA per 10 pounds of body weight per day**, split up into multiple doses. Another option is 1g of EPA/DHA for each 1% of body fat, if known; however, this method can result in pretty high doses (in the range of 9 - 10 grams, or higher).

There's been a bit of a backlash against supplementing with omega-3s (like fish oil) due to the perceived threat of your body oxidizing large, unused amounts of unstable polyunsaturated fats. However, we have yet to see solid evidence of this, especially in high-volume or high-intensity athletes, and [the studies suggest](#) that these claims are generally [unfounded](#).

Krill oil is a fairly new and popular alternative. While it contains some pretty cool antioxidants like astaxanthin and phospholipids like phosphatidylcholine, it's no better than fish oil—after all, **we're after the EPA and DHA**, and fish oil continues to be a great source of both.

People with body composition goals will also find fish oil to be essential, as it can help promote an increase in the breakdown and use—rather than storage—of fatty acids.

Implementation: As per the guidelines discussed above, we recommend 0.25 grams EPA/DHA per 10 pounds of bodyweight, split into multiple doses per day.

VITAMIN D: Essential (Health) - To say there is a lot of information out there about Vitamin D would be an understatement. We literally have files on files on files of studies supporting Vitamin D supplementation. The biggest take-away here is that athletes with sub-optimal Vitamin D levels are shown to have reduced power output and reduced immunity.

Here are two of literally hundreds of studies showing the benefits of Vitamin D for the athlete:

- [Vitamin D and Athletic Performance](#)
- [Supplemental vitamin D enhances the recovery in peak isometric force shortly after intense exercise](#)

Implementation: We recommend a minimum of 4000 IU daily of vitamin D, or dosing based on the following formula: (body weight in pounds ÷ 25) x

1000. So, a 200 pound male would take 8000 IU of Vitamin D per day ($200 \div 25 = 8$; $8 \times 1000 = 8000$). Take this in the morning to maintain a normal circadian rhythm.

WHOLE-FOOD GREENS SUPPLEMENTS: Recommended

(Health/Immunity) - We recommend whole-food greens supplements over multi-vitamins/multi-minerals for a couple of reasons. In general, micronutrients work with greater efficacy when **A)** they're in a form closer to their natural state, and **B)** when they're consumed in conjunction with the other micronutrients and cofactors found with it. Also, there's some pretty solid evidence behind anti-oxidants improving recovery from training, especially high-volume endurance training.

Implementation: Use daily, preferably first thing in the morning.

PROBIOTICS: Recommended (Health/Immunity) - You may actually find that the greens supplement you use contains a probiotic, but be aware that the dose is low (usually 1 billion CFU or less), and it's not always the case that the strain is a live culture.

We recommend finding a *multi-strain*, high-dose (5 billion CFU or more) probiotic and taking it in the morning and at night. Again, be cautious of brands that label their product to be dosed very highly, but only contain one strain, as this is not as effective as multi-strain probiotics.

Remember, your gut is your second brain, so ensuring GI health is a must. Probiotics support systemic immunity, and no matter what your goals are, being sick is not conducive to them!

Implementation: 1 capsule (minimum 5 billion CFU), 2x per day, after your first meal *and* with night-time supplements.

ZINC/MAGNESIUM: Recommended (Health/Recovery) - Two of the most important minerals for athletes also happen to be two of the most deficient: zinc and magnesium (ZMA). While in a perfect world, we'd get all we need from our food, often times that just doesn't happen.

Clearly we are big fans of ZMA, as we created [MAX SLEEP](#), which, in a nutshell, is zinc and magnesium with some B6 thrown in. Why do we recommend it? It hits recovery from a number of angles.

First, because of the poor quality of most produce, and the nature of the typical Western diet, we do not get enough zinc or magnesium from food alone.

Second, when we add on physical exertion (be it daily training or competition), it will only exacerbate these deficiencies.

Third, zinc is involved with immunity and testosterone production—both essential not only for performance, but for body recomposition as well.

Fourth, magnesium is involved in pretty much every cellular activity you can think of—including oxygen uptake and skeletal muscle contraction, making it crucial for athletes.

Finally, magnesium causes deep tendon muscle relaxation. When combined with B6, **we see a pronounced increase in sleep quality**. And yes—we all need MORE and BETTER sleep!

Implementation: Take 1 serving of Max Sleep or 1 serving of your favorite ZMA product about 20-30 minutes before bed.

VITAMIN B COMPLEX: Recommended (Health/Performance) - There is evidence to suggest that, when taken in the pre-workout period, B vitamins (or a B complex) can act as a nootropic or central nervous system stimulant. We find this to be beneficial in any training situation. More importantly, B5 is involved in the adrenal cascade. As we know, training and competing (as well as over-dieting) is a constant beat-down on our adrenals, so we should be proactively taking measures to support the health of our adrenals any chance we can get.

Implementation: We recommend 100 mg of B complex about an hour before training, or first thing in the morning on non-training days.

VITAMIN C: Recommended (Health/Immunity) - Vitamin C is another vitamin used to help treat adrenal fatigue, and it assists in recovery by attenuating cortisol.

It is VERY important to note that studies have shown supra-physiological doses of antioxidants like Vitamin C to actually *blunt* training adaptations. Because of this, you will want to take your Vitamin C *away* from your training sessions.

Implementation: 1 gram at night with your ZMA and/or probiotic.

GLUTAMINE: Optional (Recovery/GI Health) - Glutamine is one of the most overhyped supplements to hit the market. The majority of the studies that companies reference when making their claims about glutamine's positive effects on protein synthesis and immune function were done on burn patients, patients with blood infections, or in cases where glutamine was given intravenously instead of orally. Therefore, these claims do not readily apply to athletes without the complications listed above.

That said, we have seen higher doses of glutamine to be effective in terms of GI health. It is rapidly taken up in the GI tract and used as fuel for repair and function.

We have also seen benefits of glutamine in terms of immunity. Actually, all of the scientific studies that support glutamine supplementation are done in an endurance crowd—and the results support not a increase in *performance*, but rather a boost in *immunity*.

All of these things considered, supplementing with glutamine is a great idea for athletes that will be competing in a multiple workout scenario (e.g., multiple WODs in a single day at CrossFit competitions).

When glycogen is depleted, and lactic acid is produced continually, glutamine can serve as a pH buffer to protect you against lactic acid buildup. The glutamine you take will also replace preexisting skeletal muscle glutamine, which means that your body can direct energy to other areas for recovery.

Implementation: 15g immediately post-workout (in your shake, if you have one). For GI health you can add another 10 - 15g at night with your other supplements. Glutamine is extremely safe and well-tolerated.

BRANCHED CHAIN AMINO ACIDS: Recommended (Performance) -

There's lots of research that supports the use of Branched Chain Amino Acids (BCAAs). For instance, studies have shown a decreased Rate of Perceived Exertion (RPE) and longer Time To Exhaustion (TTE) among populations that supplement with BCAAs.

BCAAs are even more important when training in a fasted state, as glycogen is not as readily available after fasting. Because fasted training can initiate an overly aggressive cortisol response, which can lead to muscle breakdown, BCAAs are essential an essential protection in these instances.

Implementation: Begin sipping 1 serving (7 - 15g) about 20 - 30 minutes prior to training.

CREATINE: Recommended (Performance) - Creatine is probably one of the best-known supplements, and has been studied extensively in regards to power output, strength, and endurance.

Creatine can be very beneficial to athletes due to its many functions, such as modulating metabolic function, increasing protein synthesis, and buffering acidosis. If that sounds like Greek to you, we are essentially talking about faster recovery between sets (specifically in short-duration or max-effort energy system work), more energy during sets, and delayed fatigue during sets.

One of the most common questions with creatine is, "What kind should I use?" When answering this, it's important to note that **all well-controlled studies (read: NOT funded by supplement companies) have used creatine MONOHYDRATE.** Therefore, don't waste your money on "sexy" forms of creatine like tricreatine malate, creatine ethyl ester, liquid creatine, or kre-alkalyn. **Creatine monohydrate is king.**

So when selecting your brand, stick to creatine monohydrate; we've had good experiences with brands that use "Creapure."

A note on dosing: Most labeling will tell you to take 20 grams for 5 days, then 5 grams per day thereafter. The sole reason for this would be to reach saturation (i.e., the maximum holding capacity of your muscle cells) faster. Unfortunately, it's also a damn good way to experience side effects, as limited as they are. Therefore, we recommend just taking 5 grams (generally *one* of the scoops in the container, or a level teaspoon) a day, optimally in the post-workout period. On training days, 5 grams of creatine pre-workout will also optimize levels prior to training.

There's also this weird myth that creatine must be taken with a high-glycemic carb, like grape juice. Why this myth persists—and why it involves a high glycemic carb, and what grape juice has to do with it—is beyond us. Indeed, these myths make our brains cramp, so we're happy to dispel them.

Here's the real scoop: it's true that high GI carbs cause an insulin spike. It's also true that, in the post-workout period, our insulin receptors are sensitized. Still, this really has nothing to do with creatine transport. The transporter, CreaT, is actually *sodium*-dependent, so insulin isn't even relevant here. Further, there are plenty of other reasons why high GI carbs are fine post-workout, so throwing 5 grams of creatine into a shake isn't a bad thing.

It's just good science to know why you're doing something.

Creatine FAQ

Will it wreck my kidneys? No. It's the most studied OTC supplement in history. It's safe. Your kidneys will be fine.

Doesn't it cause water retention? No. It causes skeletal muscle hyperhydration. There's a difference (see below for more on this).

Does it cause muscle and tendon injury? No. But not warming up, training irresponsibly, and being dehydrated can cause injuries.

Don't I need to cycle it? No. "Cycling" is another bodybuilder-perpetrated myth based on the cycling of AAS (anabolic-androgenic steroids) due to down-regulation of hormones from exogenous sources. Creatine intake, either from food or supplements, doesn't do this.

Key point: Since creatine causes intracellular hyperhydration, it draws fluid from extracellular space to intracellular space. What does that mean? Well, **when taking creatine, you need to stay hydrated.** Be diligent about this unless you want to turn into a pile of dust while doing thrusters! The vast majority of side effects associated with creatine are due to folks not drinking enough water.

Implementation: 5g creatine monohydrate post-workout, with an optional 5g pre-workout.

BETA-ALANINE - Our view on Beta-Alanine is written in great detail here: [The \(Almost\) Death of Beta-Alanine](#)

CHAPTER 8 – ADVANCED PROTOCOLS

There is a very clear reason that we have left this for (almost) last. Nutritional prescription is not meant to be overly complicated. Unfortunately, in a technologically advanced world, we have access to way too much information, which creates an environment in which “bro science” thrives. The aim of this book thus far is to provide you with not only the SCIENCE, but also the APPLICATION of proper nutritional principles.

As such, this section will contain the science and application of some more advanced protocols. **That said, these protocols are NOT necessary to get started, and should only be used when appropriate.**

REFEEDS

A *refeed*, by basic definition, is a day where you consume more calories than normal, which often come in the form of carbohydrates. Refeeds are usually an effort to reach “maintenance calories” over a 24-hour period. We often hear the term “refeed” interchangeably used with “cheat meal,” but for the purposes of this book, we will not consider them to be synonymous. Specifically, a *refeed* is a strictly controlled increase in your calorie/carbohydrate intake as compared to your baseline, whereas a *cheat meal* is essentially reckless in nature and often leads to unnecessary binging.

Refeeds can last a single day or several days, depending on the person. That said, it is very rare that we start with multiple-day refeeds; instead, we opt first for a single day and ensure that it falls on the same day every week.

Who should refeed: Let’s be clear—*anyone* can refeed if they choose to. As discussed in the calorie section, our calorie intake is determined by the caloric deficit we’re attempting to create over the course of a week. If you want to consume more calories on one day compared to the other 6, you simply need to live in a larger deficit during those other 6 days.

That said, it's uncommon that we recommend refeeds at first.

To understand refeeds, let's first briefly examine the dietary process in regards to hormonal production and regulation in the body. As a diet progresses, and a caloric deficit is sustained, the body begins to create an adaptation—**metabolic adaptation**. While we typically love adaptation (e.g., in regards to strength, cardio, etc.), we DO NOT like *metabolic* adaptation. This is because metabolic adaptation involves the down-regulation of metabolic hormones like leptin, ghrelin, and T4-T3 conversion. As the level of these hormones declines during a calorie deficit, fat loss and performance both become impaired.

This is where a refeed becomes important.

When you hit a plateau due to metabolic adaptation, you have two options: decrease calories (from any macro or combination of macros), or try a refeed. Because refeeds bring your calories up to maintenance level, they briefly spike the aforementioned metabolic hormones, allowing them to re-elevate. Then, when you return to your caloric deficit the following day, you are doing so with much higher levels of these hormones. This leads to improved fat loss and performance.

We do this once every seven days because the body is a very efficient machine and metabolic adaptation occurs very quickly.

Example: Suppose that you are a 200 pound male looking to lose weight. You've established that you need to consume 2800 calories daily to meet your fat loss goals, with your macros being as follows: 200g protein/285g carbs/95g fat.

Maintenance calories for this person would be 3000 - 3200; in other words, 200 - 400 calories *above* the determined number of calories for fat loss. Therefore, on refeed day, this person might plan to add 300 (we chose this as it's a happy medium between 200 and 400) calories, all from carbohydrates.

What's 300 calories in grams? Recall what you learned in Chapter 5: $300 / 4 = 75$ grams of carbs. Therefore, his refeed day would consist of the following macros: 200g protein/**360g carbs**/95g fat.

As you get deeper and deeper into a fat loss phase, multiple refeeds can become necessary. The reason for this is simple: metabolic adaptation is happening in fewer than seven days (probably closer to every two or three days), and the hormone levels need to be spiked more frequently.

Multiple refeeds also allow you to live your “normal” days (i.e., days that are not refeeds) in a larger calorie deficit, which is often useful toward the end of a fat-loss phase.

CARB CYCLING/CARB ROTATION

By implementing multiple refeeds, you are essentially cycling your carbohydrates (low carbs on “normal” days, high carbs on refeed days, repeat). However, this is not typically what is referred to as *carb cycling*, which is a more complex and involved process.

A typical carb cycle will involve some or all of the following days, with respect to the amount of carbs consumed:

- super high
- high
- medium
- low
- zero

Super high would be a refeed on steroids. Qualifying as a “super high” carb day usually involves consuming 500+ grams of carbs; we have seen (and prescribed) these days to be upwards of 1000g of carbs.

High simply refers to the highest daily carbohydrate intake for the week. This is very relative to the individual; for example, Jason consumes 450 - 500g of carbs on a high day, whereas Mike consumes closer to 350 - 400g.

Medium, as its name suggests, is the middle or average amount of carbs consumed.

Low is the opposite of *high*, and refers to the lowest daily carbohydrate intake or the week.

Finally, *zero* is a day that is completely devoid of carbs.

A carb cycle rotation can take the form of any combination of these days. When starting, a typical week-long carb cycle usually looks something like this: *High, Medium, Low, High, Medium, Medium, Low*.

As the diet progresses, the medium days are replaced with low days, and eventually low days are replaced with zero days.

Important note: We're calling this "carb cycling," but as your carbs decrease, you must ensure that your calorie deficit is not too severe. You can do this by implementing a corresponding *increase* in the amount of protein and/or fat that you consume.

We'd also like to mention that carb cycling has no application whatsoever to the performance crowd, but is very popular in the physique world. That said, it is not a method that we routinely use, and so we will leave you with just the facts.

"OFF DAY MACROS"

Oddly enough, we are starting to see this trend creep into the performance world. Why, you wonder? We have ZERO idea.

Essentially, this technique refers to consuming a different macronutrient quantity on days that you train versus days that you don't train. The theory behind this is that you should consume fewer calories (specifically, carbs) on non-training days.

For fat loss, this might hold merit. In fact, some of the top nutritionists (many of whom we've personally learned from) use this technique with their clients, with an important distinction—their clients *in the physique world*.

Before outlining how this works, **we want to take a firm stance AGAINST using this technique in the performance (e.g., CrossFit) world.** As noted earlier, glycogen resynthesis happens over an 18 - 24 hour period. So why in the world would you *decrease* glycogen during this window before

training in a GLYCOLYTIC environment?! In fact, non-training days should be viewed as *refueling* days by those seeking an increase in performance.

If you are strictly seeking cosmetic improvement, this technique can be implemented by simply lowering your calories approximately 10 - 20% percent on non-training days, removing most of these calories in the form of carbs.

REVERSE DIETING

This strategy is very complex and will be addressed in its own book in the *iN³* series: **UNDO THE DAMAGE: Reverse Dieting Made Easy**. You can find the book on our website, [click here](#).

DIET BREAKS

Diet breaks are not commonly talked about, but can be used as an important part of any long-term dietary strategy. **Let's be very clear: the research shows that diet breaks DO NOT interfere with fat loss when implemented properly**, with the operative word being "properly" (sorry, this doesn't mean you can diet break every other week).

We recommend diet breaks to people who have demonstrated a long history of adherence (i.e., are always compliant). So if you're thinking about a diet break, take a moment and be real with yourself: do you "fall off the wagon" frequently? If so, you are not an ideal candidate.

What constitutes a diet break? A diet break is typically a week in which we attempt to get close to maintenance calories over seven days. A simple strategy is to increase 500 daily calories from your current diet, and plan a few nights of eating out over the course of one week. This will create an environment of calorie maintenance for a week, and will contribute to stopping any metabolic adaptation that is happening due to a long-term caloric deficit.

Once again, this should be done in a CONTROLLED manner, and is not a “free for all” week. It should serve as a nice mental (as well as physical) break, and allow an individual to resume the following week fully energized.

CHAPTER 9: TEST, RE-TEST

As any responsible professional will do, we must remind you that this information is simply that—INFORMATION. Your *application* of this information will be individual in nature, and can be distinct from what is considered to be “normal.” That said, we do feel that in this chapter we can outline a strategy to keep you progressing on the right track.

Over the last two years, the iN3 Dream Team has completely changed the game in nutritional consulting. We have done this by instating frequent interaction with our clients, so as to ensure that we always know what is going on. Biofeedback or physiological feedback is constantly assessed, so we can make sure the implemented dietary strategy is working.

Even if you’re not working with us (if you’re interested, you can contact us directly at admin@in3nutrition.com OR by visiting www.in3nutrition.com), you need to do the same for yourself.

To do this, we recommend that you record several pieces of information daily. In the document we have provided with this book, you can easily chart your macros consumed daily, as well as your biofeedback and your weight fluctuations.

When you are accurately hitting your macros daily, you can *test* your body’s reaction on a physical and physiological level.

If you like the results, **keep going.** Why fix what isn’t broke?

However, if you are unhappy with the results, or you find yourself at a plateau, then it is time to make a change and *re-test*.

While dietary prescription is not overly difficult (and especially now, after reading this book!), it *does* need to be monitored carefully. By keeping accurate information about how you feel, look and perform, **you have REAL feedback as to how your diet is affecting you.**

Always make sure you’re testing consistently, and when you make changes, re-test—**this is essential!**

As a concluding note, we'd like to give you a couple options if you hit a huge plateau. *First*, use your new starting point and go back through this book. You will have a new set of calories, macros, and potentially a new advanced protocol prescription.

Second, **contact us!** You can contact us directly at admin@in3nutrition.com OR visit our website at www.in3nutrition.com and get in touch with us there.

We truly hope you have found this book helpful, and we look forward to seeing all of the amazing results that we KNOW it will create!

