

A Health-First Fueling Guide for Endurance Runners

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INTRODUCTION

Hi, I'm Lauren Beihoffer.

Welcome to my health-first fueling guide for endurance runners. I'm the owner of Misfit Mountain Athletics, a coaching business that is focused on holistic training for the well-rounded athletes. I'm a master's level biochemist, former research scientist and college professor, certified nutritionist, and certified running coach with specialized training in metabolic efficiency, strength and conditioning and women's health.

I'm deeply passionate about helping individuals in midlife and beyond conquer their health, wellness and performance goals. As a 40+ year-old busy mom of three who also battles PCOS, I completely understand the struggles of a health-first approach when it comes to endurance fueling.

I've run everything from 5K's to 100 milers and in addition, participated in 48 hour adventure races and multi-day mountaineering treks. Endurance fueling takes practice! Let this guide lead the way.

This ebook provides a "quick start" guide for athletes looking to enhance metabolic health while being able to fuel well for performance.

Disclaimer: The following guide is designed for educational purposes only and is not a prescribed nutrition plan for any particular individual. While I am a certified nutritionist and running coach and have designed this guide with safety in mind for the healthy, adult ultrarunner, you should consult your physician or other health care professional before starting this or any other nutrition/fitness program to determine if it is right for your needs.



Getting Started with Every Day Nutrition



Energy Balance

One of the most important pieces of information to understand when beginning your ultrarunning and nutrition journey is this--

What's my energy balance?

"Energy balance" is the relationship between energy in (food calories taken into the body through food and drink) and energy out (calories being used in the body for our daily energy requirements).

This relationship, which is defined by the laws of thermodynamics, dictates whether weight is lost, gained, or remains the same.

You can use an online calculator yourself to give you a ballpark idea of your daily energy needs (try this one if you'd like: <https://goodcalculators.com/estimated-energy-requirement-eer-calculator/>)

Under-fueling has disastrous consequences for ultrarunners in terms of metabolic health, bone health *and* performance. Eating an appropriate amount of calories is extremely important!



Optimizing Blood Sugar

Once you find your daily energy needs as an endurance athlete, you can begin the process of optimizing your blood sugar for metabolic health.

What is metabolic health?

Metabolic health refers to how efficiently and effectively your body uses energy sources from your diet to fuel bodily processes (i.e. uses the carbohydrates and fats from food to help your body move and function.)

Metabolic health is defined as having ideal levels of blood sugar, triglycerides, high-density lipoprotein (HDL) cholesterol, blood pressure and waist circumference without using medications. These factors directly relate to your risk of heart disease, diabetes and stroke.

It's estimated that around 88% of Americans are metabolically *unhealthy* and most do not even know it.

On the next page, we'll learn how to optimize metabolic health via blood sugar optimization.



Meal Planning

As a busy endurance athlete, the number one way you can set yourself up for success is to plan ahead. While you don't have to go into full-blown meal prep mode, having a plan in place can be really helpful.

Optimizing Blood Sugar for Metabolic Health

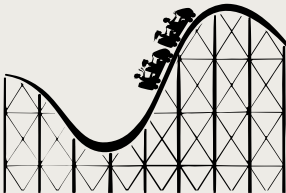
What is blood sugar and why do I need to worry about it?

Blood sugar, also known as blood glucose, refers to the amount of sugar circulating in your bloodstream at any given time. Glucose serves as the primary source of energy for our bodies. Without a continuous supply of glucose in our blood, the body cannot carry out essential processes.

Both high blood sugar (hyperglycemia) and low blood sugar (hypoglycemia) can cause long-term health problems. Managing blood sugar levels is crucial to prevent poor metabolic health.

Blood sugar is regulated by hormones produced in the pancreas—insulin and glucagon. They play a vital role in balancing blood sugar. Insulin helps glucose enter your cells for energy, while glucagon releases stored glucose (glycogen) when your body is in a fasting state.

What we want to avoid is the **BLOOD SUGAR ROLLER COASTER.**



The blood sugar roller coaster is when your blood sugar levels go up and down outside of the optimal ranges. This can happen for many reasons. By learning to optimize blood sugar control, we can optimize and ensure metabolic health as we age. This disregulation in blood sugar balance can be a major player in driving metabolic disease!

When blood sugar veers outside of optimal ranges, you are on the blood sugar roller coaster and you may get symptoms that range from mood dysfunction (irritability, brain fog, feeling anxious, and/or moody), to poor sleep, fatigue, and loss of focus, to weight gain and skin issues.



You know that “hangry” feeling you get? That’s usually a side effect of blood sugar crashes.

Sometimes you might not notice any signs of blood sugar imbalance until more serious issues begin to develop, such as pre-diabetes, diabetes and cardiovascular disease.

It’s estimated that nearly 88% of Americans are metabolically unhealthy and most don’t even know it! Controlling blood sugar is a great place to start to optimize metabolic health.

So how do we optimize blood sugar?

The Secret Formula: PROTEIN + FIBER + FAT

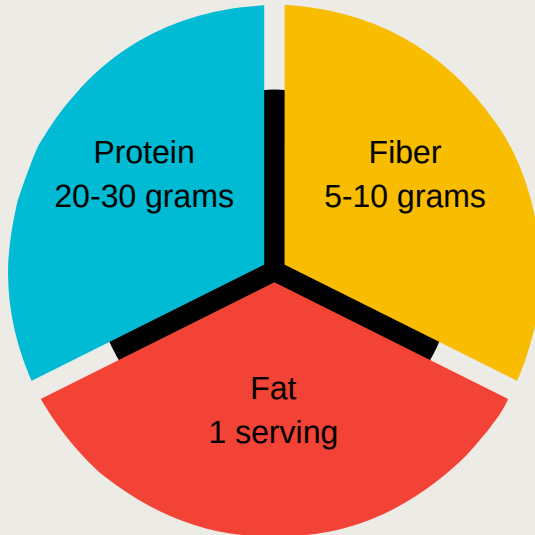
Protein, healthy fat and fiber are the super heroes of balancing blood glucose levels.

These nutrients help modulate the blood sugar and insulin response of your meals and snacks. Each of these slows the uptake of sugar into the blood and stunts the insulin response. Also, these are the nutrients that you keep you full for hours.

We want to build meals that incorporate these 3 nutrients.

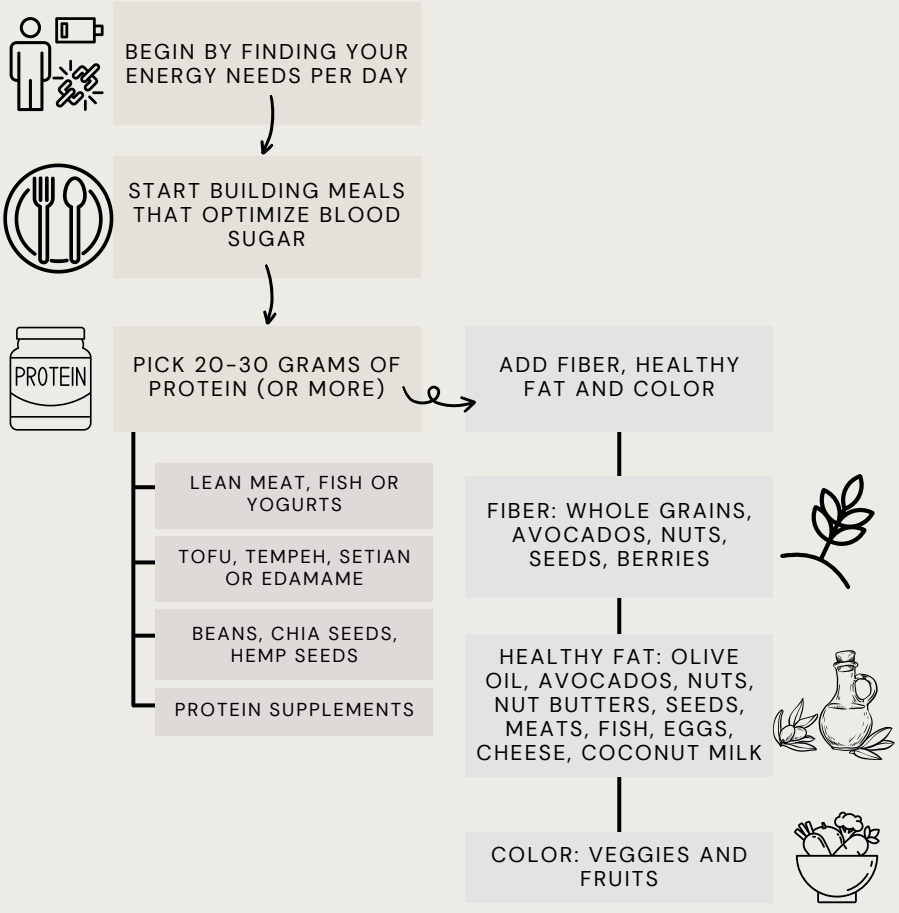
The next page gives you some ideas on how to accomplish this.

Always round out the meal with color (veggies and fruits.)



CHAPTER TWO

Optimizing Blood Glucose for Better Metabolic Health and Performance



Fueling for Training and Racing

Identify the Length of Your Run



Our bodies don't know mileage, they know time! Our GI system runs by time and we can use this to our advantage.

When planning out your training run or race, the amount of time you intend on running is most important for nailing your nutrition.

Think about Carbs/Hour Instead of Calories/Hour



Our primary fuel source while running is carbohydrates. Therefore, it's advantageous to focus on how many carbs per hour you are consuming instead of calories.

For most runners, we want to initially aim for 25-30 grams of carbs per hour while running. However, for optimizing performance, we will eventually want to transition to 50-60 grams of carbs per hour or more. This will take practice and planning!

Hydration



You lose both water and electrolytes as sweat when you exercise. These need to be replenished to avoid dehydration, which can make you feel physically sick and impede performance. Even slight dehydration has been shown to disrupt running performance.

A good place to start is consuming 12-20 oz of water per hour (or more) depending on the weather and your body size. Need to dial that in even more precisely? Check out the sweat test section.

Sweat Test

This will tell you the volume of water (sweat) you lose from one hour of running. This does not tell you how much salt was lost.

1. Use the restroom then undress. Weigh yourself. This is your starting point.
2. Get dressed and run for 60 minutes.
3. After your run, dry off, undress and weigh yourself. This is your ending point. You'll notice you lost water weight!
4. Subtract your ending weight from the starting weight—the difference is your sweat rate.
5. If you consumed water/fluids during your run, you will need to subtract that amount.

For example, let's say you lost one pound of weight when doing this test and consumed no water during your run.

1 pound = 16 ounces

Your sweat rate is 16 ounces per hour. This means you will need to replace at least 16 ounces of water per hour while running. Note, this will change depending on the weather, so feel free to test often as the seasons change.

We know that sweat contains electrolytes (i.e. salt.) So when replacing the 16 ounces of water, it's best to add electrolytes to your fluids if you are running more than 90 minutes.

Electrolytes

Your sweat contains electrolytes (i.e. salt) that we must replenish along with our fluids.

How much salt is lost via sweat varies widely from person to person, so you will need to practice. Start small and work your way up. We are most worried about replacing sodium—the major player in this salt scenario. Aim for consuming 200-500 mg sodium/ hour (or more!)

To give you a frame of reference, here is what a person might lose in just 10 ounces of sweat:

- 220 mg sodium (some people lose much more!!)
- 63 mg potassium
- 18 mg calcium
- 8 mg magnesium

As this varies widely, it's best to practice and see what works best for you. You can add electrolytes to your fluids or take salt tablets by mouth, but also consider that many gels and sports foods contain sodium as well.

CONCLUSION

Putting It All Together

Ultimately, the best nutrition plan is one that is flexible, works with your lifestyle and is easy to adhere to. I typically encourage 80% adherence in order to see results both in health and performance.

This guide contains generalized, evidence-based guidelines to help you fuel yourself well both in everyday life and in your endurance pursuits.

If you find that you need more personalized guidance, feel free to reach out and we can craft a plan tailored specifically for YOU!

LAUREN BEIHOFFER