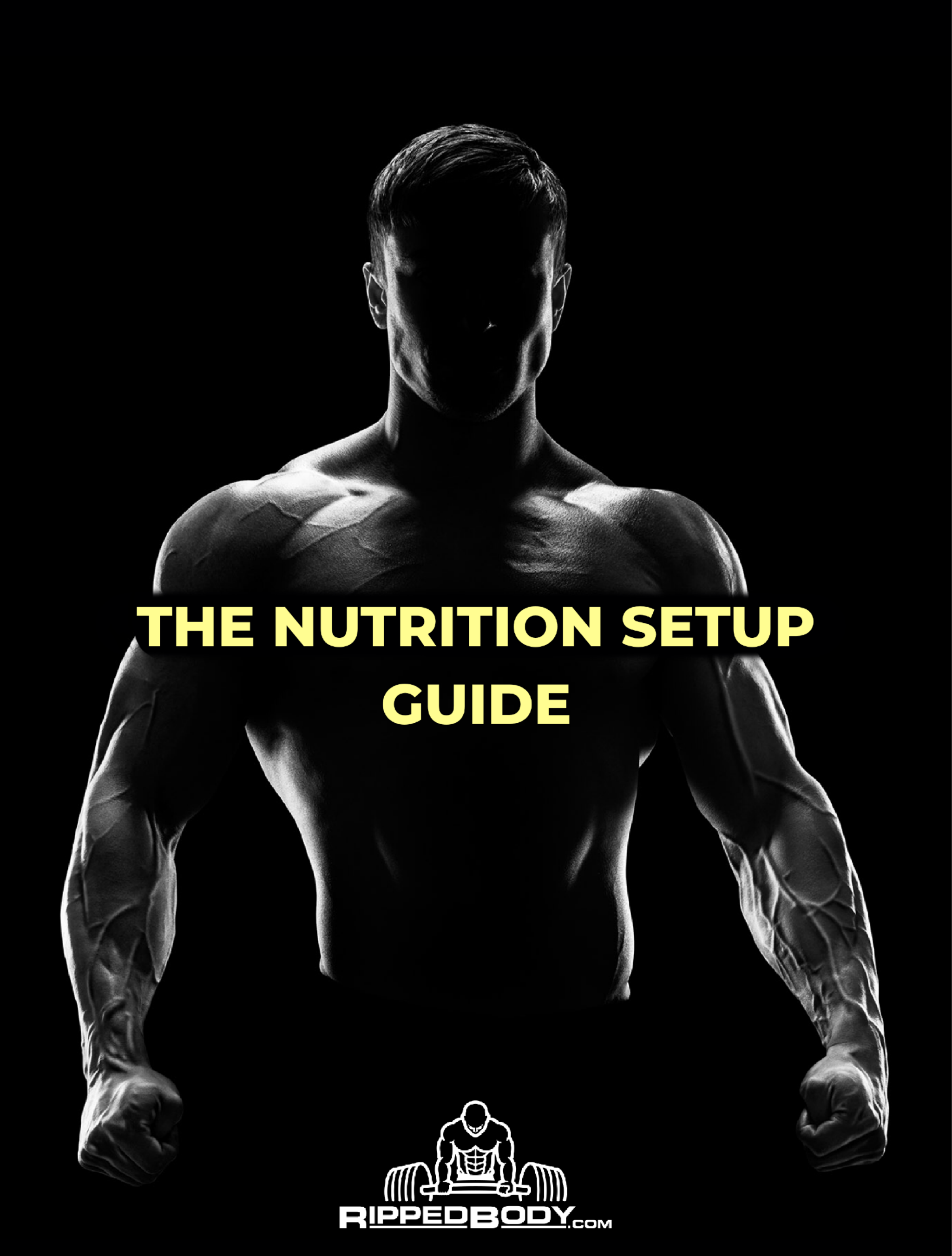


THE NUTRITION SETUP GUIDE

RIPPEDBODY.COM

This book is not intended for the treatment or prevention of disease, nor as a substitute for medical treatment, nor as an alternative to medical advice. Use of the guidelines herein is at the sole choice and risk of the reader.

This book is dedicated to my online coaching clients.

Your leap of faith in hiring me has changed my life forever.

I live one filled with meaning, the most extraordinary set of friends, and the work I love more and more each day.

Thank you 🙏🏻

Before you begin, this book is intended to be paired with my 7-day email course which will help you avoid the most commonly made mistakes people make when implementing it.

"This was an amazingly informative course. It's still crazy to me that it was free." – Jessica Benton

"Your email list is the best I've ever subscribed to, of any kind. Thank you so much for your well-researched, honest, and valuable writing!" – Nicolas Ayllon

"I knew it was going to be good, but not this good!" – Yerson Gutierrez

I'd love the opportunity to show you how to get the most out of this book:

Sign up to receive the free 7-day email course here.

INTRODUCTION

WE'VE BEEN LIED TO

I started this website in 2011 to take revenge on an industry that had lied to me.

For the majority of my 20s, I was brainwashed by nutrition scams and hype. I spent a lot of money that I didn't really have on useless supplements and wasted a *lot* of time.

The fitness industry does not benefit from genuinely educating people.

People desperately want to believe in shortcuts, 'biohacks,' and magic powders. And there are far greater profits to be made in selling them, rather than serving up legitimate information.

Therefore, the charlatans will always have a broader reach with more advertising dollars behind them.

Anyone with half a brain can guess that the rapid-fat-loss-promising supplements that Instagram influencers push on their young fans are nonsense. But how does the non-expert distinguish between legit information and that which is craftily designed to seem it?

What we believe to be true is often what we are first exposed to. The *sunk-cost fallacy* makes it hard for our brains to accept we may have invested 10 hours reading a book by a

doctor who is misrepresenting science. Algorithms and confirmation bias push us into echo chambers, reinforcing whatever existing beliefs we may have.

Me in my early to mid-20s, thoroughly brainwashed by the fitness industry B.S.

Logically, we know there are books, documentaries, and podcasts out there with factually incorrect information. But cognitive biases affect us all. And they may stop us from accepting the idea that may be one of them.

This guide, using the best scientific evidence we have to date, will show you how to set up your diet in a way that will maximally support your strength and physique goals.

You will understand the reasons behind every decision you make. Some of the small trade-offs will promote greater balance in your life.

But most importantly, it will teach you how to think. This means you'll gain the superpower of being able to spot nutritional nonsense from a mile away.

I would very much like you to read on. But can I be trusted?

"IT IS DIFFICULT TO GET
A MAN TO UNDERSTAND
SOMETHING WHEN HIS
SALARY DEPENDS UPON HIS
NOT UNDERSTANDING IT!"

- UPTON SINCLAIR

MY BIASES & HOW I EARN A LIVING

I'd like to explain my background so that you can understand my biases and decide whether you can trust me before you read any further.

You might say that I earn a living from calling out the nonsense in the fitness industry. I don't do that by attacking specific brands, but by picking apart ideas and presenting easy-to-follow nutrition and training guides for people.

Originally, RippedBody.com was in two languages, English and Japanese (I live in Tokyo). I split them into two separate sites in 2012. Naturally, no advertising is accepted on either.

On RippedBody.com, I earn a living mainly from online coaching. My success here depends on my reputation, which depends on us getting clients the results we promise them.

I also earn money from three books and international royalties on them.

Our Japanese site (AthleteBody.jp), lost money for the first 8 years, and I used profits from the English site to cover it. (Online coaching was something the Japanese had yet to embrace.)

I did this because I was fed up seeing my Japanese friends in the gym getting ripped off by supplement companies. I believe that everyone should have access to no BS fitness info without language being a barrier, and I felt uniquely positioned to make

an impact, being able to bridge the gap between the fitness community in Japan and the West.

Fortunately, because we consistently put out top-notch content, we became the most trusted fitness site in the country.

- In 2019, we released the translation of Starting Strength and made it a best seller. (Here's the English version.)
- In 2020, we released our Big 3 Basics video series, teaching people how to squat, bench, and deadlift. (English version.)
- In 2021, we released the translation of The Muscle and Strength Pyramid: Nutrition and made it a best seller. (English version.)
- In 2022, we did the same for the training book counterpart training book counterpart. (English version.) These two books are now considered Bibles by many in the fitness community here.

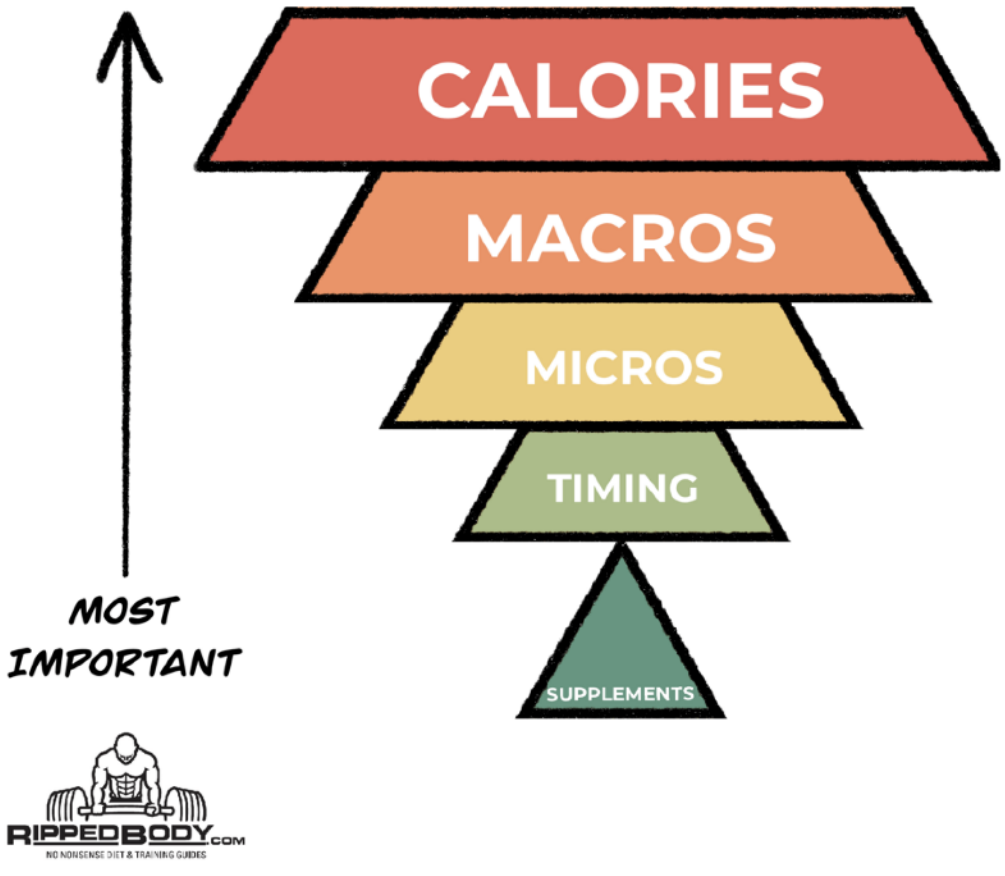
Given this background, my biases are toward *simplicity*, *time efficiency*, and an *intense* level of skepticism toward the supplement industry. I require a high level of evidence of the efficacy of something before I will recommend it, and these biases affect this guide.

THE MUSCLE AND STRENGTH NUTRITION PYRAMID

One of the best ways I know of explaining the order of nutritional importance is by using a pyramid shape.

I first came across this idea in a YouTube video by Dr. Eric Helms, in 2015. I reached out to him to ask permission to create this short guide, and through a fortunate series of events, this led to me co-authoring two books with him, expanding on it considerably. So, I'll continue the pyramid idea here and play with it a little.

I'd imagine that if the ancient Egyptians used fitness industry marketing logic to build their pyramids, they'd look something like this.



It's damn hard to make a profit from telling people that calorie balance is key, so the marketing forces of the fitness industry work to make us believe that the nutritional order of importance is backward.

Imagine you are someone completely new to nutrition and training and looking to get in shape.

You read the latest magazines, complete your Google research, and armed with the knowledge of the pyramid above, you attempt to create a nutrition plan for yourself, thinking this is going to get you jacked like a Marvel Superhero in no time.

However, you're faced with a problem: nobody seems to be able to agree on anything.

What supplements are best? Is fasting *the* answer we've all been hoping for? Or should you be consuming six meals a day? You're tempted to go vegan after seeing a Netflix documentary saying how that's better for muscle growth (nope). But what if the keto people are right?!

So, you decide to cover your bases and come up with the following:

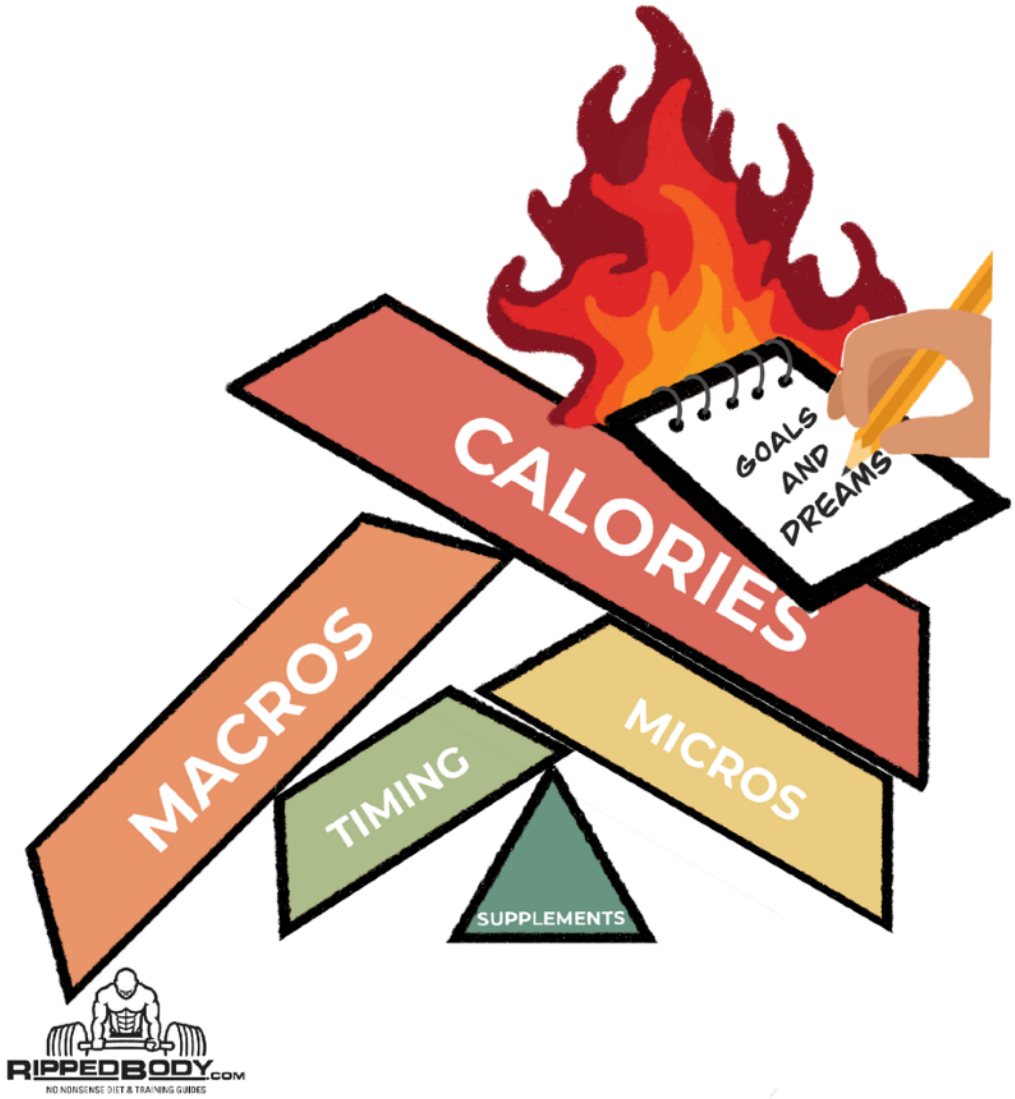
1. First, you order ALL the supplements, because you're on a mission and you have been told that magic powders are key to getting you there. Pre-, post-, intra-workout shakes and horse-sized pills are put on a monthly recurring order. You think you can't go wrong this way.

2. Next, you decide you're going to eat six meals on the days you train but fast entirely on the days you don't. You figure this will maximize muscle growth and fat burning while clearing away cancer cells.

3. You drink a green powdered drink instead of eating any vegetables, because you can't trust the quality that "big agriculture" will deliver to you. (Plus, who wants to bother cooking them?)

4. Confused as to what 'named' diet may be best, you decide to do vegan-keto, paying zero attention to calorie balance.

The result should be no surprise...



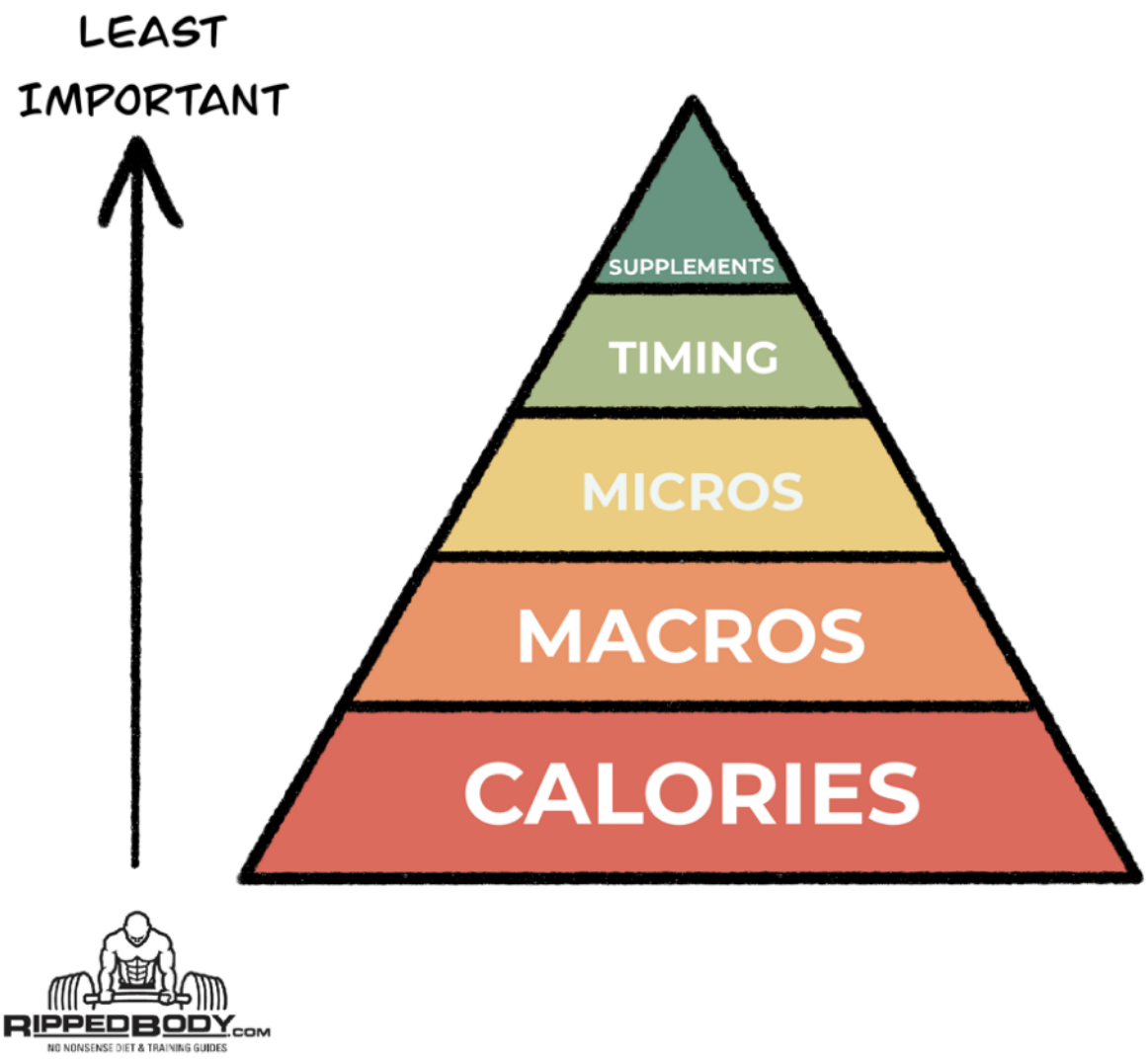
The fantasy pyramid, crumbling before your very eyes.

Now, you might be laughing at the ridiculousness of the previous setup, but this is the kind of thing that I see people do *all the time*.

Sadly, the truth is that we can't just eat 'clean foods' and ignore calories. We can't supplement our way out of a bad diet, and we can't use some special meal timing tricks to enable us to binge eat in the evenings.

THE NUTRITION PYRAMID OF IMPORTANCE

Here is how the pyramid should actually look:



The actual Nutrition Pyramid of Importance

LAYER 1: CALORIE INTAKE

Energy balance determines whether weight will be gained or lost. If you have a caloric surplus, you will gain weight. If you have a caloric deficit, you will lose weight. In this guide I'll cover two key parts:

1. How to calculate calorie intake for bulking, cutting, or body recomposition phases.

2. How to make adjustments to calorie intake if things don't proceed as planned.

LAYER 2: MACRONUTRIENTS

Macronutrients (known as 'macros') are the proteins, fats, and carbs that make up the foods we eat.

You may have heard that while energy balance determines whether weight is gained or lost, macronutrients (carbohydrate, protein, and fat) determine whether that change is fat or muscle mass.

Though that is a gross oversimplification, macros play an important role and need consideration. Simply put, get them right and you'll reach your physique goals quicker and easier than if you ignore them.

LAYER 3: MICRONUTRIENTS

If you think of macros as being the gas in your car, micros (vitamins and minerals) are the oil and lubricants.

I'll give a few simple rules of thumb to help you safeguard deficiencies and mention specific at-risk populations in this section.

LAYER 4: NUTRIENT TIMING

Nutrient timing refers to what you eat and when. *Should you slam a protein shake before or after your workout? What about post-workout carbs?* Well, depending on when you train, and how you have your regular meal times set up, these things may not be necessary at all.

This section will cover meal timing, calorie cycling, macro cycling, and my latest thoughts on intermittent fasting.

What I have learned over the years working with people is that there is a large degree of flexibility with nutrient timing and most people just need to avoid extremes rather than worry about the minute details (though I'll do a little of that too).

My bias is towards simplicity because this leads to consistency, which is what delivers results.

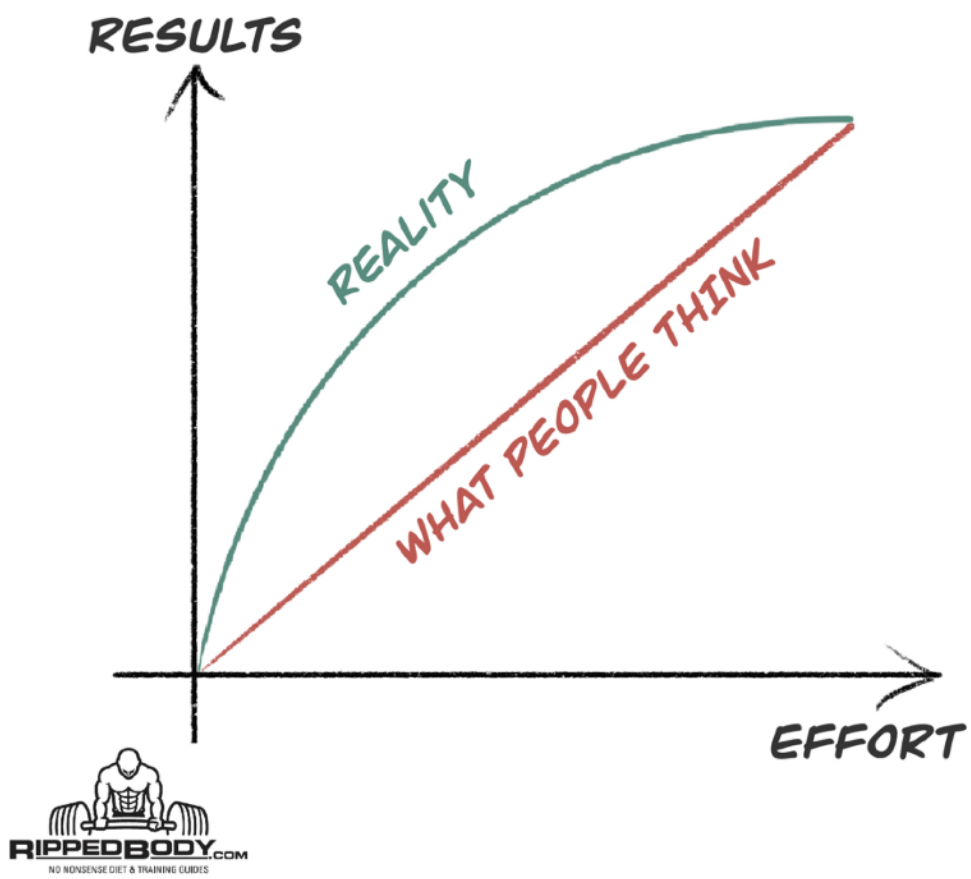
LAYER 5: SUPPLEMENTS

Supplements are the least important part of any nutrition plan. Very few work. Those that do, do little, and cannot make up for any of the other four things being screwed up.

However, some supplements can be useful, so I'll cover supplements for physique and performance, as well as for general health.

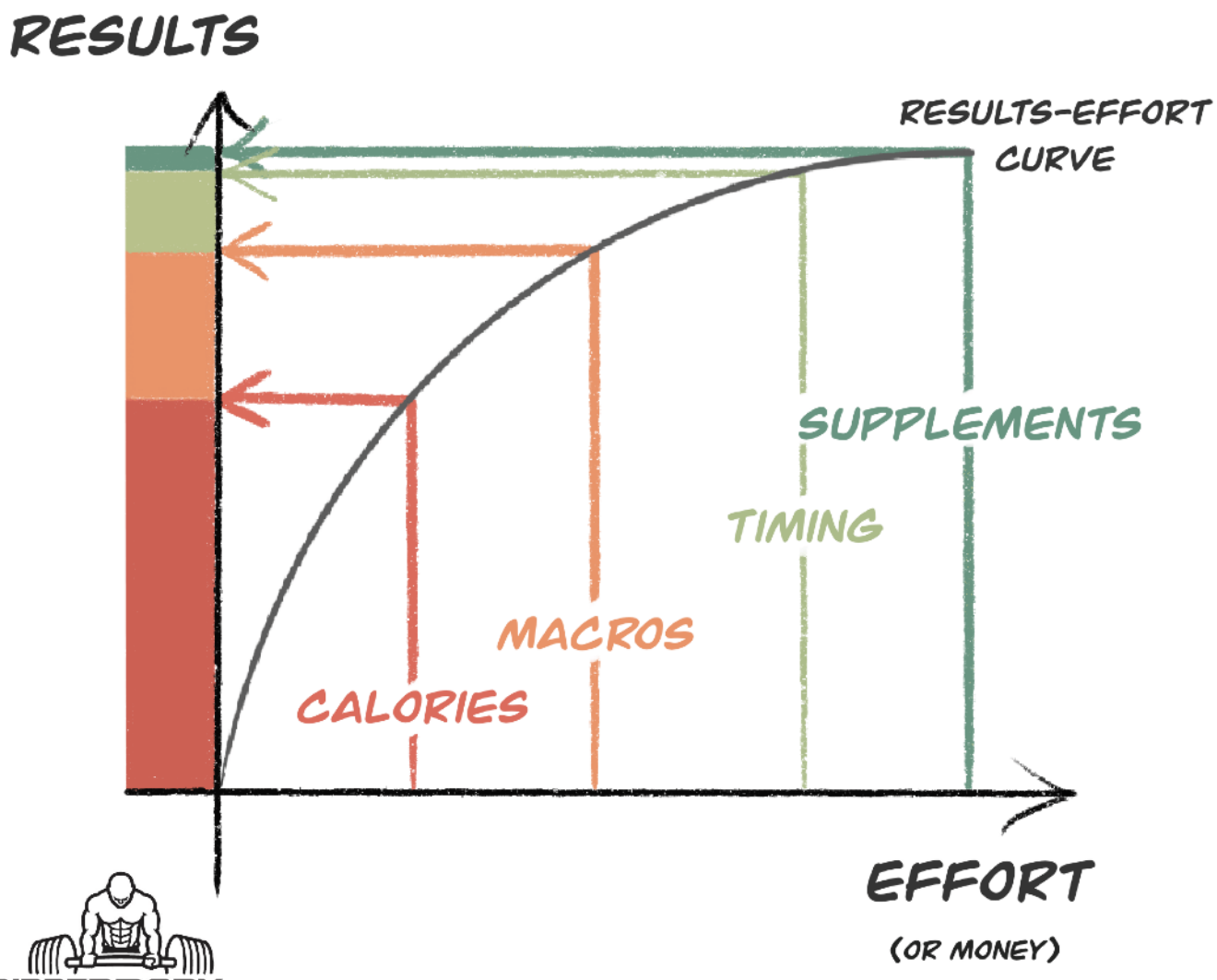
YOU SHOULD FOCUS ON THAT WHICH MATTERS MOST, FIRST

If it isn't clear by now, I'd like to underscore one important point: all layers of the pyramid are not of equal importance. I hope this is a fantastically freeing thing because it means you get a disproportionate return on your efforts from focusing on the first few layers of the pyramid.



So, if you start by keeping to your calorie intake target, get your macros in the right ballpark, without doing anything silly with

nutrient timing, you're most of the way there.



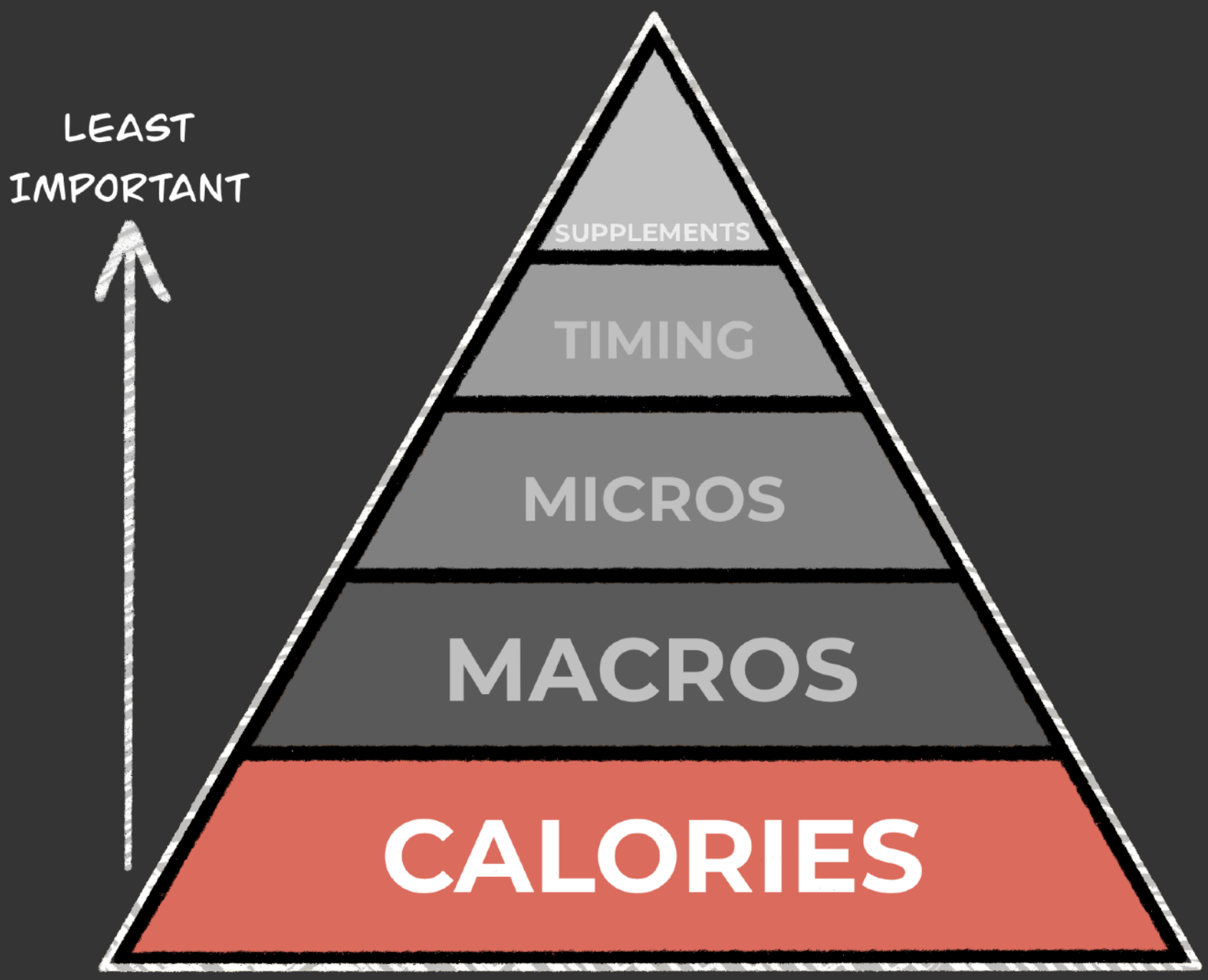
(You'll see that I didn't include micronutrients here. This is because while a shortfall can't stop you progressing in the short-term, in the long-term your health could crumble, and I didn't find this easy to place a value on.)

It also means that if some things in the later layers become too complicated, ignore them, you're not missing much.

THE MACRO CALCULATOR

You'll see a few formulas throughout this guide to calculate your calories, macros, and any calorie (or macro) cycling strategies you might choose to use.

But don't worry, I created a calorie and macro calculator and put it on the site to save you any math.


LEAST
IMPORTANT
SUPPLEMENTS
TIMING
MICROS
MACROS
CALORIES

#1: HOW TO SET YOUR CALORIE INTAKE

This chapter covers the calorie part of the nutrition puzzle. This is the exact system that I have used and refined from working with clients over the last 9 years. Here's what it covers:

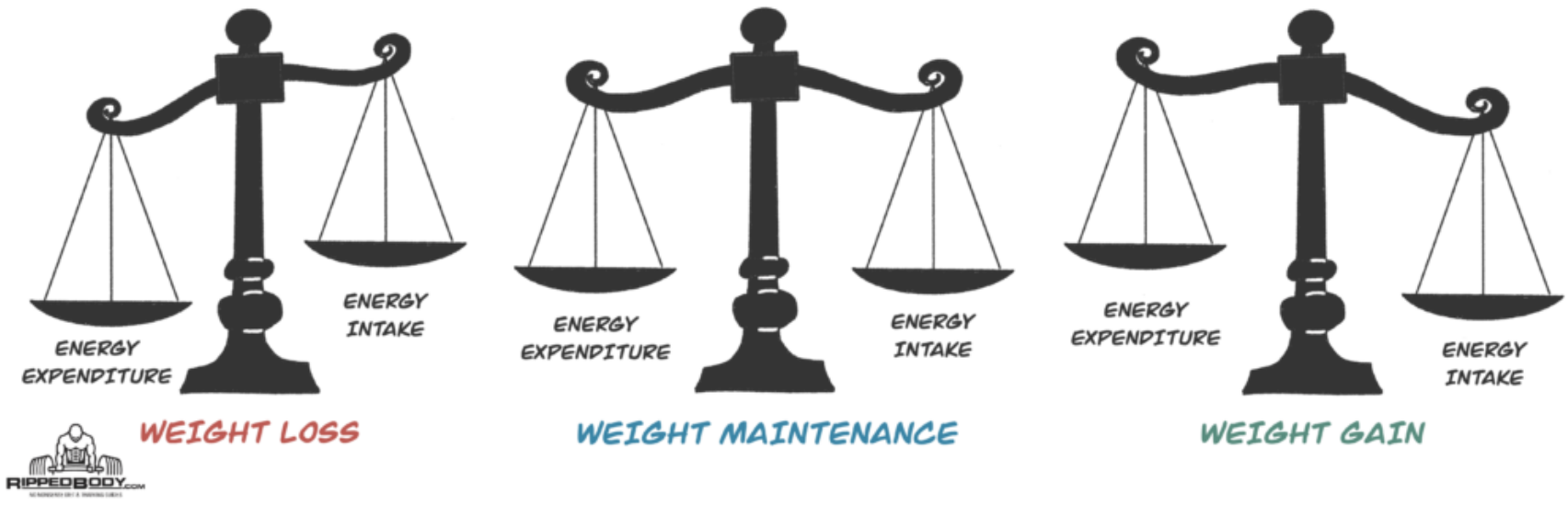
- **Why calorie intake comes first** and what you'll hear from those who make money by denying it.
- **How to calculate maintenance calorie needs**
- **Adjusting your calories for your specific goal**: fat loss, muscle gain, or gradual body recomp.
- **Why calorie calculations are estimations** that will need adjusting.
- **How to tweak things to stay on target** when they don't go as planned.

WHY CALORIE INTAKE COMES *FIRST*

Whether your goal is muscle gain, fat loss, or weight maintenance, the single most critical piece of the nutritional puzzle is getting your calorie intake right.

- If you consume more calories than your body needs, you will gain weight.

- If you consume the same amount of calories that your body needs, you will maintain your weight.
- If you consume fewer calories than your body needs, you will lose weight.

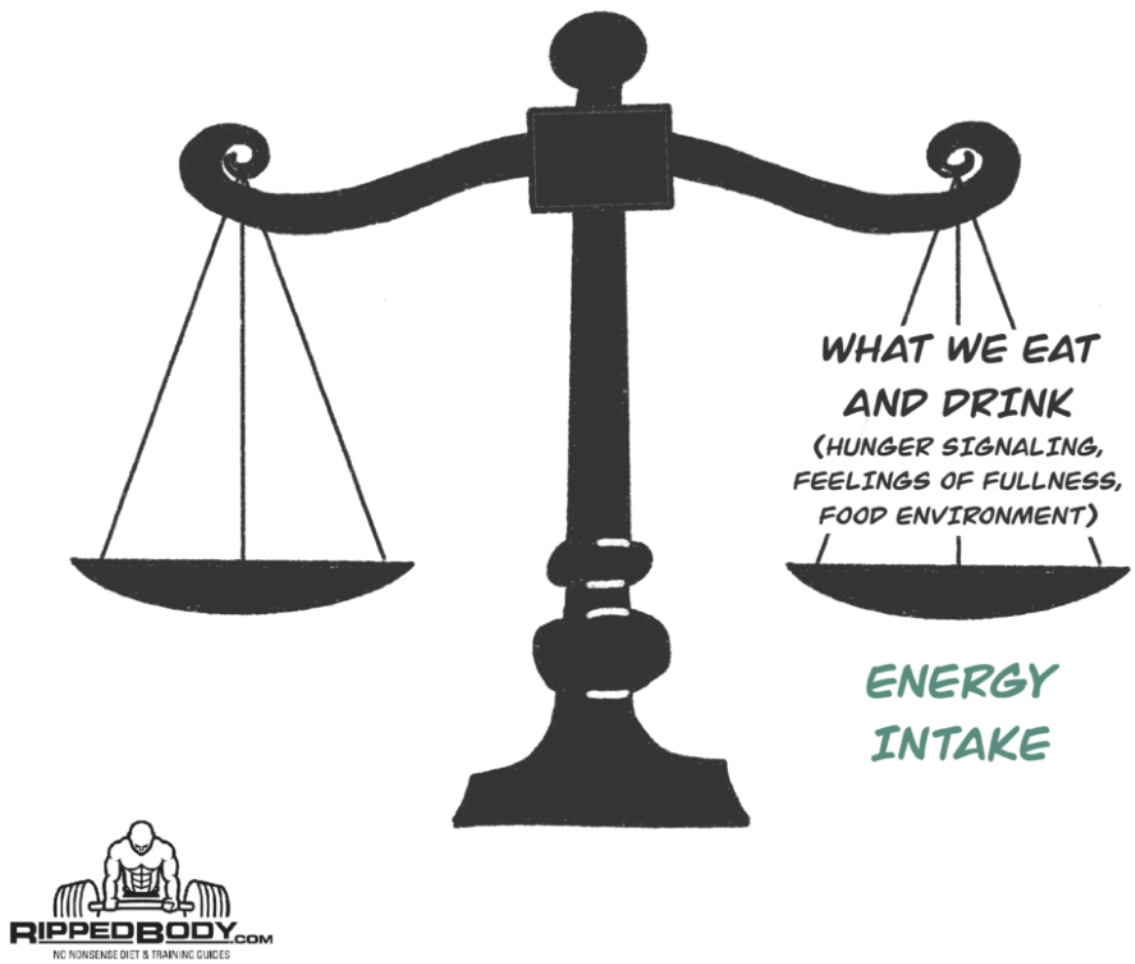


The calories in, calories out equation (often referred to as CICO) is a simple one, but each side affects the other and there are a few things in and out of our control on both.

THINGS THAT IMPACT ENERGY INTAKE

The energy intake side of the equation looks simple but is actually quite nuanced.

The specific foods we eat and *when* we eat them impacts *how much* we eat. This means the macro, micro, and timing sections of the pyramid influence our ability to adhere to this first layer.



The intake side of the energy balance equation, what we eat and drink, is affected by hunger, which adapts to circumstance.

While getting our food choices and timing right can help with feelings of fullness, our feelings of hunger are affected by the energy intake side of the equation.

If we overeat, we get less hungry and tend to eat less.

If we undereat, we get more hungry and tend to eat more.

Those who are naturally skinny and struggle to gain weight have a stronger pull the one way than those who are naturally overweight and struggle to lose it.

When you consider we consume nearly one million calories each year, it's quite remarkable that our weights fluctuate by a mere 1–2 lbs each year on average. This shows how strong a self-regulating mechanism this is.

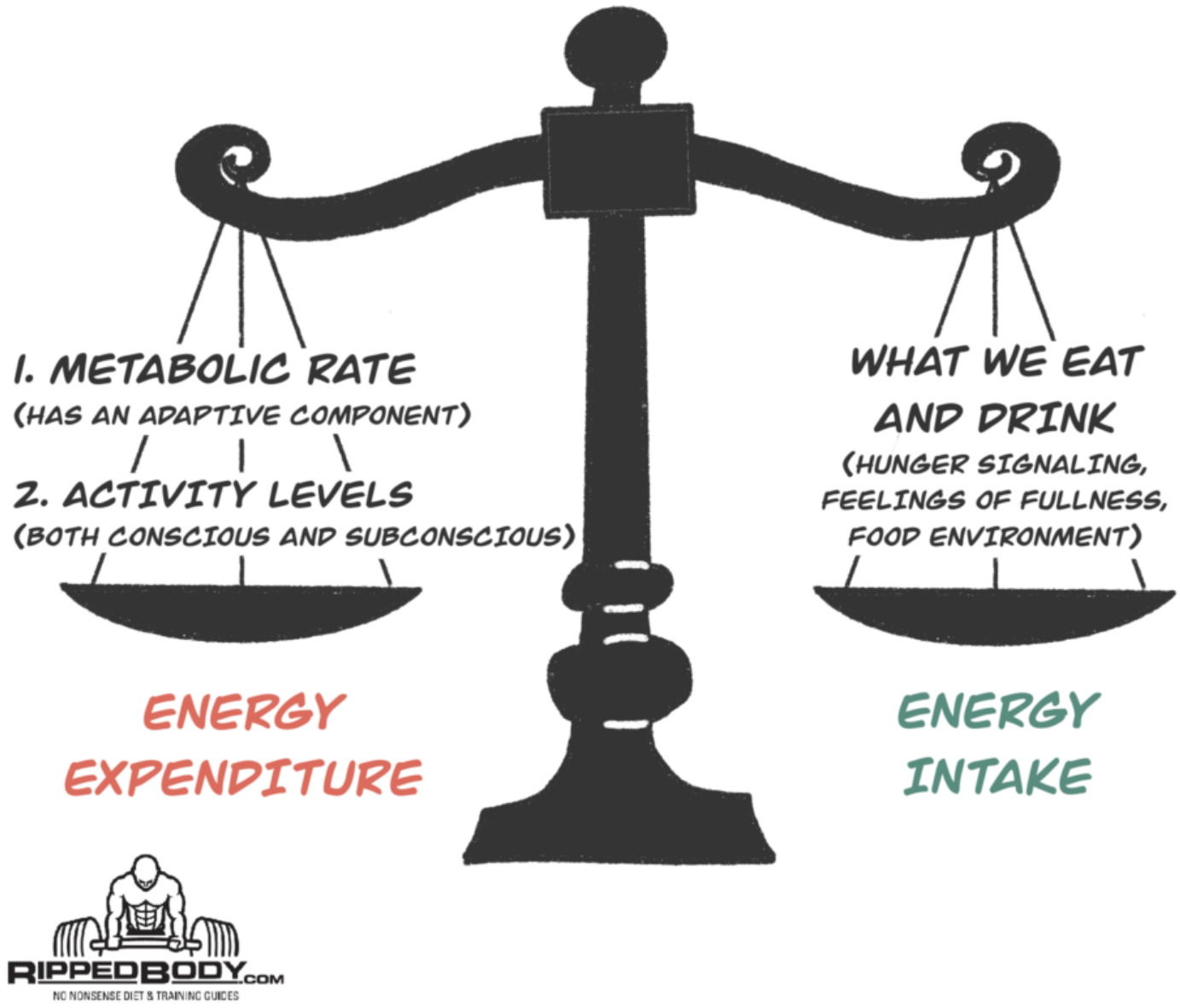
This is good for life preservation, but terribly inconvenient for those of us who want to change the status quo. We need to override this mechanism, which is why counting calories becomes the necessary next step for people who have made all the obvious lifestyle changes but are still not successful.

Our *environment* also impacts our choices. This is partially in our control. We can make sure the fridge is stocked with the foods we want to eat and clear the junk out of the house, but we can't control all the fast-food restaurants and how frequently Betty decides to bring banana bread into the office.

THINGS THAT IMPACT ENERGY EXPENDITURE

Metabolic rate drops when we diet and then returns to normal when we come back to maintenance. This is out of our control.

Activity levels are partially under conscious control (like how much we exercise) and partially not (how much we fidget and move around throughout the day).



The two primary factors on the energy expenditure side of the equation, are our metabolic rate and our activity levels. Both of these are affected to some degree by the energy intake side.

This latter part is particularly interesting because it seems to vary from person to person and can make a big difference in

energy expenditure. — Some people get way more lethargic than others when dieting, and some move around a lot more when they overeat. This is called *non-exercise activity thermogenesis* (nicknamed NEAT) and includes things like the energy expended walking to work, typing and texting friends, shaking up a protein shake, performing yard work, and fidgeting.

So, sharp readers may be thinking, "Ahh, but couldn't I exercise more rather than restrict my food intake if I want to lose weight?"

Technically, yes, you *could*. However,

- **It's more time-efficient to control energy balance** with your diet, i.e., eating more or less, rather than moving more or less.
- **Adding in extra weight training will interfere with your recovery**. This is not only inefficient but a common way people get injured.
- **Cardio should be used sparingly, if at all.** Reliance on it is unsustainable and sets people up for failure.

Therefore, dietary changes should be the primary driver of an energy deficit or surplus.

BEWARE THOSE WHO DENY THE IMPORTANCE OF CALORIE BALANCE

The focus of this guide is on what to do, instead of what not to do. So I won't spend much time debunking ideas. However, there is one notable exception worth addressing immediately — that is the idea that low-carb diets are superior (or necessary) for weight loss.

THE CARBOHYDRATE-INSULIN HYPOTHESIS OF OBESITY

There are a few legitimate-seeming doctors who continue to push something called the carbohydrate-insulin hypothesis of obesity.

The idea is when insulin levels are high, we can't lose fat because insulin shuts down fat burning. And as carbs are supposedly the biggest thing that stimulate insulin release, if we eat a high-carb diet, we can't lose fat.

(The argument is more nuanced, but this is the general gist.)

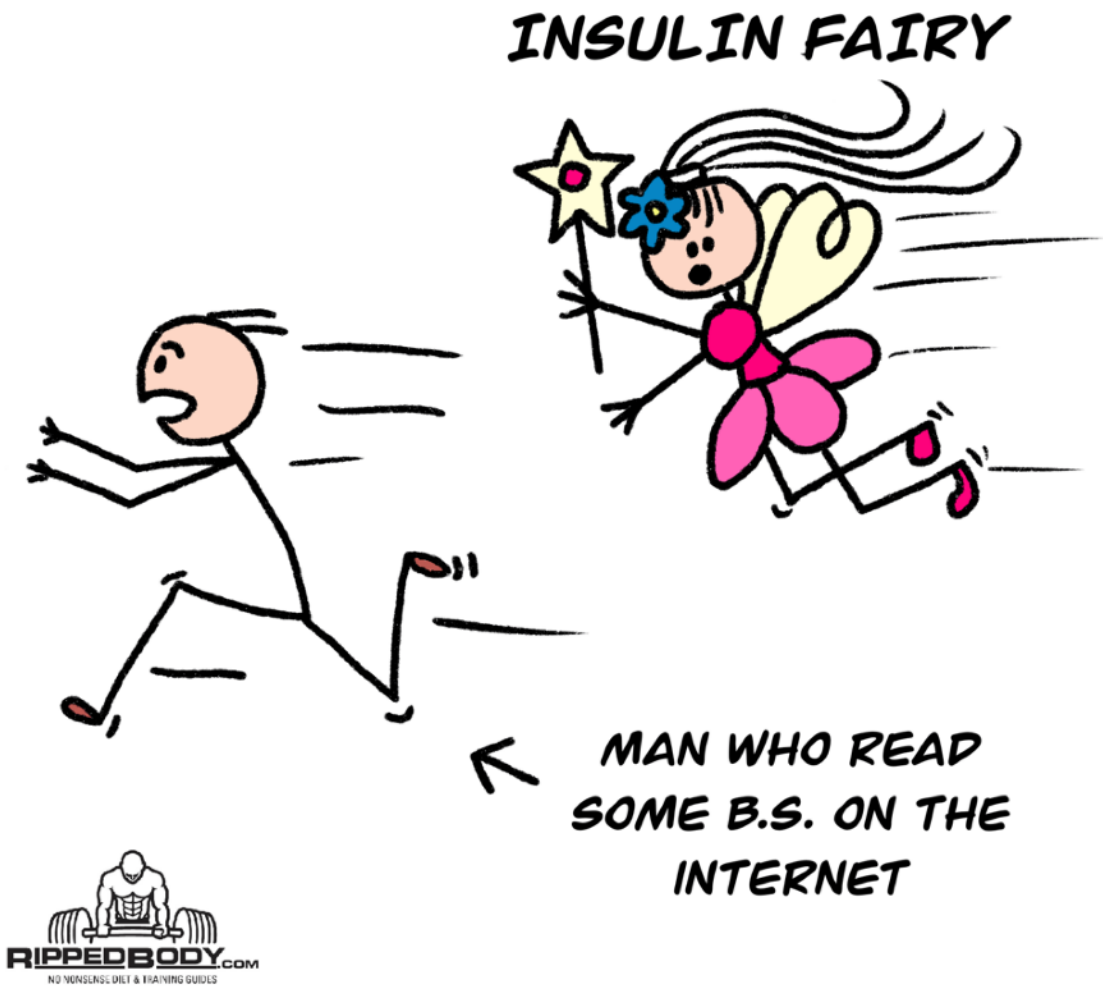
I could point out that protein (whey, dairy, animal protein, etc.) spikes insulin just as high as sugar and all sorts of other mechanistic shortcomings with this theory.

And people love to argue all kinds of biochemical pathways and hormone regulation loops.

But the fact is, when you put two groups on a calorie-matched, high vs low-carb diets, studies show that there is no difference in fat loss outcome.

So why does this idea persist?

1. It's easy to understand and share.
2. It makes people who talk about it a shit-ton of money in book sales and speaking gigs. (Gary Taubes and Jason Fung are two names, in particular, to steer clear of.)
3. There is an element of truth in the idea that cutting carbs helps with weight loss.



I do not deny that a low carbohydrate diet can be effective for fat loss. But it's important to note that people lose weight

because they eat fewer calories overall, *not* because of any effect on insulin or because it burns more body fat.

If you are trying to lose fat, you will likely need to reduce your carb intake to create a calorie deficit (and probably your fat intake too). But, if someone tells you that you need to remove carbs almost entirely, or that calorie balance is not the key to sustained weight loss, ignore them.

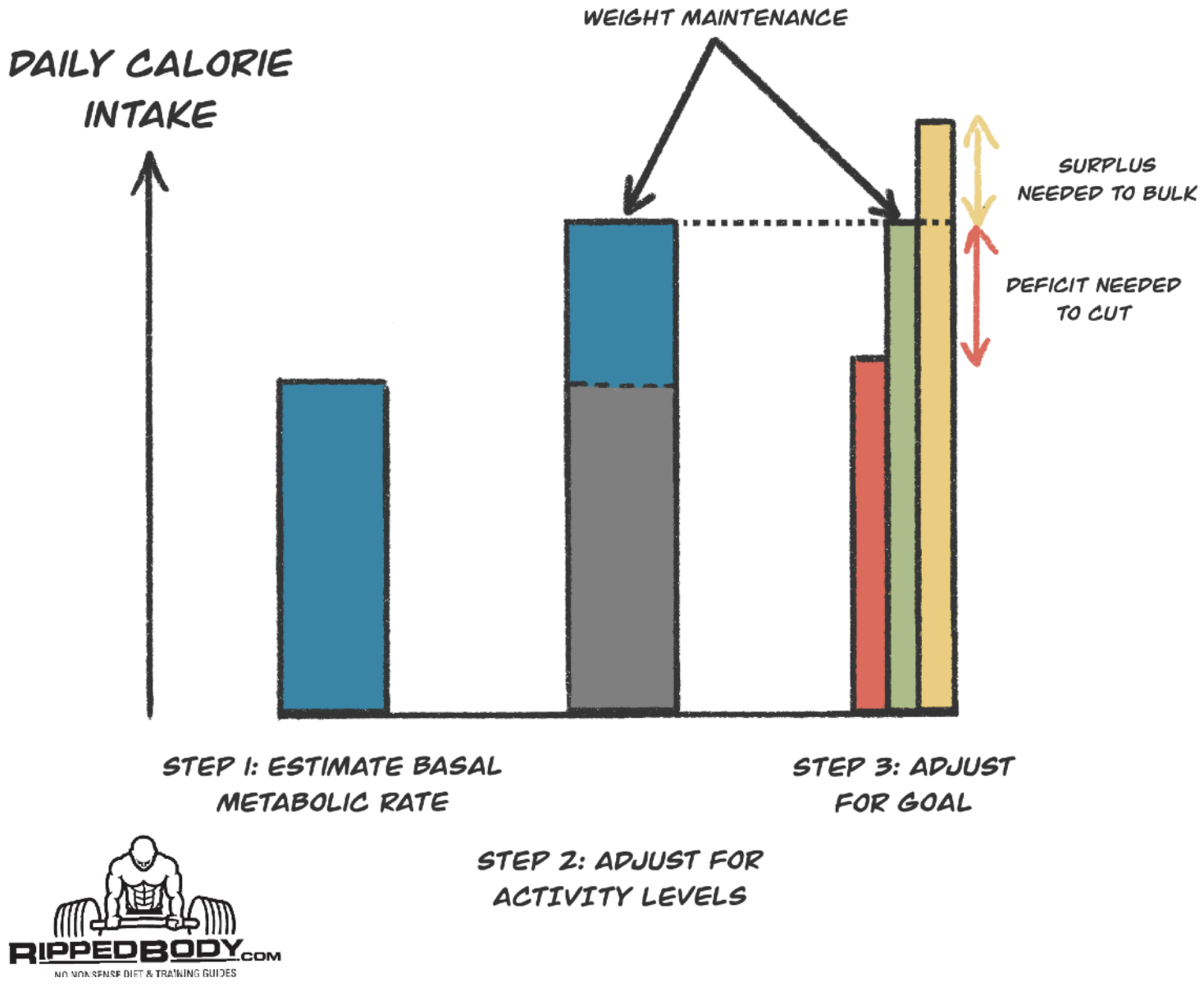
Lastly, sugar is demonized by the media but is not inherently 'bad.' It depends how it fits with the rest of your diet. However, limiting sugary foods is a good idea if you are trying to diet, and you find yourself easily overeating them.

HOW TO CALCULATE YOUR DAILY CALORIE NEEDS

Step 1: We must estimate your basal metabolic rate (BMR).

Step 2: We must adjust this figure based on your daily activity levels.

Step 3: We must adjust this calculation based on your goal.



Before proceeding, it is essential to understand that the final calorie number you calculate is only an estimation. The equations are derived from group averages, the activity

multiplier used will be an estimation, and there are individual differences in how people respond to a calorie deficit or surplus.

Therefore, consider your calculation as a starting point from which to adjust based on how you progress. I'll come back to this later.

CALCULATE YOUR BASAL METABOLIC RATE

There are a variety of formulas designed to estimate basal metabolic rate. I like the Harris-Benedict formula because it's just as effective as any other method yet relatively simpler to do.

THE HARRIS-BENEDICT FORMULA FOR CALCULATING BMR

For those who use pounds and inches:

- **Men**: BMR = 66 + (6.2 x weight in lbs) + (12.7 x height in inches) – (6.8 x age)
- **Women**: BMR = 655 + (4.4 x weight in lbs) + (4.6 x height in inches) – (4.7 x age)

For those who use kilograms and centimeters:

- **Men**: BMR = 66 + (13.7 x weight in kg) + (5 x height in cm) – (6.8 x age)
- **Women**: BMR = 655 + (9.6 x weight in kg) + (1.8 x height in cm) – (4.7 x age)

ADJUST FOR ACTIVITY LEVELS TO FIND MAINTENANCE CALORIE NEEDS

We need to account for your activity levels. I like to use the following four categories:

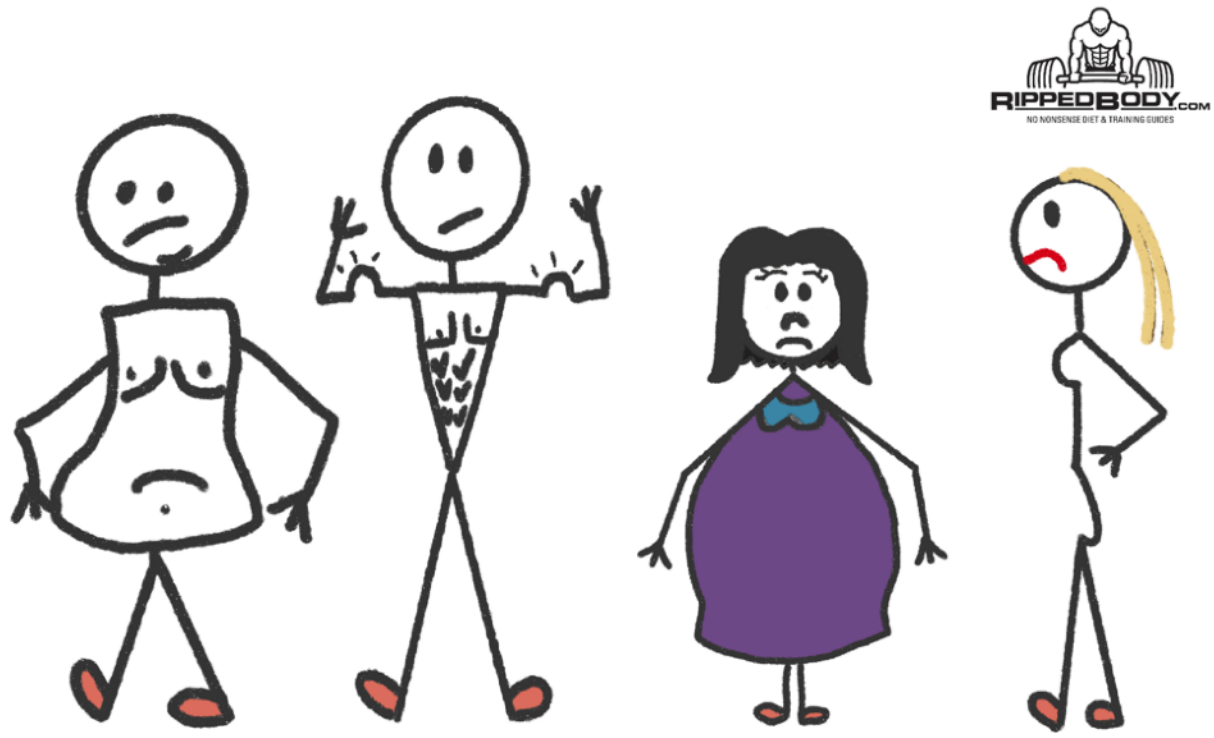
1. **Sedentary** (little or no exercise) [BMR x 1.15]
2. **Mostly sedentary** (office work), plus 3–6 days of weight lifting [BMR x 1.35]
3. **Lightly active**, plus 3–6 days of weight lifting [BMR x 1.55]
4. **Highly active**, plus 3–6 days of weight lifting [BMR x 1.75]

The majority of people reading this will find that the second or third options are the best fit. If you are an office worker who drives to work and walks around little, I'd suggest the second option.

This will give you a number known as your *Total Daily Energy Expenditure* (TDEE).

EXAMPLE TDEE CALCULATIONS

I find examples to be exceptionally helpful, when I am learning new things, to solidify what I am learning. So, I'll give four examples throughout this guide which fit four common avatars: Fat Freddie, Shredded Sam, Thicc Thelma, and Noobie Natalie.



Fat Freddie is 5'9, 31 years old, weighs 180 lbs, and works in an office so is "mostly sedentary." His TDEE is estimated to be 2499 kcal.

Shredded Sam is 6'1, 37 years old, weighs 175 lbs, and is lightly active. His TDEE is estimated at 2844 kcal.

Thicc Thelma is 5'4, 44 years old, weighs 190 lbs. Having an office job, her current activity level is sedentary, but she will

choose “mostly sedentary” because she’s about to start to lift. Her TDEE is estimated at 2109 kcal.

Noobie Natalie is 5’7, 21 years old, weighs 135 lbs, and works filling shelves at Costco. Up until now, she has enjoyed 3x a week spinning classes with the occasional weekend trail run. She is completely new to strength training, and will drop the spinning class to once per week. Therefore, her activity level is set at “lightly active.” Her TDEE is estimated at 2254 kcal.

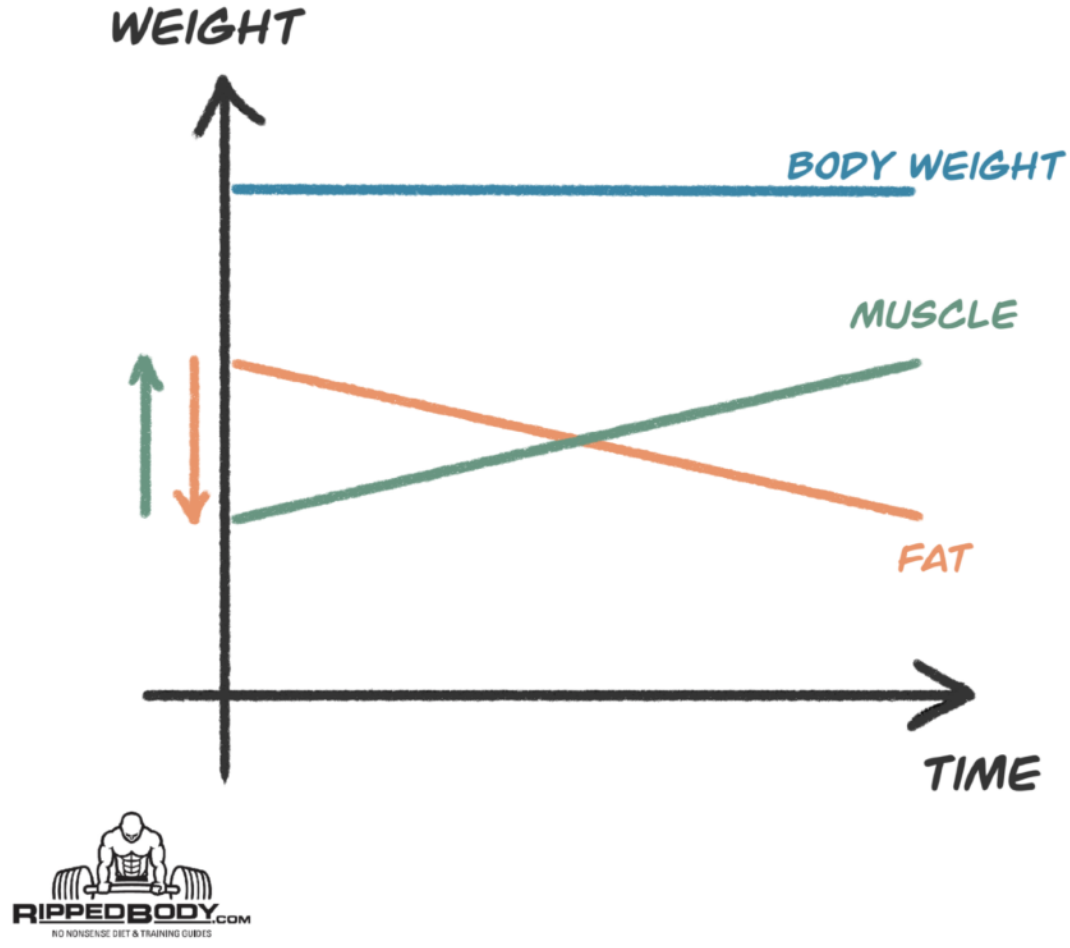
(Test these numbers or enter your own using the calorie and macro calculator.)

CHOOSING A GOAL: BULK, CUT, OR BODY RECOMP

There are three paths you can choose from here: a slow body recomposition phase, a fat loss phase, or a gaining phase.

WHEN TO CHOOSE A BODY RECOMPOSITION GOAL

A body recomposition phase is generally typified by simultaneous muscle growth and fat loss, while weight remains stable.



Slow body recomposition:
an equal amount of fat loss and muscle gain.

Everybody wants simultaneous muscle growth and fat loss. However, the rate at which we can achieve this diminishes with training experience, so, I would only recommend this to relatively newer trainees and those coming back from a relatively long training layoff.

I do not recommend it to anyone who is underweight or overweight.

- If you are underweight, you should bulk.
- If you are overweight, you need to cut; however, the less training experience you have, the more likely it is that you will gain muscle at the same time as you lean out (though you'll lose weight overall).

(I am purposefully not defining underweight and overweight as there is a degree of subjectivity about this.)

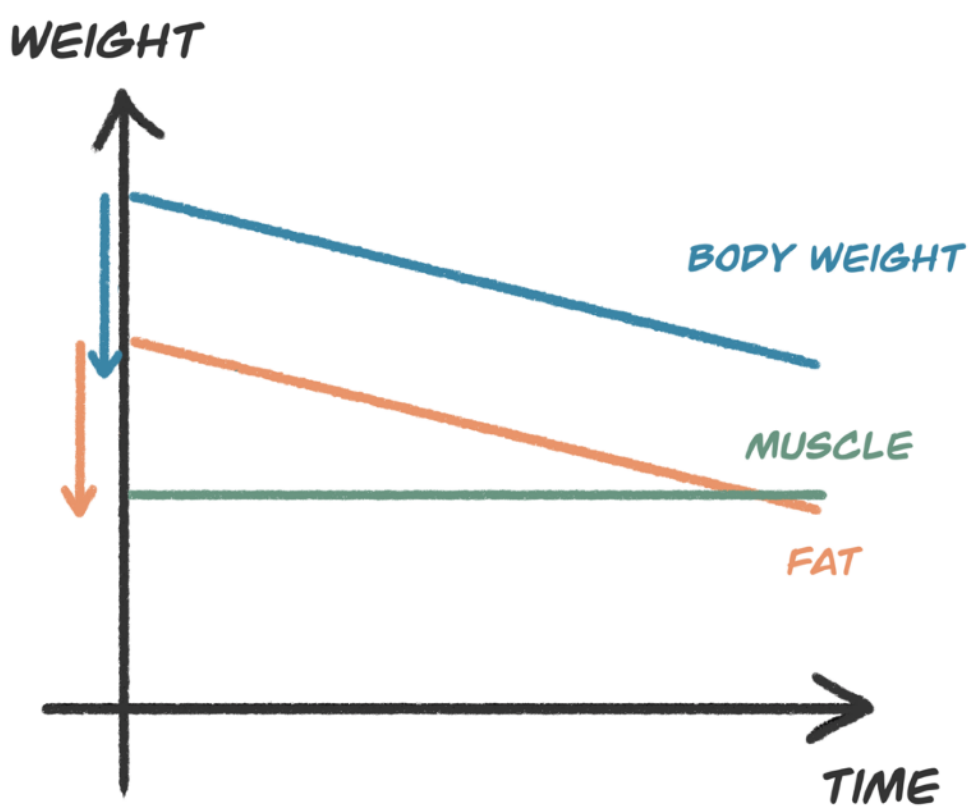
You are welcome to try a body recomp at any point during your training career, but when progress is hard to measure, it is hard to manage and stay motivated, so I suggest most people build their physiques over time by alternating between fat loss and muscle gain phases.

To hold your weight stable and do a body recomp you do not need to make any further adjustment to your calorie calculation — your target daily intake is your TDEE we calculated in the last step.

Noobie Natalie will shoot for a body recomposition goal. Her TDEE *is* her target daily calorie intake, which is 2254 kcal.

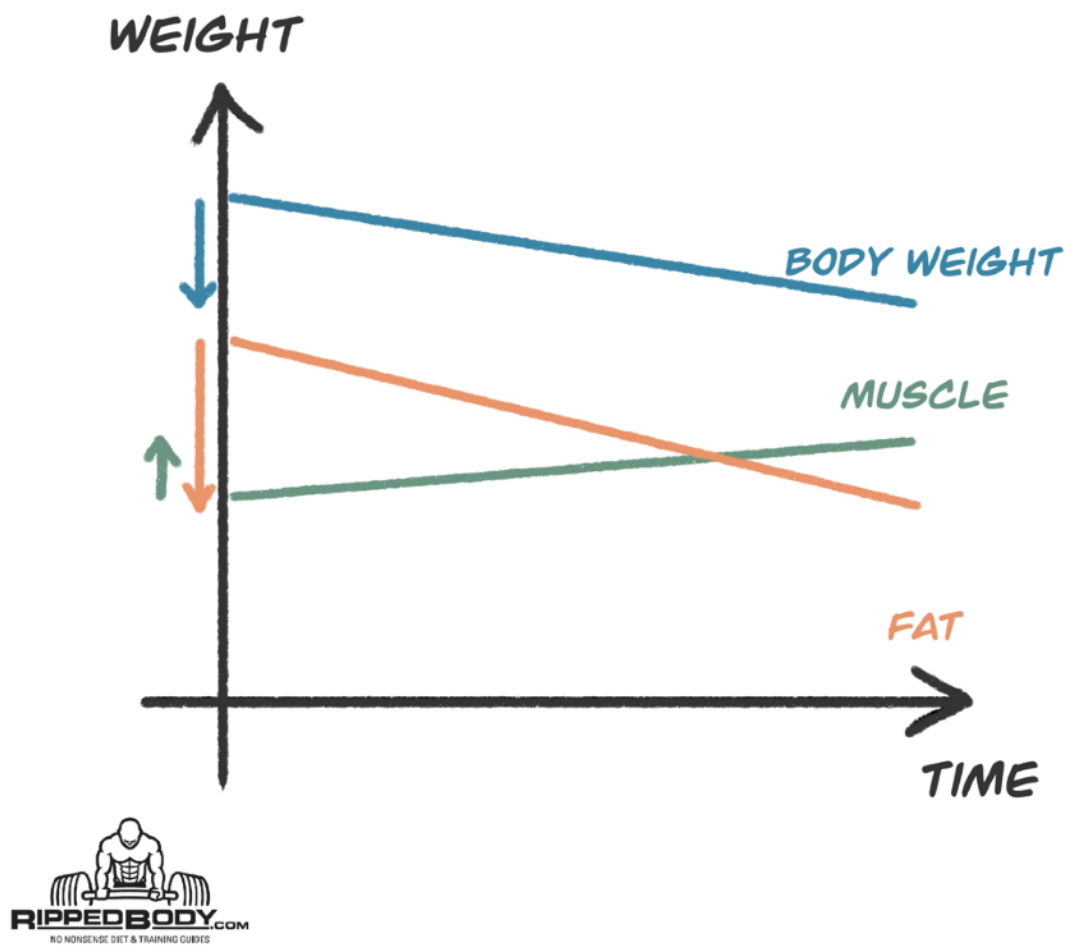
WHEN TO CHOOSE A FAT LOSS GOAL (CUT)

The goal of a fat loss phase is to maximize lean mass retention while dropping off body fat. It requires a calorie deficit and so you will lose weight overall. We call this a *cutting phase*.



The typical cut — muscle mass is maintained as fat is removed.

You may be able to gain some muscle during a cutting phase; however, your ability to do so decreases the leaner you get, the more advanced of a trainee you are, and the size of that calorie deficit. Any muscle gain achieved while cutting may not be obvious.



Those with less training experience may be able to gain muscle mass while cutting.

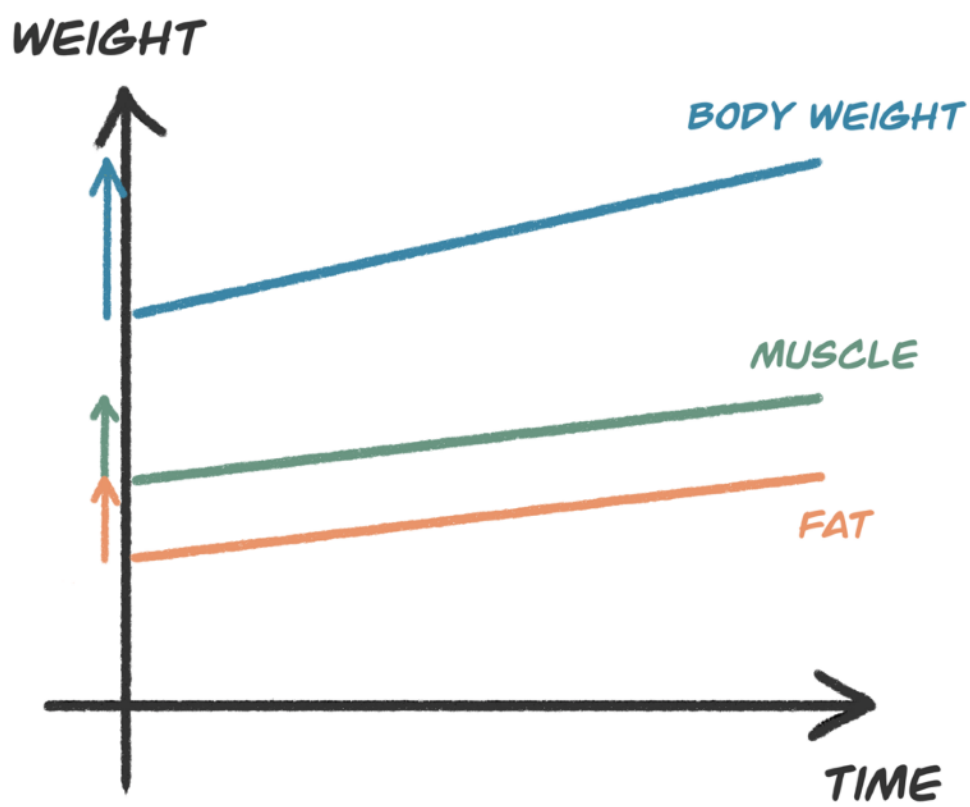
To put it another way, the fatter you are and the less training experience you have, the more likely you are able to achieve a degree of both. *Technically* you could call this body recomposition, but as weight is still lost, I like to still call it a cut to make explanations easier.

» Choose to cut if you are overweight or carry a large amount of body fat, regardless of your level of training experience.

Thicc Thelma and Fat Freddie will choose to cut.

WHEN TO CHOOSE A MUSCLE GAIN GOAL (BULK)

When your primary goal is to gain muscle, you need to gain weight. This is known as *bulking*.



A typical bulking phase where the weight gain is a 50-50 mix of fat and muscle.

Gaining muscle requires the building of new tissue, so bulk phases take more time and require patience. Fortunately, the less advanced of a trainee you are, the faster your muscle growth rate.

» Choose a bulk if you are underweight or are already lean enough to see your abs and wish to get bigger.

Shredded Sam will choose to bulk.

ADVICE IF YOU CAN'T DECIDE WHETHER TO CUT OR BULK

If you are a novice trainee, and not really under or overweight (which is obviously a subjective judgment), consider the body recomp.

For non-novice trainees I offer the following guidelines:

» Cut–bulk phases are typically best kept in the 10–20% body fat range (add 7% for women).

» Bulking phases are best capped at 20% because past this point, the risk to health increases and I'd advise not bulking if you estimate yourself to be 16% body fat or above. — You want enough uninterrupted time to gain a meaningful amount of muscle before you need to cut. If this is you, get leaner first.

» You can cut to any point you wish, but lower than 10% body fat (for visual reference, the majority of the clients on the results page are all 8–10% body fat) doesn't really offer any advantage for a subsequent bulking phase. It may even be pointless to start a bulking phase at lower levels of body fat than this as the body is primed for fat regain. — The body doesn't want to be exceptionally lean, as it is a threat to survival.

» The majority of dedicated, physique-focussed clients find the sweet spot to be 10% body fat for the end of their cutting phases and 15% for the end of their bulk phases. You may find you prefer a higher range because you feel or perform better, but do not think you can do it effectively at a lower range. You

will not make progress if you attempt to stay shredded lean all year round.

SUMMARY GUIDELINES ON WHEN TO CUT, BULK, OR RECOMP

CATEGORY OF TRAINEE	RECOMMENDATION
Overweight	Cut
Underweight	Bulk
Inexperienced trainee, 13–18% body-fat	Recomp
Experienced trainee over 16% body fat	Cut
Experienced trainee under 16% body fat	Cut or bulk, as per preference
When bulking, suggested upper body fat limit to switch to a cut	20%
When cutting, suggested lower body fat limit to switch to a bulk	9–10%

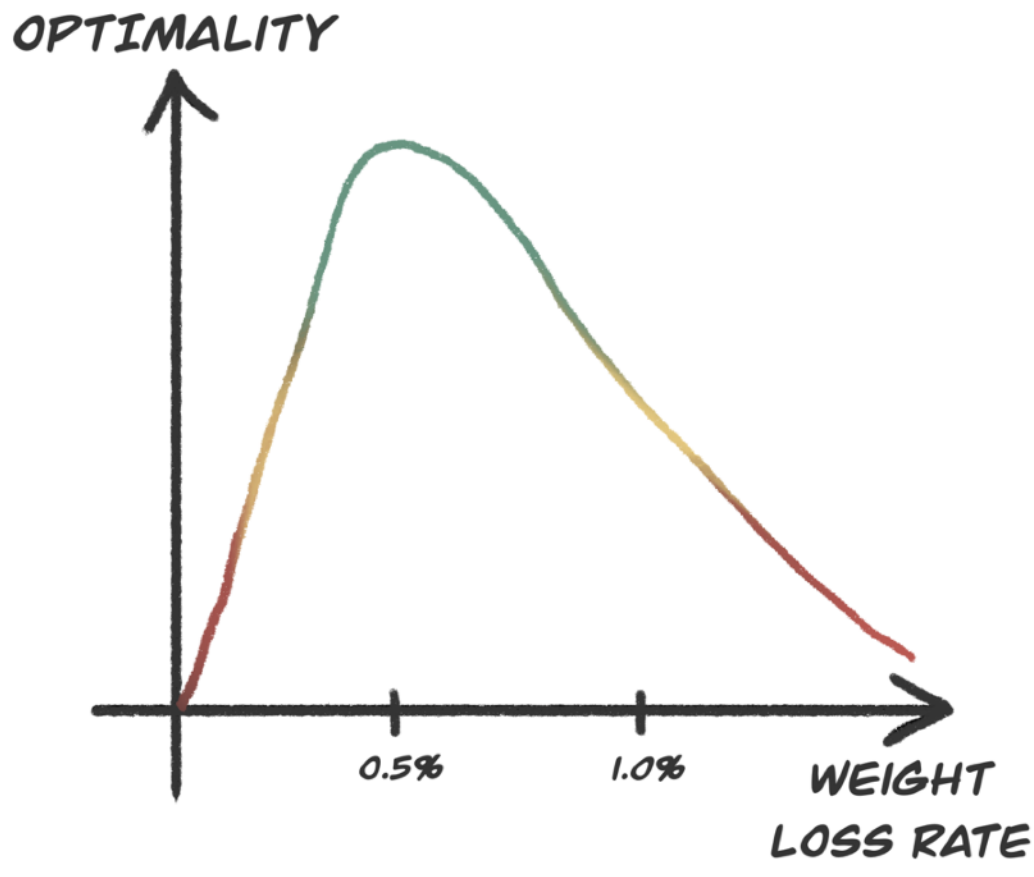
(Women, add 7% to all these body-fat % numbers)

ADJUSTING CALORIE INTAKE BASED ON YOUR GOAL

In this section, I give recommended rates of body weight loss and gain during cut and bulk phases, explain the math used, and give example calculations for Thicc Thelma, Fat Freddie, and Shredded Sam.

HOW TO ADJUST CALORIE INTAKE FOR A FAT LOSS GOAL

When your goal is primarily to lose fat, we call this a *cut*. I recommend a weight loss rate between 0.5–0.75% of body weight per week.



The fat-loss rate sweet spot for most people is around 0.5% of body weight per week.

High rates of weight loss are motivating, but they are hard to sustain. The leaner we are, the higher the chances of muscle mass losses.

Slow rates of weight loss are easier to sustain, but hard to stay motivated for, difficult to track, and they can become an increasing mental burden.

For busy individuals who can't afford the lethargy and brain fog, 0.5% seems to be the sweet spot per week. I'm basing this on my years of client work.

You can go up to 1% if you have a lot of fat to lose, but most clients didn't find this to be sustainable. Above 1%, your diet will be very hard to sustain and muscle loss is likely.

As you close in on seeing your abs for the first time, I would recommend you stay closer to 0.5%. If you get into the single digits of body-fat %, the whole curve shifts to the left and you want to lose at or slightly under a rate of 0.5% to maximize your chances of holding onto muscle mass.

CUTTING MATH & EXAMPLE CALCULATIONS

It requires an approximate 3500 kcal deficit to burn 1 lb of fat (7700 kcal per kg). Therefore, to lose 1 lb of fat per week, you need a 500 kcal daily deficit (1100 kcal for 1 kg).

The calculation to adjust your calorie intake for a fat loss goal is as follows:

Target daily calorie intake (TDCI) = TDEE – (Bodyweight x target weekly fat loss rate x 500*)

*1100 if you use kg

However, our metabolisms adapt to fight a caloric deficit, which means that if we use the calculation above, it will not likely lead to the 0.5% of body weight loss per week we are hoping for. Therefore, I have set the calorie and macro calculator to use 0.75%.

Fat Freddie's target daily calorie intake = 2499 – (180 x 0.0075 x 500) = 2499 – 675 = 1824 kcal

Thicc Thelma's target daily calorie intake = 2109 – (190 x 0.0075 x 500) = 2109 – 712.5 = 1397 kcal

Even if you wish to cut faster than 0.5% of body weight per week, I suggest you use the calculator as I have it, wait, then adjust after a few weeks based on the outcome. This will teach you if you can sustain 0.5% first. Again, for most people, attempts at faster fat loss rates rarely end well.

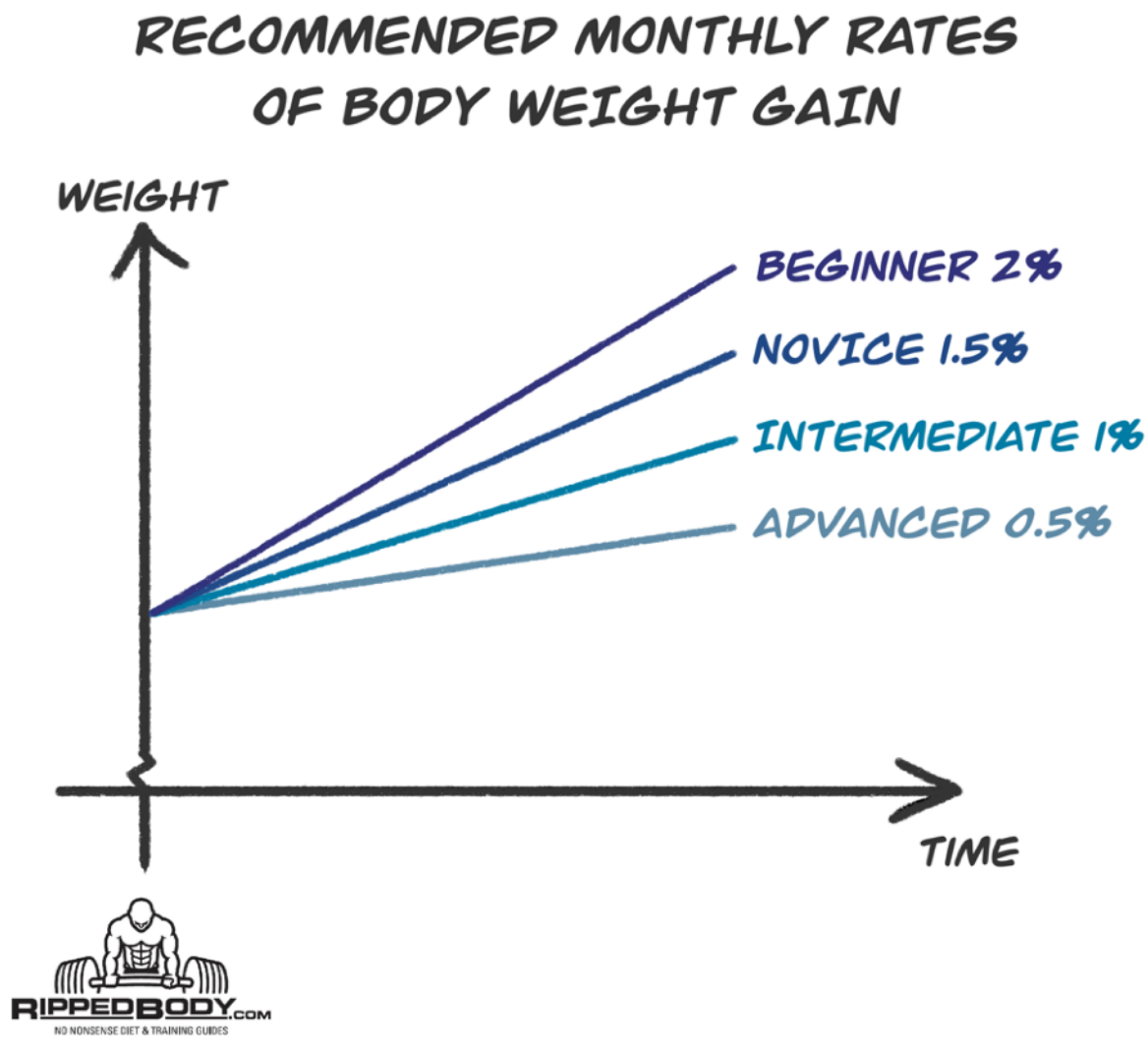
HOW TO ADJUST CALORIE INTAKE FOR A MUSCLE GAIN GOAL

The goal of the bulk is to maximize our rate of muscle gain while gaining the least amount of fat. Therefore, it is important to estimate our rate of muscle growth potential if we're to set weight gain targets and calculate the calorie surplus appropriately.

The newer you are to training, the faster the rate you can gain muscle; the more advanced you get, the slower this will happen. Therefore, it is best to set weight gain targets based on your level of training experience. If you ignore this, you'll either gain too much fat or make slower progress than you could have.

Categorizing training advancement is tricky, but here is my preferred method along with the *monthly* rates of weight gain I recommend:

- **Beginner: 2%** (Totally new to training.)
- **Novice: 1.5%** (Still able to progress most training loads in the gym on a week to week basis.)
- **Intermediate: 1%** (Able to progress most training loads in the gym on a month to month basis.)
- **Advanced: 0.5%** (Progress is evident only when viewed over multiple months or a year.)



The less training experience you have, the faster you can grow, so the higher you should set your rate of weight gain. Be aware that the inverse is also true.

These rates of weight gain purposefully skew to the upper boundary of the recommendations we have in our Muscle and Strength Pyramid: Nutrition book.

As I often say to online coaching applicants, when it comes to goal setting, it is imperative that the outcome is measurable if we are to manage it. When results are hard to measure, it is both tough to coach for and tough to stay motivated for. This is why I have a preference for slightly higher numbers.

There is also a genetic component to the rate at which people gain muscle. This will work out better for those more genetically blessed.

BULKING EXAMPLE CALCULATION

It takes roughly ~2500 kcal to build 1 lb of muscle and ~3500 kcal to burn or store 1 lb of fat.

As people typically gain fat and muscle in a 1:1 ratio in a bulk phase, and if we assume a 30 day month, this means we need a 100 kcal daily caloric surplus to gain 1 lb of weight per month (~220 kcal for 1 kg).

However, like the additional downward adjustment I made for metabolic adaptation when cutting, I believe we should make an additional upward adjustment when bulking. This is because as we raise calories, some of that calorie increase will be eaten up by NEAT and not result in a caloric surplus.

The NEAT increase will be different from person to person and is impossible to predict, but I suggest we add 50% to these numbers, which gives the following heuristic:

To gain 1 lb of weight per month, add 150 kcal each day (330 kcal for 1 kg).

Therefore, the calculation to adjust your calorie intake for a weight gain goal is as follows:

- Target daily calorie intake (TDCI) = TDEE + (Bodyweight x target monthly gain rate x 150*)

*330 if you use kg

Shredded Sam is an intermediate trainee, so his target monthly gain rate will be 1%. His calculation is as follows:

Shredded Sam's target daily calorie intake = 2844 + (175 x 0.01 x 150) = 2844 + 263 = 3107 kcal

WHY CALCULATIONS ARE ESTIMATIONS

It's essential to understand that any initial calculation will just be an estimation. This are three primary reasons for this:

1. The BMR calculation in step 1 was developed based on group averages, but people can vary up to 15% either side.

2. **The activity multiplier is an estimation.**

3. **Reactions to a calorie surplus or deficit vary** – some people get more fidgety and move around more throughout the day when in a calorie surplus, some people get very lethargic when in a calorie deficit. This is the NEAT I referred to earlier.

This means two 6 ft, 200 lb dudes of the same age and training schedule could find their maintenance calorie needs 700 calories apart.

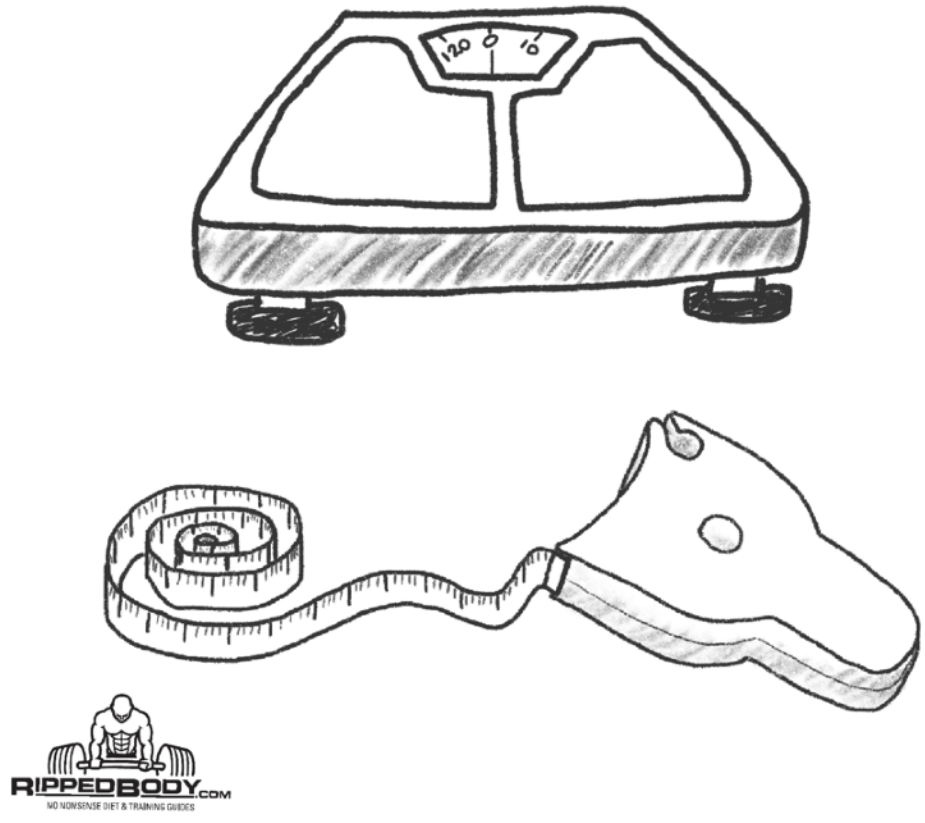
No calculation can take into account these differences. Therefore, tracking after the initial calculation and then making refinements is essential.

HOW TO ADJUST CALORIE INTAKE WHEN YOUR WEIGHT DOESN'T CHANGE AS PLANNED

I wrote a book and video series (The Diet Adjustments Manual) on this topic, but here are the fundamentals.

HOW TO TRACK PROGRESS

To know how to adjust your calorie intake, you need to have data on which to base decisions. At the very minimum, I recommend that you track your weight each day and measure your stomach in three places once per week.



Progress tracking tools

Your weight will fluctuate from day to day and vary depending on the time of day, so stepping on the scale a few times a week is not enough.

Note your weight each morning, immediately after using the bathroom after you wake, and write down the average at the end of the week.

Don't try to measure your progress using a body fat estimation device. (DEXA, BIA machine, BodPod, calipers, underwater weighing, etc.) The error rate is greater than the rate at which muscle and fat changes can take place over the short term, so they are useless tools for tracking progress in a way we can base decisions on, and potentially devastating to motivation. Don't believe the marketing hype.

What you'll likely see if you switch to a cut, is a large drop in weight in the first week, and then a more steady rate of change each week thereafter. The opposite will be true when bulking.

This is due to the change in gut content, water, and muscle glycogen in your body, which happens whenever you change the number of carbs you eat or the volume of food intake.

Use a tape to measure at your navel, and then 3 finger-widths above and below. This will help you to keep tabs on fat gain when bulking, fat losses when recomping, and confirm that fat (rather than muscle) is being lost when cutting.

So, before deciding you need to adjust, track for several weeks first, taking the average scale weight each day and your stomach measurements once per week, and ignore the first week of data.

Log your weight and body measurements in this tracking sheet. I use this with clients. You'll see a link to the instructions in the top left.

HOW TO ADJUST

For a Cut

- If weight is lost too quickly, there is a risk of muscle loss. Increase calorie intake.
- If weight is not lost quickly enough, decrease calorie intake.
- Suggested incremental change: 200–250 kcal per day

For a Slow Bulk

- If weight is not gained quickly enough, increase calorie intake.
- If weight is gained too quickly, you'll have put too much fat on, so decrease calories.
- Suggested incremental change: 100–150 kcal per day.

Remember to take into account water weight fluctuations, and always consider 3–4 weeks' worth of tracking data before making any changes.

THE WEIGHT LOSS STALLS AND 'WHOOSHES' YOU CAN EXPECT

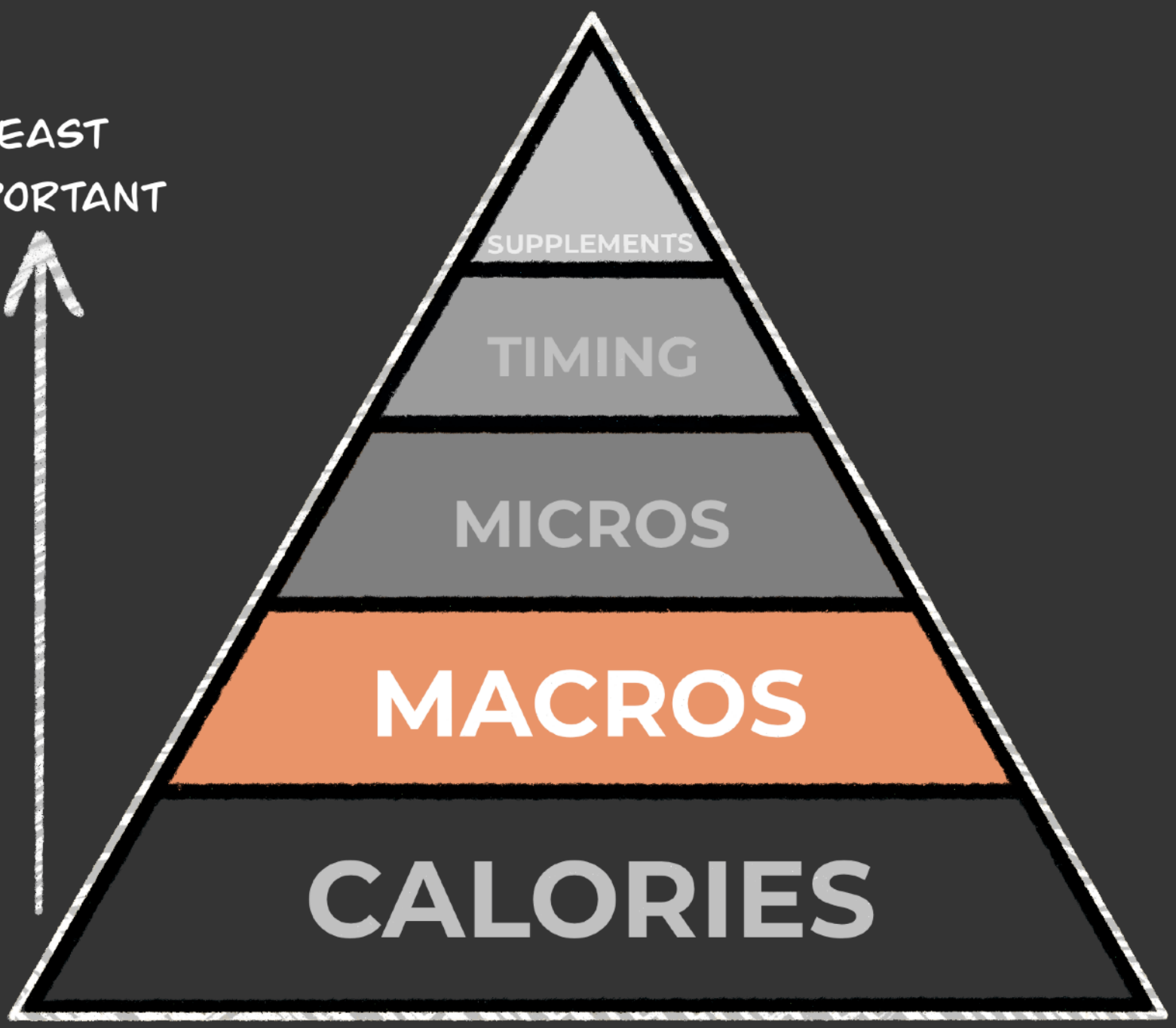
It's not uncommon for some people to find that the scale weight suddenly stops moving and stays there for several weeks. This is due to water retention — the fat loss is still happening, but as the fat cells empty, they fill back up with water.

I'm not sure exactly why this happens, but potentially due to rises in cortisol, which happen when we are stressed. (A calorie deficit is a stressor, training is a stressor.) All you can do is sleep well, work to reduce other stress in your life, then just wait it out.

A *gradual* decrease in the rate of fat loss over the weeks is to be expected and does not indicate water retention (in this case you'll make an adjustment to your calorie intake downwards to bring up the rate of fat loss), but a *sudden* stall indicates that it is water retention marking the fat loss, as there is no physiological mechanism whereby your body will suddenly cease to burn fat if you are in a calorie deficit.

This has the potential to drive everyone crazy, but **there is little you can do but wait it out.** One morning you'll wake up to find yourself a couple of kilograms lighter. This is known as a whoosh. It happens with both sexes but is especially common with women.

LEAST IMPORTANT



#2: HOW TO SET YOUR MACROS

When people refer to their *macros*, they are talking about the three macronutrients: **carbohydrate, protein, and fat**.

Calorie intake determines whether weight is gained or lost. The macronutrient content of those calories has a significant effect on:

1. Whether that change is fat or muscle mass,
2. How you feel and perform, and
3. How easy your nutrition plan is to stick to.

Protein helps with muscle repair, muscle maintenance, and muscle growth. Recommendations will be based on body weight and slightly higher when in a cutting phase.

Think of carbohydrates and fats as the main fuels of the body. They will make up the remainder of your calorie intake.

PROTEIN INTAKE GUIDELINES

WHY IS PROTEIN IMPORTANT?

Protein provides the building blocks for muscle mass. Protein helps us to recover and grow from our training, helps preserve muscle when dieting, and has the highest effect on satiety of all the macronutrients.

Protein is therefore very good stuff. However, more does not mean better.

There are 4 calories per gram of protein.

HOW MUCH PROTEIN SHOULD WE CONSUME?

We want to eat enough protein so that we cover the muscle growth and preservation benefits, without being so high that it becomes limiting to food choice.

Past a certain point, higher protein intakes can limit our performance because they reduce the number of carbs we can eat while keeping to our calorie budget. (The most important macronutrient for performance is carbohydrate.)

This is of particular concern when dieting because maintaining training quality is the single most important thing we can do to signal to our bodies to hang on to muscle mass.

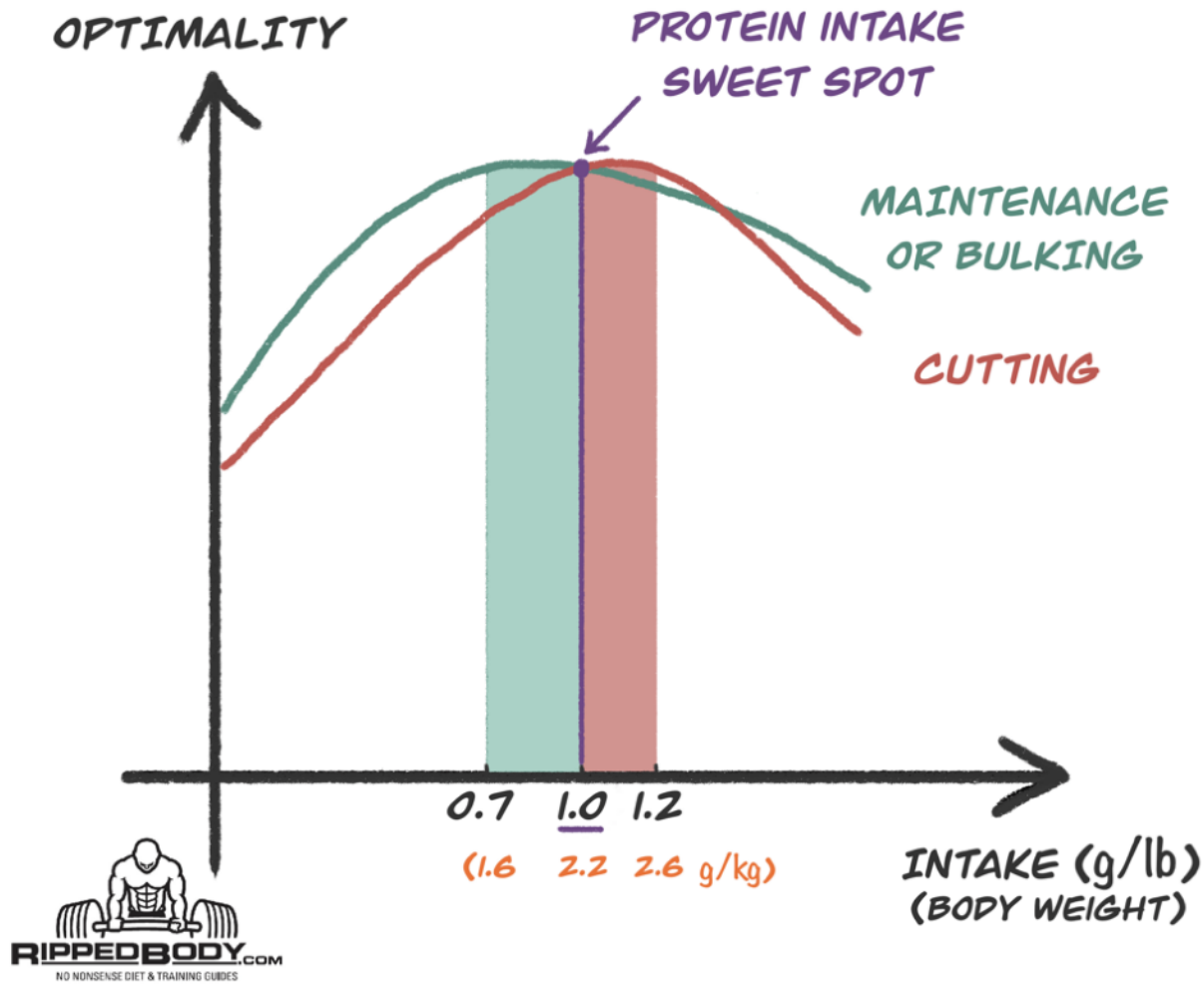
Protein needs are slightly higher when cutting. This is because as the glycogen and fat stores in your body decrease, the body is forced to rely more on protein as an energy source. Your body can break down both dietary protein and muscle protein to do this, so setting protein intake higher can help limit this.

Taking all the research into account, we can come up with the following guidelines for protein intake:

	CUTTING	**MAINTENANCE OR BULKING**
Protein	1.0–1.2 g/lb (2.2–2.6 g/kg) of body weight	0.7–1.0 g/lb (1.6–2.2 g/kg) of body weight

You'll notice that the common number between each of these is 1 gram per pound of body weight and for simplicity, this is where I would suggest you set your protein intake regardless of whether you are cutting or bulking.

People get upset with that recommendation, so I created the following sketch to illustrate why I don't believe it makes a big difference. You're free to set your protein intake higher, though.

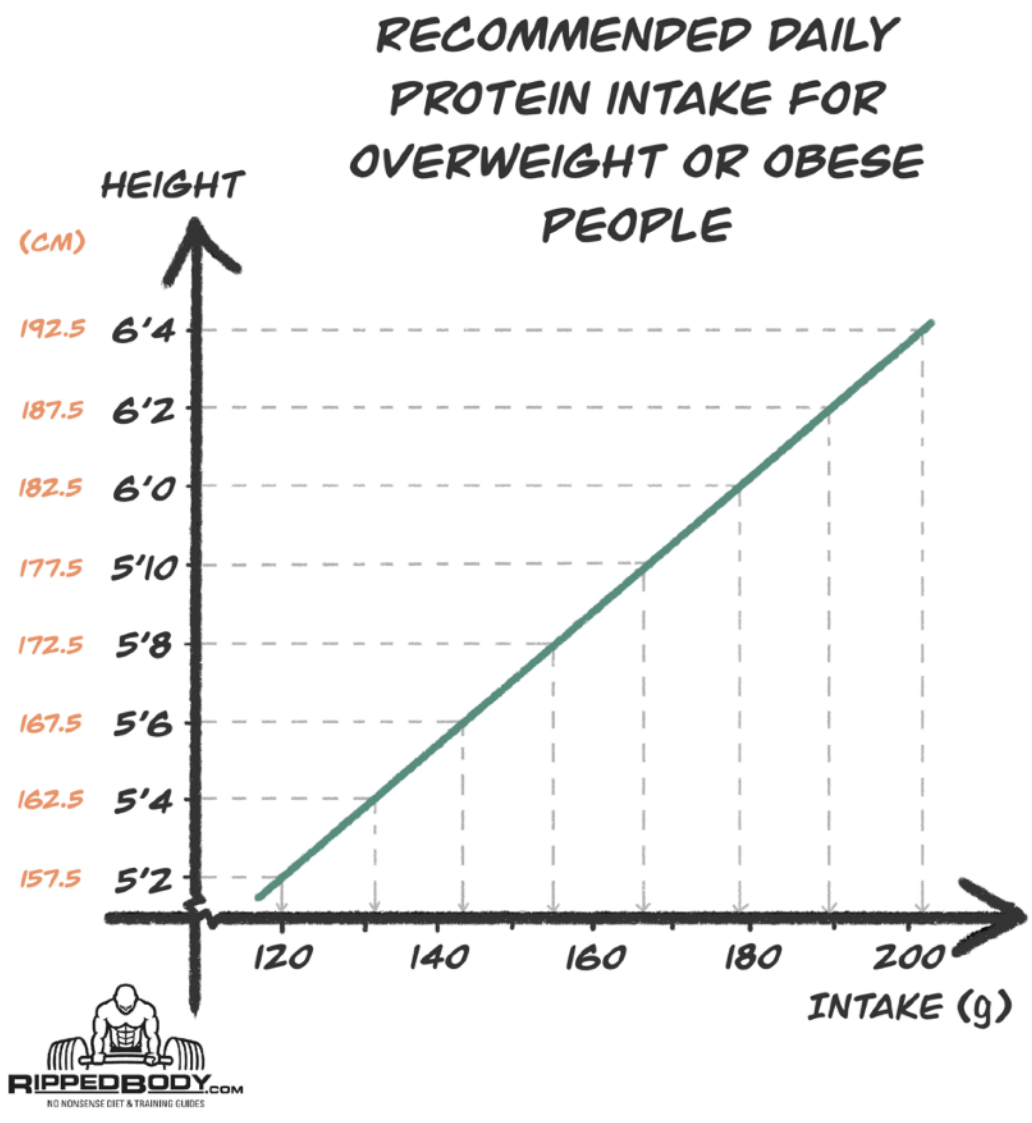


By setting protein intake at 1 g per pound of body weight, you have maximal simplicity with minimal trade-off.

A CAVEAT ON SETTING PROTEIN INTAKE FOR THOSE WITH A LOT OF FAT TO LOSE

While a good heuristic for many, the “1 g per pound rule” will set protein intake too high for overweight or obese people. I’d suggest you set your protein intake as per your height in the chart on the following page.

If the figure you get from this is significantly lower than what you get using the “1 g/lb rule,” unless you’re jacked, consider using the number here.



If the figure you get from this is significantly lower than what you get using the “1 g/lb rule,” unless you’re jacked, consider using the number here.

So, if you're 260 lbs and 6'0, instead of consuming ~260 g of protein as I have in the calculator, consume 180 g and swap the 80 g remaining for carbs to maintain the calorie balance. This will be better for satiety, diet variety, and training quality.

Some people may argue that this protein figure is a little too low to be protective of muscle mass when dieting, but I disagree.

Having a lot of fat mass is protective of muscle mass. This makes sense when you think about it from a survival perspective. When the body has to choose between releasing fatty acids or breaking down muscle into amino acids for fuel, the smarter decision for survival is to burn off fat when there is an abundance of it. Therefore, protein needs are likely a bit lower for the 260 lb guy with 160 lbs of muscle mass vs. the 200 lb guy with 160 lbs of muscle mass.

PROTEIN POWDER OR REAL FOOD?

Protein powders are a useful tool to make hitting protein targets affordable, and highly convenient.

However, getting your protein intake from real food is always going to be more filling. By that, I mean mainly through meat, fish, eggs, and dairy consumption. When we diet, hunger is our enemy. So it's best to prioritize real food.

On the flip side, when bulking it can be tough, physically, to get in enough food without feeling sick or bloated. In this situation,

calorie-dense foods or liquid meals, like protein shakes, can be your friend.

Alright, now with protein intake set, it’s time to decide where the rest of the calorie intake will come from.

FAT AND CARBOHYDRATE INTAKE GUIDELINES

There is scope for personal preference in how you split the remainder of your calorie budget between the carb and fat intake, but all the possible ways you c*an* split it are not equal for performance, muscle maintenance, and growth.

There are 4 calories per gram of carbohydrate, 9 calories per gram of fat.

WHY ARE FATS AND CARBS IMPORTANT?

Fat is an essential nutrient. This means your body cannot make it; we have to eat it. Dietary fat is necessary for regular hormonal function, gallstone prevention, and fat-soluble vitamin absorption, among other things. Attempting to eliminate fat from your diet is a bad idea.

Carbohydrates are not essential nutrients, but they fuel performance and have positive impacts on hormonal function. They replace muscle glycogen, the primary and preferred fuel source of our muscles, fueling our workouts.

If you restrict carbs too severely, it may cost you your muscle mass, but if you restrict fats too severely, it will cost you your health. Therefore, fat recommendations take priority, with carb intake filling the rest of our calorie budget.

HOW MUCH FAT SHOULD WE CONSUME?

I recommend that 20–30% of your calories come from fat when bulking and 15–25% when cutting. The lower range when cutting is because of the relatively higher importance of keeping up carbohydrate intake for performance to prevent muscle loss.

The minimum fat intake I recommend is 0.25 g/lb (0.5 g/kg) per day. This should easily cover your physiological needs. (You likely go lower than this if you supplement with omega-3 fatty acids high in EPA and DHA content, but most people will find a diet so low in fat bland and difficult to maintain.

Some people find higher-fat diets easier to stick to. You may be one of these people. Training performance, rather than food preference, should dictate the limit if physique goals are your priority.

DON'T EAT TOO MUCH SATURATED ANIMAL FAT

However, there is an important health caveat to all of this.

Research shows low saturated animal fat intakes are key to minimizing cardiovascular disease (CVD) and coronary heart disease (CHD) risk.

Aim to keep your saturated fat intake to less than 10% of your total calorie intake to minimize it.

I mention this because you will see catchy soundbites from certain dark corners of the fitness influencer space recommending diets very high in animal fat. And although having bacon and sausages for breakfast each morning would be heavenly, even if I could make it fit my macros, I don't because I don't want to drop dead in 20 years from the build-up of plaque in my arteries.

CVD and CHD are the leading causes of death in the developed world; it pays to be prudent.

If your calorie budget is 1800 kcal daily, 10% of this is 20 g. (If 2700 kcal, 30 g, which is a more likely scenario when you have finished dieting.) This isn't a rule that can never be broken, but days you blow through this should be the exception rather than the rule.

HOW MANY CARBS SHOULD WE CONSUME?

Carbs should make up the remainder of your calorie budget.

The minimum carb intake I recommend is 0.5 g/lb (1 g/kg) per day.

These bottom-line recommendations aren't likely to be relevant when you do your initial dietary calculation, but after a few

months of dieting when you are considering where to make cuts to your calorie intake, you need to consider them.

In summary, my recommendations for fat and carb intake are as follows:

	CUTTING	BULKING & MAINTENANCE	DAILY MINIMUM
Fat	15–25% calories	20–30% calories	0.25 g/lb (~0.5 g/kg)
Carbs	– the rest –	– the rest –	0.5 g/lb (~1 g/kg)

EXAMPLE MACRO CALCULATIONS

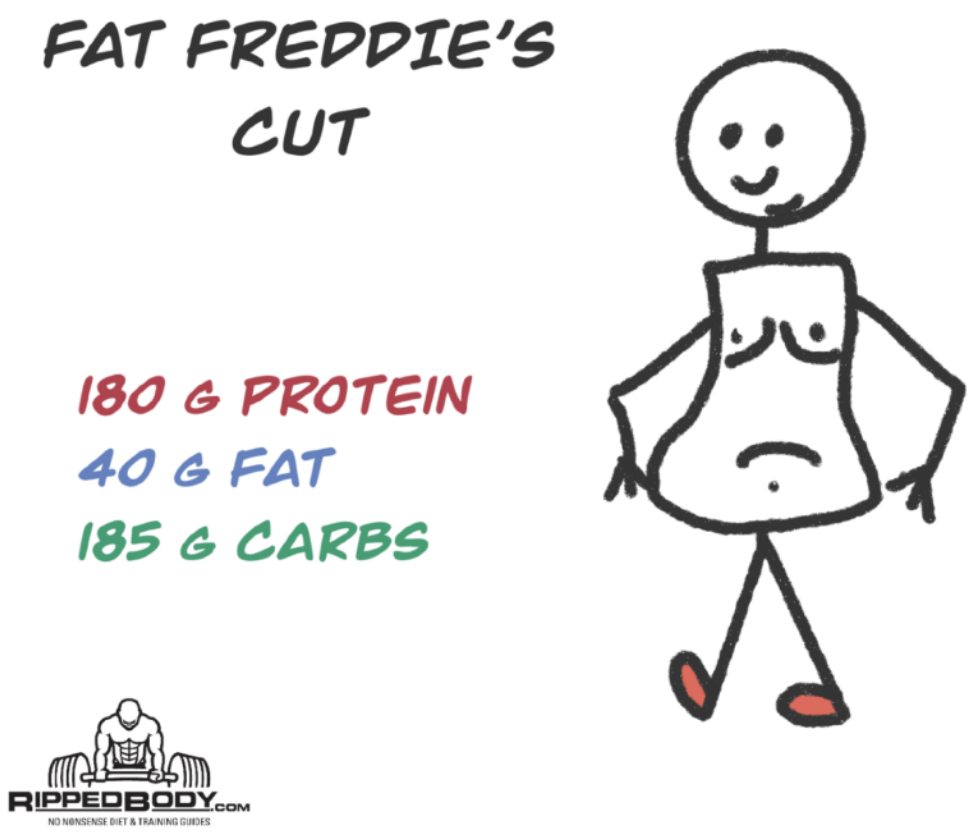
I'll round the macro results for each person to the nearest 5 for simplicity.

FAT FREDDIE'S MACRO CALCULATION

Freddie's target daily calorie intake is 1824 kcal. He weighs 180 lbs, so he is overweight but not obese. Therefore, he'll set his protein intake at 180 g, which is 720 kcal.

He doesn't have any particular preference for high or low fat intake, so he'll choose to consume 20% of his calories from fat. This is 365 kcal, which is 41 g.

The calories remaining for carbs are 740 kcal, which is 185 g.

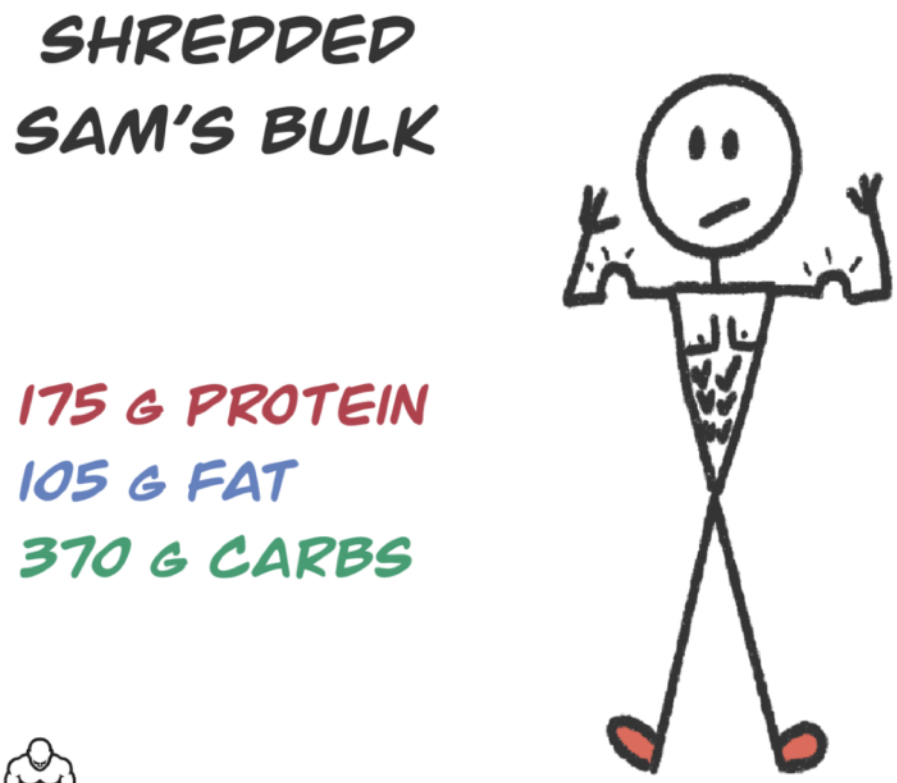


SHREDDED SAM'S MACRO CALCULATION

Sam's target daily calorie intake is 3107 kcal. He weighs 175 lbs so he'll set his protein intake at 175 g, which is 700 kcal.

He likes to have a fat intake on the higher side, so he'll choose to consume 30% of his calories from fat. This is 932 kcal, which is 104 g.

The calories remaining for carbs are 1475 kcal, which is 370 g.

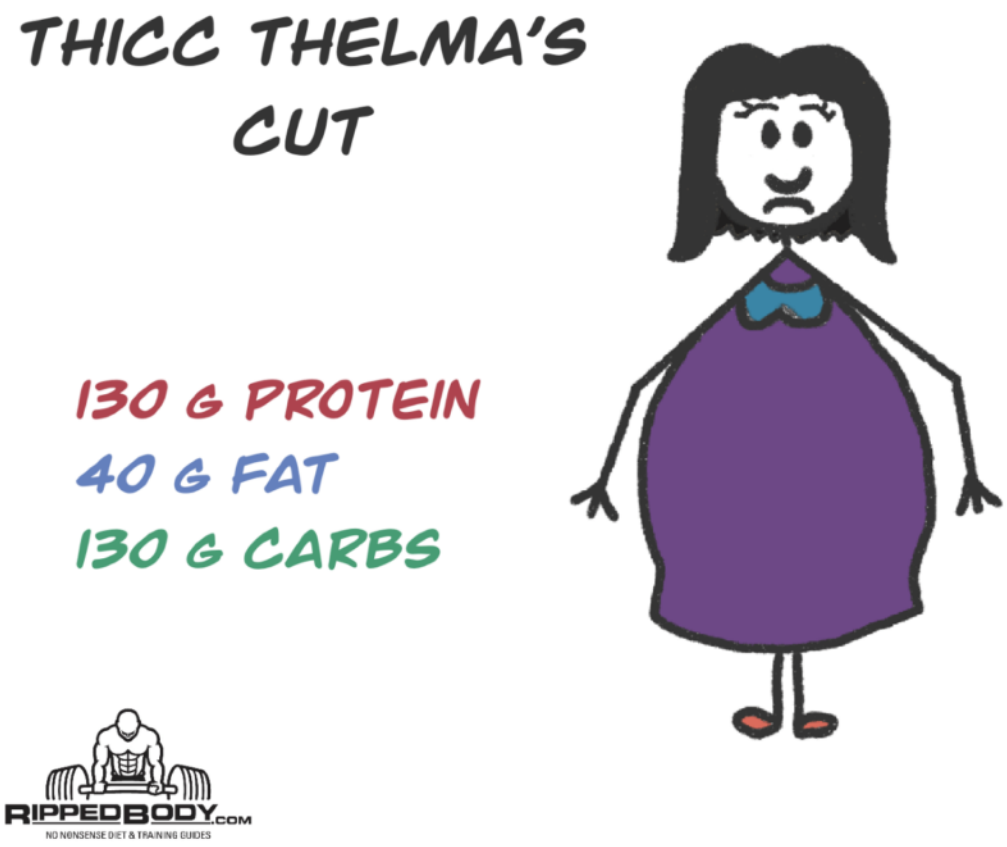


THICC THELMA'S MACRO CALCULATION

Thelma's target daily calorie intake is 1397 kcal. She weighs 190 lbs and at 5'4 is obese, so she'll use the height chart to set her protein intake at 130 g, which is 520 kcal.

Thelma chooses to consume 25% of her calories from fat, which is 349 kcal, which is 39 g.

The calories remaining for carbs are 510 kcal, which is 127.5 g of carbs.

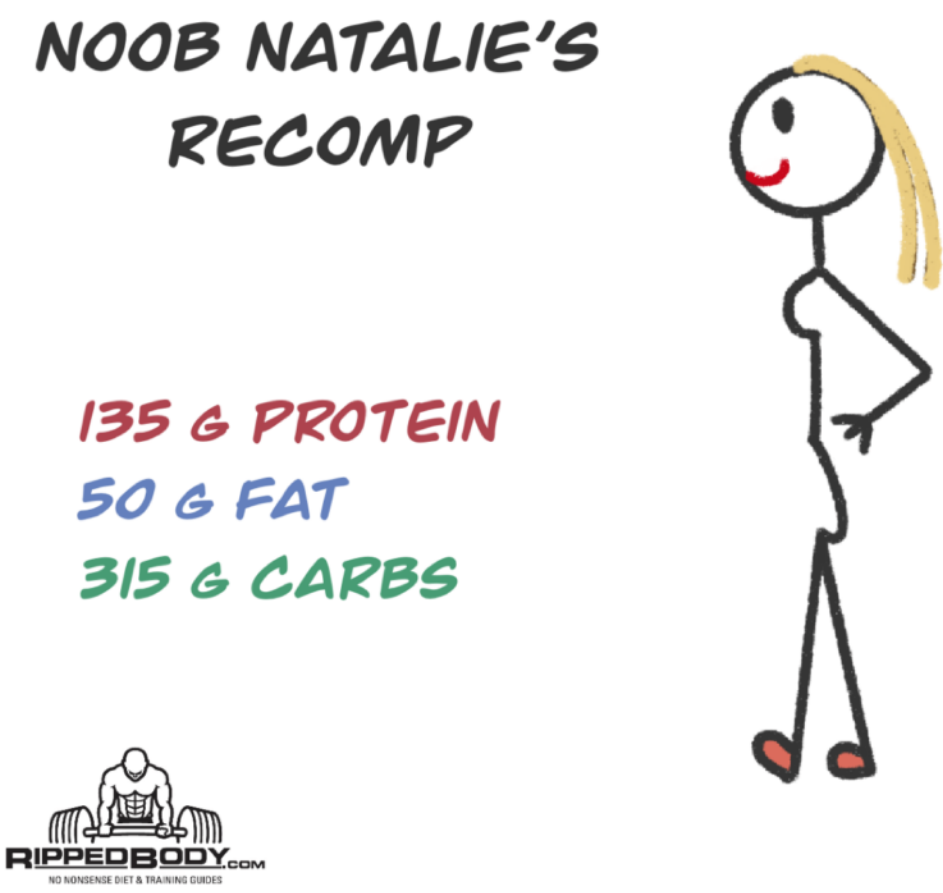


NOOBIE NATALIE'S MACRO CALCULATION

Natalie's target daily calorie intake is 2254 kcal. She weighs 135 lbs so she'll set her protein intake at 135 g, which is 540 kcal.

Natalie loves carbs, so she'll choose to consume the lower threshold of recommended fat intake, 20%. This is 451 kcal, which is 50 g.

The calories remaining for carbs are 1263 kcal, which is 315 g.



ALCOHOL CONSIDERATIONS

There are 7 calories in every gram of alcohol.

WHY IS ALCOHOL IMPORTANT?

Alcohol makes dull people interesting, masks social insecurity, and makes us forget the midnight kebabs. Technically, alcohol is a macronutrient, but not an essential one (unless you are from Glasgow).

HOW MUCH ALCOHOL SHOULD WE CONSUME?

Preferably none.

1. It will impact your sleep quality, which will impact hunger, mood, and your ability to train and recover.

2. It will impact your growth response.

3. If not accounted for in your calorie budget, it will eat into your calorie deficit when dieting, and cause you to store an unnecessary amount of fat when bulking.

4. If accounted for in your calorie budget by reducing the other macronutrients, it will steal away your ability to recover.

The dose makes the poison in all cases.

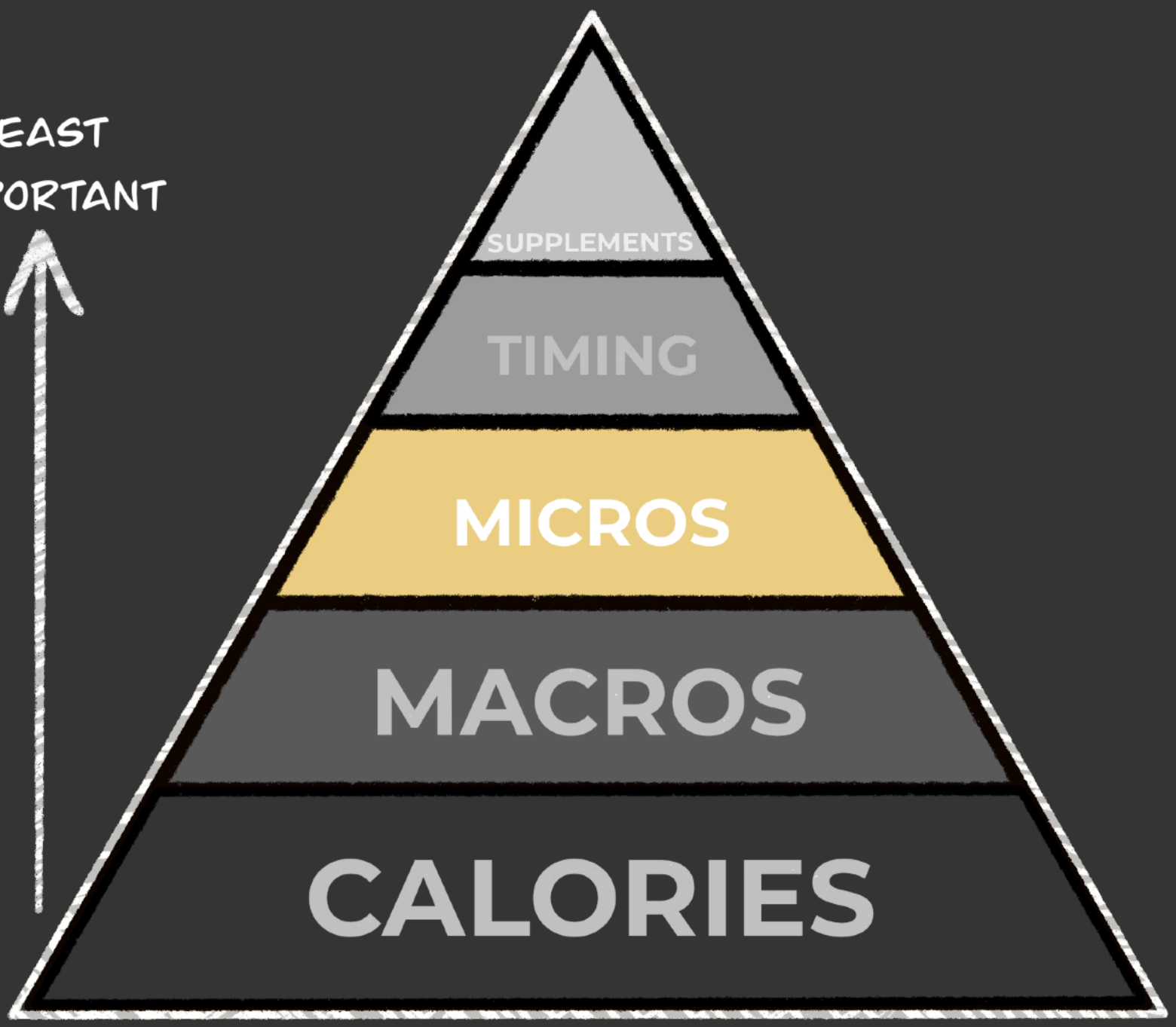
I have known *many* people over the years who have an alcohol habit that was the sole cause of their lack of progress and it doesn't have to be extreme.

If you're shooting for 1 lb of fat loss per week, you need a 500 kcal deficit (550 kcal for 0.5 kg).

Let's say you keep your diet on point, but are in the habit of drinking two large whiskeys (~250 kcal), two pints of beer (~300 kcal), or two large glasses of wine (~400 kcal), to "wind down" with your partner or friends every evening... BAM, you've just erased 50–80% of your efforts.

If you want to go out but feel awkward, consider ordering zero-alcohol, zero-calorie beers. They look the part, don't taste as terrible as you'd imagine, and this small psychological trick you pull on yourself could be helpful.

LEAST IMPORTANT



SUMMARY OF MACRO GUIDELINES

	CUTTING	BULKING & MAINTENANCE	DAILY MINIMUM
Protein	1 g/lb (2.2 g/kg)	1 g/lb (2.2 g/kg)	1 g/lb (2.2 g/kg) cutting 0.7 g/lb (1.6 g/kg) bulking
Fat	15–25% calories	20-30% calories	0.25 g/lb (~0.5 g/kg)
Alcohol	Preferably none	Preferably none	–
Carbs	– the rest –	– the rest –	0.5 g/lb (~1 g/kg)

#3: HOW TO COVER YOUR MICRONUTRIENT NEEDS

Micronutrients are generally counted in milligrams (or less).

Think of macros as being the gas in your car, giving it the energy to propel the engine; micros as the oil and lubricants, keeping the car from breaking down.

Long-term micronutrient deficiencies will impact your health and sabotage your training efforts. But, by observing a few simple rules of thumb regarding your daily fruit and vegetable intake, you minimize your risk of deficiencies.

WHY MICRONUTRIENTS ARE IMPORTANT

The most commonly known micronutrients are the *vitamins* and *minerals* that we get from the foods we eat, which we can't live without.

Other compounds — like *phytonutrients* and *zoonutrients* — aren't considered vitamins or minerals, but can optimize health and prevent disease. They are obtained from the plant and animal foods we eat. We haven't figured out how to put these in a pill yet, so a daily multivitamin and mineral can *not* be considered a substitute for a poor diet, only an insurance policy on a good one.

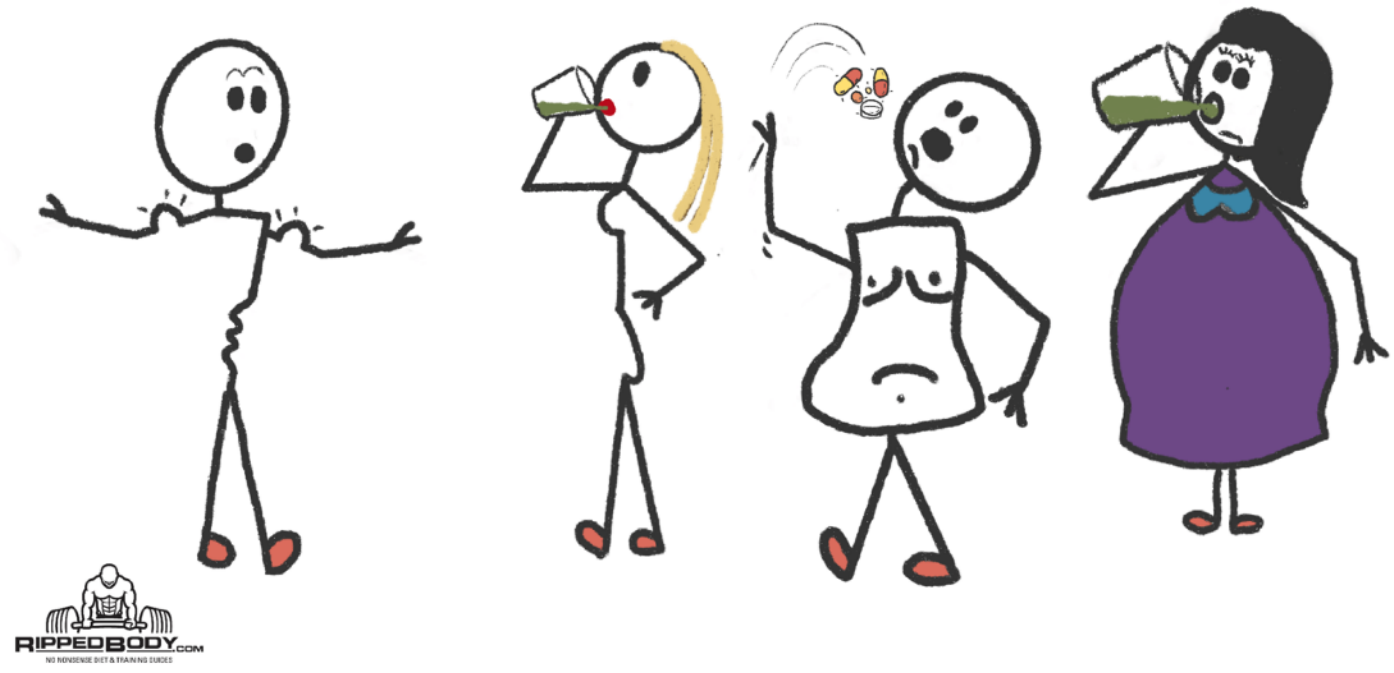
Vitamins are organic and come from once-living things. The fat-soluble ones (A, D, E, and K) are absorbed in the gut, so deficiencies or surpluses (overdoses) build over time. The water-soluble ones are hard to overdose on because they will be passed in the urine. The flip side of this is that they need to be consumed daily.

Minerals are non-organic. Some of these (calcium, sodium, potassium, magnesium, etc.) are needed in greater quantities than others (iron, copper, zinc, etc.). Not coincidentally, things containing the former group (dairy & salty foods for example) taste especially good to us.

- Zinc deficiencies can negatively impact your metabolism.
- Iron deficiencies can negatively impact strength.
- Calcium deficiencies can negatively impact bone health.

There are performance benefits from eating vegetables. Green vegetables (spinach, rocket, and beetroot in particular) have a lot of nitrates. An increase in nitrate intake can elevate plasma nitrate concentration, which can increase the amount of oxygen supplied to muscle tissue, reducing the cost of exercise and improving exercise tolerance.

It’s not a night and day difference, but Popeye was onto something with eating all that spinach, and your mum was right in telling you to eat your vegetables.



Shredded Sam is pissed. He's caught Natalie, Freddie, and Thelma trying to take micronutritional shortcuts, despite his warnings that there are none. Time to school them...

FRUIT AND VEGETABLE INTAKE GUIDELINES

The majority of people reading this will be fine for the micronutrients we get in meat, dairy, and starchy carbs.

It's generally the ones from fruit and veg that clients typically need to pay attention to, as they are the foods most often skipped.

A good starting point is to eat a minimum of two pieces of fruit a day, to make sure you eat a fist-sized portion of fibrous vegetables with every meal, and to vary their intake day-to-day.

However, it's a good idea to scale your intake based on how much you are eating overall, so I recommend the following for fruit and veg intake based on calorie intake:

FRUIT AND VEGETABLE INTAKE RECOMMENDATIONS BASED ON CALORIE INTAKE

CALORIE INTAKE	CUPS OF FRUIT & VEG. EACH DAY
1200–2000	2 cups each
2000–3000	3 cups each
3000–4000	4 cups each

This uses the US cup measurement system, which is ~250 ml, or the size of a typical coffee mug.

FIBER INTAKE GUIDELINES

Fiber is important for gut health and nutrient absorption.

Both too little and too much fiber can be detrimental, but if you're following the guidelines mentioned and not doing anything unusual with the rest of your diet, you're probably fine.

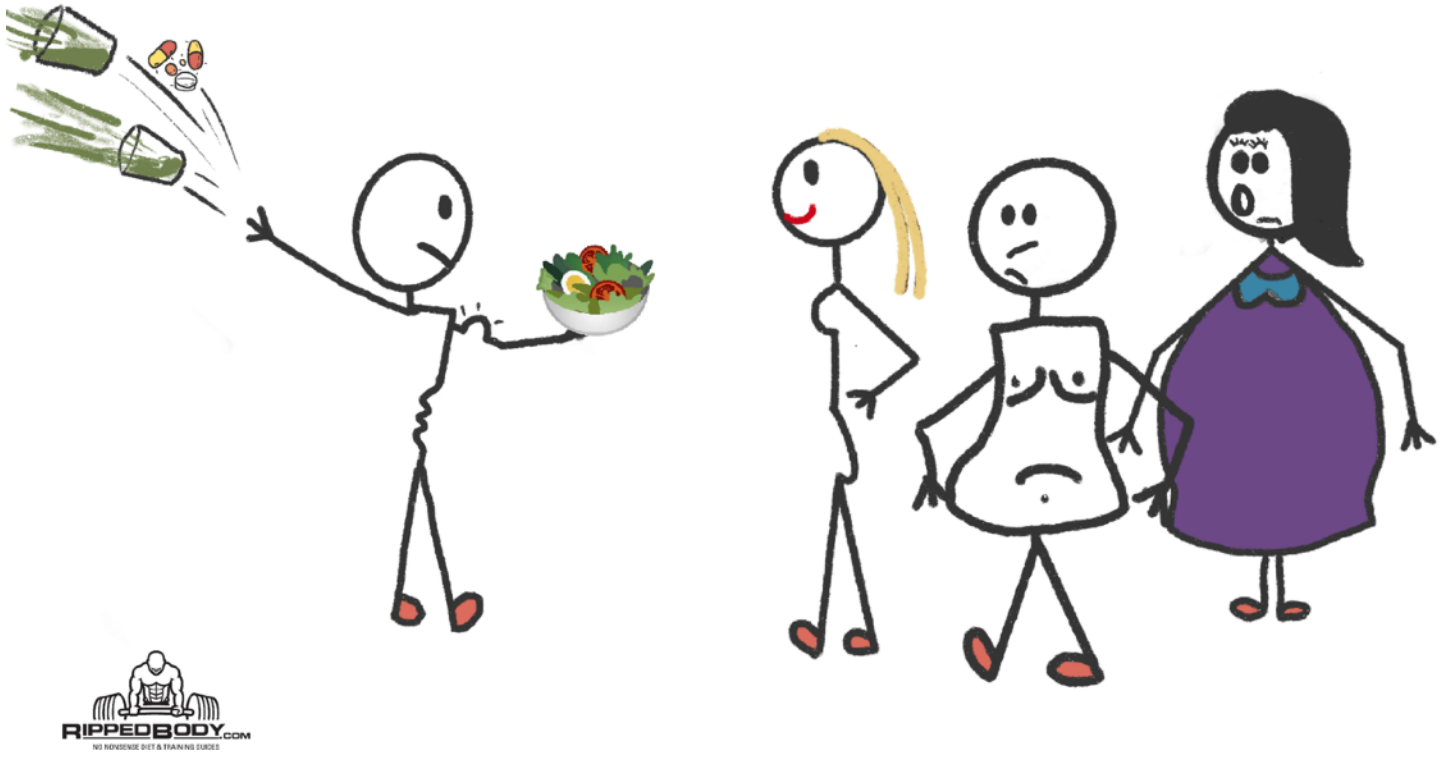
👉 Current recommendations for fiber intake are 14 g/1000 calories.

Constipation can be a sign that you're eating too little; very loose stools a sign that you're eating too much. Adjust accordingly.

If you eat a lot of beans, oats, or high-fiber cereal to hit your carbohydrate numbers, your fiber intake is likely too high. You'd have to consume an extraordinary amount of vegetables for this to be the case. See the comparison table on the following page.

FIBER CONTENT OF FIBROUS VEGETABLES VS. OATS AND CEREALS

FOODS HIGH IN FIBER	FIBER PER 100 g
Asparagus, broccoli, cabbage, cauliflower, celery, eggplant, kale, lettuce, onion, spinach, zucchini, and many more.	1.3–2.9 g
Beans	~5.1 g
Bran Flakes	18 g
Oats	11 g



Shredded Sam schools Nat, Fred, and Thel.

Eat your vegetables. The fiber helps you poop, they keep you full, they have micronutrients we can't put into a pill or powder, and there are potential performance benefits.

WHY DIETERS ARE AT RISK OF MICRONUTRIENT DEFICIENCIES

As calories and macronutrients get lower, it becomes harder to prevent micronutrient deficiencies.

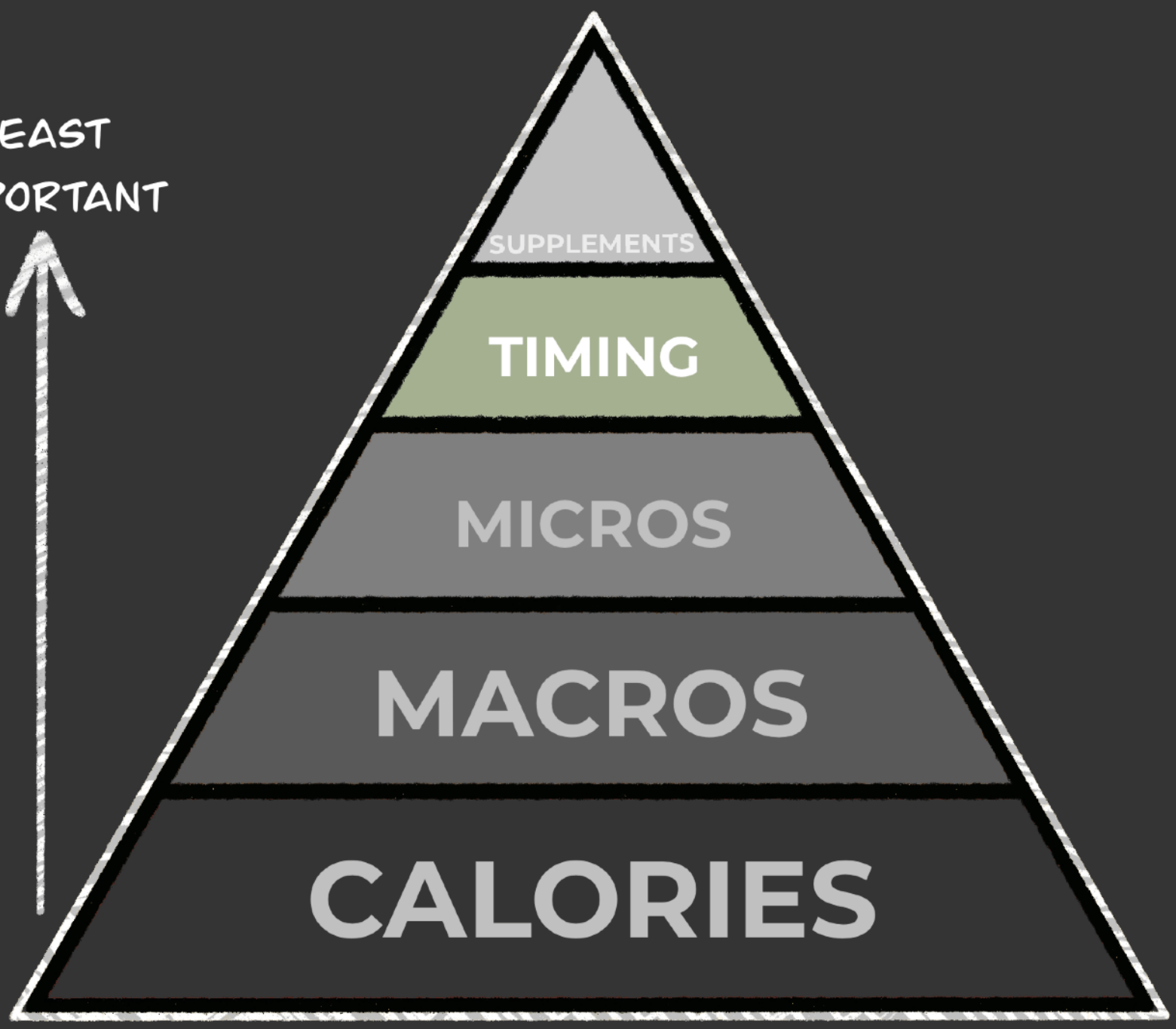
Try to maintain dairy and red meat intake (lean, with the fat trimmed, can fit into almost any diet), and get regular outside sun exposure (not through windows). This should help you avoid calcium, zinc, magnesium, iron, and vitamin D deficiencies. For those who don't eat meat or dairy, I'll cover supplements that may be worth considering in that section.

WATER INTAKE GUIDELINES

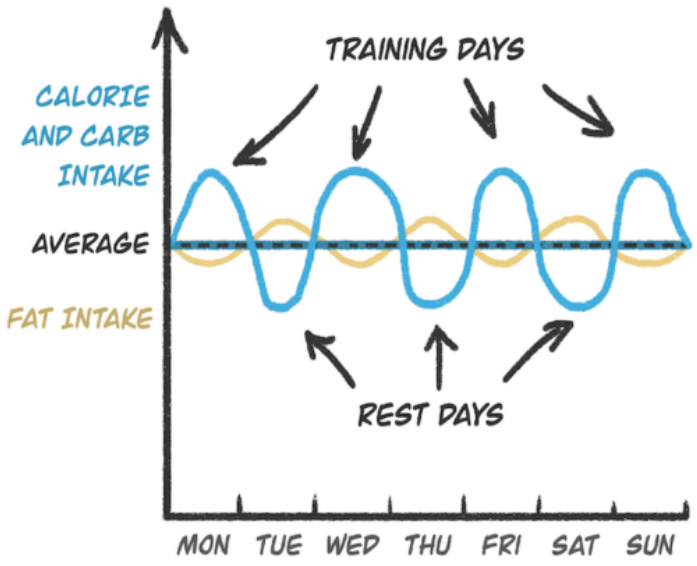
Water is important for fat loss and performance. I don't like the idea of setting water intake for people based on body weight, simply because some people sweat more than others, not to mention different climates and activity levels. Therefore, I suggest the following guidelines:

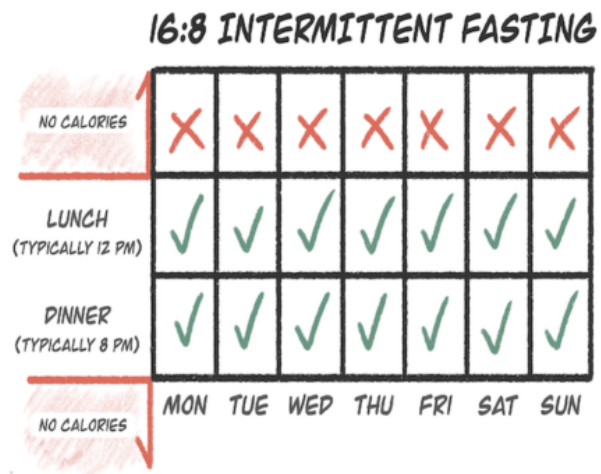
1. Aim to be peeing clear by noon.
2. Have five clear urinations a day.
3. Make sure that you're not dehydrated at the time of your workouts or they will be negatively impacted.
4. Taper water intake toward the end of the day as needed so you don't have to wake to pee.

LEAST IMPORTANT



#4: NUTRIENT TIMING





Thelma's confused reaction is understandable. But as she's about to learn, nutrient timing benefits come mostly from making sure you don't do something stupid, rather than optimizing for every last hypothetical detail.

In this chapter the key principles you will learn about nutrient timing are:

1. Doing nothing stupid or extreme that could compromise the rest of your efforts.

2. Optimizing things in a way that helps you adhere.

3. Avoiding complicated strategies unless you need them for your sport.

It appeals to us that something as simple as changing the timing of things can have a potent effect.

People go mad for any shortcut, rather than actually putting in some effort. Marketers take advantage of this (flash a little bit of science while conveniently not talking about the bigger picture) to sell us on something new.

Getting the timing of things right most certainly has favorable effects on body composition, however, if you gloss over the most impactful, foundation levels of your nutrition plan (the calorie intake, macro composition, and micronutrition considerations) you are wasting your time, money and effort.

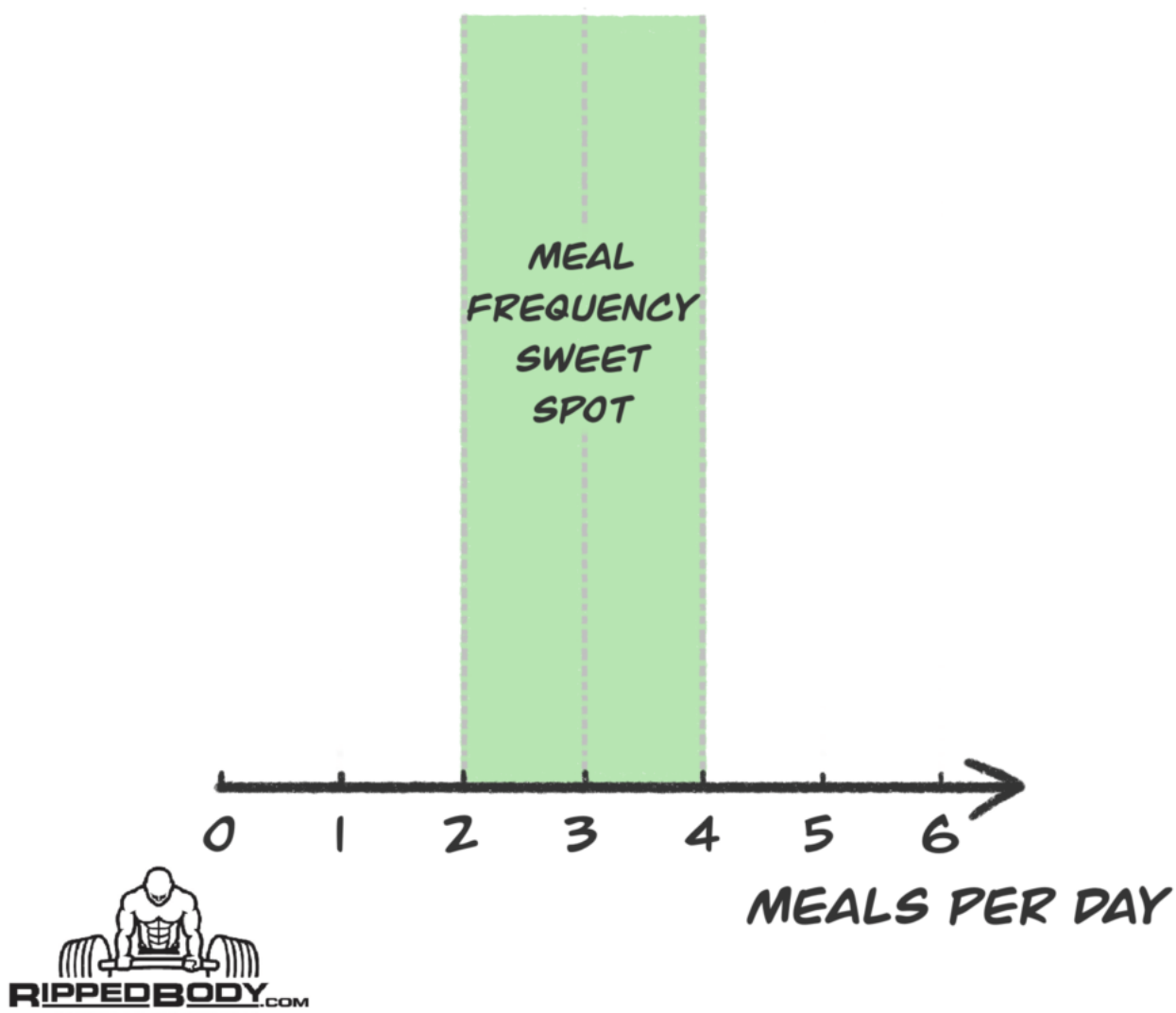
Consider the first three stages of the nutrition pyramid the foundation. Now we're going to look at the fourth stage while trying to not get lost in the meaningless details. Here's what we'll cover:

- **How Many Meals Should We Eat?**
- **When Should We Eat?**
- **Suggestions For When To Eat, Relative To When You Train**
- **Should You Try Intermittent Fasting?**
- **Refeeds, Calorie Cycling, Macro Cycling, and Cheat Days**

Example Calorie, Macro Cycling, and Refeed Calculations For Our Four Amigos

As with this series as a whole, this article is written in the order of importance that each addition will likely benefit you. The most important factor in all of this is that you adhere to your diet. So don't do anything here that is too tiresome or complicated for you to sustain.

HOW MANY MEALS SHOULD WE EAT?



The sweet spot for meal frequency is 2–3 meals when cutting and 3–4 meals when recomping or bulking.

I suggest we eat the minimum number of meals that we can without compromising our goals *unless* your personal preference is for a higher number.

By eating fewer meals we simplify food preparation and macro counting. This improves adherence, which is key to success over the long-term.

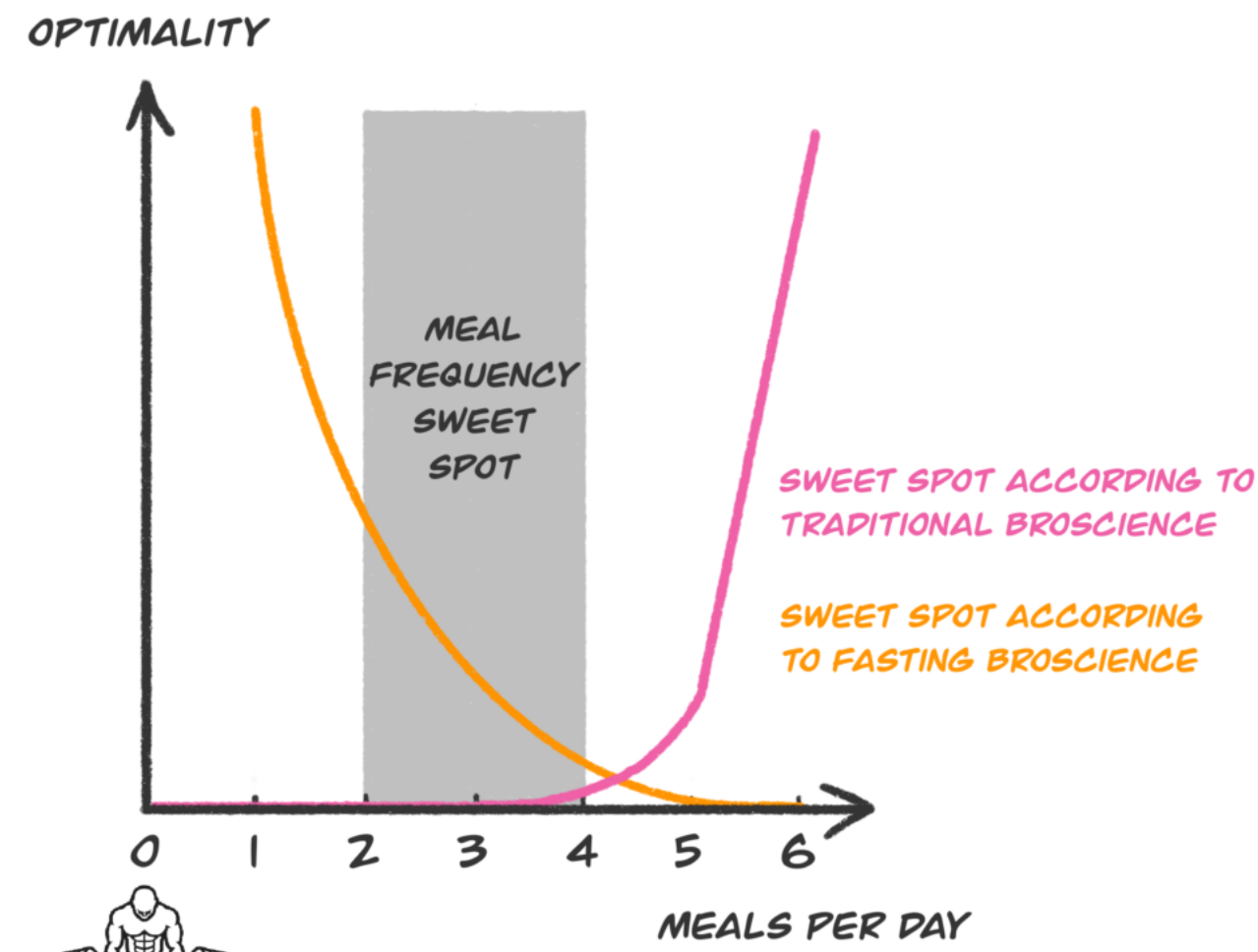
WHY I RECOMMEND YOU AVOID EXTREME MEAL FREQUENCIES

Eating one meal a day may be the simplest choice, but it is not going to be optimal for lean mass retention when dieting, nor muscle growth when bulking.

Further, as your stomach is of a limited size it will be very hard to get in the appropriate amount of fruit and vegetables for the day to meet your micronutrition and fiber needs, while still getting in enough calories in a single meal. Even if you feel good, I'd recommend you don't do this.

The only time I would give people a pass on this is for obese individuals who find it the easiest way to lose weight and curb their cravings, as the health risks of carrying so much body fat outweigh the risks of short-term micronutrient deficiencies. It is not an optimal long-term strategy.

Eating 6+ meals a day is the old-school "bro-science" choice, which harks back to the days when we thought this may have been superior for muscle growth.



Avoid the extremes of meal frequency and you'll do fine.

The only people I can see needing such a high meal frequency are athletes who train multiple times a day. They have very high energy demands and may find their performance impaired when training on a full stomach. The higher frequency of meals will also help with faster glycogen replenishment between workouts, which is only of concern to this group.

Do not try to copy athletes — the young ones tend to pay little attention to their diets because they haven't needed to yet, the older ones are drawn to the quacks of the industry as the reality of aging sets in and they start to look for an edge. People that call recreational trainees "athletes" are just tickling your ego. Which is fine, but just know the difference.

MEAL FREQUENCY RECOMMENDATIONS FOR THOSE CUTTING AND BULKING

For those cutting, it can be beneficial to have fewer meals because you can eat more at each meal. This is one of the benefits of skipping breakfast — enabling larger lunches and dinners.

The majority of my clients over the years skip breakfast when in a cutting phase and many choose to skip it when in a bulking phase. There is a caveat to this: for those who train fasted in the morning, I have them take a whey protein shake first to minimize the risk of muscle breakdown. (More details on this in the meal timing section.)

For those bulking, it can get to a point where it is not comfortable or practical to eat just two meals a day because of the volume of food that needs to be consumed. In this case, consider splitting your meals into three or four meals, or having liquid meals/snacks. Though there are likely no benefits to eating more than four meals a day, it is perfectly fine to do so if you wish.

There isn't any definitive research showing that eating more than two meals a day is beneficial to lean mass preservation when in a dieting phase. (I certainly haven't had any issue with clients either.)

There is research to suggest that eating more than twice may be more beneficial for muscle growth, but I can't say I have

noticed any differences in client groups on average, between those who continued to skip breakfast and those who didn't.

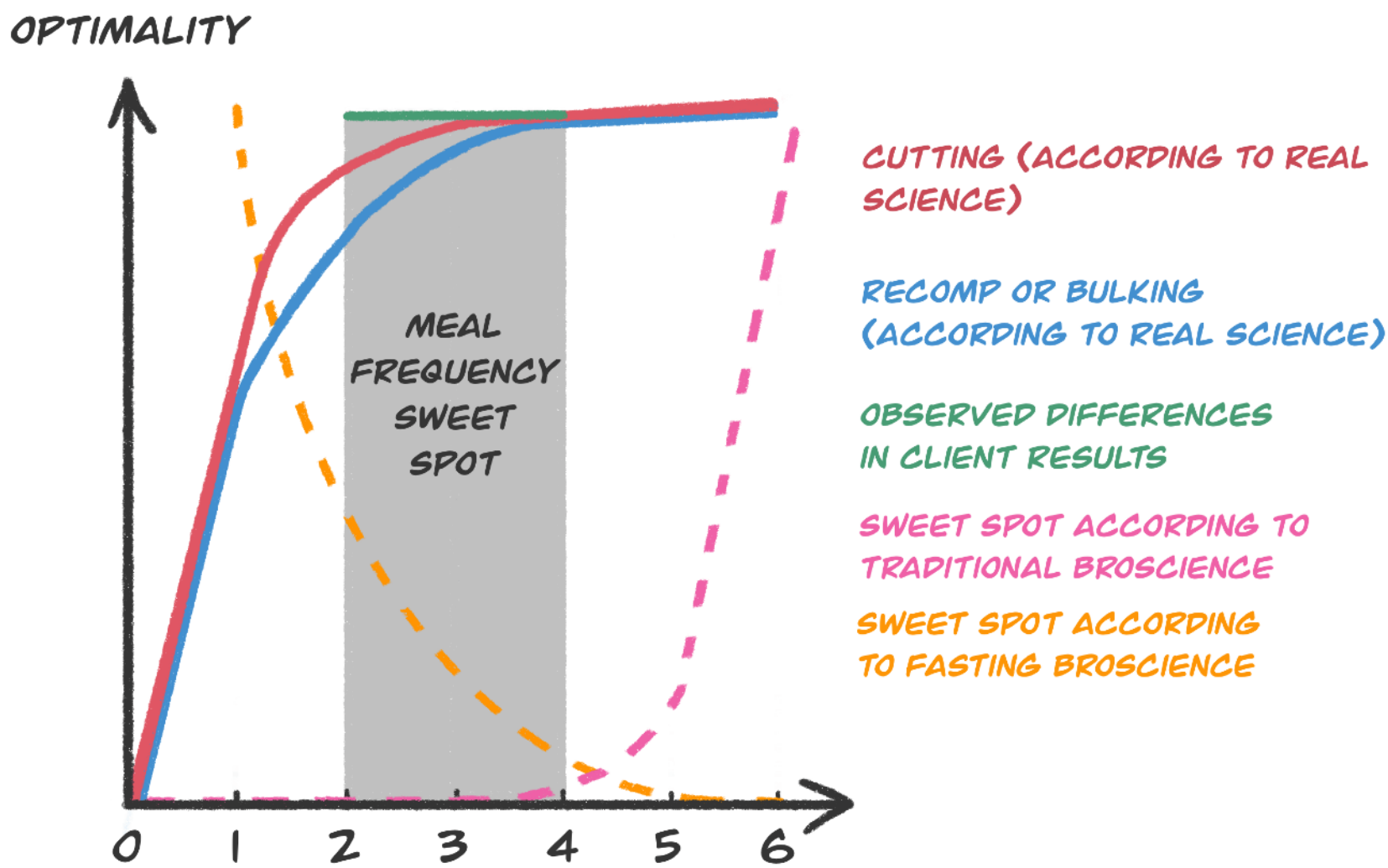
I realize this can be nuanced, so I've tried to categorize the differences in the diagram below along with what I have observed.

Those looking to bulk (or recomp) may benefit from a higher meal frequency, though I haven't noticed any differences in outcome between clients who preferred to eat two meals vs. those who ate three or four.

Physique professionals may wish to opt for the higher end to maximize any potential benefits. Recreational trainees don't need to complicate things this much.

Regardless of whether I'm cutting or bulking, I choose to eat two meals and have a morning shake before training. But I like to optimize my life for simplicity and don't think the additional

meal is worth the trade-off. You do you.



You'll notice that there are diminishing returns to increases in meal frequency which likely disappears by the fourth meal of the day. Whether you care enough about the incremental differences between 2 and 3 meals, and 3 and 4 meals, is something you have to decide for yourself.

I'll say again, I haven't noticed any differences in outcome between clients who ate 2–4 meals. However, although this is a large sample size (1000+ clients over 9 years), probably 80% were cutting.

WHEN SHOULD WE EAT?

Nutrient timing is not as important as we once thought it was. There are two fairly simple rules to follow when it comes to meal timing during the day. As long as you follow them, you should be totally fine.

1. DON'T TRAIN COMPLETELY FASTED

I myself, as well as many clients, prefer to train first thing in the morning without having eaten a meal prior. If you choose to do this also, make sure you have a whey shake 30–60 minutes before you start lifting heavy so that when your body seeks amino acids (the building blocks of protein), it takes them from your bloodstream rather than breaking muscle down to get them.

Whey protein is better than EAA or BCAA supplementation in this scenario. It is fast-digesting (a good thing in this context) at a rate of 8–10 g per hour, therefore, if your first meal of the day is more than 3 hours after your first scoop was taken, take a second scoop. — You'll see this in the first example below.

(I prefer to have 50 g of whey in the morning rather than splitting it into two shakes. This may be a fraction less optimal, but I don't think it will make a meaningful difference.)

If you find yourself struggling to train with the same intensity you usually do, have 30–60 g of carbs with the shake. This can

be as simple as eating a banana or two (or anything you find easy to digest).

Toward the end of a cut, when your liver and muscle glycogen stores are low, this could help you maintain training intensity.

Avoid fat as this could cause stomach upset.

Personally, I feel completely fine without this, but I want to state it here as an option.

2. SPREAD YOUR MEALS EVENLY ACROSS THE DAY

If you eat twice per day, make that lunch and dinner, and roughly 7-9 hours apart. If you eat three times per day, make it breakfast, lunch, and dinner.

Feel free to eat a little less in one meal than the others (if you train in the early afternoon, you might want a light lunch so you don’t feel nauseous).

Don’t do anything weird like bunching all your meals in the space of a few hours.

3. SPREAD YOUR MACROS EVENLY

As long as meals are evenly spaced, there is likely very little benefit to worrying about more specific protein or carbohydrate timing.

- You don't need to slam a protein shake immediately after your workout because you will still have amino acids in your blood-stream breaking down from the meal consumed earlier.

- You don't need to have carbs right before you train because your muscles will still have glycogen in them to fuel your training from meal(s) prior, or even the day prior. (Glycogen is like the fuel tank of a car — if you fill up the night before, it'll still be in the tank even if you didn't go for a drive.)

- You don't need to have carbs immediately after you train. Yes, some research looking at muscle protein synthesis over the course of a day has hinted that this may be beneficial, but it just hasn't panned out in longer time frame studies.

- Avoid skewing your fat, protein, or carb intake across the course of a day too heavily. You may still find some people saying that eating fats and avoiding carbs at the start of the day and vice versa at the end of the day is beneficial. There's no evidence for that, it complicates things, and I'd be willing to bet that it's a net negative.

SUGGESTIONS FOR WHEN TO EAT, RELATIVE TO WHEN YOU TRAIN

Here are some detailed meal timing examples of when to eat, relative to when you train. I'll cover whether you may want to consider skipping breakfast in the next section.

EARLY MORNING FASTED TRAINING

This setup is the most popular with clients. They all have full-time jobs and most have families, so they choose this because it allows them to train before the rest of the day takes its toll. The key isn't waking up early, it's going to bed consistently earlier so that you *can* wake up early while still being rested.

IF SKIPPING BREAKFAST	IF EATING BREAKFAST
05:30 25 g whey (optional banana)	05:30 25 g whey
06:00 Training	**06:00 Training**
08:30 25 g whey	07:00 Breakfast
12:00 Lunch	13:00 Lunch
20:00 Dinner	20:00 Dinner

MID-MORNING TRAINING

When I'm in a writing/creative phase, I wake early to work before any distractions, then hit the gym mid-morning. My preferred setup is the left column.

IF SKIPPING BREAKFAST	IF EATING BREAKFAST
08:30 25 g Whey	07:00 Light Breakfast
09:00 Training	**09:00 Training**
12:00 Lunch	12:00 Lunch
20:00 Dinner	20:00 Dinner

LUNCHTIME TRAINING

This is popular with folks who can take a slightly longer lunch than the typical hour and have a gym close to their office (or in the same building). The key to success is often preparing lunch the night prior.

IF SKIPPING BREAKFAST	IF EATING BREAKFAST
11:30 25 g Whey	07:00 Breakfast
12:00 Training	**12:00 Training**
13:00 Lunch	13:00 Lunch
20:00 Dinner	20:00 Dinner

EARLY-AFTERNOON TRAINING

Fewer clients do this, but it works equally well.

IF SKIPPING BREAKFAST	IF EATING BREAKFAST
–	07:00 Breakfast
12:00 Light lunch	12:00 Light lunch
14:00 Training	**14:00 Training**
~15:30 25 g Whey & banana	~15:30 25 g Whey & banana
20:00 Dinner	20:00 Dinner

EVENING TRAINING

Training in the evening is completely fine, but if you find that stuff often comes up which prevents you from leaving work early to do it, consider training in the morning.

IF SKIPPING BREAKFAST	IF EATING BREAKFAST
–	07:00 Breakfast
12:00 Lunch	13:00 Lunch
~17:00 Training	**~17:00 Training**
20:00 Dinner	20:00 Dinner

LATE-EVENING TRAINING

This type of setup is best avoided if it impacts the duration or quality of sleep.

In this specific case, a slow-release protein shake like casein may be better than whey prior to bed. (A pre-prepared small chicken breast would do equally well if not better, and the banana is just an example of some quick and easy carbs.)

IF SKIPPING BREAKFAST	IF EATING BREAKFAST
–	07:00 Breakfast
12:00 Lunch	13:00 Lunch
19:00 Light dinner	19:00 Light dinner
~21:00 Training	**~21:00 Training**
22:00 50 g Protein & banana	22:00 50 g Protein & banana

Some people find that carbs make them sleepy. Breakfast eaters that feel lethargic mid-morning should consider eating fewer calories from carbs, and more calories from fats at breakfast time, and reversing this at dinner. Breakfast skippers should do this but with lunch. As an added bonus, this may help you sleep better in the evening.

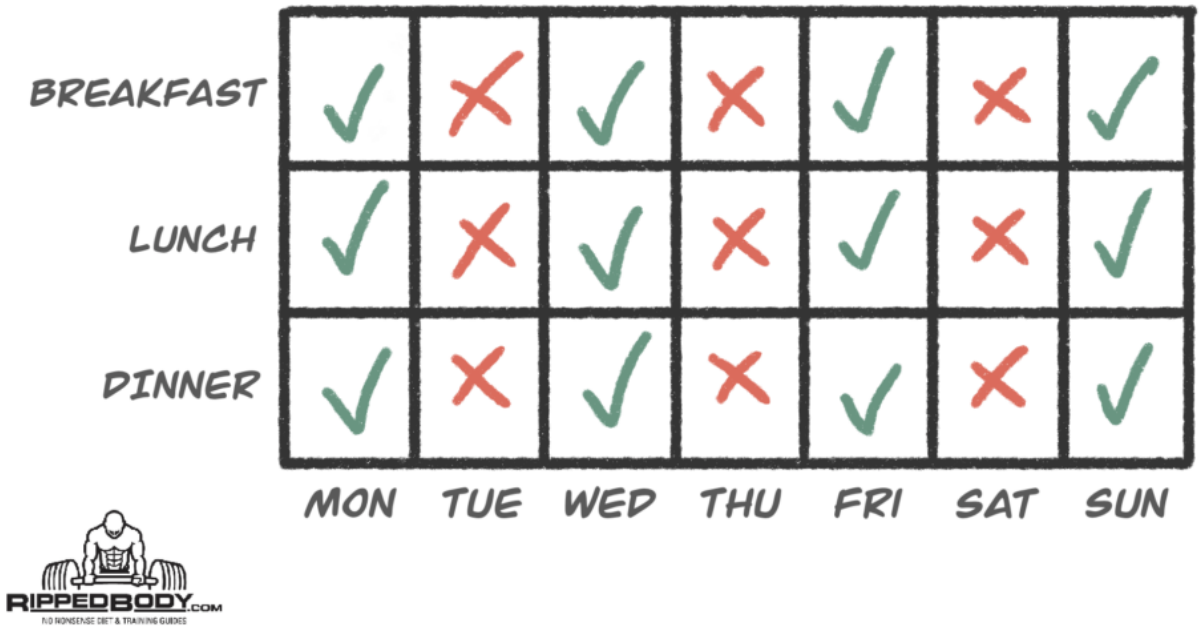
A small percentage of clients find that a large meal before bed disturbs their sleep. If this causes you to sweat or just otherwise feel uncomfortable, eat an hour or two earlier or reduce the calorie content of your evening meal.

The idea that eating before bed makes you fat is a myth.

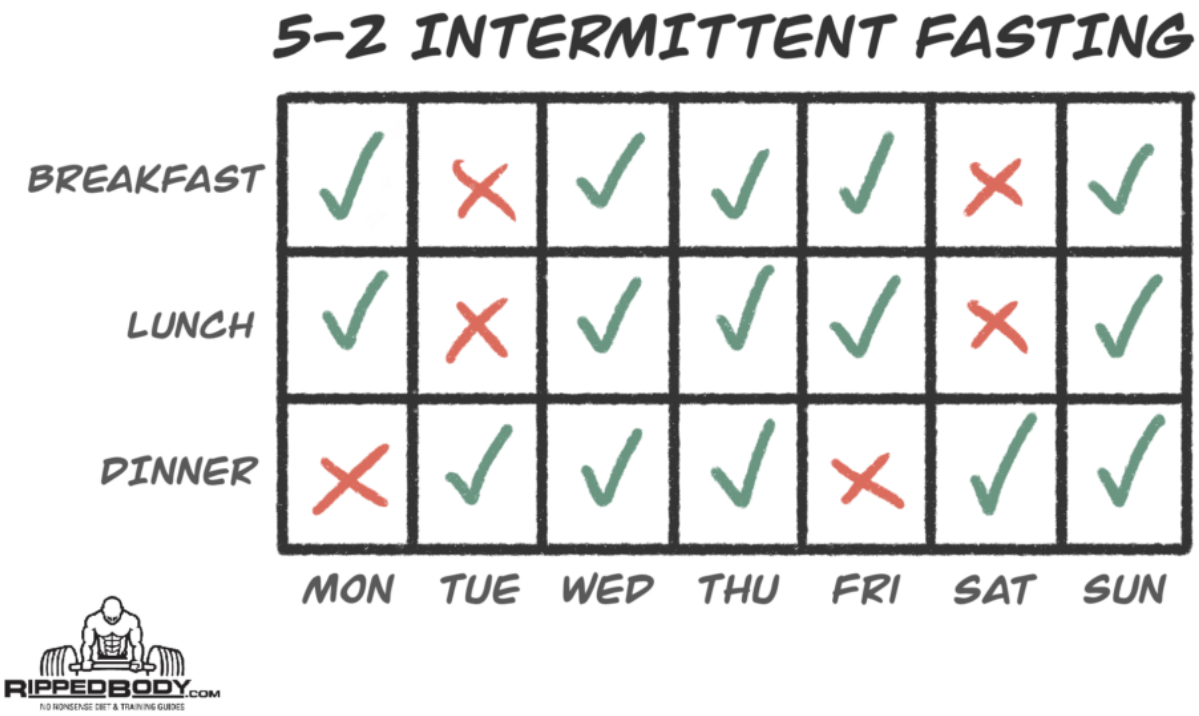
SHOULD YOU TRY INTERMITTENT FASTING?

I do it, many of my industry friends do it, and many of my clients do it also. However, there are a few different types of intermittent fasting (I.F.), and they are not all created equal.

Alternate day fasting is where you eat one day then don't eat the next. This is often advertised as "Don't eat one day and then eat whatever you like!" This can cause rapid weight loss but it encourages binge-starve behavior cycles and I do not recommend it.

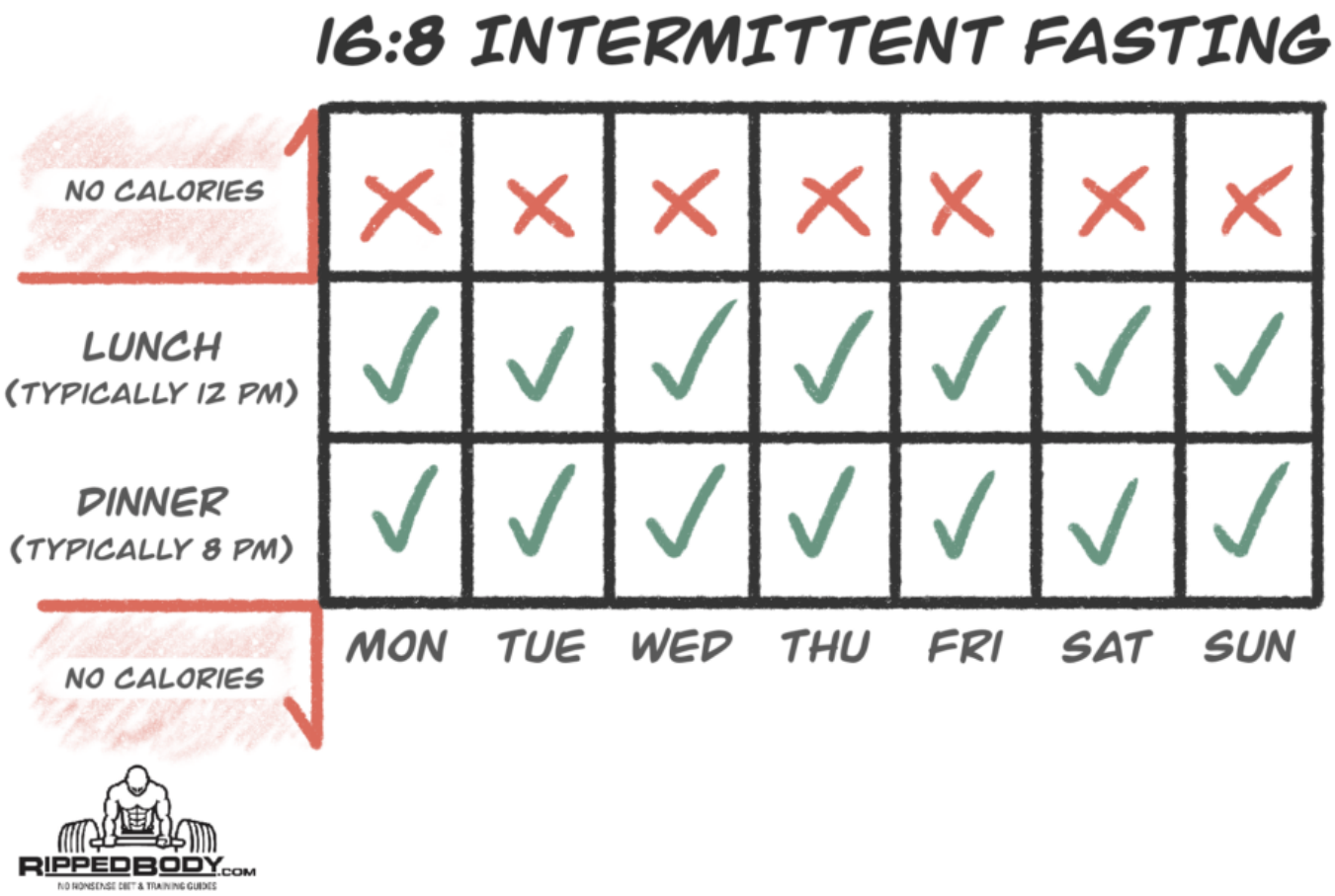


5-2 intermittent fasting involves two ~24 hour periods per week with no food. You just skip three consecutive meals, twice per week, but not on the same day so that you're always eating something on any given day.



As consistent meal times can help with hunger regulation, I do not recommend 5-2 I.F. either.

16:8 intermittent fasting involves skipping one meal, typically breakfast, partially because this is the easiest to stick to as it has the least social consequences. It can help create the calorie deficit needed for fat loss by removing 1/3 of the meals people typically eat from their week.

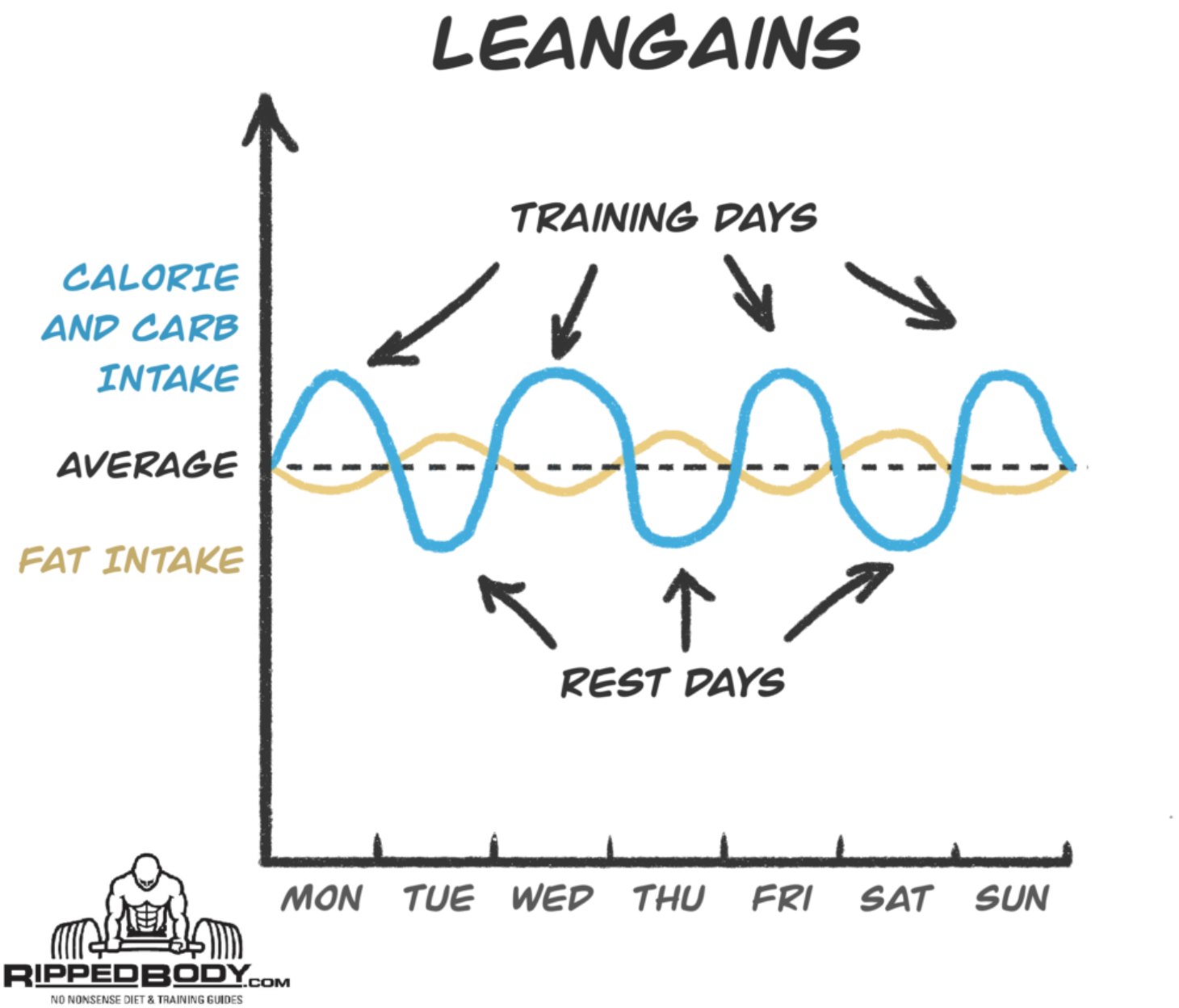


16:8 intermittent fasting permanently removes the one meal (usually breakfast) from each day. The majority of those clients you see on the results page have done this.

You may have success with any of these methods of intermittent fasting for a while, but it is likely that at some point you will need to count calories because your body's compensatory mechanisms will drive you to eat more without you realizing it.

LEANGAINS-STYLE INTERMITTENT FASTING

Leangains is a style of 16:8 intermittent fasting developed by Swedish nutritionist Martin Berkhan. It combines skipping breakfast with fluctuating calorie and macro intake — more calories and carbs are consumed on the training days; fewer calories and carbs are consumed on the rest days. Fat intake is lower on the training days, and more on the rest days.



Martin popularized the 16:8 term by telling people to eat all their food within an 8-hour window. So, Leangains preceded

16:8 I.F., which can be considered a simplification, but skipping breakfast is not exactly new.

So where does the 8-hour window come from and why is this not 7 or 9 hours?

Marketing and practicality, in my opinion. You have to give people easy-to-understand rules or they'll screw themselves up. If I say to people, "Hey, skip breakfast and just eat two meals," then a certain portion of people will put two meals too close together to be optimal. Six hours is the closest spacing I'd suggest, eight hours is probably a little better, but a little longer is fine.

Why did Martin choose to fluctuate calorie, carb, and fat intake?

This is an attempt at getting more favorable calorie partitioning. More calories and carbs on the training days when they can be utilized for growth and recovery, with a low fat intake to minimize the risk of any storage. The rest days just flip it, so that the balance for the week is maintained.

Does this make a difference?

Probably not. Still, I offer a pattern similar to this with clients because it breaks the monotony of dieting.

LEANGAINS BENEFITS

1. Meal prep is less time-consuming.

2. You're less likely to make counting mistakes.

3. Fewer meals mean **larger meals** for the same calorie budget, which is more psychologically satisfying.

4. There is **a lack of hunger in the mornings** after an initial adjustment phase, which is usually 5–7 days.

5. People also report an **increased focus in the mornings**. (I am one of these people and this is when I like to get my hardest cognitive tasks for the day done.)

The majority of clients choose to do this but it is their choice, not my demand. My advice: try it, see if you like it. If not, don't worry, you're not missing out on anything magical.

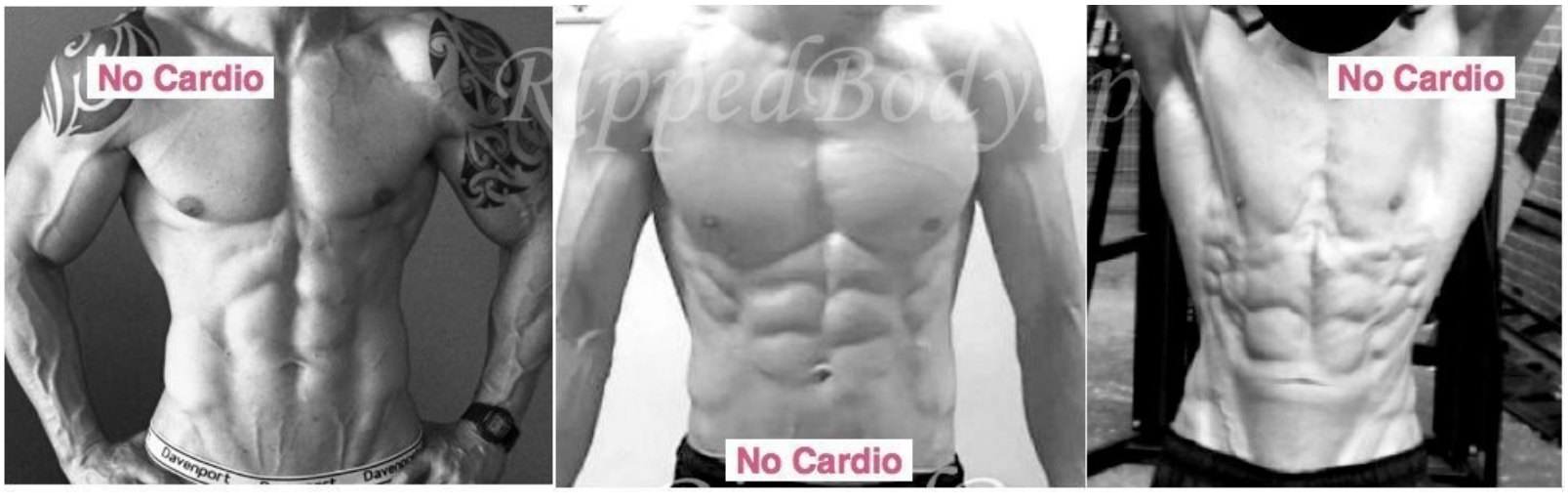
LEANGAINS DRAWBACKS

1. **There is a higher risk of muscle loss when dieting**. The scientific literature isn't clear on this. I can't say I have noticed any meaningful muscle losses after coaching hundreds of clients to a shredded lean condition, but it's important to consider I work with serious recreational lifters, not competitors looking for an edge.

2. **It's likely less optimal when bulking.** The scientific literature suggests that it is likely better to space meals out further.

3. **If you have a history of disordered eating** then you probably shouldn't be doing any form of fasting as it can be used as an excuse to legitimize your behavior.

4. **It's more complicated, which can make it harder to adhere to.** The increased variety across a week can improve adherence for some, but it's also another layer of complication that can ruin adherence for others.



Some examples of clients I have worked with who skipped breakfast. None of them did any cardio.

REFEEDS, CALORIE CYCLING, MACRO CYCLING, AND CHEAT DAYS

Calorie and macronutrient intake do not have to be the same each day of the week.

I will commonly incorporate these strategies into diet plans for clients, but I don't pretend that they have as strong support in the scientific literature for improving outcomes as the other things I have discussed up until this point.

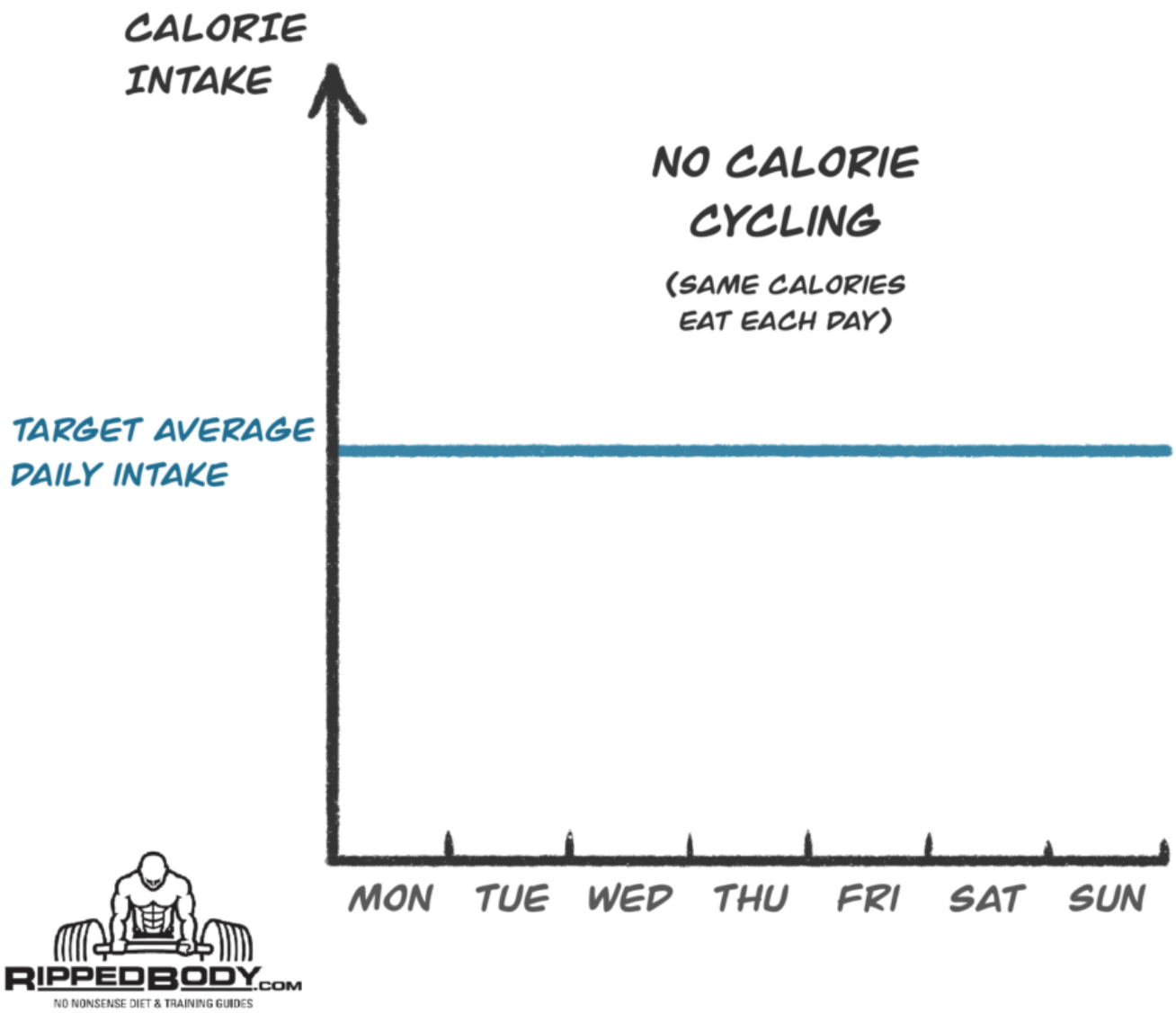
Why include them? They provide a helpful break from the monotony of dieting by introducing some variety in possible food options across the week.

Will they be beneficial beyond that? Probably not for beginners and early intermediates, possibly for those more advanced. So only implement these strategies if they help improve your adherence, not hinder it due to the added complication.

CALORIE CYCLING AND HOW TO IMPLEMENT IT

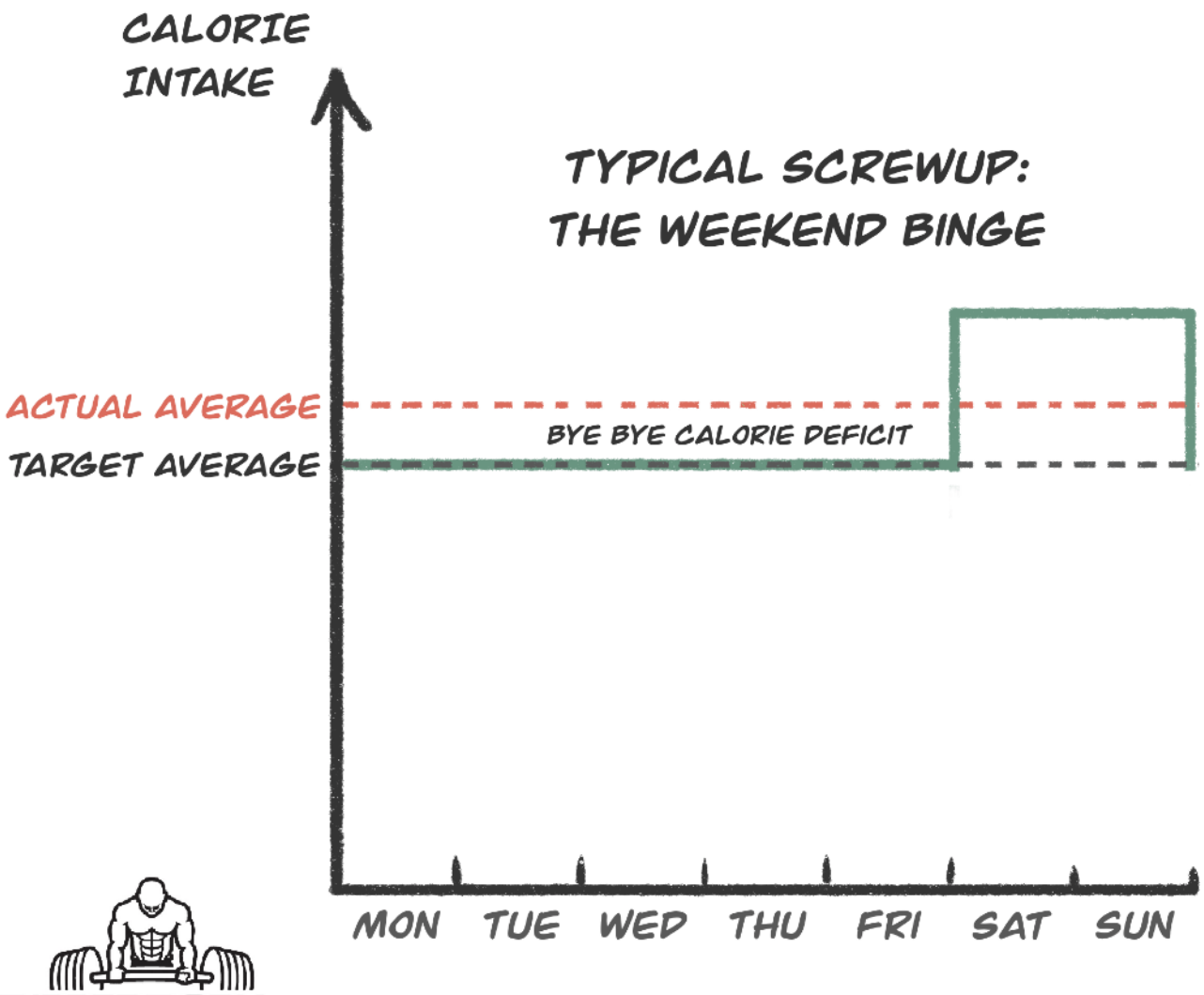
Calorie cycling is the name given when different days of the week have different calorie targets.

Most people intend their diets to look like this:



An iso-caloric diet (same calorie target each day).

But in reality, they usually look a little more like this:

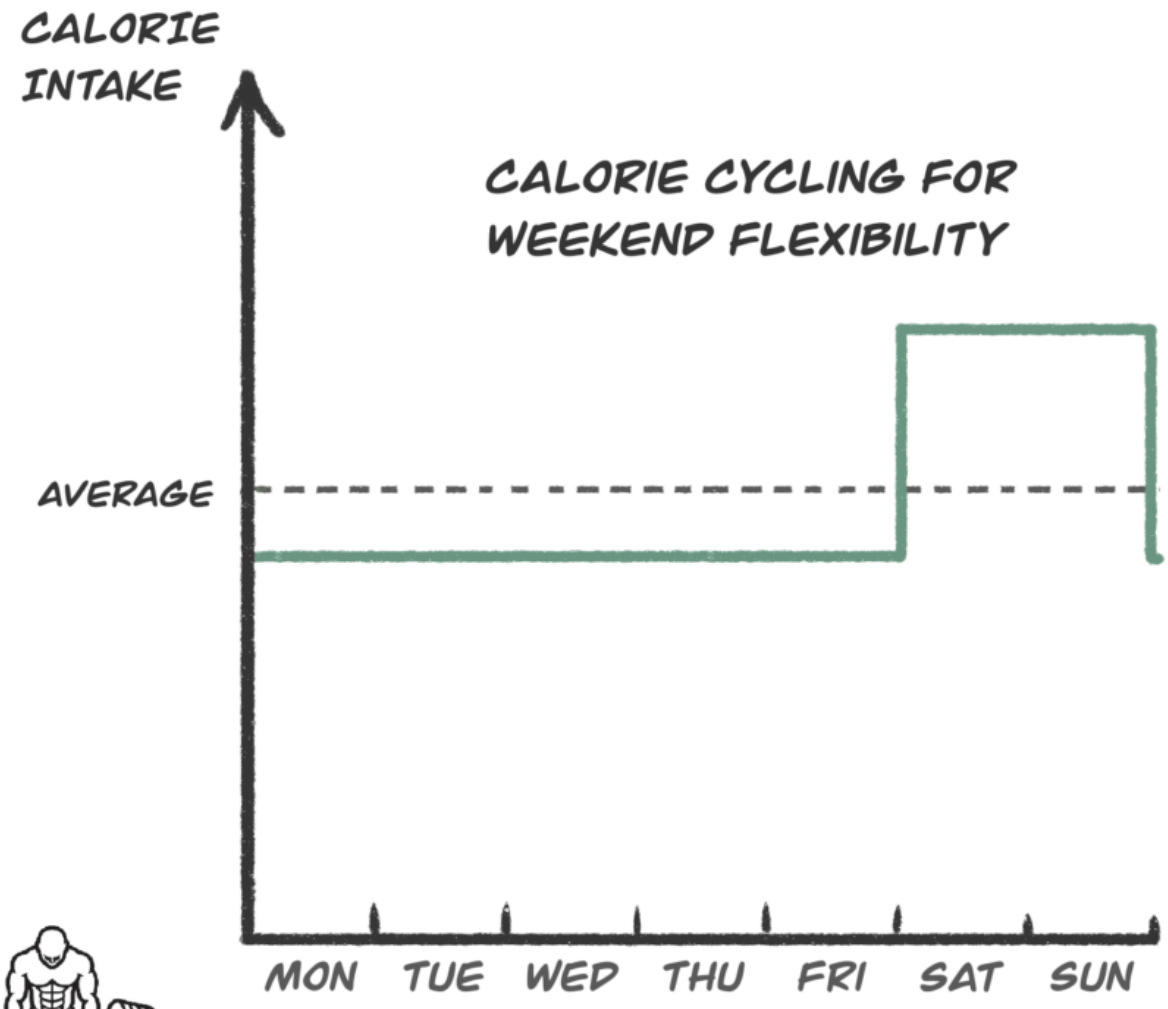


The weekend binge — the way most of the population ends up permanently "dieting" without making any progress.

I call this *unintentional* calorie cycling.

If you find yourself keeping to your diet during the week but struggling at the weekends, consider building more flexibility into your plan to allow that.

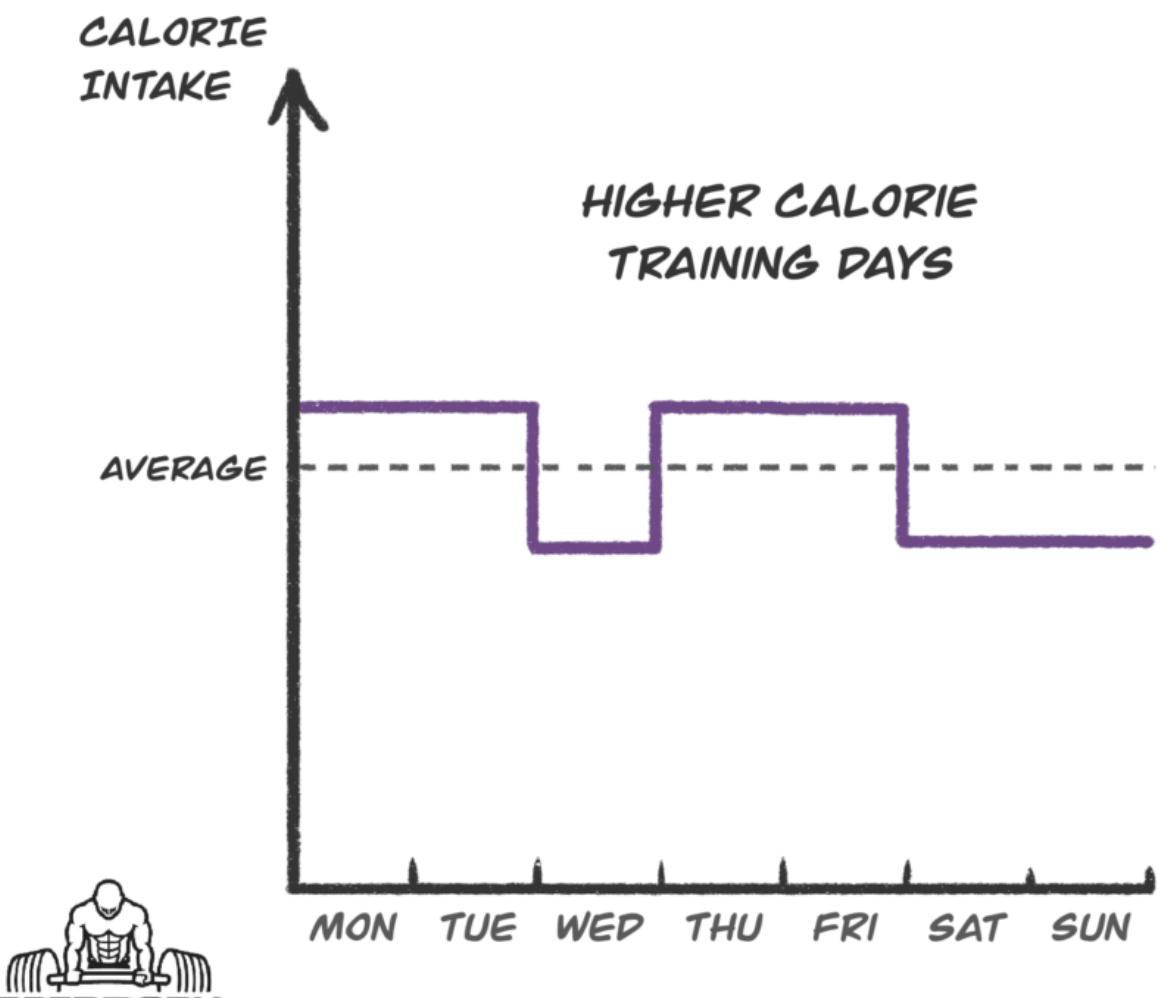
So for example, to maintain the daily average calorie intake, you could eat 300 calories fewer on the weekdays so that you can eat 750 calories extra on the weekends:



It's perfectly possible to build in some flexibility for your weekends, should you wish to.

To do this, "borrow" 50 g of carbs and 10 g of fat from your weekdays and "lend" Saturday and Sunday 125 g of carbs and 25 g of fat each.

The most common pattern I use with clients is having them eat more on the days they train and less on those they don't. Here's what that looks like with a four-day training split:



Macro cycling with higher calorie training days.
(Four-day training week.)

I have set the macro calculator to calculate rest day calorie intake at 20% lower than the training days. I recommend avoiding fluctuations much greater than this as it will make adherence harder and likely compromise results.

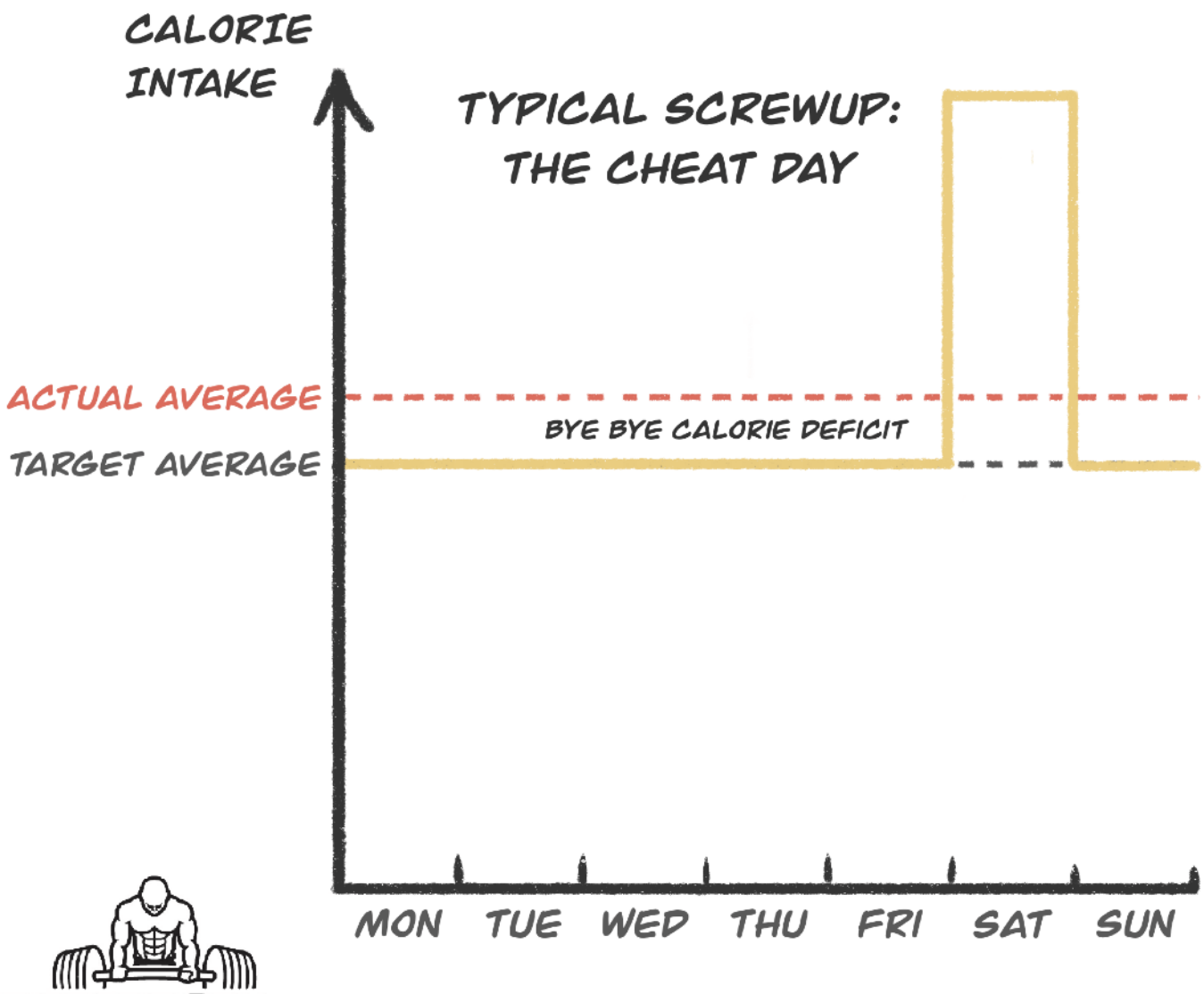
CALORIE CYCLING GONE WRONG

Cheat days are the name given to days where people eat whatever they want. They have no place in a diet and I strongly suggest you avoid them.

The most common pattern of people screwing up their diets (or getting fat when they bulk) is staying tight during the weekdays and blowing it all on the weekend. It is perfectly possible to do this over one day as well.

Think about it like this: if you're targeting 1 lb per week of fat loss (0.45 kg) you need a 500 kcal deficit each day. This means that over the weekdays you will have built up a 2500 kcal deficit. But if you eat (or drink) 2500 kcal extra over the weekend, you are back where you started.

Those who are perfect 6 days a week and think they can't overdo it by eating 3000 kcal on a weekly single "cheat" day are kidding themselves also.



How "cheat days" commonly just cheat people out of their progress.

We can build some flexibility into our diet, but do not label these days “cheat” days.

MACRO CYCLING AND HOW TO IMPLEMENT IT

Macro cycling is the name given when different days of the week have different macros targets.

People do this with a goal to improve body composition, training effect, or performance.

An example of this would be eating more carbs and less fat on the days you train; more fat and fewer carbs on the days you don't. I recommend you avoid extreme splits in macro intake as that could also compromise recovery and hamper adherence.

I have set the calculator to calculate the rest day fat intake 20% higher than the training days. As carbs balance the calorie budget, this means the training days have more carbs than the rest days. (See examples at the end of this section.)

WHAT ARE REFEEDS?

Refeeds are the name given to days where more calories and carbs are eaten. The idea is to replenish muscle glycogen and help boost performance during cutting phases.

Some people do this every training day (like with Leangains), but when most people talk of refeeds they are referring to a once per week, carb-heavy day, which is often above caloric maintenance. Often fat intake will be limited on these days in a bid to minimize storage, though whether this has any effect is unclear.

Refeed days still have specific macro targets, but when they don't, they are called *cheat days*, not refeeds, and these should be avoided for the reasons discussed.

EXAMPLE CALORIE, MACRO CYCLING, AND REFEED CALCULATIONS

Note: I will purposefully spare you the math in this section. But if you wish to see the formulas used, see see the “reference list” at the end of this webpage.

Note how personal preference is the reason behind the choice for all of these examples. Also, note that in the section on macros we rounded to the nearest 5, which is why the total calorie numbers don’t exactly match.

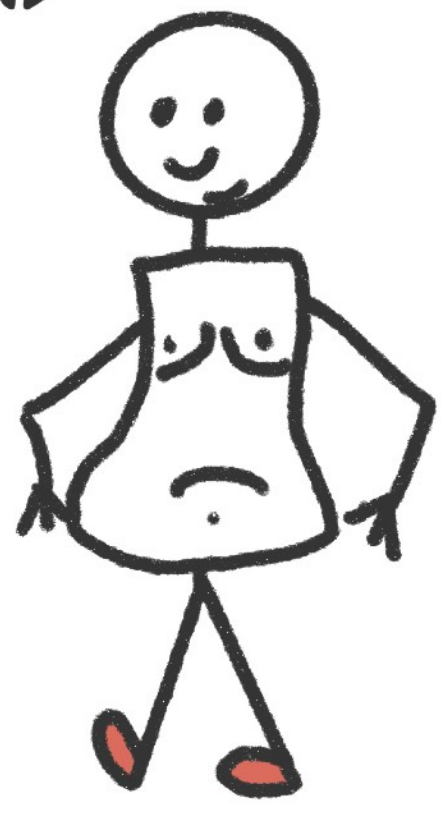
FREDDIE’S CUT WITH ADDED WEEKEND FLEXIBILITY

Freddie’s daily calorie target is 1824 with the following macros: 180 g of protein, 40 g of fat, and 185 g of carbohydrate.

He decides that he wishes to sacrifice some flexibility on the weekdays so that he has a calorie buffer on the weekend.

As he doesn’t want to go any lower with his fat intake, he chooses to “borrow” 40 g of carbs from his weekdays. This gives him an additional 800 kcal (40 x 4 kcal x 5 days) to “spend” across his Saturday and Sunday. He chooses to split the 400 kcal additional budget between fats and carbs evenly, so he adds 20 g of fat and 55 g of carbs to these days.

FREDDIE'S CUT WITH ADDED WEEKEND FLEXIBILITY



WEEKDAYS: 1660 KCAL

180 G PROTEIN
40 G FAT
145 G CARBS

WEEKENDS: 2220 KCAL

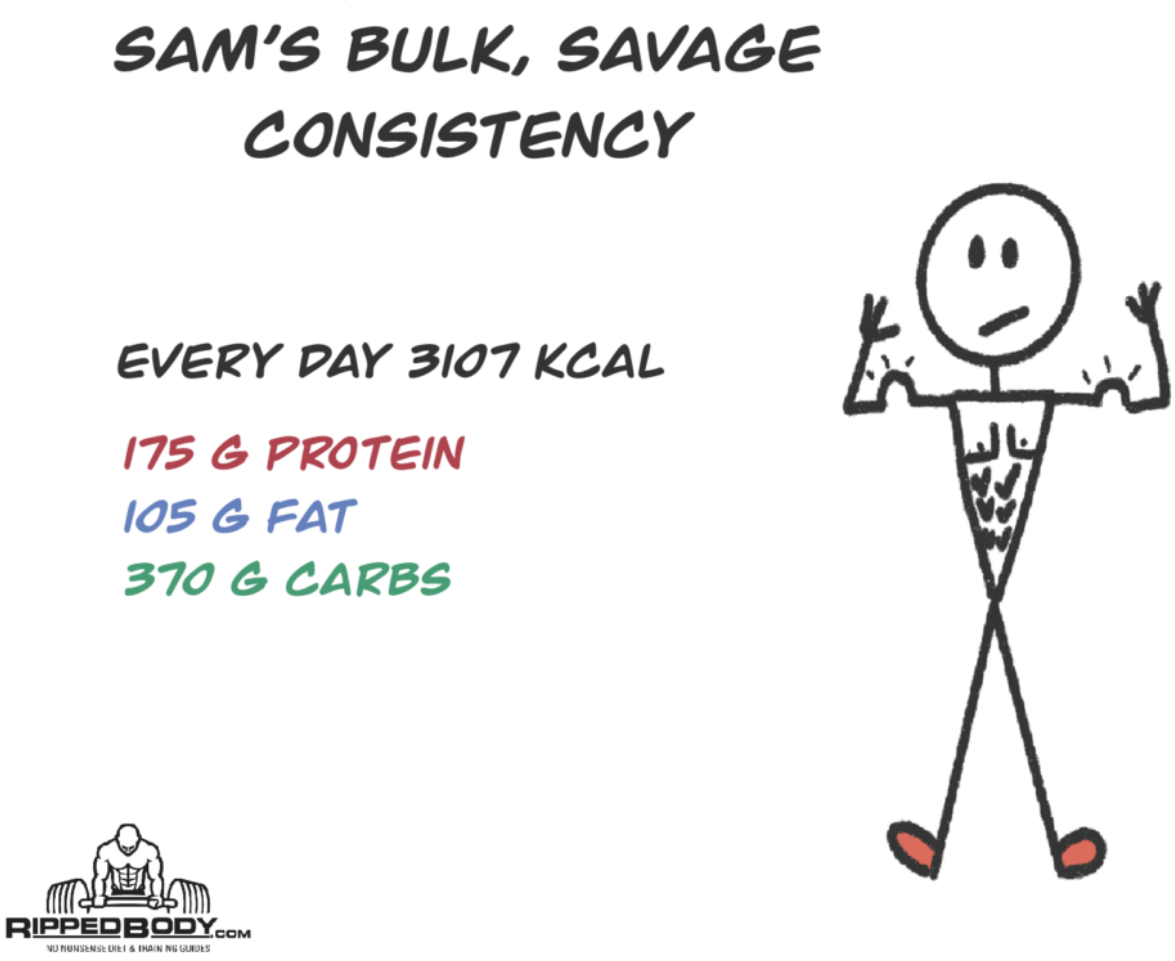
180 G PROTEIN
60 G FAT
240 G CARBS

As Freddie has had trouble on the weekends in the past, he chooses to be stricter on the weekdays to allow more calories on the weekends.

SHREDDED SAM'S SAVAGE CONSISTENCY

Sam's daily calorie target is 3107 with the following macros: 175 g of protein, 105 g of fat, and 370 g of carbohydrate.

Sam is bulking so he doesn't feel particularly restricted and he chooses to keep his macros as they are.

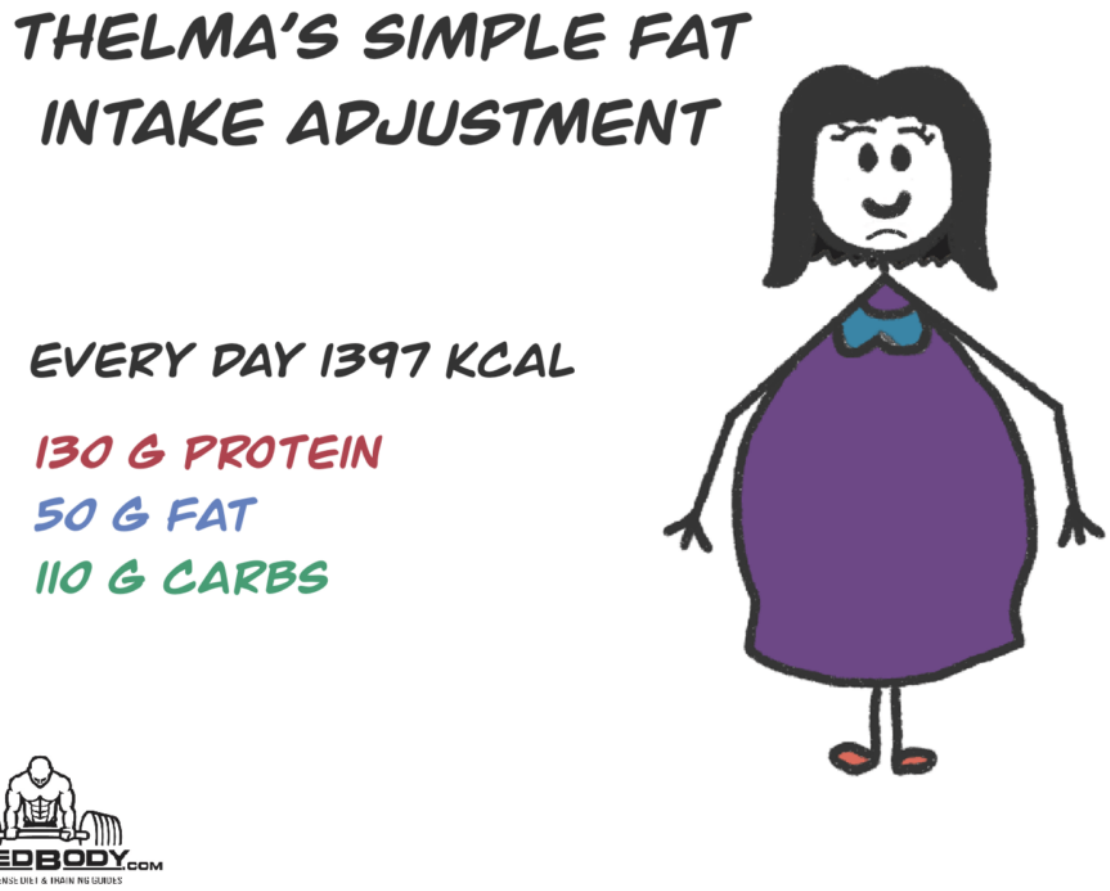


I asked Sam to smile for the camera but he refused as usual.

THICC THELMA'S FAT MACRO ADJUSTMENT

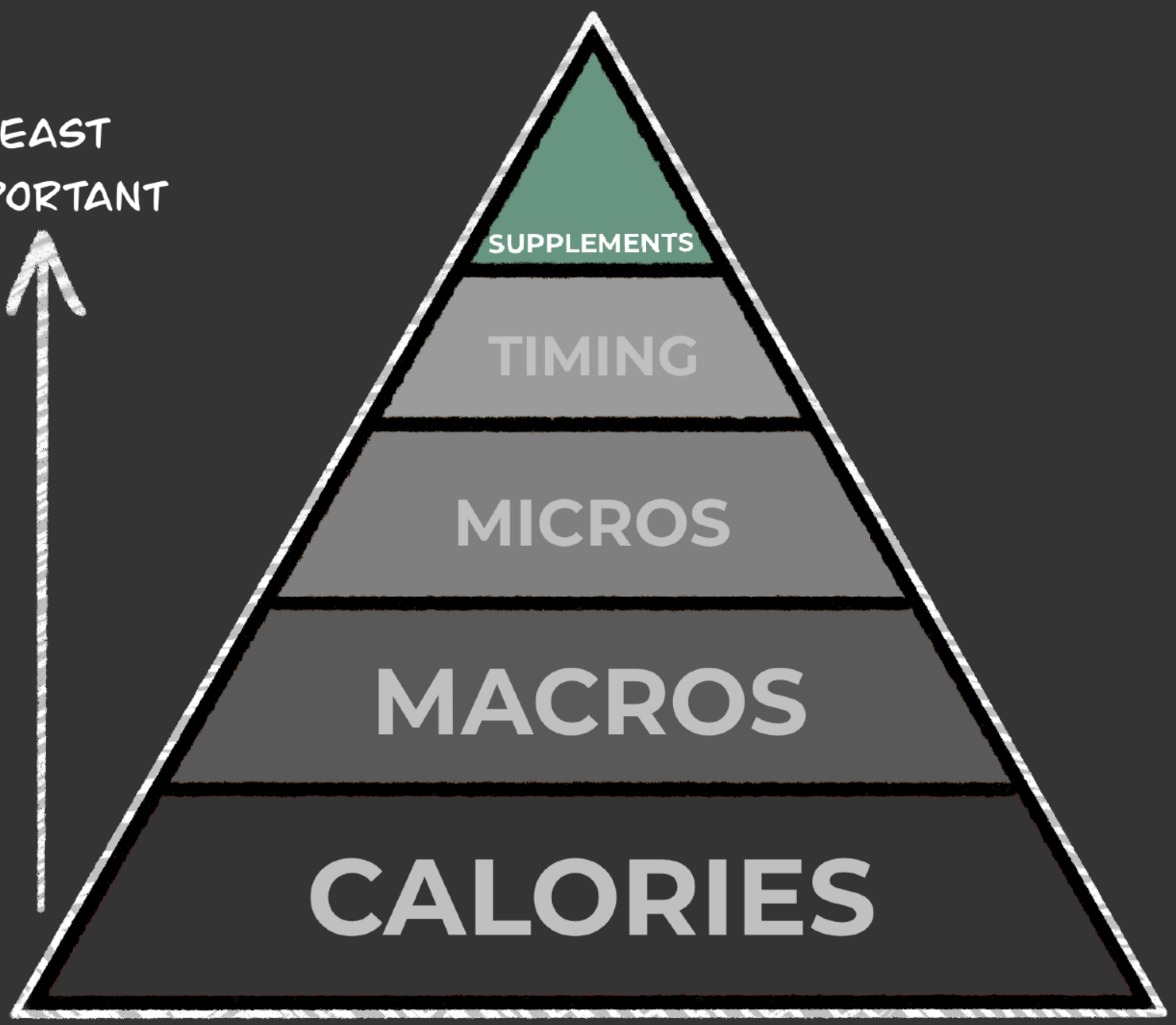
Thelma's daily calorie target is 1397 with the following macros: 130 g of protein, 40 g of fat, and 130 g of carbohydrate.

Thelma wants to make her life easier, not more difficult by adding a layer of complication, so she decides against calorie or macro cycling. As she prefers a little more fat in her diet, she chooses to swap 20 g of carbs for an additional 10 g of fat.



Thelma's macros become 130 g of protein, 50 g of fat, and 110 g of carbohydrate. (Technically, this is a 10 kcal difference, but such small amounts don't really matter.)

LEAST IMPORTANT

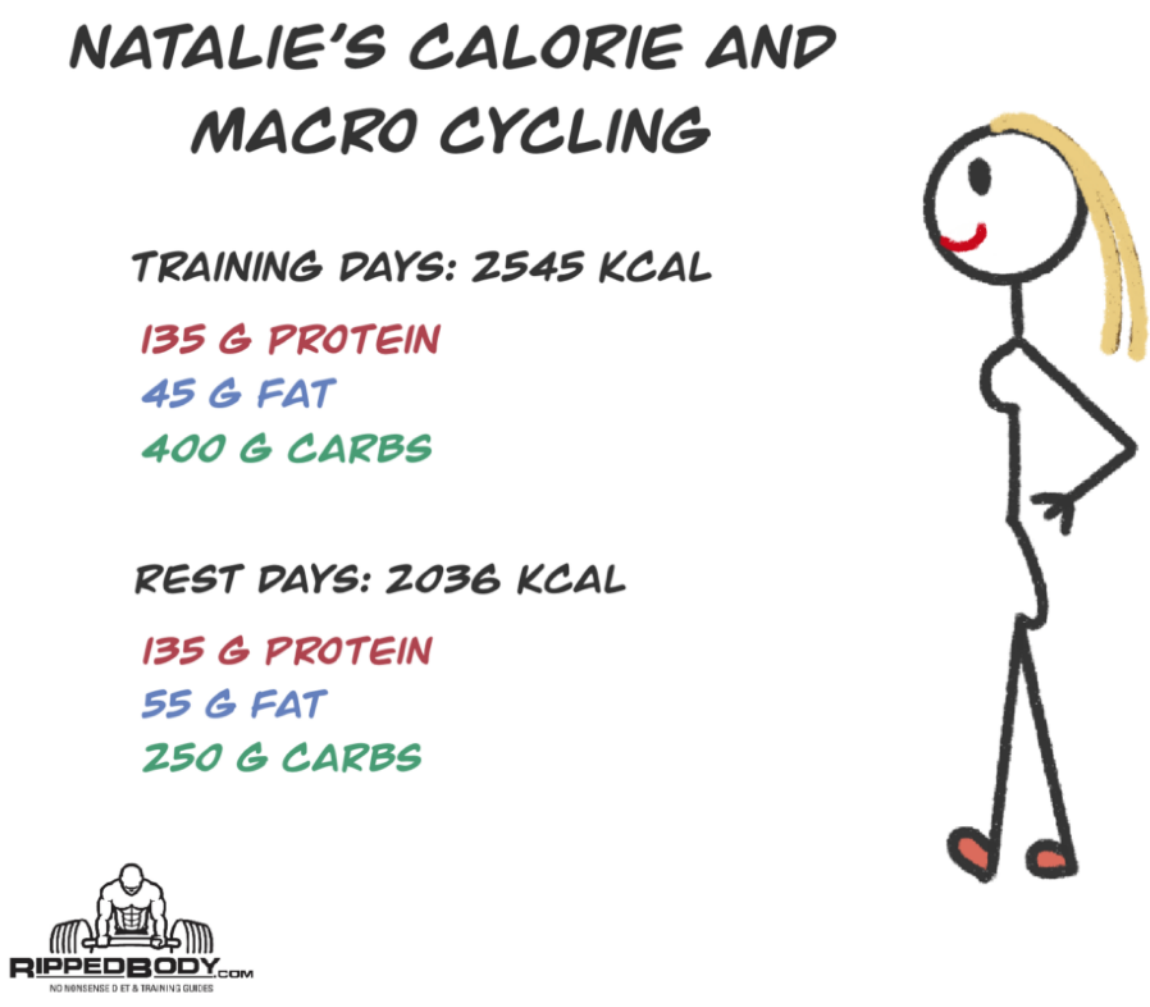


NATALIE'S CALORIE AND MACRO CYCLING

Natalie's daily calorie target is 2254 with the following macros: 135 g of protein, 50 g of fat, and 315 g of carbohydrate.

She wants to do both calorie and macro cycling, as she feels it will add variety in her diet each day which will make things easier to adhere to.

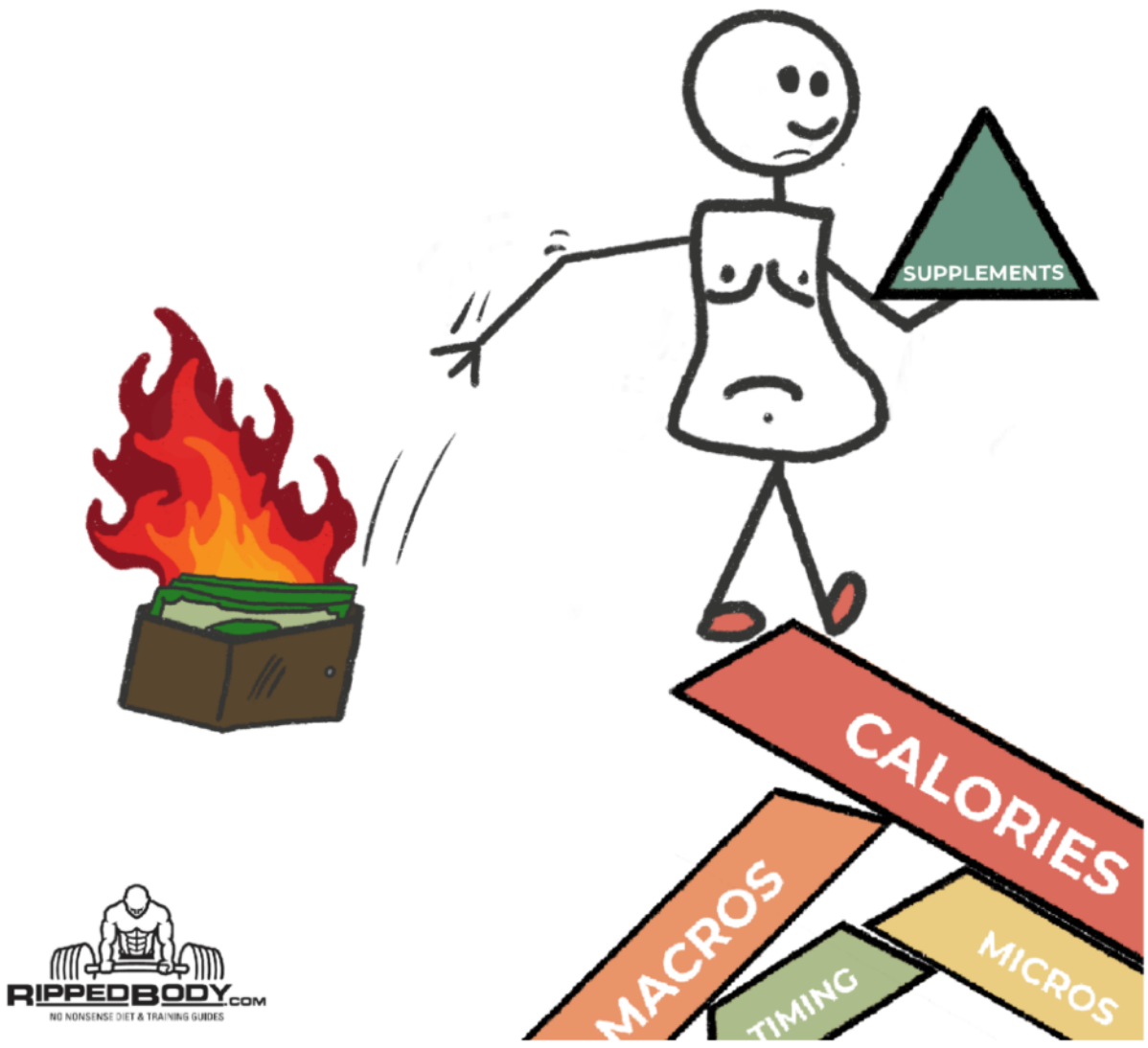
She uses the macro calculator and her macros are as follows.



NUTRIENT TIMING SUMMARY GUIDELINES

1. Avoid any extremes. Nutrient timing is about doing nothing stupid, first and foremost.
2. Eat 2–3 meals when cutting, 3–4 meals when bulking.
3. Don't train completely fasted.
4. Spread your meals evenly across the day.
5. Spread your macros evenly across the day.
6. Feel free to skip breakfast, if you prefer to do so and find it easier, but don't expect different results.
7. Feel free to use calorie cycling, macro cycling, and refeeds if you feel doing so will help you adhere. But don't expect noticeably different results.
8. *If you're a physique competitor*, a *slightly* higher meal frequency *may* be to your advantage, so consider it unless it will throw off your adherence.
9. *If you are a physique competitor*, consider calorie and macro cycling unless it will throw off your adherence.

#5 SUPPLEMENTS FOR MUSCLE GAIN, PERFORMANCE, AND HEALTH



Freddie decides, "Fuck it, I'm just gonna buy my way out of all this effort." Don't be like Freddie. You can't.

Summary: I recommend whey protein, creatine, caffeine, and a daily multivitamin. Four more supplements are conditionally beneficial and worth consideration.

WHY SUPPLEMENTS ARE NOT VERY IMPORTANT

Supplements can benefit a good nutrition plan but cannot make up for a poor one.

Supplements are not needed to transform your physique and, in many cases, constitute an unnecessary expense.

Few supplements have a robust base of evidence showing benefits to physique and performance. Those that do have a modest effect.

If I had a magic wand and could erase the effects that supplements have had on top-level, drug-free physique competitors, I doubt there would be much of a visible difference.

That may seem like a strong statement, but let it sink in if you're coming to this chapter hoping for a cure to your physique and strength woes.

Sure, marketing messages (and even friends) will tell you *endlessly* how supplement X, Y, or Z is amazing, but this is just market forces + exaggeration + the placebo effect.

Even so, it is important to understand that a good part of the reason we're bombarded with marketing messages about supplements with bold claims is an issue with the interpretation of scientific research. It explains why cold baths, antioxidant megadosing, and all kinds of supplements have hit the scene hard and died a slow death. So bear with me a moment while I explain that.

WHY WE HAVE AN ENDLESS SUPPLEMENT HYPE CYCLE

When a new supplement is studied, it is usually for the acute (short-term) effects. A supplement may increase the performance of a training session directly, or we may think it beneficial indirectly via mechanisms impacting fat loss, muscle growth, or performance.

If acute research is consistently positive, then longer-term studies will be conducted to see whether it leads to a better outcome.

But just because something has an acute effect does not necessarily mean it will improve long-term training outcomes. This is the case, more often than not.

People desperately want supplements to work, and supplement makers want any shred of evidence they can get to support their marketing messages. So new supplements hit the scene quickly, with spectacular hype, *far* before sufficient evidence supports them.

Unfortunately, once released, the rumor fairy is out there and has sprinkled her dirty little fairy dust, affecting people's minds far and wide. This is tremendously difficult to clean up when subsequent studies show them not to have any real-world beneficial effects. And, it is often a long time before demand drops, and these supplements are removed from shelves.

Even high-end performance coaches are not immune to the pressure of the hype cycle if they want to claim to be “cutting-edge.” But anyone who has been in the game long enough should know better by witnessing so many promising supplements come and go over the years.

SOME RECENT EXAMPLES OF SUPPLEMENTS (OR RECOVERY MODALITIES) THAT RODE THE HYPE-DIE CYCLE

In 2009, **D-aspartic acid** was shown to acutely increase testosterone levels to an impressive degree. It was quickly touted as a muscle builder, libido enhancer, and performance enhancer, and the fitness community lapped it up. But subsequent studies from other labs found it to actually have a negative effect.

Antioxidants (usually vitamin C doses) have been shown to increase recovery by decreasing oxidative stress. However, while this means weekly training volume can be pushed higher, it decreases anabolic signaling, which impacts muscle growth.

Ice and cold baths are a similar story, improving recovery between training sessions but at the cost of training adaptations. Same again with **NSAIDs like ibuprofen and aspirin.**

So, I would suggest you hold off on taking anything before there is long-term research from multiple different research labs showing benefits.

With this in mind, I'll make recommendations of supplements that may be worth considering (and those that aren't) in both the physique/performance and health benefit categories.

THE BEST SUPPLEMENTS FOR MUSCLE GROWTH AND PERFORMANCE

I will rate the supplements as **A**, **C**, or **S**.

- 'A' means always advisable.
- 'C' means conditionally relevant, less evidence to support it, or both.
- 'S' means a waste of money.

PROTEIN POWDER (A)

I don't think of protein powders as supplements, more powdered food. They are convenient, macro-friendly, and offer a low cost per gram when bought in bulk.

I recommend *whey* protein, as it has the highest quality amino acid profile. (If you are vegan or don't like whey, a 70:30 mix of pea and rice protein closely mimics the amino acid profile.)

There is a scam in the protein powder industry called "amino spiking." This is where manufacturers dump cheap ingredients into their powders so that they can pass tests to claim a higher protein content than they truly have.

To check the quality of your powder, look for the following:

- 11% of whey protein content should be leucine. So you should see ~2.75 g per 25 g of protein.

- 25% of whey protein should be BCAAs. So we should see ~6.25 g per 25 g of protein.

If these things are not listed, I would choose another brand. More in my article: How to Avoid Protein Powder Scams

CREATINE MONOHYDRATE (A)

Creatine is a non-essential nutrient we produce in our body from the amino acids glycine, methionine, and arginine. We store it in our muscles.

Creatine is a popular supplement, and with good reason. Supplementation reliably results in increased *strength*, *power*, and *muscle mass*.

Despite what your aunt says, creatine is not a drug; it won't wreck your kidneys or liver, and it's not going to make you go bald (see video below). However, creatine supplements should not be used in people with chronic renal disease or using potentially nephrotoxic medications.

It's cheap and easy to take. If there's one supplement you should consider, it's creatine.

How Creatine Works

Creatine increases strength and power by improving adenosine triphosphate (ATP) turnover and recycling.

ATP is an organic compound that provides energy to drive and support many processes in living cells. High-intensity exercise (like lifting heavy things) requires a large amount of ATP. When access to ATP drops, we can't sustain performance. Creatine provides a sort of limited reservoir for the rapid replenishment of adenosine triphosphate (ATP) and can thus help us get a few more reps from our sets.

Hundreds of studies show that creatine increases strength and power output during short-duration, high-intensity exercise. And while there is no doubt that this performance improvement can help us get more jacked, this may not be the main reason that creatine makes us bigger. — Other supplements have a similar effect on acute performance (caffeine, beta-alanine, and citrulline malate) but not muscle growth.

So why does creatine promote muscle growth beyond the performance improvements alone? It is likely by directly affecting myostatin, myogenic regulatory factors, insulin-like growth factor 1, reactive oxygen species, and satellite cell activation.

You don’t need to know how that all works. However, if we were to take one of these mechanisms as a fun example, the reason that Belgian Blue cows are so gloriously jacked is because of the inactivation of the myostatin gene.

Some days, I wish I were born a Belgian Blue.

Some people “respond” to creatine supplementation better than others. This is likely because some people’s creatine stores are more topped up through diet than others before supplementation.

On average, a recent meta-analysis suggests that creatine can help us build muscle about 1/3rd faster.

How Much Creatine To Take

0.03 g/kg (0.014 g/lb) of body weight should be sufficient to maximize and maintain muscle creatine concentrations, which means **a little over half a teaspoon (~3 g) daily will be plenty for most people**.

Take this any time of day, dissolved in a drink.

You do not need to cycle on and off creatine. And though you can do a loading phase (20 g per day for a week) if you are in a rush, this may lead to gastrointestinal discomfort.

What Creatine Is Best?

Creatine monohydrate is the most tested, affordable, and effective of all the variants. It is also the cheapest. I wouldn't bother with others. They are usually more expensive and lack research on efficacy and safety.

Creatine Side Effects

Some people experience gastrointestinal discomfort when taking creatine. If you experience this, avoid taking more than necessary, avoid drinking it with caffeine, and make sure it's fully dissolved before you drink it. (Micronized creatine monohydrate is more soluble, but you can simply mix regular creatine into a warm drink.) Alternatively, split the dose across the day. (For example, half a teaspoon at lunch and half at dinner.)

Creatine often causes water retention; 2–4 lbs (1–2 kg) over several weeks is not uncommon. Most is water pulled into muscles and isn't something to worry about. However, if you are using the scale weight to track your progress (which you should), it is something to be aware of.

Pay close attention to your stomach measurement changes. And remember, if you were consistently losing (or gaining) weight before you started taking creatine, and your diet and energy expenditure haven't changed, the underlying rate of weight change won't have altered.

Creatine does not cause hair loss. The only evidence for this speculation comes from one study on rugby players that studied creatine's effects on DHT levels. Here's a video I made putting this hair loss myth to rest.

CAFFEINE (A-)

There is a ton of research on caffeine's effectiveness in improving acute resistance-training performance, including strength and muscular endurance. However, there is still a lack of long-term research on whether this is beneficial, which is why I give it an A-minus.

I think long-term studies will show this to be beneficial because, in contrast to the research on NSAIDs, antioxidants, cold baths, and D-aspartic acid, caffeine directly affects performance because it works by reducing perceptions of fatigue (among other things).

Caffeine is cheap, and I don't see any downsides as long as you do not take it in a way that impacts your sleep. (Avoiding the late afternoon and evening is the best bet for the majority of people; a minority metabolize it more slowly and may need to reduce their dosing or avoid intake even earlier than this.

I buy it in 200 mg tabs. **Take 1.8–2.7 mg/lb (4-6 mg/kg) approximately 60 minutes before training.**

Note that pre-workout supplements are popular, but caffeine drives most of the acute effects. Most use low doses of lesser proven supplements piggybacked with caffeine, so it's better to just purchase caffeine on its own, in my opinion.

CITRULLINE-MALATE (A–)

You may have heard of an essential amino acid called arginine. Arginine was once a common ingredient in pre-workout supplements. Remember back in the day (circa 2010) when we'd take scoops of a pre-workout, usually in an ominous bright red container, promising skin-splitting muscle pumps?

Yeah, that was arginine. The idea was to increase blood flow to the working muscles by increasing nitric oxide — something would happen, and we'd get jacked. I didn't know what that "something" was at the time, but that sure as shit didn't stop me from taking it, as everybody else seemed to be, and I didn't want to miss out.

But the problem was that arginine has poor bioavailability, meaning we can take it, but it's not absorbed very well. So citrulline, a non-essential amino acid, has taken its place, effectively doing the same thing but better.

Citrulline, a non-essential amino acid, aids performance by increasing blood flow to working muscles through an increase

in nitric oxide (a vasodilator) and by helping to clear ammonia (a marker of muscle fatigue). It is commonly paired with malate, a Krebs cycle intermediate, which means it could increase energy production during exercise.

In combination, citrulline-malate could assist with both energy production and waste removal during training. Therefore, you would expect a positive effect on muscular endurance, inter-set recovery, and thus, the ability to perform volume in a training bout and over time.

In the 2019 (second edition) of our Muscle and Strength Nutrition Pyramid book, we pointed out that the evidence was split between slightly favorable and neutral, and the evidence wasn't sufficient for us to recommend it at the time. However, a recent meta-analysis looked at all the studies assessing the acute impact of citrulline malate supplementation on strength endurance — meaning repetitions to failure.

Compared to a placebo, it appears that supplementing with 6-8 g of citrulline-malate, preferably in a 2:1 ratio, about an hour before exercise, delays fatigue and enhances strength performance. As a bonus, it's cheap too.

There is still nowhere near the level of research as with creatine and caffeine, which is why I give it an A-minus.

BETA-ALANINE (C)

Beta-alanine can be thought of as the muscular endurance version of creatine monohydrate. If you think of creatine for power, strength, and hypertrophy, think of beta-alanine for longer anaerobic performances of 30 seconds ~ 10 minutes.

This sounds great, but it only has a small performance-enhancing effect. Some of your training sets may be over 30 seconds long, but whether this will make a meaningful difference is hard to say. Those who do longer activity bursts (like CrossFit athletes, perhaps) might consider it if it's in their budget.

Take 3–4 g/day if you're interested. For what it's worth, I don't bother.

BCAAS AND EAAS (C-)

If your daily protein intake is already high enough, BCAAs are unlikely to benefit you. If your daily protein intake isn't high enough, the answer is to take more protein, not just EAAs or BCAAs. A whey shake prior to training fasted is more effective than either EAAs or BCAAs, in my opinion.

Verdict: *A waste of money.*

GLUTAMINE (S)

Glutamine is the most abundant amino acid in the body. It is non-essential, which means the body can produce it, and we do not need to get it from our diet. It has been a popular

supplement in the bodybuilding and fitness community, but there is no evidence that supplementary glutamine improves body composition or performance.

At best, there is a theoretical argument that glutamine could possibly aid in gastrointestinal health among physique competitors during contest preparation, although this is speculative.

Verdict: *A waste of money.*

HMB (S)

A metabolite of leucine, β-hydroxy-β-methylbutyrate (HMB), has been investigated for over two decades for improving resistance training performance and increasing lean body mass via a reduction in muscle protein breakdown.

The only research showing benefits to HMB supplementation was funded by a company that sells it, and the data have been called into serious question in three separate letters to the editor — for transparency, my co-author, Eric, was among the 17 authors of one of these letters.

Verdict: *A waste of money.*

AVOID PROPRIETARY BLENDS

Make sure you never choose a supplement that hides the exact amount of individual ingredients listed by calling it a

“proprietary blend.” This is a common trick used to make people believe a product is special, where it just allows them to under-dose the expensive ingredients (which usually means the beneficial ones) to boost profits.

SUPPLEMENTS WORTH CONSIDERING FOR HEALTH

As “general health” is outside the scope of my professional capacity, I will purposefully limit myself to three specific supplements that have an abundance of evidence that I think are worth considering.

Before taking anything, I would recommend getting blood work done to ensure you aren’t potentially providing micronutrients in excess or neglecting an unknown deficiency.

For anything you are interested in that is not listed, check out Examine.com, which is an excellent and unbiased resource on supplements. Beware the bullshit on the internet when you search for things elsewhere!

A DAILY MULTIVITAMIN & MINERAL (A)

Multivitamin use appears safe and may give a small protective health benefit to long-term users.

If taking one corrects a deficiency, it could have a significant impact:

- Zinc deficiencies can negatively impact your metabolism
- Iron deficiencies can negatively impact strength
- Calcium deficiencies can negatively impact bone health

A regular one-a-day multivitamin is worth considering, but avoid the types of multivitamins that come in giant bags. If you're having to swallow down multiple pills, it's probably overdosed, which could have negative consequences.

ESSENTIAL FATTY ACIDS (EPA AND DHA), COMMONLY FOUND IN FISH OIL (C)

A daily intake of 1–2 g of combined EPA and DHA will be sufficient to achieve the vast majority of health benefits shown in research (reducing symptoms of depression, decreasing the risk of cardiac death, decreasing blood pressure, and decreasing waist circumference).

If you don't eat fish or don't like taking fish oil, you can also get EPA and DHA from an algae supplement. (This is what fish eat that gives them the EPA and DHA that we are looking for.) Just be careful when choosing your supplement, as some are much lower quality than others. Just as 100 g of protein powder is not 100% protein, 1 g of fish oil is not 1 g of combined EPA and DHA, and the quantities vary *wildly*.

VITAMIN D3 (C)

If sun exposure is lacking, dietary sources of Vitamin D become increasingly important for health (and performance).

Severe deficiency can cause osteoporosis and can be a contributing risk factor for cancer, hypertension, and a number

of autoimmune diseases. Correcting a deficiency [(25(OH)D < 75 nmol/L (30 ng/ml)] may improve immune function and reduce your chance of illness, but it's unclear as to whether vitamin D directly benefits resistance training.

Vitamin *D3* is the form best absorbed by the body, and **recommendations for insufficient athletes are between 20-80 IU/kg taken daily**.

You could also get some more sun. Unfortunately, sunlight through a window doesn't provide vitamin D, as glass blocks UVB, and depending on your climate, vitamin D dosing strategies may need to change during the winter.

SUMMARY OF SUPPLEMENT GUIDELINES

New supplements come along all the time and as you can see, exceptionally few have stood the test of time.

If there's something you have heard of for performance that isn't mentioned here, consider my exclusion of it as a silent hat tip to it not being effective.

	Beneficial ✅	Conditionally beneficial 😐	Don't Bother 🤦🏻‍♂️
Whey Protein	25 g ~30 min. before *fasted* training		
Creatine Monohydrate	5 g/day		
Caffeine	✅ 200–600 mg ~60 min. before training		
Citrulline-Malate	8 g ~60 min. before training		
Beta-Alanine		3–4 g/day.	
BCAAs & EAAs			N/A
Glutamine			N/A
HMB			N/A
Multivitamins	A regular one-a-day multi.		
EPA & DHA		1–2 g combined (Unnecessary if eating fatty fish 2x/week+)	

Vitamin D3		9–36 IU/lb (20–80 IU/kg) is the typical daily dose if 25(OH)D < 75 nmol/L (30 ng/ml).	

FINAL WORDS

Sincerely, thank you for reading. If you have a friend who you think would benefit from reading this, please tell them to download it here. 🙏🏻

The natural next step is to read my Diet Adjustments Manual. This will teach you how and when to make diet adjustments to crush your cut and bulk phases. The decision frameworks mean you will always know what to do next, and I've shared real client data and the decisions I made when guiding them, to help you proceed with confidence.

No pressure to get that, but know that it's there if and when you need it. My other two geekier books (*The Muscle and Strength Pyramids*) are here, along with my video course (*The Big 3 Basics*) so you can teach yourself how to Squat, Bench Press, and Deadlift, and troubleshoot common technique issues.

If you need help, I'm available to support you in the comments on the site. So please don't hesitate to ask if you have questions or need clarifications. Just drop a question in the comments section of a related article. (You can search for one here.)

Best of luck! 😊💪🏻

- Andy

END