

PRE/ POST WORKOUT

NUTRITION GUIDE



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We are all different when it comes to how our body responds to food and exercise, making it crucial we play the role of detective for our body, investigating how food and exercise influence our body. This will take some experimentation but paying special attention to how you feel after training or eating will eventually provide a clearer picture of what works best.

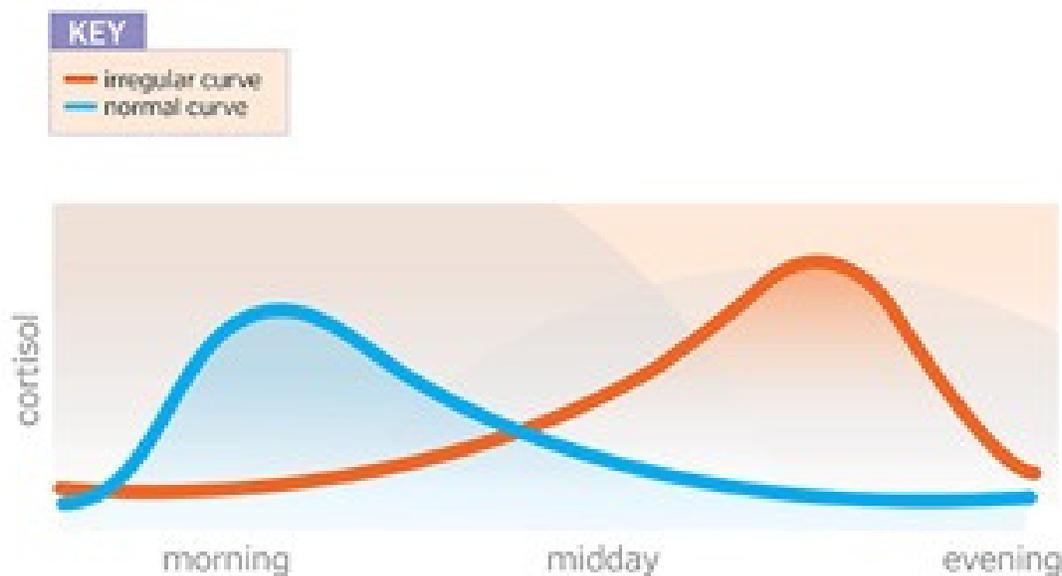
When discussing Pre/Post Workout Nutrition, the timing and type of workouts do, of course, matter. Different styles of training can be complemented with specific eating schedules but unless you are a professional athlete it can be challenging to plan for a day down to the minute and trying to do so is likely not worth the stress!

In this guide, we will be focused on best practices from my research, work with clients and extensive experimentation on myself. There are of course exceptions to the rules that I am going to lay out as it pertains to athletic pursuits. Primarily, endurance athletes, bodybuilders or fitness competitors. If you fall into one of these categories, you'll likely need a different approach to satisfy your caloric needs.

******Everyone is different and specific conditions may put you at risk with any one generic meal plan. I urge you to reach out to a health-care professional if you do have any extenuating circumstances before you begin any specific nutrition plan. If you are unsure of who to contact, please reach out to me and I am happy to help you locate an appropriate person. ******

LET'S GET NERDY - THE HORMONAL EFFECT

Let's talk a little science, all the systems in our body rely on a circadian clock that governs how they operate. This means that at different times of the day specific organs are more active than others. For example, when we are trying to build muscle mass, we rely heavily on the influence of growth hormone which is most active overnight. If growth hormone is responsible for muscle growth and most active at night, it is easy to see why sleep plays such an essential role in building muscle mass and recovering from workouts. Our Cortisol – the stress hormone - functions in a different fashion, it is highest in the morning and lower at night. This is why it is so important that our body's hormones are functioning properly. If our Cortisol release is reversed – which is possible through excessive stress, poor nutrition and lifestyle, chronic overtraining – we will be awake at night and tired during the day and under recovered at all times!



That's a scary prospect but so many of us have experienced it.

HORMONES

Hormones are chemical messengers in your body which tell your cells how to react to the outside environment. For example, even when you smell appetizing food – maybe, your Grandma’s cooking - your hormones can start to communicate with your body anticipating the delicious meal to come. It even goes so far as to trigger your digestive process, so you can avoid wasting time when the plate arrives.

Our hormonal system can also grant us insight into when and how we should train, remember the Cortisol curve from earlier? Well, it’s great to move in the morning but keep the work rate low and avoid any heavy weight training or high-intensity classes. Go for a walk, do some light stretching or a quick flow.

The optimal time to strength train or crush a high-intensity workout is actually in the afternoon. Later in the afternoon our body can absorb more nutrients and promote repair of muscle tissue. Brain function is high, as is motor coordination and blood flow which leads to overall improved muscle function. Exercise later in the day also has a secondary benefit in that it helps to reduce hunger and prevent overeating in the evening.

When you are exercising your hormones act similarly, and you begin to alter them. This, in turn, will help you burn fat, store fat, build muscle or break down muscle depending on how they have been affected.

Hormones also significantly respond to your nutrition around workouts. Insulin is a great example. Insulin plays a significant role in fat storage but is also one of the primary hormones responsible for muscle gain. Insulin is an anabolic hormone meaning it builds up as opposed to breaking down (catabolic). It is best known for lowering blood sugar and shuttling blood sugar into fat-cell storage, into the liver for later use, or to our muscles to support physical activity. To build muscle your body must synthesize more protein than it breaks down, and insulin is responsible for the muscle growth and the storage of muscle glycogen. But, excess insulin production - from too much dietary sugar - will lead to the storage of body fat and halt fat burning. It can work for you, or against you depending on how you treat your body.

How we eat can impact how our body expresses insulin. The timing of carbohydrates around workouts matters and will determine whether or not you are prone to building muscle or storing fat.

If you were to eat a sugary, starchy meal before a workout, this could influence the body to increase insulin and can cause a subsequent decrease in the body’s ability to burn fat during exercise. Alternatively, if you have carbohydrates post workout with protein, you can promote an insulin spike which can help to support muscle building.

This is just one brief example of the many chemical processes at work in your body, but hopefully, it helps illustrate the importance of our hormonal regulation and recovery/growth.

WHAT WE EAT MATTERS

Different foods will affect our metabolism in different ways! Eating 300 calories of a chicken breast will stimulate protein synthesis and assist in the muscle building process following a workout, whereas 300 calories of a donut will spike insulin and unless the workout was exceptionally intense the body will not need to replenish its muscle glycogen and will instead store that donut as excess fat storage. This is why the type of food is more important than just the caloric intake. Knowing the different macronutrients - Proteins, Carbohydrates and Fats - and how they affect our hunger, cravings, energy, and recovery from workouts is vital for getting the best results.

BREAKDOWN OF MACRONUTRIENTS

Macronutrients are Proteins, Carbohydrates and Fats. Below is an explanation of each macronutrient and why it is important to incorporate good quality sources of each into your diet.

GOOD NEWS!

You do not need to get obsessive about counting your “macros” or calories in order to get results in the gym! Just follow the Daily Meal Checklist. Easy right?

DAILY MEAL CHECKLIST:



Protein: Protein is vital for growth and repair of all tissues in the body. The focus for protein should always be on quality! When choosing meat select organic, grass-fed or hormone free sources when available.

- Choose red meat 1-2 times per week: Grass-fed Beef, Bison, or Lamb.
- Choose free range poultry: Chicken, Quail, Turkey, etc.
- Choose wild caught or sustainable fish 2-3 times per week: Salmon, Trout, Halibut, etc.
- Choose plant-based sources of protein: Beans, Lentils, Chickpeas, etc.
- Choose a quality Protein Powder: Whey Isolate, Collagen, Bone Broth Collagen or Vegan Protein Powder -I recommend Biosteel Sports Supplements.



Fiber Rich Carbohydrates: Fiber will help with optimal digestion and slow down the release of glucose in your system giving you long lasting energy.

- Insoluble fiber speeds up digestion by adding bulk. Insoluble fiber sources include whole grains (Brown rice, Quinoa etc.) and most vegetables (Broccoli, Cauliflower, Root vegetables, Carrots, Green beans etc.)
- Soluble fiber slows down digestion by attracting water and creating gel-like substance which assist in healthy bowel movements. Sources of soluble fiber include Chia, Flax seeds (preferably ground), Oats/Oat Bran, Nuts/Seeds, Beans, Lentils, Peas, Berries, and Carrots.



Healthy Fats: Fats are an essential macronutrient and source of energy and will help decrease inflammation. They release slower in your system keeping you fuller, longer.

- Consume the majority for your fats as Monounsaturated and Polyunsaturated fats such as Olive oil, Flax oil, Avocado, Coconut oil, Nuts and Seeds.
- Omega 3 fatty acids are extremely important for athletes as they have anti-inflammatory properties. The best sources of Omega 3's are Fatty fish, Flax seeds, Chia seeds, Hemp seeds and Walnuts.

COLOUR



Colour: This means eating a wide range of fruits/vegetable throughout the day to boost consumption of nutrients. See below chart for a guideline.

Colour	Benefit	Food	Micronutrients
Green	Improve eye health, improve detoxification, reduce free radical damage from excess toxin consumption.	Dark leafy greens, Green Beans, Asparagus, Broccoli, Brussel sprouts, Zucchini, Celery, Cucumber, Green Cabbage, Kiwi etc.	Magnesium, Iron, Calcium Potassium, Vitamin K, B-Vitamins, Lutein
Red	Reduce inflammation, improves memory, promotes heart health	Red pepper, tomatoes, apple, beets, radish, cranberries, raspberries, strawberries, cherry, red cabbage, rhubarb, etc.	Vitamin C, Quercetin, Lycopene, etc.
Purple/ Blue	Supports the immune system, improves skin health and increases antioxidant consumption	Purple cabbage, Blueberries, Blackberries, Prune, Fig, Plum, Eggplant, Purple grape, Blackcurrant etc.	Vitamin C, Folate, Potassium etc.
Brown/ White	Improve cardiovascular health, supports healthy bones and joints, supports immune function, anti-fungal and anti-bacterial benefits,	Potatoes, Banana, Cauliflower, Dates, Ginger, Garlic, Onions, Shallots, Turnip, Celery root, Mushrooms etc.	Flavonoids, Vitamin C, Sulforaphane, Allium
Orange/ Yellow	Increase antioxidant consumption, promotes eye and skin health, provides electrolytes and anti-inflammatory properties to reduce muscle soreness post workout	Sweet potatoes, Yams, Yellow/Orange Peppers, Pumpkin, Squash, Carrot, Papaya, Peach, Nectarine, Mango, Corn etc.	Beta carotene, Alpha carotene, Vitamin C, Vitamin A, Potassium.

APPLICATION TIME

STEP 1: GET CLEAR ON YOUR GOALS

Goal setting is one of the most important steps! It creates a benchmark to work towards, which will help guide motivation and propel us forward when we stumble. It is essential to focus not only on the outcome (goal) but also what is getting you there. That's the daily process and small wins I'm always mentioning. We do not just arrive at strength, or fit, or successful. It is the day-to-day hard work we put into our workouts, meals, and mind that makes us stronger over time.

Are you looking to lose fat?

Are you looking to build muscle?

Are you looking to improve strength focused performance in the gym?

Are you looking to improve endurance focused performance?

STEP 2: WRITE IT ALL DOWN

Record your Goals:

- Set a timeline for your goal. (Be realistic!)
- Start small and add on- If you want to work out five days/ week, start with only one day/ week, build a consistent habit and slowly add more.

Create a Food and Recovery Log:

- See Food and Recovery Log
- This may seem like a lot of work, but, tracking helps you to understand how your body is responding to your nutrition and recovery plan.

*** Please note tracking shouldn't consume you! It is meant only to bring awareness and insight on your current practices and how you can improve.

EXTRA TIP

Planning your week: A Quick Note on Training

When developing a workout plan it is best to keep the famous words of William Cowper in mind, 'variety's the very spice of life'. We will get the best results when we vary our approach, choosing different types of exercise and different methods within the same category – it also helps to reduce boredom. After all, it is important to select activities you enjoy!

I love strength training, but I also know that endurance training is essential for recovery, heart health, and overall wellbeing, so I try to find fun ways to incorporate endurance training into my weekly regime. It might take a bit of creativity, but it's well worth the effort. I use basic strength training exercises completed in a moderate intensity circuit, this way I keep my heart rate steady but avoid plugging away mindlessly on a piece of cardio equipment. I'll even hit a hip-hop class from time to time, and I end up covered in sweat without ever feeling like I had to do a workout. The fantastic benefits count regardless of how you train, they don't count more because you choose elliptical over hip hop.

Below is a Sample Week from my training routine

M: Full Body Weight Training Session
Tu: HITT (High Intensity Interval Training)
W: Yoga or other recovery
TH: Full Body Weight Training Session
Fr: HITT / Run / Play
Sa: Full Body Weight Training Session
Su: OFF

STRENGTH TRAINING VS. ENDURANCE

PRE/POST WORKOUT

How we train affects how we should eat, both before and after the session. When we consider longer endurance focused activity (One Hour +) the primary goal is typically hydration and sustaining energy for the entire workout. Very different than a strength training workout where the focus shifts to replenishing protein to promote protein synthesis – the rebuilding of muscle tissue. You would also look to include a moderate amount of carbohydrates to assist in the muscle building process by boosting insulin – there's that hormone Insulin again– plus a ton of nutrients- vegetables.

I'm calling on you again to play detective with your eating. Pay attention to how you are feeling during your workouts, and it will grant you insight on how you might need to increase or decrease calorie intake to support your training.

If you wake up in the morning and plan to do some light endurance work –which is optimal for your circadian rhythm – you won't typically require platefuls of calories and instead should focus on hydration. But, if you are going to crush a HITT workout or Strength Training session, you'll want to make sure you can sustain energy and strength for the duration. I know personally having something in my system before lifting weights, or HITT training goes a long way in how I perform. When it's a lower intensity day, my main focus is hydration, and I can emphasize my post-workout meal.

STRENGTH ATHLETE VS. ENDURANCE ATHLETE

Strength/ HIIT

Endurance

Pre- Workout Goals

Boost Energy
Boost Strength &
Performance

Boost Energy
Hydration

Pre- Workout Role of Protein

Maintain or boost muscle mass.
Amino acids (breakdown of protein) help to promote muscle building during workout

Can reduce damage and breakdown of muscles during longer duration endurance activities

Pre- Workout Role of Carbohydrates

In moderate amounts, can help insulin production when in combination with protein and help to promote protein synthesis (Boosting Muscle Mass!)
Can provide fuel for the workout

Can help fuel your workout by increasing glucose production in muscles used as a fuel source in both shorter and longer duration endurance workouts
Can provide fuel for the workout

Pre-Workout Role of Fats

Improves satiation (fullness) to avoid energy crashes and overeating at post workout meal
*** Fats can be used as an energy source during intense strength training/HITT training for those on a low carbohydrate diet**

Can help fuel longer duration endurance workouts (1+ Hour)
Improves satiation (fullness) to avoid energy crashes and overeating at post workout meal

During Exercise

The main goal should be hydration. Focus on quality water or a clean sugar free sports drink. Biosteel High Performance Sports Mix is always in my gym bag
*** A note on BCAA's. Branch Chain Amino Acids are very popular for helping to boost strength and muscle protein synthesis during workout. BUT absolutely NOT mandatory if you are eating a variety of quality protein

Unless you are exercising for longer than 2 hours, food or gels - quick carbohydrate energy - during workouts are typically unnecessary
The main goal should be hydration. Focus on quality water or a clean sugar free sports drink. Biosteel High Performance Sports Mix is always in my gym bag

STRENGTH ATHLETE VS. ENDURANCE ATHLETE

Strength/ HIIT

Endurance

Post -Workout Goals

Boost recovery
Preserve muscle mass or build muscle mass
Rehydrate
Refuel

Boost recovery
Rehydrate
Refuel

Post -Workout Role of Protein

Promotes protein synthesis. (Building of muscle mass)
Helps with repair and regrowth of muscle
Increases satiation (fullness) to balance energy levels, reduce cravings

Helps to maintain muscle mass after long duration exercise, avoiding protein catabolism
Helps repair muscle breakdown
Increases satiation (fullness) to balance energy levels, reduce cravings

Post- Workout Role of Carbohydrates

Promotes an insulin spike that assists in muscle growth, replaces used muscle glycogen and helps to transport nutrients into cells
Simple fast acting carbohydrates can help to replace muscle glycogen quickly after an intense workout. ½ - 1 cup of fruit or a recovery formula shake (like Biosteel Advanced Recovery Formula) can help boost muscle recovery but should only be used after heavy strength training or HIIT Training
*** If the goal is to reduce body fat, a whey isolate shake with ½ banana can be enough replenishment, followed by a balanced whole foods meal within 2 hours***
Remember, whole foods carbohydrate sources which include minimally processed fiber rich carbohydrates help restore glycogen gradually over a prolonged period of time as opposed to dumping simple, fast acting, carbohydrates in your system immediately (Processed sugar, White bread, Pasta etc.)

Restores muscle glycogen to help boost recovery
Simple fast acting carbohydrates can help to replace muscle glycogen quickly after a long workout. ½ - 1 cup of fruit or a recovery formula shake (like Biosteel Advanced Recovery Formula) can help boost muscle recovery but the workout should be longer than 60 minutes.
Remember, whole foods carbohydrate sources which include minimally processed fiber rich carbohydrates help restore glycogen gradually over a prolonged period of time as opposed to dumping simple, fast acting, carbohydrates in your system immediately (Processed sugar, White bread, Pasta etc.)

STRENGTH ATHLETE VS. ENDURANCE ATHLETE

Strength/ HIIT

Post- Workout Role of Fats

*** We previously believed that fats after workout would slow digestion and interfere with the absorption of nutrients. It turns out that the speed of digestion for protein and carbohydrates is not as important as we once thought for recovery***
Healthy fat sources (in particularly omega 3- fatty acids) can help to decrease inflammation and promote recovery after workouts

Endurance

We previously believed that fats after workout would slow digestion and interfere with the absorption of nutrients. It turns out that the speed of digestion for protein and carbohydrates is not as important as we once thought for recovery
Healthy fat sources (in particularly omega 3- fatty acids) can help to decrease inflammation and promote recovery after workouts

Meal Timing:

- We are always recovering (research suggests up to 48 hrs post-workout) but there is a window of opportunity where we should prioritize post workout nutrition. Eat within a 2-hour period if possible, even if it is just a quality shake.
- If you decide to work out in a fasted state, definitely try eat something solid within a couple hours, especially if it was a weight training session.

Portion Size:

Portion size is going to depend on intensity and type of exercise. A yoga session and a hard strength training session are going to require different portions. That's why it's best to wear your detective hat and pay attention to hunger and satiation rather than becoming overly obsessive with macronutrients measuring. As a general rule, you should eat until you are about 80% full at meals and time those meals around hunger and workouts.

PRE/POST WORKOUT RECOMMENDATIONS

Eating whole foods will automatically promote a blend of Carbohydrates, Protein, Fats, and Fiber with antioxidants, vitamins, minerals, and phytonutrients to help recovery and decrease inflammation, supply energy and build muscle. For this reason, I always promote a whole foods diet.

There is a lot of talk about being fat adapted -fueling off of fat- ketogenic diet- versus needing carbohydrates to fuel workouts. Long story short the goal is to be metabolically flexible, meaning you should be able to burn glucose when needed in harder or more extended duration training sessions, while also being able to burn fat. This metabolic flexibility will not just happen because you've switched to eating a high-fat diet, this happens by improving your hormonal system and paying attention to physical hunger, energy, cravings and recovery from workouts.

EXTRA TIP

Are You Eating Properly?

- Slow down and chew your food, this not only helps the digestion process but can prevent you from overeating by allowing your digestive system a chance to process your food at a reasonable rate.
- Avoid distractions while eating - cell phone, television, computer- it puts your brain on autopilot and you don't notice consumption. Ever sit down to watch a movie with a bowl of popcorn and somehow you have eaten the entire bowl before the open scene finishes? Thought so.
- Balance those hunger hormones by including protein, healthy fat, fiber and veggies at every meal/snack. It's far easier to over eat potato-chips than over-eat almonds, the natural satiating properties of fat and protein in the almonds help prevent it.

PRE-WORKOUT: MORNING

Earlier in this resource, I discussed how life will unavoidably get in the way and that unless you're a professional athlete, it is nearly impossible to have a perfect training routine. Well, if you have no choice but to workout hard in the morning, you should prioritize the Pre and Post workout options.

Water first. Always! You can add sea salt and lemon for extra electrolytes and a detoxifying effect first thing in the morning. Liquid Chlorophyll is also an excellent option for detoxification that you can add to your water.

Water + Black coffee: If you are looking to train in a fasted state this will technically kick you out of it but can help boost performance during a workout. It is up to you to decide if it's something you want to do. If you plan on doing a higher intensity workout (Strength Training, HITT, etc.) I do recommend to fuel around workout. Fasted, or black coffee only might be fine for a lower intensity workout: walking, slow bike rides, yoga or a stretching routine, but, can make some of the other activities a real struggle.

If you're not interested in training in a fasted state but also don't want a 6-course breakfast before an early morning session, there are some great small meal options below:

*** SEE PRE/POST WORKOUT RECIPE BOOKLET

Bulletproof Coffee

Yogurt Protein Bowl

Protein Energy Balls

Everyday Green Smoothie

Whey or Plant-based Protein Powder – Add your choice of milk and/or fruit.

Grain-free Coconut Almond Porridge

Cinnamon Flax Muffin

POST-WORKOUT: MORNING

Protein shake

Egg Scramble

Egg Cups

Paleo Overnight N'Oats with Protein Powder

Turkey Breakfast Hash

Lunch Bowl Options

PRE-WORKOUT: AFTERNOON

Lunch/Dinner Bowl Options (See recipe package)

- Choose Protein (Chicken, Ground Turkey, Salmon, Falafel etc.)
- Choose Fiber- Rich Carbohydrates (Roasted Cauliflower, Brussel sprouts, Zoodles etc.). *** Please note a lot of fiber post workout can cause digestive upset so use caution with the type of vegetables and additional fiber you are eating pre-workout. ***
- Choose Greens
- Choose Healthy fats (EVOO, Hemp Seeds, Flax etc.)

Remember to save the majority of your starchy carbohydrates for post workout, this means sweet potato, squash, quinoa, rice etc.

POST-WORKOUT : AFTERNOON

Lunch/ Dinner Bowl Options (See recipe package)

- Choose Protein (Chicken, Ground Turkey, Salmon, falafel etc.)
- Choose Fiber- Rich Starchy Carbohydrates (Sweet Potatoes, Squash, Quinoa, Rice etc.)
- Choose Greens
- Choose Healthy fats (EVOO, Hemp Seeds, Flax etc.)

EXTRA TIP

Shake It Out

A protein shake is always a good post workout option, especially when you have longer than 1 hour to the next meal. Include protein, fat, fiber and veggies in your shake to boost energy, manage cravings and assist in overall recovery.

PRE-WORKOUT : EVENING

If you choose to train later try to have larger meals throughout the day, even possibly splitting your dinner into half sized portions for Pre and Post training rather than eating a big meal close to bed. You should stop eating 2 hours before bed to help aid in proper digestion and promote sleep.

Lunch/ Dinner Bowl Options (See recipe package)

- Choose Protein (Chicken, Ground Turkey, Salmon, Falafel etc.)
- Choose Fiber- Rich Carbohydrates (Roasted Cauliflower, Brussel sprouts, Zoodles etc.). *** Please note a lot of fiber post workout can cause digestive upset so use caution with the type of vegetables and additional fiber you are eating pre-workout. ***
- Choose Greens
- Choose Healthy fats (EVOO, Hemp Seeds, Flax etc.)

POST-WORKOUT : EVENING

In addition to the ½ portion dinner suggestion from the Pre-Workout section you could also opt for a shake following workout with a protein-rich small snack instead of a full meal to avoid overeating and potentially disrupting your sleep.

Lunch/ Dinner Bowl Options (See recipe package)

- Choose Protein (Chicken, Ground Turkey, Salmon, Falafel etc.)
- Choose Fiber- Rich Starchy Carbohydrates (Sweet Potato, Squash, Quinoa, Rice, etc.).
- Choose Greens
- Choose Healthy fats (EVOO, Hemp Seeds, Flax etc.)