

The
COMPLETE GUIDE
To Setting Up
YOUR DIET

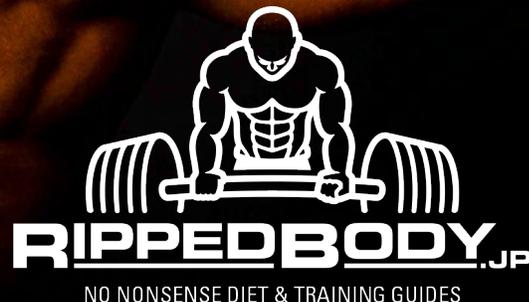


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Introduction

This is a complete guide teaching you how to set up your diet to crush your fat loss or muscle growth goals. It is based on the teachings of the best guys in the industry and then refined through my work with clients over the last four years.

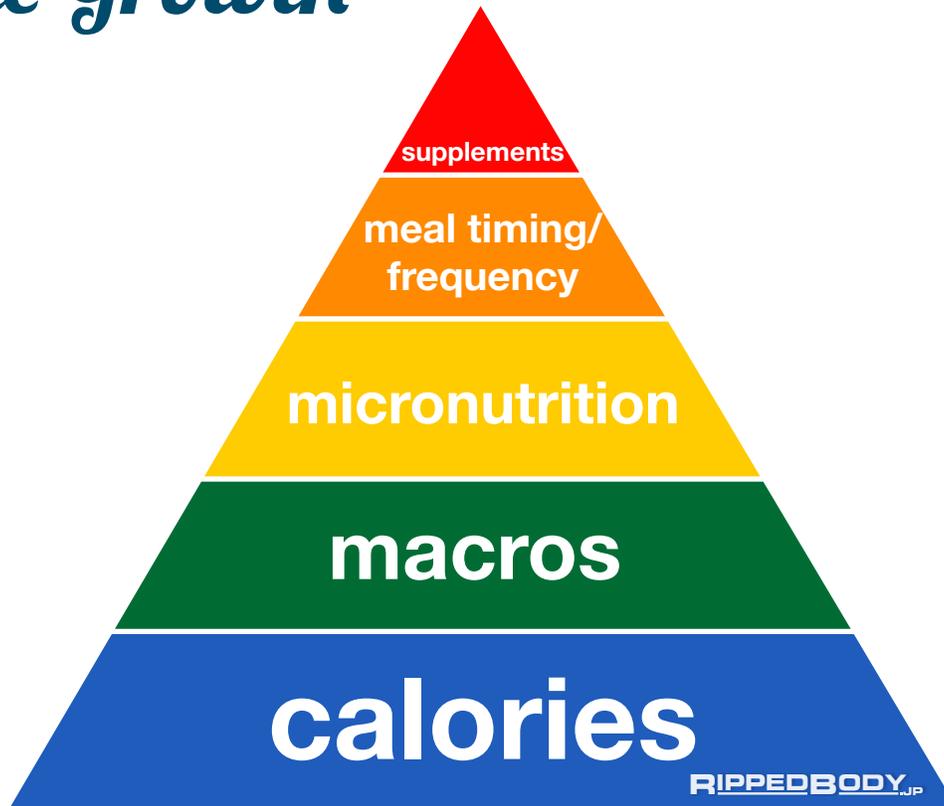
Within you'll find the exact details of how I set things up for clients, the principles that magazine cover models and drug-free physique competitors use to achieve their shredded condition, and those that athletes use to dominate in their sports.

Make yourself a cup of tea. This is long, it's detailed, and best of all, it's free.

This guide has been (and continues to be) very much a team collaborative effort, built and developed from feedback by industry friends, and readers of the site like yourself. So, if you spot any mistakes, or feel that something is incomplete or confusing, don't hesitate to let me know how I can make it better.

– Andy Morgan

The Nutritional Pyramid Of Importance for Fat Loss and Muscle Growth



Credit to Eric Helms for the idea of organising things as a pyramid, and thanks for giving permission to use it here.

There is a very clear order of priority when setting up your diet. If you don't understand it, at best you'll just be wasting money, at worst your time and effort as well.

Unfortunately there is a large amount of confusion and misconceptions over what is important. I see this a lot with the one-on-one nutritional coaching also, and I'm sure you see it around the internet too. Given the misinformation that the industry peddles you'd think that the pyramid of importance above were inverted. When struggling to make a change, we're taught to focus on the things that matter least, namely supplements and timing, rather than double-check that the foundations are solid.

What this means is that you can't eat just 'clean foods' and ignore calories, you can't supplement your way out of a bad diet, and you can't use some special timing tricks to enable you to binge eat on the evenings.

Here's a quick rundown of what this guide covers:

#1 Calorie Setting

Energy balance pretty much determines whether weight will be gained or lost. Sadly, this is one of the most frequently ignored pieces of the puzzle. I'll give guidelines on:

- How to calculate energy balance for weight loss or gain,
- How to adjust for activity,
- How to make adjustments to calorie intake if things don't proceed as planned.

#2 Macros, Fibre & Alcohol

You may have heard it said 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 more painlessly than if you ignore them.

#3 Micronutrient Considerations & Water

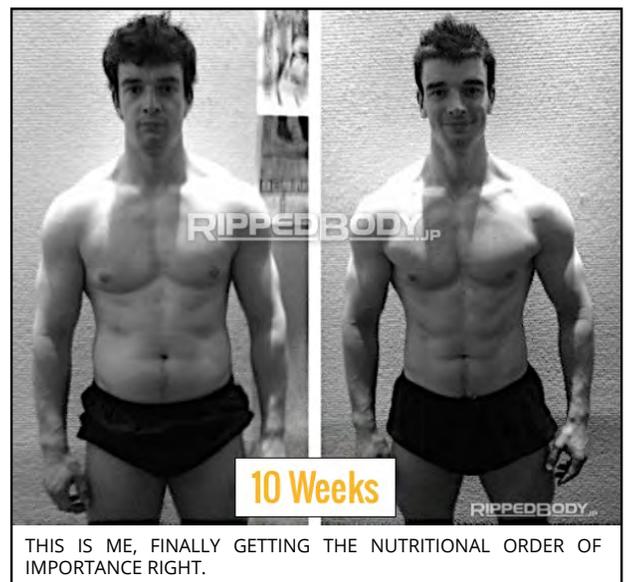
The topic of micronutrition may sound boring but you can't afford to ignore it. Long-term micronutrient deficiencies will impact your health and torpedo your training efforts. Fortunately it doesn't have to be complicated. By observing a few simple rules of thumb regarding your daily fruit and vegetable intake you can safeguard against deficiencies.

#4 Nutrient Timing & Meal Frequency, Calorie & Macro Cycling

Industry thinking used to be as simple as, *eat big, lift big, get big*.

The pendulum then swung too far to the right of moderation towards excessive attention to detail. The new standard became 'eat many small meals throughout the day', sometimes known as a typical bodybuilder diet.

Unfortunately I now think it has swung too far in the other direction, where we have the (only slightly less annoying) myth that 'meal frequency and timing don't matter, or even



that 'calories don't count as long you eat within an 8 hour window' – a natural consequence of people jumping on the intermittent fasting bandwagon without understanding (or caring about) the science.

As is the case with most of these things, the truth is somewhere in the middle. We'll discuss where this happy line of moderation may lie for you, as well as the hypotheticals for those wanting to be more pedantic.

#5 Supplements

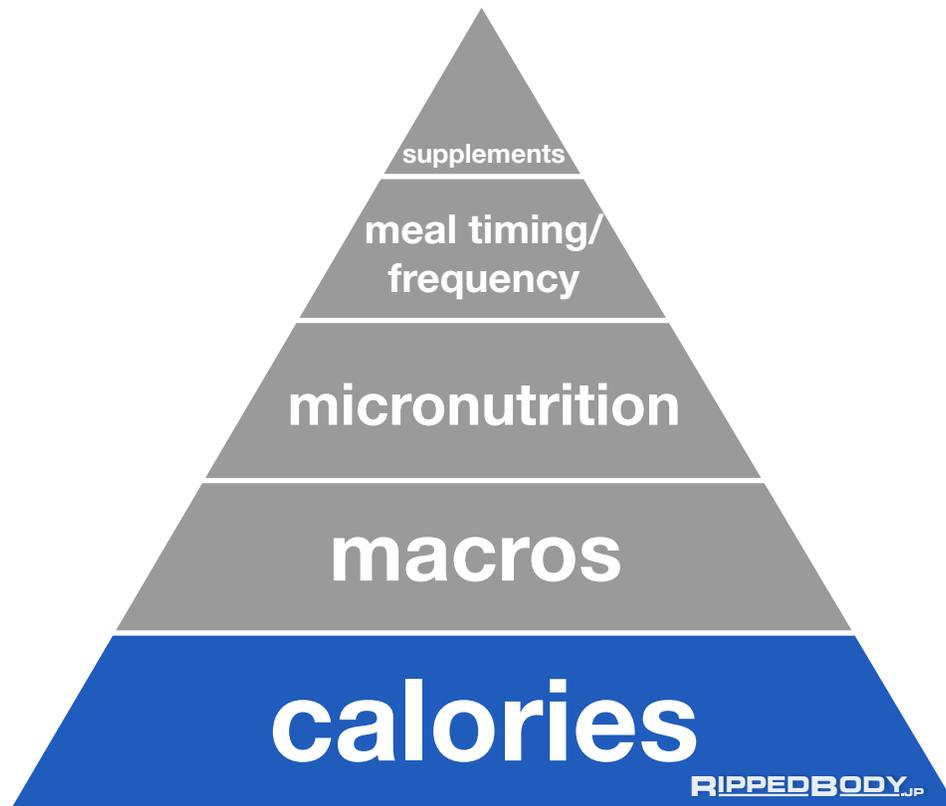
Supplements are the smallest part of the puzzle. However, they can be useful so we'll cover them in two sections: 1. General health, 2. Physique & performance.

This series is written in order of importance. *So implement it in this order.* You want to add in the least amount of complication that you can to progress. *Don't let yourself get overwhelmed.* If you're completely new to this, consider focusing on calories first, then macros, and forget the other points for now.

Prefer video? Eric Helms has an excellent [series](#) on Youtube on this topic that inspired me to write this series myself. Very detailed, over an hour in total.

LET'S BEGIN...

#1 Calorie Setting



Whether your goal is muscle gain, fat loss, performance enhancement or weight maintenance for your sport, the single most important piece of the nutritional puzzle is getting your energy intake right.

Not macros - not timing - not avoidance of alcohol, gluten, dairy or any other specific food - calorie intake.

First we'll cover the calorie part of the nutrition puzzle. This is the exact set-up system that I have used and refined from work with clients over the last 4 years. Here's what we'll cover:

- How to **choose appropriate fat loss targets** based on your current body-fat percentage.
- How to **set muscle gain targets** based on your current training experience.
- How to **calculate your energy intake** for those targets defined above.
- Why **energy calculations are only a 'best guess'** and need to be adjusted.
- How to **adjust your calorie intake** to get back on target if things don't go as planned.

FAT LOSS & MUSCLE GAIN FUNDAMENTALS



People generally have one of two goals – fat loss or muscle gain – though most wish for both. **Our ability to gain muscle while being in a caloric deficit decreases with body fat percentage, training advancement and the size of that caloric deficit.**

Essentially, the fatter you are and the less training experience you have, the more likely you are able to achieve both, provided you don't cut calories too far and hamper your ability to do this. Deficits can (and arguably should) be greater than surpluses.

- **Fat can be lost quicker than muscle is gained**, so those cutting will experience quicker and more obvious visual changes than those looking to gain muscle.
- **Gaining muscle requires the building of new tissue and connections in the body.** It takes time and requires patience. Think of building a house versus burning one down. The former takes time, the latter is much quicker.
- An excessive energy surplus when bulking (stuffing yourself with food every day) will lead to muscle growth, **but also excessive and unnecessary fat gain.** As we are looking at nutrition from a physique (and secondly performance) perspective, we want/need to curb this. We will therefore refer to a muscle gain phase as a 'bulking-phase' rather than bulk.
- Given these differences in typical responses to energy deficits or surpluses, **deficit phases for fat loss, can and should be larger than surplus phases (for muscle gain).**

Diet changes, rather than manipulations to training, should be used to create an energy deficit or surplus.

- It's easier and **more effective to control the energy balance through diet**, i.e. eating more or less, rather than moving more or less.
- **Training should be determined by goal**, not used to address the energy balance equation.
- Adding in extra weight training (this includes metabolic conditioning circuits) **will interfere with the recovery balance** from your workouts. When bulking this threatens to steal from your gains. When cutting, the increased energy and recovery demands will add to systemic stress, and those hormonal effects will negatively affect fat loss and cause muscle losses if overtraining occurs.

- Cardio, while it can be used to help create caloric deficits required for fat loss, **should never be the primary means of doing so** in my opinion, as it sets people up for failure.

CALCULATING YOUR CALORIE NEEDS



The likely range for your maintenance caloric needs must be calculated first.

Step 1. Calculate your BMR

I like to call BMR your ‘coma calories’ – the energy intake you need, should you fall into a coma, to maintain your body weight. There are a variety of formulas, all of which produce a guess at best, so don’t worry about trying to calculate things perfectly. We’ll adjust our intake based on how we progress.

For now we need a figure to work with. Here are two good formulas I like, but please choose a different method if you wish.

Harris-Benedict Formula

(Less accurate, but no need to know your body-fat percentage)

Metric

Women: $BMR = 655 + (9.6 \times \text{weight in kilos}) + (1.8 \times \text{height in cm}) - (4.7 \times \text{age in years})$

Men: $BMR = 66 + (13.7 \times \text{weight in kilos}) + (5 \times \text{height in cm}) - (6.8 \times \text{age in years})$

Imperial

Women: $BMR = 655 + (4.4 \times \text{weight in lbs}) + (4.6 \times \text{height in inches}) - (4.7 \times \text{age in years})$

Men: $BMR = 66 + (6.2 \times \text{weight in lbs}) + (12.7 \times \text{height in inches}) - (6.8 \times \text{age in years})$

If you're obese then the above formula will overestimate your BMR, and if you are very lean then the above formula will underestimate your BMR. If you have an idea of your body-fat percentage then it is best to use the Katch-McArdle BMR Formula.

Katch-McArdle Formula

(More accurate, if you have a good idea of your body-fat percentage)

Metric

$$\text{BMR (men and women)} = 370 + (21.6 \times \text{lean mass in kg})$$

Imperial

$$\text{BMR (men and women)} = 370 + (9.8 \times \text{lean mass in lbs})$$

Note: I use this latter formula, gauging body-fat percentage by eye when clients send me photos.

So how do I find out my body-fat percentage then?

If you have no idea what your body-fat percentage is, get an estimate either through body-fat calliper measurement (only if you are fairly lean), or the BIA machine your gym will likely have. (DEXA, BODPOD and underwater weighing are other options if available.) [There are flaws in all of these methods so do not use them to gauge progress](#), just use them for the initial guesstimate for the calorie calculation.

Step 2. Adjust for Activity

You need to add an 'activity multiplier' (x1.2~x1.9) to your BMR depending on your lifestyle/training.

- **Sedentary** (little or no exercise): BMR x 1.2
- **Lightly active** (training/sports 2-3 days/week): BMR x 1.375
- **Moderately active** (training/sports 4-5 days/week): BMR x 1.55
- **Very active** (training/sports 6-7 days a week): BMR x 1.725
- **Extremely active** (training/sports and physical job): BMR x 1.9

It's essential to realise that any calculation will just be a best guess, which is why I used the words "likely range" to describe the calculations above. This is because spontaneous physical activity (a.k.a. NEAT, written about [here](#)) – fidgeting, moving around, propensity to take stairs vs elevator etc. – will vary greatly between people.

This means that two 6ft, 200 lb males, with the same 15% body fat and training regimes may find their maintenance calorie needs vastly different. One guy may need 2500 kcal a day to maintain his weight, the other 3250 kcal.

No calculation can take into account these individual NEAT differences. However, we need a starting point, so we make a calculation regardless.

From these two calculations we now have our approximate daily energy expenditure (TDEE).

MEET BOB	MEET TOM
AVERAGE HEIGHT INTERMEDIATE TRAINEE MODERATELY ACTIVE 75KG, 10% BODY FAT GOAL - GAIN MUSCLE / BULK	TALL, NOVICE TRAINEE, LIGHTGLY ACTIVE 90KG, 20% BODY FAT GOAL - IRRELEVANT HE NEEDS TO CUT AND IF HE DOES IT RIGHT HE'LL GAIN MUSCLE AT THE SAME TIME
STEP 1: BMR = $370 + 21.6 * 75 * (1 - 0.1) = 1828 \text{KCAL}$	STEP 1: BMR = $370 + 21.6 * 90 * (1 - 0.2) = 1925 \text{KCAL}$
STEP 2: TDEE = $1828 * 1.55 = 2833 \text{KCAL}$	STEP 2: TDEE = $1925 * 1.375 = 2647 \text{KCAL}$

Step 3. Set weight-loss (or gain) targets

Set weight-loss targets based on current body fat percentage, or weight-gain targets based on training status (beginner, intermediate, advanced).

Step 4. Calculate the theoretical deficit or surplus needed to achieve that.

Step 5. Adjust energy intake upwards or downwards

Adjust these based on how the scale weight* changes over a few weeks of consistent implementation.

**For ease and simplicity we'll assume fat loss is linear and any scale weight change reflects pure fat loss in a cut, or weight gain (muscle and a little fat) in the bulking phase. That probably won't be the case, so I'd recommend you track body changes more thoroughly. You can see how I do this here: [How to Track Your Progress When Dieting](#)*

CALCULATIONS — A GUESS AND NOTHING MORE

It's essential to realise that **any calculation will just be a best guess**, which is why I like to use the words "likely range" to describe the calculations above. This is for three primary reasons:

1. The calculations were **developed based on averages**, but some people's basal BMRs will be 10-15% higher or lower than predicted values.
2. The activity multiplier is a little arbitrary.
3. We all **vary in our subconscious reaction to calorie surplus or deficit** circumstances – 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 caloric deficit. This is known technically as NEAT ([more here](#)) and it varies greatly between people.

This means two 6ft, 91 kg males, with the same 15% body fat and training regimes may find their maintenance calorie needs vastly different. One guy may need 2500 kcal a day to maintain his weight, the other 3250 kcal.

No calculation can take into account these differences. **Tracking after the initial calculation and then making refinements is therefore essential.**

CUTTING: CHOOSING FAT-LOSS TARGETS AND SETTING CALORIE INTAKE



How much fat can I lose per week?

There is a theoretical limit to how much fat can be released from the fat stores in a single day and this is inversely proportionate to how lean we are. If we go over this limit, we will lose muscle mass, regardless of whether we keep our protein intake high (specifics covered in next article on macro setting).

Simply put, fatter folks can get away with greater rates of fat loss than leaner people.

Maximum fat-loss recommendations depend on a person's body fat percentage rather than total body weight. If you shoot for the following, in my experience, you should be ok for preserving muscle mass:

Body fat %	Loss /week
30%>	~2.5 lbs / 1.1 kg
20-30%	~2 lbs / 0.9 kg
15-20%	1.25-1.5 lbs / 0.45-0.7 kg
12-15%	1-1.25 lbs / 0.45-0.6 kg
9-12%	0.75-1 lbs / 0.35-0.45 kg
7-9%	0.5-0.75 lbs / 0.2-0.35 kg
<7%	~0.5 lbs / 0.2 kg

NB. the above figures are my guidelines, not theoretical limits.

- Obese people significantly over 30% body fat will be able to lose more per week without muscle losses, but I don't advise it for skin elasticity reasons (i.e. you risk being left with sagging, loose skin).
- Short people should shoot for slightly less; taller people may be able to go slightly higher.

Even for those of the higher body-fat ranges I typically recommend 0.45-0.6 kg a week of fat loss to clients, as higher than that tends to push the boundaries of what is sustainable in terms of adherence. Ideally people should feel almost like they're not dieting for the longest time possible.

Just because you *can* lose more, doesn't mean you *should* if it makes your life miserable.

How do I adjust my calculations to do that?

You may have heard the rule that it takes 3500 kcal to burn a pound of fat (~0.45 kg), ~7700 kcal for a kilogram. This is not an absolute figure and it will depend on circumstance, but to avoid being unnecessarily technical, it's a good guide so we'll roll with it.

If based on that chart above you have determined that a 'suitable' rate of fat loss for you is 0.45 kg a week, then **you'll need to have a caloric deficit of 3500 kcal for the week** to do that. This can be as simple as reducing calorie intake by 500 kcal each day.

The other option is to fluctuate your intake to have more food on training days than on rest days for the theoretical recovery and nutrient partitioning benefits. Even if you choose to add this layer of complexity, you still need to maintain the same weekly deficit. For example, if you are training 3 days a week that could be: maintenance +500 kcal on training days, maintenance -1250 kcal on rest days.

More on this in the fourth part of this series...

REMEMBER TOM

TALL - NOVICE TRAINEE - LIGHTGLY ACTIVE - 90KG - 20% BODY FAT - GOAL - IRRELEVANT

HE NEEDS TO CUT AND IF HE DOES IT RIGHT HE'LL GAIN MUSCLE AT THE SAME TIME

STEP 1: BMR ~ 370 + 21.6*90*(1-0.2) = 1925KCAL

STEP 2: TDEE = 1925*1.375 = 2647KCAL

Step 3. Set a weight-loss/gain target

Tom could lose 0.7 kg of fat per week. However, he sets calorie intake a little higher so that he only loses 0.45 kg per week. This is because as a novice trainee, he has a good chance of gaining muscle while he drops the fat off, as long as he doesn't set his deficit too high.

Step 4. Calculate appropriate calorie intake for your goals:

- Suggested daily calorie intake = TDEE – fat loss target per week (kg) * 7700/7 kcal
 - Suggested daily calorie intake = 2647 kcal – (0.45*1100)
 - Suggested daily calorie intake = 2152 kcal
-

Caveats

It's important to note here that the 3500 kcal rule and thus the 500 kcal deficit/day is **just what will happen in theory**. Alongside the individual energy requirement variances that make the initial maintenance calculation just a best guess, we also have **the issue of NEAT swings with dieting** (this is the subconscious activity that we mentioned earlier).

Basically some people will experience greater swings in their NEAT than others when their calorie intake changes upwards or downwards. Which partially explains why some people tend to struggle and claim of being very lethargic when dieting, but others don't.

Also, there's the issue of [metabolic adaptation](#), your calorie needs will decrease as you progress with your diet. Meaning that things aren't always going to work out as the math said. You need to track your progress and adjust your calorie intake upwards or downwards according to the scale weight changes to get yourself back on target. You're best to take the average of 3 or 4 weeks weight change.

Additionally, 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.

This is caused by rises in cortisol, which happen when we are stressed. **A caloric deficit is a stressor, training is a stressor**. All you can do to avoid this is sleep well and work to reduce other stress in your life then just hope for the best.

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 caloric deficit.

This has 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.

BULKING: MUSCLE GROWTH EXPECTATIONS AND SETTING CALORIE INTAKE



Muscle Growth Expectations

We know that **our level of training advancement determines our rate of muscle growth potential**, which decreases with experience – contrast this to when we have a fat-loss goal: body-fat percentage determines how quickly we can lose fat and has nothing to do with training experience.

By categorising our training advancement, we can get a reasonable estimate of the amount of muscle we can hope/ expect to gain per month, which becomes very useful when setting calorie intake and bodyweight gain targets.

Classifying your training experience/ status is a sticky area, but fortunately some smart guys have done this hard work for us. **Lyle McDonald** does it by *'Years of Proper Training'*, **Alan Aragon, Martin Berkhan and Eric Helms** go by *'Beginner, Intermediate and Advanced'* categorisations.

- If you're a lifter that has been focused on gaining strength in the barbell movements, or has put those movements at the core of your workouts, then you can determine your training status fairly objectively [using Martin's guidelines](#), section Progress and Goals.
- If not, check out [Lyle's guidelines](#).

Here is a rough breakdown of the rate of growth you can expect based on these classifications if you do everything right:

MUSCLE GROWTH POTENTIAL

Training Status | Gains/month

Beginner | 0.9-1.2 kg / 2-3 lbs

Intermediate | 0.45-0.9 kg / 1-2 lbs

Advanced | 0.22 kg / 0.5 lbs

- Taller people will want to go with the higher end of the range.
- Novice trainees that are very well muscled already (through a life of sport perhaps or manual labour job) will probably be best to consider their growth potentials as that of the intermediate trainee.

The Three ways to Bulk

I feel that there are three legitimate ways to successfully bulk:

- **Relaxed bulk** – This is bulking without counting calories or macros. This is sometimes known as a “dirty bulk”.
- **Controlled bulk** (slow bulk) – maximise the rate of muscle gain, without gaining an unnecessary amount of fat,
- **Aim For Lean Gains** – maintain maximal levels of leanness while adding muscle.

These methods all have their pros and cons, something which took me 8000 words to fully cover and guide on in [this article on how to adjust your diet to successfully bulk](#), but the long and short of it is that I recommend that you do the controlled bulk / slow bulk.

Technically, it's possible to gain muscle without any significant fat gain. However, muscle growth rates cannot be maximised without a significant calorie surplus. Therefore, fat **gain is going to come along with the muscle** if you wish to grow at your fastest.

The key here is keeping this fat gain under control so that it's easy to cut off later.

With the relaxed bulk you'll get too fat and have to spend longer periods cutting. With the lean gains style the progress will be so slow and hard to measure that it will likely drive you up the wall.

An **approximate 1:1 ratio of muscle to fat gain is realistic** for most people.

I'll save you the math but this means that to gain 1 kg of muscle per month, you'll need to gain 2 kg of body weight, and will require a 440 kcal daily calorie surplus.

REMEMBER BOB

AVERAGE HEIGHT - INTERMEDIATE TRAINEE - MODERATELY ACTIVE - 75KG

10% BODY FAT - GOAL - GAIN MUSCLE / BULK

STEP 1: BMR $\approx 370 + 21.6 \times 75 \times (1-0.1) = 1828 \text{KCAL}$

STEP 2: TDEE $= 1828 \times 1.55 = 2833 \text{KCAL}$

Step 3. Set a weight-gain target

Bob is an intermediate trainee of average height. He can gain approximately 0.7 kg of muscle per month which means he will target 1.4 kg of weight gain per month.

Step 4. Calculate Appropriate Calorie Intake For Your Goals

- Suggested calorie intake = TDEE + muscle gain target per month (kg) * 440 kcal
- Suggested calorie intake = 2833 kcal + (0.7*440)
- Suggested calorie intake = 3141 kcal

ADJUSTING CALORIE INTAKE WHEN WEIGHT DOESN'T CHANGE AS PLANNED



Step 5. Adjust energy intake

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 value: 200-300 kcal/day, or ~5-10% of total calorie intake.

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 value: 100-200 kcal/day, or ~3-6% of total calorie intake.

Remember to take into account water weight fluctuations, and always consider 3-4 weeks' worth of [tracking data](#) before making any changes.

Calorie Set-up FAQ

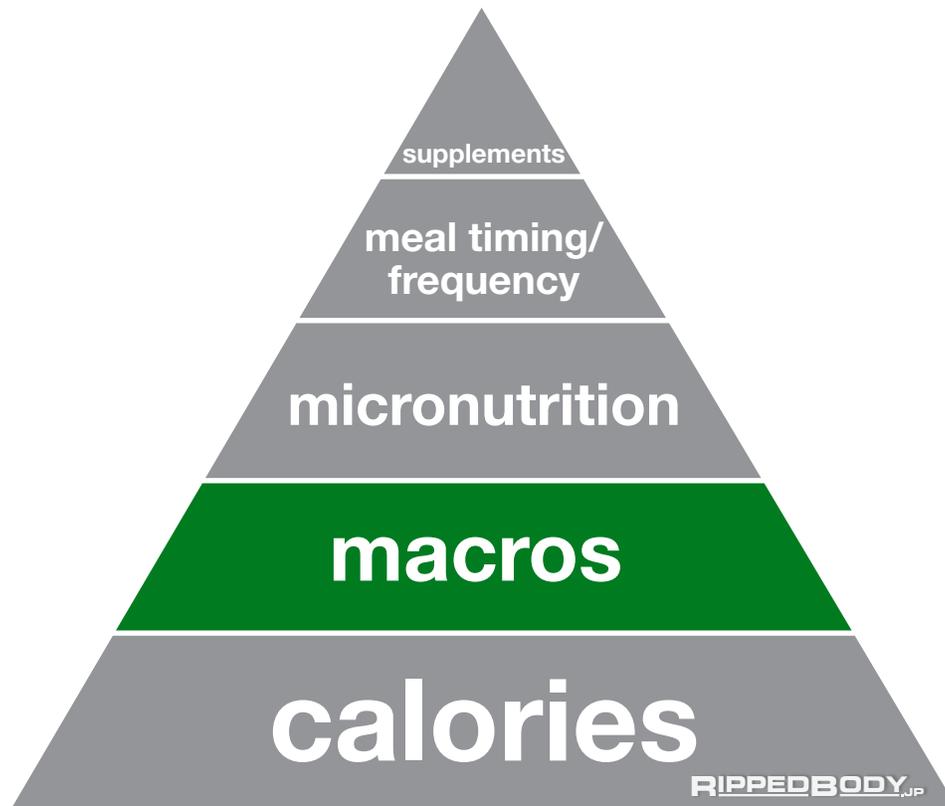
What about setting calorie targets for a 'recomp'?

Depends what you mean by 'recomp'. If you mean muscle growth and fat loss at exactly the same rate, then there will be no deficit or calorie surplus, so you just skip that part of the calculation. However, that is idealistic and simplistic and muscle growth rates will only match fat loss rates under very specific circumstances (generally, the skinny-fat novice trainee). For most people, even aiming to do both at the same time, it's best to have a slight deficit or surplus. Full details in [my Goal Setting Guide](#).

To minimise any muscle loss when cutting and minimise any fat gain when slow-bulking you'll need to get those macros right. We'll cover this next.

Have a question or need clarification? Feel free to hit me up in [this section's comments](#).

#2 Macro Setting



When people in the industry refer to their 'macros' they are talking about the three macronutrients: **carbohydrate, protein and fat**. You may have heard it said that while energy balance determines whether weight is gained or lost, macronutrients determine whether that change is fat or muscle mass.

Though that is a gross oversimplification, as their position in the pyramid above would indicate, macros play the second most important role when it comes to the fat loss/muscle gain equation. **Simply put, get them right and you'll reach your physique goals quicker and more painlessly than if you ignore them.**

The following guidelines are based on research, other coach recommendations (main influences being [Alan Aragon](#), [Lyle McDonald](#), [Martin Berkhan](#) and [Eric Helms](#)), as well as personal observations from client work.

There are sometimes individual differences and considerations which I have tried to cover in the explanations below.

Note to geekier friends: 'Re-feeds' and macro cycling strategies will be discussed in the timing guide. This will form the base for that though, so don't skip it.

PROTEIN INTAKE GUIDELINES



There are 4 Calories in every gram of protein.

Why is it important?

Protein helps us to recover from our training, **it preserves lean tissue when dieting, helps us grow more muscle when bulking, and has the highest effect on satiety** of all the macronutrients.

Protein is therefore very good stuff. However it is not as simple as saying more = better. Here is what I believe defines 'optimal' intake for physique goals:

A quantity of protein consumed that is *high enough to reasonably cover all potential benefits, without being so high that it becomes unnecessarily expensive*, and limiting to food choice by reducing the quantity of the other macronutrients we can consume while keeping to our calorie budget for the day.

NB: This is *not* the same as the government RDA which is usually very low. There is a very big difference between minimal human needs, versus what is optimal for our physique goals. (Personally, in the face of the evidence I think that the RDA needs to be raised so that the muscle loss which sick, bed-bound people experience is minimised. But issues with the RDA and politics why it doesn't change are another story for another day.)

How much protein should I consume?

	Cutting	Bulking
Protein	2.3-3.1 g/kg LBM (~1.1-1.4 g/lb)	1.6-2.2 g/kg LBM (~0.8-1.0 g/lb)

The amount of protein that is optimal **depends on our lean mass**. As body-fat ranges vary dramatically I don't like to base calculations on body weight because that risks giving fatter people too much protein and leaner people too little.

The most important factor in determining our protein intake requirement is lean body mass (LBM). The more you have, the more you need. **We can determine this by taking our weight and subtracting the amount of body-fat we carry.** (You will have estimated this in part #1, Calorie Setting).

If you have no idea on what your body-fat percentage is, get an estimate either through body-fat caliper measurements (only if you are fairly lean), or the BIA machine your gym will likely have. (DEXA, Bodpod and underwater weighing are other options if available.)

Important: All of these methods have inaccuracies and inconsistencies, so save yourself the heartache and **DO NOT USE THESE DEVICES TO TRACK YOUR PROGRESS.** They are fine for the purpose of making these calculations but not for tracking progress. (My guide for that [here](#).)

Reason for the difference between *bulking* and *cutting*

- Protein helps spare muscle mass when in a caloric deficit, so the requirements are higher when cutting.
- Protein intake past the range given when bulking, though not likely detrimental other than to our wallets, isn't likely going to be beneficial either – protein synthesis will already be maxed out. (Unless drugs are used, which is why you may read in a magazine about a Mr Olympia competitor's 600g per day consumption.)

Reason for the range of intakes

- 'Optimal'; intake is also determined by **Severity of the Caloric deficit, Body-fat percentage, and Training Status.**
- When cutting, the greater your deficit, the higher protein intake you'll need to keep your body from eating into lean tissue. The steadier you take the fat loss, the less you'll need.
- **Fatter people can get away with greater deficits.** However, greater deficits mean more hunger, and as protein is the most satiating macronutrient (meaning we stay feeling fuller for longer on higher protein diets) you might want to keep your protein intake at the higher end of the range anyway.
- Beginners trainees seem to have lower protein requirements. (Perhaps their calorie partitioning is better with the new stimulus their bodies are experiencing.)

NB: While these numbers are based in the research, we can only use the research to use **what is good for people on average.** There will be outliers – people that need more, and those that can get away with eating far less. However, there is no way to tell this without painstaking trial and error.



Beware of the Industry Nonsense

Protein is the **most expensive macronutrient** to get in your diet, which means we can find a lot of nonsense online and in magazines surrounding the subject of optimal intake. If you are new to this and about to increase your protein intake, here's likely what will happen:

- "Oh damn, that's going to be expensive. Let's get some protein powder."
- Your mum/partner/auntie laughs at your protein tub in the kitchen, starts to worry it isn't healthy.
- They google "Are high protein diets safe?" It comes back with an article about kidney damage regarding either high protein diets or protein powders specifically. They start harassing you.
- You start second guessing this and get worried yourself.

Just to be clear: High protein diets do not cause kidney damage.

*The origin: Back in 1983, researchers first discovered that eating more protein increases your "glomerular filtration rate," or GFR. **Think of GFR as the amount of blood your kidneys are filtering per minute.** From this finding, many scientists made the leap that a higher GFR places your kidneys under greater stress.*

*What science really shows: Nearly 2 decades ago, Dutch researchers found that while a protein-rich meal did boost GFR, **it didn't have an adverse effect on overall kidney function.** In fact, there's zero published research showing that downing hefty amounts of protein—specifically, up to 1.27 grams per pound [2.8 g/kg] of body weight a day—damages healthy kidneys. – Alan Aragon*

NB: That's per pound of bodyweight, not lean mass, so that's a very high number indeed.

For a full summary of the research and practical recommendations regarding high protein diets see this excellent article over on [examine.com](https://www.examine.com).

Protein Powder or Real Food?

Protein powders are a very useful tool to make hitting protein targets affordable, not to mention the convenience factor when out and having to rely on restaurant portions of meat which tend to be small.

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 prioritise real food.

On the flip side, when bulking it can be tough physically 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** (that you calculated in part #1, Calorie Setting) will come from.

FAT INTAKE GUIDELINES



There are 9 Calories in every gram of fat.

Why is it important?

Consumption of dietary fat is important for regular hormonal function, especially testosterone production. If you drop very low with your fat intake the most obvious change you will notice is a decrease in sex drive. It should never be eliminated from a diet.

How much fat should I consume to cut or bulk?

	Cutting	Bulking
Fat	0.9-1.3 g/kg LBM (~0.4-0.6/lb)	20-30% calories

Cutting

When cutting we need to take in fewer calories. **Fat is the most energy dense of the macronutrients, so decreasing fat intake is an easy way to make large changes to your overall energy intake.**

As with protein though, there is a minimum amount you don't want to go under. In this case it is for the hormonal reasons mentioned above. I'd suggest that you don't go below 0.9g of fat per kilogram of lean body mass. (If you cycle fat macros in your diet then consider this the average intake number not to go under.)

Why the range?

Those carrying more body-fat will do better with a higher fat intake than leaner individuals. **This is to do with insulin sensitivity**, which increases (generally, but not always) when you get leaner. So, if you have a very high body-fat percentage then go with the upper end of the range, leaner folks go lower.

Bulking

When bulking we need to take in more calories. Due to fat being the most energy dense macronutrient, aside from being a good way to reach calorie numbers without severe fullness, increasing our fat intake also increases our food choices available.

I tend personally not to think in terms of percentages, so previously I hadn't given specific fat recommendations for bulking (publicly), as I am waiting for more experience with clients. However, after watching Eric Helms' video series I compared his 20-30% recommendation with the results I've seen with clients and it works out quite nicely.

Why the range?

There is room for personal preference, also, **some people simply do better with different fat intakes** (which is probably also largely linked to insulin sensitivity), so feel free to experiment.

I am not a proponent of very high fat, low-carb diets – they are overly restrictive (thus threatening long-term diet compliance) and they hamper performance, certainly in athletic populations. Anything over 40% of a person's calorie intake from fat, while it may work, is not likely to work optimally.

CARBOHYDRATE INTAKE GUIDELINES



There are 4 Calories in every gram of carbohydrates.

Why are they important?

Carbohydrates are the only macronutrient we can live without. However, carbs have positive impacts on hormones, help fuel us through our workouts, replace muscle glycogen (the primary and preferred fuel source of our muscles), and make life a lot tastier. So, while we restrict them (through lack of any other choice) I do not recommend eliminating them from your diet.

Resistance training is likely equally, if not *more* important than adequate protein intake for retaining muscle mass when dieting. I mention this here because it's relevant when it comes to setting your carb intake.

We need to **eat enough carbohydrate to still get effective workouts so that we can maintain our muscle mass** – which a lot of people find isn't possible when restricting carbs severely. (~80% of a workout is fuelled by glycogen stores, a low glycogen state will compromise your ability to train hard.) This is not to say your workouts won't be tougher when in a deficit, they will, because you'll have less energy overall, but you want to avoid leaving yourself glycogen depleted also.

How much carbohydrate should I consume?

	Cutting	Bulking
Carbs	- the rest -	- the rest -

Think of carbs as just **balancing the equation as per your 'calorie' targets** decided in, #1 Calorie Setting. The difference between cutting and bulking will be the greatest with this macro number.

FIBER INTAKE GUIDELINES



There are 0-2 Calories in every gram of fibre.

Why is it important?

Fibre is a classification of carbohydrate. We cover this here because **fibre keeps us feeling fuller without adding significantly to the calorie content of food**, lowers blood sugar levels and delays digestion of food, lowers cholesterol, helps us avoid constipation, and reduces colon cancer risk. It is clearly very good stuff (full list of benefits here).

However, **it's also possible to have too much**, the side effects being gas, diarrhoea (and thus the increased risk of browning your pants in public), constipation and bloating.

Keep between the following numbers and try not to have large jumps in your intake and you'll be fine:

- Minimum – 20g/25g for women and men respectively.
- Maximum – 20% of your carb intake.

Further Reading: [Fibre – Nature's Broom](#) by Lyle McDonald.

ALCOHOL CONSIDERATIONS



There are 7 Calories in every gram of alcohol.

Why is it important?

Makes dull people interesting, reduces pain, masks social insecurity, makes us forget the midnight kebabs. Technically a macronutrient but not an essential one, [unless you are from Glasgow](#).

How much alcohol should I consume?

This really varies with location. Sober observations in singles bars leads me to conclude that, in England at least, it is a fine balance fraught between being pissed enough so that the girl sitting alone at the bar has become pretty enough to talk to, while still being able to stand up, walk over and not slur speech. Further supplementation may or may not be required depending on levels of dutch courage.

More seriously though...

For many people alcohol consumption is a fact of life. Complete avoidance will work, but that's not going to be sustainable approach for most people.

Alcohol has calories with 1 g containing 7 kcal and that is usually combined with carbs (either from fruit as with wine, hops/wheat/barley as with beer, or sugar from carbonated drink mixers).

Beer Side Image When drinking in moderation it's possible to adjust for the alcohol without messing things up. [Look up the drink you're consuming](#) and see how many calories are in there. Then **subtract the appropriate amount of calories from the macros** you see fit to maintain the calorie balance for the day. This way you'll have maintained the number one most important thing in our nutritional pyramid, while remaining close to the macros for the day.

For Example: You drink three beers

Carbs and Protein contain ~4 kcal/g, Fat contains 9 kcal/g.

If the calorie total for those three beers comes to 600 kcal, consider taking out 75 g of carbs (300 kcal) and ~33 g of fat (~297 kcal).



- Alcohol gives us energy, but with none of the benefits associated with the other macros. Thus, frequent binge drinking isn't going to be sustainable.
- You're likely not going to want to adjust the protein macro, given it's muscle sparing properties.

Yes, there are strategies for occasional binge drinking in, [The Alcohol Guide](#). Don't abuse it.

PUTTING THAT ALL TOGETHER – TWO EXAMPLES

We'll continue with our examples of Tom and Bob, whose calorie requirements we calculated in the [previous guide](#).

Tom

REMEMBER TOM

TALL - NOVICE TRAINEE - LIGHTLY ACTIVE - 90KG - 20% BODY FAT - GOAL - IRRELEVANT

HE NEEDS TO CUT AND IF HE DOES IT RIGHT HE'LL GAIN MUSCLE AT THE SAME TIME

STEP 1: BMR = $370 + 21.6 * 90 * (1 - 0.2) = 1925 \text{KCAL}$

STEP 2: TDEE = $1925 * 1.375 = 2647 \text{KCAL}$

NB: Tom is 90 kg at 20% body fat, thus his lean body mass is 72 kg. [$90 * (1 - 0.2)$]

Protein

- Protein intake in grams = 2.3~3.1 g/kg LBM
- We'll choose 2.5 g, as Tom is a beginner trainee and the deficit is modest.
- Protein intake in grams = $2.5 * 72 = \mathbf{180 \text{ g}}$

Fat

- Fat intake in grams = 0.9-1.3 g/kg LBM
- Tom has a moderate amount of body-fat, so we'll choose 1.1 grams.
- Fat intake = $1.1 * 90 * (1 - 0.2) = \sim \mathbf{80 \text{ g}}$ (Technically 79.2 g but rounded for simplicity.)

Carbs

- Carb intake in calories = Daily Calorie Intake Setting – Protein Calories – Fat Calories
- Carb intake in calories = $2152 - 180 * 4 - 80 * 9 = 712 \text{ kcal}$
- Carb intake in grams = $712 / 4 = \sim \mathbf{180 \text{ g}}$ (Again, technically 178 g but rounded to make life easier.)

Tom's Daily Macros: 180 g Protein, 80 g Fat, 180 g Carbs

Bob

REMEMBER BOB

AVERAGE HEIGHT - INTERMEDIATE TRAINEE - MODERATELY ACTIVE - 75KG

10% BODY FAT - GOAL - GAIN MUSCLE / BULK

STEP 1: BMR $\approx 370 + 21.6 \times 75 \times (1-0.1) = 1828\text{KCAL}$

STEP 2: TDEE $= 1828 \times 1.55 = 2833\text{KCAL}$

NB: Bob is 75 kg at 10% body fat, thus his lean body mass is 67.5 kg. [$75 \times (1-0.1)$]

Protein

- Protein intake in grams = 1.8~2.2 g/kg LBM
- We'll choose 2.2 kg, as Bob loves eating meat.
- Protein intake in grams = $2.2 \times 67.5 = 150$ g (Rounded from 148.5)

Fat

- Fat intake = 20~30% of calories
- Bob likes a nice balance in his diet and doesn't have a preference for carbs or fat so we'll choose to eat 25% of our calories from fat.
- Fat intake in calories = $3141 \times 0.25 = 785.25$ kcal
- Fat intake in grams = 87.5 g (Rounded from 87.25)

Carbs

- Carb intake in calories = Daily Calorie Intake Setting – Protein Calories – Fat Calories
- Carb intake in calories = $3141 - 150 \times 4 - 87.5 \times 9 = 1753.5$ kcal
- Carb intake in grams = $1753.5 / 4 = \sim 440$ g (Rounded from 438.375)

Bob's Daily Macros: 150 g Protein, 87.5 g Fat, 440 g Carbs

ADDENDUM FOR LEANGAINS SYSTEM FOLLOWERS

There is a school of thought that it can be beneficial for nutrient partitioning (and therefore body composition) to have more calories on the days you work out, and less on the days you don't. Martin Berkhan in particular took this a step further by experimenting with higher carb/lower fat intake training days, and higher fat/lower carb intake rest days in forming his Leangains system.

I believe that this works very well, however, in terms of the order of priority for results it belongs under section #4 Meal Timing & Frequency, so I will discuss it there. For many people (though not generally the readers of this blog) this is an additional, unnecessary layer of complication. So if you were linked this article by a well-meaning friend and are feeling overwhelmed don't add it in yet, remember the order of importance.

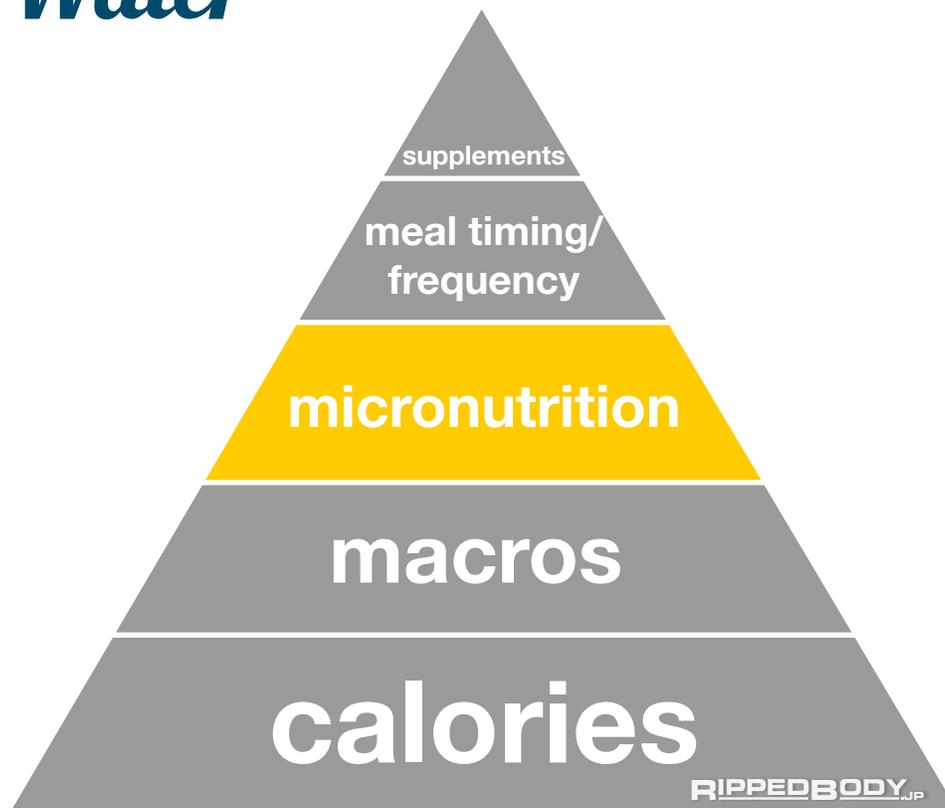
SUMMARY OF MACRO GUIDELINES

	Cutting	Bulking
Protein	2.3-3.1 g/kg LBM (~1.1-1.4 g/lb)	1.8-2.2 g/kg LBM (~0.8-1.0 g/lb)
Fat	0.9-1.3 g/kg LBM (~0.4-0.6/lb)	20-30% calories
Carbs	- the rest -	- the rest -

Getting your micronutrient intake bases covered is essential if you're not going to short-circuit your long-term progress. But it doesn't have to be the ball ache that is sounds. We'll cover some simple tips for this next.

Have a question or need clarification? Feel free to hit me up in [this section's comments](#).

#3 Micronutrient Considerations & Water



The topic of micronutrition may sound boring but you can't afford to ignore it. Long-term micronutrient deficiencies will impact your health and torpedo your training efforts.

Fortunately it's doesn't have to be complicated. By observing a few simple rules of thumb regarding your daily fruit and vegetable intake you can safeguard against deficiencies.

This article is less than a 5 minute read, but here are some key points for the super lazy:

- **A multivitamin isn't a substitute for a poor diet**, but it is additional insurance on a good one.
- Dieters are at greater risk of micronutrient deficiencies and could benefit from supplementation.
- It is likely that **there are performance benefits from eating vegetables** – Popeye was onto something with that spinach habit."
- If you have issues with energy, feel hungry, wonder why your skin is pale, or have messed up sleep patterns, *it could be that you're short of a few vitamins or minerals.*
- Water is important for fat loss and performance. Aim for 5 clear urinations a day.

All the above I'll explain in this article. I've tried to keep it short, relevant and practical.

WHAT ARE MICRONUTRIENTS?

Vitamins and minerals.

Micronutrient heart'Micro' because of the quantities: While macronutrients are generally counted in grams, **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.



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 good to us, and things containing a lot of the latter don't. Bear with me here...

Vitamins are organic. Some are water-soluble and others are fat-soluble. The fat-soluble ones are absorbed in the gut, so deficiencies or surpluses (overdoses) build over time. The water-soluble ones are very hard to overdose on because they will be passed through the body in your urine (which is why you probably haven't heard of people getting sick from super-dosing vitamin C when they catch a cold). The flip side of this is that they need to be consumed daily.

Further reading: See the video at the bottom of this post, or wade through the [micronutrient](#) page on Wikipedia.

THE RIGHT MINDSET

1. Take sensible precautions rather than go looking for issues

Some people are very quick to point the finger of blame at their diet whenever issues pop up. If someone comes to me lacking energy for example, though it could be a micronutrient deficiency, if they are currently dieting then usually just the fact that they are in a caloric deficit and have been going at it too hard, or for too long without a break.

Very often it's completely non-related to the diet – they haven't been sleeping well, there is significant stress at work or home, or they've caught a cold but haven't started sneezing yet.

If you have the time, economic means, and desire to go out and get a blood test to check, then by all means do so.



However, I suggest that rather than assuming you have a problem and getting a blood test to check for a deficiency, **assume you don't and take the reasonable dietary precautions by following the guidelines I have below.** Then if you have issues later on that you think may pertain to the diet (as you've ruled out other things) then perhaps consider getting one. I'm going to assume here though that the majority of us don't and won't, hence the guidelines below.

(Just remember that the industry profits from our desire to feel special by inventing issues for us to imagine we have and then selling solutions to these invented problems. – Those selling the idea of blood tests are also often those with a set of pills to sell.)

2. 'If It Fits Your Macros' (IIFYM) – Use it, but don't abuse it.

On working with competitors, commenting on their habits mid-diet cycle, **this is worth quoting from Eric Helms:**

"'If it fits your macros' (IIFYM) has become, 'What can I fit into these macros and get away with?' i.e. 'What can I fit into these macros to satisfy my cravings?' rather than 'How do I meet my nutritional needs?' When you combine that with extreme hunger and dieting you can run into some issues. People can end up having some pretty ridiculous menus to meet some very well set up macros, that can actually lead you running into problems micronutritionally.

I like flexible dieting, I love IIFYM, but there are some things that we want to think about so that we don't run into issues with this so that it doesn't end up short-circuiting our progress."

Eric advises his competitors to think about a diet of inclusion rather than one of exclusion. An IIFYM diet abused with too many Pop-Tarts can be just as micronutritionally deficient as the 'typical' chicken and broccoli bodybuilder diet that excludes entire food groups.

FRUIT AND FIBROUS VEG INTAKE GUIDELINES TO COVER YOUR BASES

The vast majority of people reading this, the physique focused people, will be fine for the micronutrients we get in meat, dairy and starchy carbs. It's **generally the ones from fruit and veg that we need to pay attention to**, as they are the foods most often skipped for ease. With clients I usually use these guidelines:

- Eat one or two pieces of fruit a day.
- Eat fibrous veg with every meal.
- Try and eat a variety of fruits and veg rather than the same things every day.

Then, if there are issues **we may look at total fibre intake** [see [FAQ guidelines](#)] or suggest a multi and then see how they respond. This is the simplest way of looking at your micronutrition.

That said, I also like the simplicity of the following guidelines given by Eric to his competitors as it satisfies a deep need for some people to have specific guidelines on quantities:

CALORIE INTAKE - CUPS OF FRUIT & VEG/DAY	
1200 - 2000KCAL	2 CUPS EACH
2000 - 3000KCAL	3 CUPS EACH
3000 - 4000KCAL	4 CUPS EACH

The above uses the US cup food measurement system. (Which for the British, is what you can fit in a baby pint glass. For the rest of the world it's a tiny bit more than what you can fit in a 250ml glass.) To those like myself that feel this is still a little vague, here is a quick guide:

1 CUP	1/2 CUP
 1 Large Banana	 5 Broccoli Florets
 1 Medium Grapefruit	 4 Large Strawberries
 12 Baby Carrots	 1 Medium Cantaloupe Wedge
 1 Medium Potato	 16 Grapes
 1 Large Ear of Corn	 1 Large Plum

As you can see **they are based on daily calorie intake**, with recommended intake tapering down the less that is eaten. Two main reasons:

- The less your overall food intake, the less fruit and veg you'll be able to fit into your macros.
- The more you eat, the more fibre you'll need to digest it and pass it through.

Now, I can appreciate that the reaction of the under 30 male crowd is going to be, **"So, what's the least I can get away with eating then?"** to which I don't have an answer for you. But I hope the two following quick sections will help.

OTHER IMPORTANT NOTES ON MICRONUTRITION

A Multivitamin is Not a Substitute for Fruit and Vegetable Intake

Unfortunately.

Up until my mid-twenties I considered them a pain in the arse to cook and expensive to buy. My tastes in food have changed and I quite enjoy vegetables now, but back then I believed there was an option of taking a pill instead. As for why not, this deserves a direct quote from Alan Aragon:

"It can't be over-emphasized that a poor diet with a multi is still a poor diet. There are a multitude of biologically active and beneficial compounds within the matrix of foods that are not in – and may never make their way into – a multivitamin/mineral supplement.

It's important to think of micronutrition not just in terms of essential vitamins & minerals, but also in terms of phytonutrients & zoonutrients; compounds that are not classified as vitamins or minerals but can optimize health and prevent disease. This is why attaining a variety of foods both within and across the food groups is important for covering all the micronutrient bases."

Dieters Are At Greater Risk of Micronutrient Deficiencies



Those dieting (i.e. in a caloric deficit) are at greater risk of having some kind of micronutritional deficiency. The December 2013 editorial in Alan Aragon's Research Review, 'A critique of the recent multivitamin rant in the *Annals of Internal Medicine*,' was a real eye opener in terms of how much this is so.

Recalling the findings of Calton, JB. 'Prevalence of micronutrient deficiency in popular diet plans.' from the June 2010 Journal of the International Society of Sports Nutrition, regarding specifically the *Atkins*, *DASH*, *South Beach*, and *Best Life* diets:

- All four diet plans **failed to deliver 100% sufficiency** for the selected 27 essential micronutrients, based on RDI guidelines, when followed as recommended by their suggested daily menus using whole food alone.

- Six micronutrients (vitamin B7 (biotin), vitamin D, vitamin E, chromium, iodine, and molybdenum) were identified as **consistently low or nonexistent** in all four diet plans.
- A typical dieter on any of these four popular diet plans would be, on average, **56.48% deficient in obtaining RDI sufficiency**, and lacking in 15 out of the 27 essential micronutrients analyzed.
- Thus, it is pretty clearly that when dieting it is **especially likely that you will have some kind of micronutritional deficiency**. (It also means I need to start going over the back issues of the JISSN). The advice then is to consider covering your bases with a multivitamin & mineral supplement.

We'll go more in-depth on this in part *#5 Supplements*.

It Appears That There Are Performance Benefits To Be Had From Eating Vegetables

Green vegetables (spinach, rocket, and beetroot in particular) have a lot of nitrate. An increase in nitrate intake can reduce the cost of exercise and improve exercise tolerance. – Yes, Popeye was onto something with eating all that spinach, and your mum was right in telling you to eat your vegetables.

The science: If we have sufficient nitrate in our diets, then we are able to elevate our plasma nitrite concentration, and that nitrite that's elevated can become nitric oxide, which may be beneficial to enabling the appropriate amount of oxygen to be supplied to muscle tissue.

If your VO₂ max and your lactate threshold is the same, then a lower oxygen cost for the same running speed will mean you're operating at a lower percentage of your VO₂ max, meaning you'll fatigue less rapidly as you'll accumulate less of the things that we think cause us to slow down. Lower oxygen cost, higher muscle efficiency is an important aspect of performance across the board.

For more on this topic, check out the Guru Performance Podcast, episode 54.

The Limits of My Knowledge – Further Reading

Micronutrition is not my area of expertise. What I know was read in very boring few textbook chapters a long while ago and was brought to life in [this video by Eric Helms](#). He's done a killer job and so that's why you'll find that this article in particular follows his work a lot more closely than the other articles in this series.

WATER INTAKE GUIDELINES

Water is important for fat loss and performance. A few details on the fat loss part [in the FAQ](#).

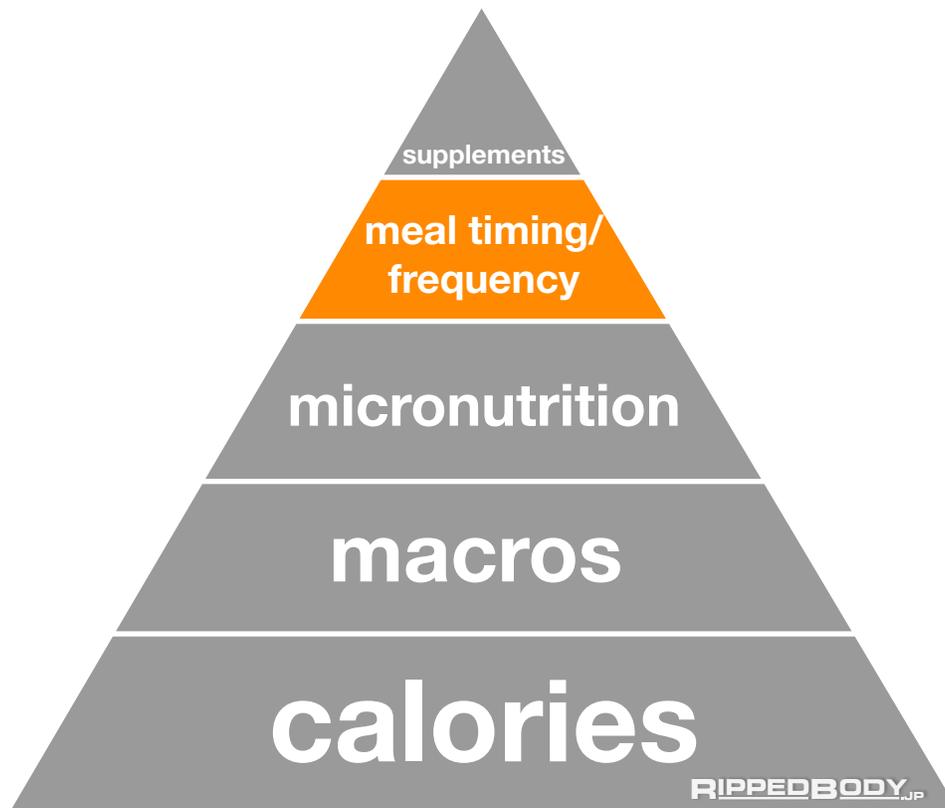
- **Aim for 5 clear urinations a day.** – Lyle McDonald
- **Aim to be peeing clear by noon.** – Me, though I'm sure I stole this from somewhere. Also,
- Make sure that **you're not dehydrated at the time of your workouts** or they will be negatively impacted.

I don't like the idea of setting water intake for people based on bodyweight, simply because some people sweat more than others, not to mention different climates and activity levels.

To maximise your gains from training you need to consider when you're eating relative to when you train. We'll cover that with detailed example set-ups next.

Have a question or need clarification? Feel free to hit me up in [this section's comments](#).

#4 Nutrient Timing & Meal Frequency, Calorie & Macro Cycling



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

People go mad for any short cut to actually putting in some effort and 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.

Any time someone presents you the nutritional importance pyramid upside-down, your BS detector should go off.

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

Consider the first three stages of the nutrition pyramid the big picture. 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 You Should Probably Be Eating**
- **When To Eat Relative To When You Train**
- **Special Considerations for Macro Timing**
- **Why You Might Consider Skipping Breakfast**
- **Why You Might Want To Consider Calorie/Macro Cycling**
- **How to Implement Calorie/Macro Cycling**
- **Example Set-ups and Calculations**

Notice the wording.

As with this series as a whole, this article is written in the order of importance that each addition will likely benefit you.

This is important to bear in mind because as I mentioned at the very start of this series, adherence is the most important factor in all of this – **the best diet is the one you can keep** – so please balance the additional complication as you work through each step, with your ability to stick to it.

And by no means feel that you have to implement all of it.

OPTIMAL MEAL FREQUENCY – HOW MANY MEALS SHOULD I EAT?

- **Suggestion:** 2-4 meals when cutting, 3-4 meals when bulking

Definitions:

'A meal' in this context refers to anything from a snack (protein shake for example) to a real food meal (protein, veggies, fats and carbs). I am not including a low-calorie pre-workout supplement such as Jack3D (whatever is the trend these days), or BCAAs in this definition.

The number of meals you will want to consume is related to the *volume of food* you are consuming and *what time of day you will train*.

I suggest you eat the minimum number of meals that you can get away with without compromising your goals.

This makes things simpler, both in terms of food preparation and in terms of macro counting for the day. Simpler -> higher adherence rate -> higher long-term success rate.



For those cutting, it can be beneficial psychologically 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. One meal a day is simply not going to be optimal for lean mass retention and also forces people to make poor, calorie dense/highly palatable food choices in order to cram enough calories in a single meal.

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. Consider splitting your meals into three or four meals, or having liquid meals/snacks. Though there are no likely benefits to eating more than four meals a day, it is perfectly fine to eat more if you wish.

Note: Other than the added complication of it, there are no likely drawbacks to eating more frequently than these recommendations, so if you wish to eat more meals in a day then feel free to do so.

MEAL FREQUENCY GUIDELINE EXCEPTIONS



Alberto Nunez Displaying Exceptional Pre-Competition Conditioning

Professionals Looking For An Edge

- **Cutting:** 3 meals minimum once they cross the 10% body fat threshold.
- **Bulking:** 4 meals or more, fairly evenly spaced throughout the day.

Skipping breakfast can [make it easier to burn stubborn fat when dieting](#), but also marginally increases the risk of muscle mass losses when getting exceptionally lean. This is especially true on a rushed cut, which these guys might need to do if they find themselves on a deadline but not leaning out quickly enough.

Also, there may be marginal benefits to a higher meal frequency (greater spacing of meals throughout the day) for mass gains for these advanced trainees.

Thus, as competitors are looking for every advantage they can get on the stage, they should consider a higher meal frequency and more even spacing throughout the day than the bottom end recommendations above, assuming they have the time to do that.

We'll come back to this topic later, but you can use this [jump link](#) to skip down and read it now if you prefer:

Athletes Training Multiple Times A Day

- In this instance, **they should eat as many meals as is necessary.**

The two primary concerns here are: i) recovery between workouts (mainly, glycogen replenishment) for the endurance athletes; ii) meeting your calorie requirements for the day but without feeling so full that you feel sick during your training.

Running around on a full stomach isn't fun. So even for non-athletes, if you're going to have a kick around in the afternoon then it makes sense to eat less at lunch and have a snack later on that day.

Glycogen depletion requires roughly 90-120 minutes of continuous work on a single muscle group, and you must use those same muscles competitively within the same day need to worry about maximal speed of glycogen restoration.

If you are an endurance athlete, then some quick carbs after your first workout of the day is a good idea. (*A sports drink or other easily digestible carb.)*

If you're not an endurance athlete there is no need to worry about it.

Anyway, bearing in mind the above, let's move onto the next section.

NUTRIENT TIMING – WHEN SHOULD I EAT?

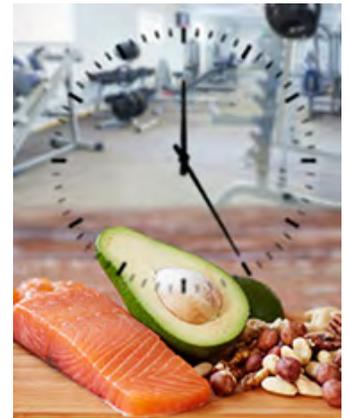
- **Within two hours of finishing your training**
- **More calories post workout than before**
- **Some carbs post workout**
- **Not completely fasted**

Definitions:

'Training' refers specifically to purposeful weight training, not random exercise.

'Post workout' refers to the timeframe between when you train and the time you go to bed.

'Not completely fasted' refers to training carried out in the state where there have been one or more meals consumed earlier in the day. BCAA consumption immediately prior to 'training' counts as not completely fasted and is a viable option.



There are multiple ways you can set things up, but as long as you keep to these principles then you will be fine. I've expanded below with specific suggestions but when it comes to examples, for the sake of brevity, I've given the simplest set-up option for that training time only.

TRAINING AND MEAL TIMING EXAMPLES

Early Morning Training

Take 10 g BCAAs ~10minutes pre-workout, then 10 g BCAAs every two hours until you eat your first meal of the day.

Breakfast-skipping example (2 meals):

- 06:50 10 g BCAAs
- **07:00-08:00 Training**
- 09:00 10 g BCAAs
- 11:00: 10 g BCAAs
- 13:00 Lunch ~50% calories/macros
- 20:30 Dinner ~50% calories/macros

– A slightly larger dinner than lunch is fine, and vice versa. If you're eating three meals, a snack in the afternoon with a big lunch and dinner is fine also.

Breakfast example:

- 06:50 10 g BCAAs / 06:00 25 g whey shake
- **07:00-08:00 Training**
- 08:00-09:00 Breakfast ~33% calories/macros
- 13:00 Lunch ~33% calories/macros
- 20:30 Dinner ~33% calories/macros

– The meals don't have to be split into thirds, so if you prefer to have one bigger than the others then please feel free to shift around your meal split.

– Reasons for the BCAAs (and BCAAs vs whey) explained here by Martin Berkhan, who was pretty much the key man in bringing fasted training to the main stream by justifying it with science™.

Morning Training

Breakfast-skipping example (2 meals):

- 08:50 10 g BCAAs
- **09:00-10:00 Training**

- 11:00: 10 g BCAAs
- 13:00 Lunch ~50% calories/macros
- 20:30 Dinner ~50% calories/macros

– A slightly larger dinner than lunch is fine, and vice versa. If you're eating three meals, a snack in the afternoon with a big lunch and dinner is fine also.

Breakfast example:

- 07:00 Breakfast ~25% calories/macros
 - **09:00-10:00 Training**
 - 13:00 Lunch ~35% calories/macros
 - 20:30 Dinner ~40% calories/macros
- **NB:** I'm suggesting a lower calorie intake for breakfast so that you don't have to train on a full stomach.

Afternoon Training

LATE-AFTERNOON

With late afternoon training the time between the end of training and dinner is greater than 2 hours, so we have a snack.

Breakfast-skipping example:

- 13:00 Lunch (~35% calories/macros)
- **17:00-18:00 Training**
- 18:00-18:30 Snack (10-15% calories/macros)
- 20:30 Dinner (remaining calories/macros)

Breakfast example:

- 08:00 Breakfast (~30% calories/macros)
- 13:00 Lunch (~30% calories/macros)
- **17:00-18:00 Training**
- 18:00-18:30 Snack (10-15% calories/macros)
- 20:30 Dinner (remaining calories/macros)

Early-Afternoon

With early afternoon training the time between the end of training and dinner is considerably greater than 2 hours, so we have a meal.

Breakfast-skipping example:

- 13:00 Snack (~20% calories/macros)
- **15:00-16:00 Training**
- 16:30 Afternoon Meal (20-40% calories/macros)
- 20:30 Dinner (remaining calories/macros)

Breakfast example:

- 08:00 Breakfast (~25% calories/macros)
 - 13:00 Snack (~10% calories/macros)
 - **15:00-16:00 Training**
 - 16:30 Afternoon Meal (~25-35% calories/macros)
 - 20:30 Dinner (remaining calories/macros)
- **NB:** The time between the end of training and dinner is considerably greater than 2 hours, so we have the meal.

Evening Training

There is no need to have a snack or shake post workout as the evening meal comes within two hours of the end of training.

Breakfast-skipping example:

- 13:00 Lunch (~40% calories/macros)
- **18:00-19:00 Training**
- 20:30 Dinner (~60% calories/macros)

Breakfast example:

- 08:00 Breakfast (~25-30% calories/macros)
- 13:00 Lunch (~30% calories/macros)
- **18:00-19:00 Training**
- 20:30 Dinner (remaining calories/macros)

SPECIAL CONSIDERATIONS FOR NUTRIENT TIMING

Avoid Extreme Macro Partitioning

In the above examples you'll see that I have suggested generally that you split your macros in the same ratio that you spit your calories. This is because it doesn't really make any difference.

Despite this you'll find some fancy ideas out there such as: only eat fats and protein earlier in the day, and only carbs and protein later. – This is not likely to have any nutrient partitioning benefits, and will threaten adherence by making your diet more complicated and restrictive. Refer to the '[if it ain't broken...](#)' rule.



Some people find that carbs make them sleepy

If this is you, you can use this to your advantage by positioning your final meal of the day nearer to bed time, or increasing the proportion of carbs in this meal.

- Breakfast eaters that feel lethargic mid-morning should consider increasing the protein and fat content of their breakfast and reducing carb intake. Simply adjust the latter meals of the day to maintain the macro balance overall. (Of course, some people simply love a lot of carbs at breakfast and if that's you, you feel good afterwards, and you can make it fit your macros for the day then go for it.
- A lot of carbs at lunch may cause afternoon lethargy, that feeling of wanting to pass out at your desk. If that's the case then try increasing veg intake or changing your choice of carb (swap that box of cereal for some potatoes or pasta for example) at lunch. Or try shifting your intake of carbs so that you have more later in the day. You could also consider breaking your lunch into two meals – a smaller lunch and an afternoon snack.

Large Meals Make You Sweat?

- This is not so much of a problem during the day but a small minority of people find they have issues getting off to sleep at night. You could try repositioning your carb intake to have less in the last meal of the day, eat the last meal of the day earlier, or eat less total calories in that last meal (more in an earlier meal).

CLEARING UP THE NONSENSE SURROUNDING INTERMITTENT FASTING

The increasing popularity of Intermittent Fasting has led to a flood of new gurus looking to profit from it and the proliferation of nonsense such as:

“Calories don’t matter as long as you eat within an 8 hour window,”

“Your body actually wants you to gorge on junk food in the evenings after your workouts as it will shuttle the nutrients into the muscle and not be stored as fat!”

These people who make a living by selling books and e-books don’t live in the real world where they are actually held accountable to client results, so it’s very easy for them to talk utter bullshit.

I often use IF with my clients in helping them get very lean because I think it has advantages for achieving this. However, as the order of this series of articles should tell you, the IF wasn’t the deal-breaker, they would have likely gotten good results without it.



SHOULD I SKIP BREAKFAST OR NOT?

Why You Might Consider Skipping Breakfast

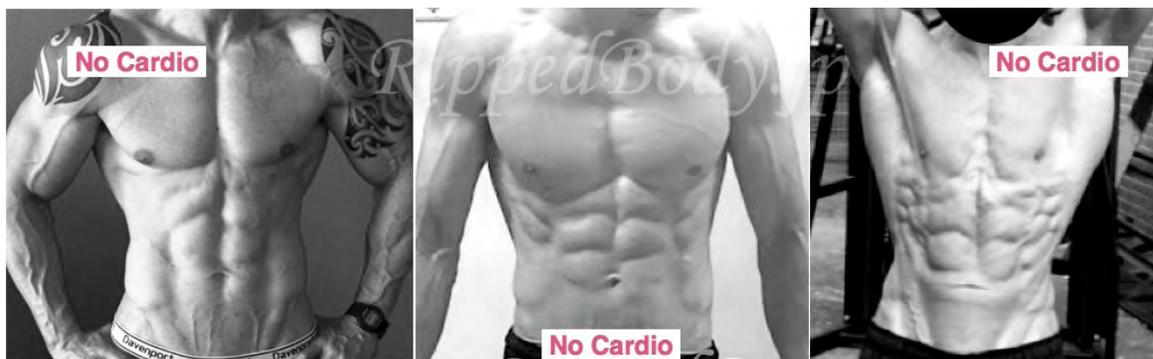
- 1. Simplicity with meal planning and counting macros.**
- 2. Increased control over hunger, and greater satisfaction from bigger meals.** If you have previously been eating breakfast it will take around 4-7 days for your body to get used to the new meal pattern and hunger pangs in the morning to subside.
- 3. Potential to help oxidise more stubborn fat.** – This is only relevant to those that are (or have gotten) lean to the point of visible abs, and a looking to get completely shredded. (This is why cardio is rarely needed with a well executed IF protocol in my experience, though I must point out that there is little clinical evidence to support this yet.)

Further reading: [Intermittent Fasting and Stubborn Body Fat – Leangains.com](#)

Why You Might Not Want To Skip Breakfast

1. IF increases the risk of muscle losses.

This is only really a concern when looking to get to exceptionally lean levels of body fat like you see below or even leaner. As long as you have your calorie intake and macros set up right as per this guide.



The leaner we get, the greater the potential for muscle loss with a reduced meal frequency. It's important to put this in perspective and weigh up the pros and cons.

If you eat a greater meal frequency and spread your meals further across the day instead of skipping breakfast, your risk of muscle mass losses is minimised, but you add in more complication to your diet. – Meal preparation takes more time, macro counting is incrementally harder, and you likely have to add in cardio earlier to get shredded lean.

The greater the caloric deficit and the leaner you are, the greater the risk of muscle loss. But if you take things slow and steady then the risk is small.

I've coached over 1000 people with the majority of them choosing to skip breakfast and I can't say I have noticed it causing any lean tissue losses.

Consider also that the clients you see in the picture above skipped breakfast, ate twice a day, and did not use any cardio to get into that condition. I can't say that we detected any muscle mass losses there either.

However, it's important to consider that they were recreational trainees without a deadline, not professional or serious amateur competitors looking to get any potential possible edge over the competition. In that case it would be better to go with the more conservative approach and have a higher meal frequency (assuming they have the time and will to do it). Also, if someone is in a rush to get into stage ready condition the deficit they will need will be higher than ideal, so a greater meal frequency should be considered so that they stand a better chance of holding onto the muscle mass.

2. Greater meal frequency/meal spacing throughout the day may lead to more muscle growth when bulking

I'd emphasise that this is marginal, and most people naturally find themselves forced to eat more than just two meals a day when bulking anyway.



breakfast



lunch



dinner

Final Points On Breakfast Skipping

If you try skipping breakfast a few times and either don't like it, feel good doing it, or simply feel much better when eating breakfast... then eat breakfast!

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 legitimise your behaviour.

I'll end this with a quote from Alan Aragon, as I think it sums up the attitude most people would benefit from taking when it comes to their nutrition:

"In the process of obsessively seeking out the "perfect" foods, food timing, food combinations (and separations), and food avoidance, the big picture gets buried in the meaningless details.

" Alan Aragon, from the AARR, Feb 2009.



CALORIE AND MACRO CYCLING – WORTH CONSIDERING?

We are now getting into the realms of the hypothetical – **there is little solid evidence of the benefits to calorie and macro cycling**, as there is very little research on this topic at all.

One clear benefit of calorie and macro cycling is that it can bring greater adherence by increasing variety in our diets. However, for some people this will be a distinct disadvantage, as the additional complication will threaten their diet adherence.

*A stressed-out, overwhelmed beginner would **do well to skip this part** for now until the more important habits are established.*

I do think that **there are some benefits to calorie and macro cycling** beyond just the adherence factors, but as this is another complication to sell people on, you'll find the supposed benefits of macro cycling completely overblown in many articles on the internet.

Definitions:

*'**Calorie cycling**' is the purposeful increase and decrease of calorie intake relative to the days that you train, while maintaining the calorie balance for the week.*

*'**Macro cycling**' is the purposeful repositioning of certain macronutrients across your training week – with a goal to improve body composition, training effect or performance – while maintaining the macronutrient balance for the week.*

Put another way, calorie cycling is eating more on your training days than your rest days, when your energy demands are higher.

Macro cycling has two common forms.

- The first being **eating more carbs and less fat** on your training days, and **less carbs and more fats** on your rest days (as with Martin Berkhan's Leangains).
- The second being strategic carb refeeds, usually **every 4-10 days**, with general low carb dieting (the most famous/pure example being Lyle Mcdonald's cyclical ketogenic diet CKD).



The idea is that by strategically increasing or decreasing the intake of certain macronutrients on certain days of the week relative to training **one can get nutrient partitioning benefits that will positively impact recovery and growth**, as well as having **favourable hormonal benefits** that will aid in fat loss.

The difference is mainly in the extent of the carb refeeds. The Leangains style calls for a more controlled carb refeed every training day, Lyle's for more of a splurge, with the tradeoff being heavier restrictions on carbs at other times. (For a more in-depth look here is an article with a section on the [benefits of carb/macro cycling](#)).

We're going to put aside Lyle's CKD aside for now and **focus on the less restrictive style**.

HOW TO IMPLEMENT CALORIE AND MACRO CYCLING

Calculating The Calorie Split



You want to give yourself **more calories on your training days, less on your rest days**. How much? Try anywhere from a 25% to a 50% difference between the two days. Don't go over this or you'll negatively impact recovery due to the especially low intake on the rest day.

Training 3-4 Days A Week? – Use This Easy Math Version

If you're fine with not getting too hung up on the actual percentage, and follow Martin's general guidelines of training three days a week, then here's a simple way of going about this.

Step 1. Decide how much you'd like the calorie split to be.

Let's say we choose ~40%.

Step 2. Add calories to the daily energy intake (calculated in #1 Calories) for the training day and subtract for the rest day.

If energy needs were calculated to be 2500 kcal, then a good approximation is to take half of the 40%, (20%) and add that to get your training day calories, 3000 kcal (2500×1.2), and subtract that to get your rest day calories, 2000 kcal (2500×0.8).

Step 3. Adjust to maintain the calorie intake target for the week.

With fewer training days than rest days, with the above simplified calculation you're going to be a little under calories for the week. **We must maintain the energy balance** for the week so we need to adjust.

Our target energy intake for the week is 17,500 kcal (2500×7).

With three training days we only consume 17,000 kcal ($3000 \times 3 + 2000 \times 4$), which is short by 500 kcal. So the easiest thing to do would be to add ~71 kcal ($500/7$) to your training and rest day calorie targets and not worry about the slight gap in the percentage math.

Training Day Target Intake: 3071 kcal, **Rest Day Target Intake:** 2071 kcal



Training More Or Less Frequently?

In this case the math above isn't going to work very well.

- **If you are training more than 4 days a week**, see the next part in the grey box.
- **If you are training just once or twice a week** it's probably not worth bothering with calorie and macro cycling just yet. The most impactful thing you could do for your physique is to add another day of training into your schedule, when you have time to do so. Skip the next part for now.

Training More Than 4 Days A Week?

I often get asked **how people can adjust their intake based on more or less training**. And though I don't generally recommend this amount of training for anyone that is not an advanced-intermediate trainee, I want to make this guide accessible to anyone, so here we go.

The catch is that you'll need to do a little math. But I spent a couple of hours reverse engineering these formulae for you from what jives with my experience.

We know: Number of training days a week (N), average daily calories (A), target percentage difference expressed as a decimal (D).

We want to find: Training-day calories (y), Rest-day calories (x).

$$1 - x/y = D$$
$$Ny + (7-N)x = 7A$$

Example: Three days training a week, 2500 kcal calculated energy requirement per day, 30% target split. (N = 3, A = 2500, D = 0.3)

$$1 - x/y = 0.3, 0.7 = x/y, x = 0.7y$$
$$3y + 7-3x = 7(2500)$$

Resolving for y: $3y + 4*0.7y = 17500$, $5.8y = 17500$, $y = 3017$

Resolving for x: $x = 0.7(3017) = 2112$

So, **Training day intake = 3017 kcal, Rest day intake = 2112 kcal**

- Thanks to reader Michael Friedrich for making this simple spreadsheet [Calorie Split Calculator](#). (This will pop put those numbers above for you without you needing to do the math.)
- Thanks to reader Paul S. from Washington DC for this [Full Macro Calculator](#).

To use those calculators you will need to have decided your target average daily calorie intake macro intake accordingly to the guidelines in #1 Calories and #2 Macros, and I still suggest you read the guidelines in the next section anyway.

CALCULATING THE MACRO SPLIT

In #2 *Macros & Fibre* you will have calculated/set your daily average protein and fat needs, and carbs will have been the balancing figure.

- Significantly **more carbs should be consumed on the training days** than the rest days.
- Significantly **less fat should be consumed on the training days** than the rest days.
- Fat intake **must not go below the calculated daily target** on average for the week.

For the sake of simplicity we'll keep protein intake the same for each day for now.

Continuing the example from above,

- Let's round those calorie numbers to 3000 and 2100.
- Let's say the protein intake was calculated to be 160 g each day – that's 640 kcal.
- We're left with 2360 kcal on the training days and 1460 kcal on rest days to fill with carbs or fat.

(1 g of protein & carbohydrate = 4 kcal, fat = 9 kcal)

Let's say that the *minimum* average fat intake is 60 g, which is 540 kcal. That leaves us with 455 g of carbs for the training day, 230 g for the rest day.

The problem with that is that food choices can get quite limiting with such a low fat intake. You can swap out a good portion of those carbs on the rest day for fats as fits your taste preferences. Some guidelines (not rules):

- You can go a little lower with the fat intake on training days if you wish as long as the average fat intake across the week does not go below your calculated minimum.
- You can go a higher with protein intake if you wish.
- You can drop the protein intake on the training day by around 10% if you wish.

So, taking preferences into account we may end up with the following:

Training Day Macros – Protein 160 g, Carbs 455 g, Fat 60 g

Rest Day Macros – Protein 180 g, Carbs 97.5 g, Fat 110 g

Note: It is normal in most instances to consume significantly fewer carbs when cutting due to the lower energy intake.

PUTTING THAT ALL TOGETHER – CONTINUING

OUR TWO EXAMPLES

We'll continue with our examples of Tom and Bob, whose calorie requirements and macros we calculated in the first and second parts of the guide.

Tom

REMEMBER TOM

TALL - NOVICE TRAINEE - LIGHTGLY ACTIVE - 90KG - 20% BODY FAT - GOAL - IRRELEVANT
HE NEEDS TO CUT AND IF HE DOES IT RIGHT HE'LL GAIN MUSCLE AT THE SAME TIME

STEP 1: BMR - $370 + 21.6 * 90 * (1.0.2) = 1925 \text{KCAL}$

STEP 2: TDEE = $1925 * 1.375 = 2647 \text{KCAL}$

Cut/Moderate Caloric deficit – 90 kg, 20% Body fat.

Daily Calorie Intake: 2152 kcal.

Daily Macros: 180 g Protein, 80 g Fat, 180 g Carbs

Timing

- Tom chooses to train fasted @09:00. He trains 3 days a week.
- He takes 10 g of BCAAs @08:50, and again @11:00.
- He eats 50% of his macros at lunch @12:00, 50% at dinner @19:30 on both training and rest days.

Calorie Intake

- Training day: $2152 * 1.2 = 2582 \text{ kcal}$
- Rest day: $2152 * 0.8 = 1722 \text{ kcal}$

Macro Split

- For simplicity, Tom chooses to eat 180 g of protein each day. This leaves 1862 kcal ($2582 - 180 * 4$) and 1002 kcal ($1722 - 180 * 4$) to be split between carbs and fats for the training and rest days respectively.
- Tom has decided to eat 80 g of fat per day on average, he chooses to have 60 g on the training days, 100 g on the rest days. This leaves 1322 kcal ($1862 - 60 * 9$) and 102 kcal ($1002 - 100 * 9$) for carbs on the training and rest days respectively.
- Tom therefore eats 330 g ($1322 / 4$) of carbs on the training days, 25 g ($102 / 4$) of carbs on the rest days.

Tom's Training Day Macros: 180 g Protein, 60 g Fat, 330 g Carbs

Tom's Rest Day Macros: 180 g Protein, 100 g Fat, 25 g Carbs*

(*From starchy sources. Fibrous sources like the majority of vegetables are being purposefully ignored.)

- **Related:** [How To Count Macros – A More Flexible Approach](#)



Bob

REMEMBER BOB

AVERAGE HEIGHT - INTERMEDIATE TRAINEE - MODERATELY ACTIVE - 75KG

10% BODY FAT - GOAL - GAIN MUSCLE / BULK

STEP 1: BMR $\approx 370 + 21.6 \cdot 75 \cdot (1-0.1) = 1828\text{KCAL}$

STEP 2: TDEE $= 1828 \cdot 1.55 = 2833\text{KCAL}$

Bulk/Calorie Surplus – 75 kg, 10% Body fat

Daily Calorie Intake: 3141 kcal

Daily Macros: 150 g Protein, 87.5 g Fat, 440 g Carbs

Timing

- Bob chooses to train in the evening @19:00. He trains 4 days a week.
- He struggles to get all his food in two meals, especially on training days, and prefers to eat mid-morning.
- He eats 25% of his macros in a mid-morning snack @10:00, 35% of his macros for a late lunch @15:00, and ~40% of his macros for dinner after training @20:00.

Calorie Intake

- Training day: $3141 \cdot 1.2 = 3769 \text{ kcal}$
- Rest day: $3141 \cdot 0.8 = 2512 \text{ kcal}$

Macro Split

- For simplicity, Bob chooses to eat 150 g of protein each day also. This leaves 3169 kcal ($3769 - 150 \cdot 4$) and 1912 kcal ($2512 - 150 \cdot 4$) to be split between carbs and fats for the training and rest days respectively.
- Bob has decided to eat 87.5 g of fat per day on average, he chooses to have 65 g on the training days, 110 g on the rest days. This leaves 2584 kcal ($3169 - 65 \cdot 9$) and 922 kcal ($1912 - 110 \cdot 9$) for carbs on the training and rest days respectively.
- Bob therefore eats ~645 g ($2584/4$) of carbs on the training days, 230 g ($922/4$) of carbs on the rest days.

Bob's Training Day Macros: 150 g Protein, 65 g Fat, 645 g Carbs

Bob's Rest Day Macros: 150 g Protein, 110 g Fat, 230 g Carbs*

- Bob struggles to eat so many carbs on his training days, and he also finds it difficult to keep fat intake that low. He increases fat intake to 75 g, increases protein intake to 200 g, and reduces the carb allotment to maintain the same energy balance. This is a good decision, ease of implementation beats out any small difference this will bring to results. (Which will be minimal, if any.)

Bob's Modified Training Day Macros: 200 g Protein, 75 g Fat, 575 g Carbs

Bob's Modified Rest Day Macros: 150 g Protein, 110 g Fat, 230 g Carbs



NUTRIENT TIMING FAQ

So you don't think that IF and calorie/macro cycling is important then?

That is not what I am saying. Importance comes with context, there is no blanket black and white statement that can be made. Please go back and re-read the above.

Researcher and nutrient timing specialist Alan Aragon in his monthly Research Review suggested a minimum of 3 meals a day as optimal. Why do you say two is fine?

This recommendation ignores the option of fasted training with BCAAs. It was based on a meal being eaten sometime before working out, some time within a couple of hours after, and one more meal either earlier or later in the day as being the minimum optimal nutrition & protein spacing/frequency.

Recently (14th January 2015) Alan Aragon, Brad Schoenfeld, and James Krieger's, '[Effects of meal frequency on weight loss and body composition: a meta-analysis](#)' was published. I'd encourage you to read it all, but here are the concluding comments, the bolding is mine:

*Although the initial results of the present meta-analysis suggest a potential benefit of increased feeding frequencies for enhancing body composition, these findings need to be interpreted with circumspection. The positive relationship between the number of meals consumed and improvements in body composition were largely attributed to the results of a single study, calling into question the veracity of results. Moreover, **the small difference in magnitude of effect between frequencies suggests that any potential benefits, if they exist at all, have limited practical significance. Given that adherence is of primary concern with respect to nutritional prescription, the number of daily meals consumed should come down to personal choice if one's goal is to improve body composition.***

There is emerging evidence that an irregular eating pattern can have negative metabolic effects, at least in the absence of formal exercise. This gives credence to the hypothesis that it may be beneficial to stay consistent with a given meal frequency throughout the week.

As for fasted training with BCAAs, is this more or less optimal than fed training?

For the same reasons as with the morning fasts it can help get through to stubborn fat for sure, this time by increasing blood flow to those stubborn fat areas.

Alan tends to constrain his thoughts by what has been proven/shown in the research, which when it comes to fasted training there is little and frankly, more is needed. I would guess this why Alan made no direct recommendation or condemnation of fasted training.

If there is anything to the added “anabolic sensitivity” of fasting, the IF strategy may well be taking advantage of it. It’s really too soon to say if the IF approach to eating is really superior or just a convenient way of dieting, but it does get results. (December 2009 issue of the AARR, guest analysis of the study ‘Increased p70s6k phosphorylation during intake of a protein-carbohydrate drink following resistance exercise in the fasted state’.)

- Further reading on fasted training [here](#), and [here](#), over at Leangains.com.

Why do you say keep an even split of macros across the meals?

At the moment I don’t feel that there is sufficient evidence to suggest that there are any benefits significant enough to make the additional complication worth it. Exceptions are covered in the ‘Special Considerations for Nutrient Timing’ section.

You’ve given a range of figures for the calorie split between training and rest days. Is there an optimal figure?

From reading through old forum posts on Bodyrecomposition.com (probably the best nutrition information website in the world) we know that Martin Berkhan experimented with very large differences in his rest and training day energy intake initially when forming his Leangains system. I don’t know if he actually formulated specific guidelines, I’d imagine they’d depend on body fat percentage, caloric deficit/surplus relative to maintenance, diet history, carb tolerance, preference and recovery.

Regarding that last point on recovery, it is easy to imagine that having too large a difference in your training day and rest day intake would not be optimal.

It’s quite geeky topic that isn’t worth worrying about to most, but I’d find a roundtable with thoughts from Alan, Lyle, and Martin fascinating, particularly for the latter’s extensive client experience with such narrowly controlled variables.

Why the recommendation to eat a meal within two hours of ending your workout?

There is a definite window of opportunity for nutrient partitioning in the post workout window. This is not merely an hour as once thought (see *“The effect of protein timing on muscle strength and hypertrophy: a meta-analysis,”* Brad Schoenfeld, Alan Aragon and James Krieger), and while there may be an effect lasting 48 hours that you have read about, this is likely going to be on a sliding scale rather than any set cut off point. (Kind of like if I kick you in the nuts, the pain will fade over time.)

The recommendation of two hours is a precautionary one. It can be a full meal or a snack.

Early-morning fasted training is the exception, where you can delay eating with BCAAs post workout.

Layne Norton's talks about advantages of more frequent meals/BCAA supplementation between meals. What are your thoughts?

Firstly, let me just say that Layne Norton seems to me to be one of the good guys in the industry, highly knowledgeable, and with a very good track record with clients. It's important to note that Layne works with competitive bodybuilders as his recommendations should be taken in that context.

Someone pointed out that he has said that 1-3 meals is not optimal. Of course, it depends on how one defines 'optimal'. I would define it as getting a balance between simplicity and complication so that the non-competitor can stick to their nutrition plan long-term, but still reap >95% of the benefits without going fully anal about things.

Layne has also invested a lot of time and effort researching into the effect of BCAAs so it's natural for him to be a little biased towards their use. The results of the research he has done so far, in the end, showed that the effect of BCAA dosing between meals was small/negligible. More on this here.

Are you claiming the timing of carbs post-workout or pre-workout doesn't make a difference?

It's not quite as blanket a statement as that, but in general I don't believe it matters a great deal for recreational trainees.

The exceptions being in the "Special Considerations for Macro Timing" part, and by definition, athletes, which I have spoken about briefly above also. There will be some individual response of course, some people will find that they perform better in their workouts with more or less carbs pre workout. There is not a one size fits all answer.

When I train fasted in the morning I don't feel as strong/powerful. Is this a sign that I should eat something before I train?

I'm going to assume here that you have come to this conclusion based on observation of your energy in multiple, successive training sessions, under the same conditions (time, sleep, diet, stress) with sufficient sleep and no extra-stressful events recently. – I mention this because some people have a single bad session and jump to the conclusion that it's the training time rather than something else.

I'm also assuming you are a recreational trainee, not an athlete, are not having multiple training sessions a day, are not heavily restricting carbs (relatively speaking), and are not in a highly active job (hence the word relative).

Your muscle's fuel stores (glycogen stores) are like a gas tank in your car – you fill them up and if you come back even a day later, the energy is still there. Assuming you're not on a highly carb restricted diet and you're not highly active outside of your gym work (job or otherwise), then training fasted shouldn't be a problem.

Some people find that they feel stronger when they have had something to eat before they train, some find exactly the opposite, likely due to the increase in catecholamines – epinephrine (adrenaline), norepinephrine (noradrenaline) and dopamine – in the system when training fasted. In some of these cases it's going to come down to the placebo effect, i.e. "I worry that I can't, therefore, I can't." The placebo effect is very real and needs to be taken into account.

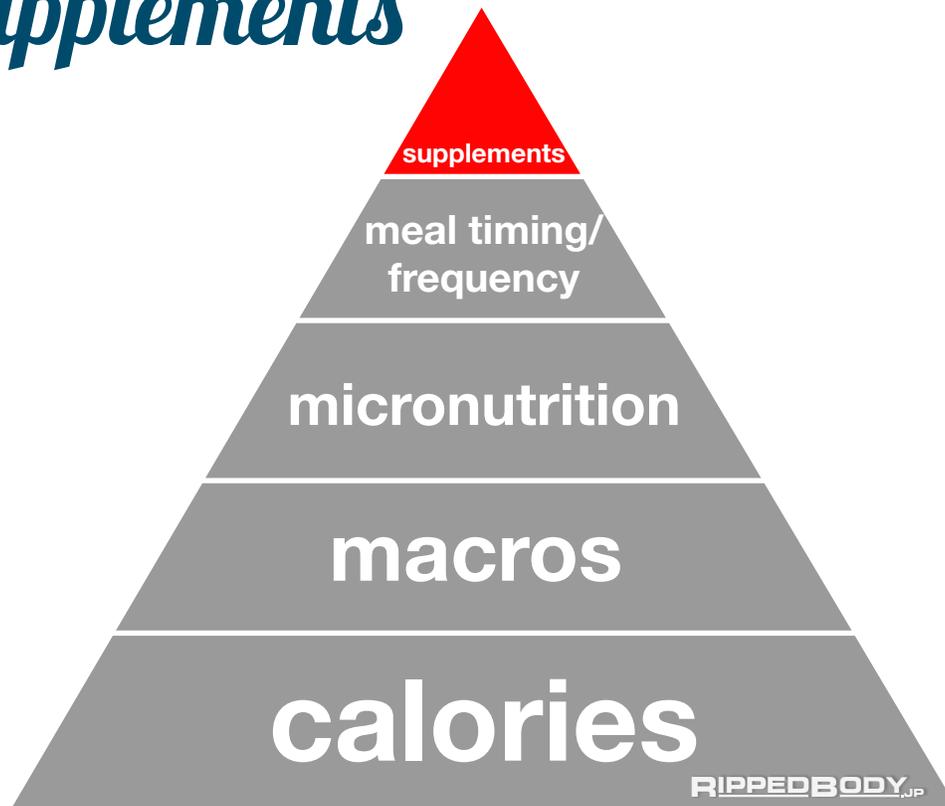
To have any non-placebo, real physiological effect we're talking a carby meal at least 2 hours before the training, or a sugary drink ~1 hour before. Adjust the rest of your macros throughout the day accordingly.

Some people just can't do well with fasted training however. So try it out, see how you feel.

Onto the final and most overrated part of the pyramid importance then.

Have a question or need clarification? Feel free to hit me up in [this section's comments](#).

#5 Supplements



Cross your eyes, and imagine the pyramid above is one huge, layer cake and the little red blur at the top is a cherry.

Now, if the first four layers are made of mud, shit, snot and sawdust respectively, is that cherry going to make a difference to the taste? – Clearly not, yet this is how the supplement industry wants you to think about your nutrition.

Supplements can be broadly categorised by their physique, performance, or health benefits. How important they are depends on context, but in general, not very.

- 1. Supplements can benefit a good nutrition plan, but they cannot make up for a poor one.**
- 2. Supplements are not needed to transform your physique and in many cases constitute an unnecessary expense.**

Any article or advertisement that you come across which contradicts the above is likely aimed at your wallet. So, if you haven't got the first four parts of the nutrition pyramid in place, please do so before reading any further, because no single supplement is going to have more impact on your diet than getting your diet right in the first place.

Protein powder is convenient, [BCAAs are arguably necessary for fasted training](#), caffeine can give you the right kick to make a more effective workout, and by many standards, fish oils seem to improve just about everything to a small degree which makes them worth considering.

The end.

ANTICIPATED FAQs

Dude, is that it?

Yes.

Why Andy?! Tell me the good stuff.

I already told you the 'good stuff'. You simply don't want to believe it because you have been seduced by the idea of supplements as shortcuts or as necessity. Trust me bud, I've been there. All the best stuff is in parts one to four and that is how I got my clients the results they achieved.

Ok but what about your clients, those results can't all just be down to food and training, right?

Wrong. I suggest protein powder to people for convenience, insist on BCAAs if someone chooses to train fasted, but everything else is optional and I encourage people to use the minimum.

But come on, surely you can go into more detail, right?

Yes I sure could, but for the rest we're talking about minor fractions and I'm painfully aware that making any list, regardless of any strong preface to it, will result in people going out and purchasing the list in its entirety, regardless, because that's just how people are.

Didn't you forgot to mention creatine?

Creatine is probably the most researched supplement out there. It is safe, cheap, can boost strength and has neuroprotective and cardioprotective properties.

- 5g a day, taken with meals is fine. Loading is not necessary.
- The standard creatine monohydrate is the cheapest and just as effective as any other type.
- Creatine cycling is not necessary. A highly precautions approach would be 2 weeks off then cycle on. (Any nitrogenous compound can stress the liver in theory.)

Creatine causes increased water uptake in the muscles and can cause bloating. In some individuals it can take a full 30 days for this to take effect. So bear this in mind when interpreting your tracking data.

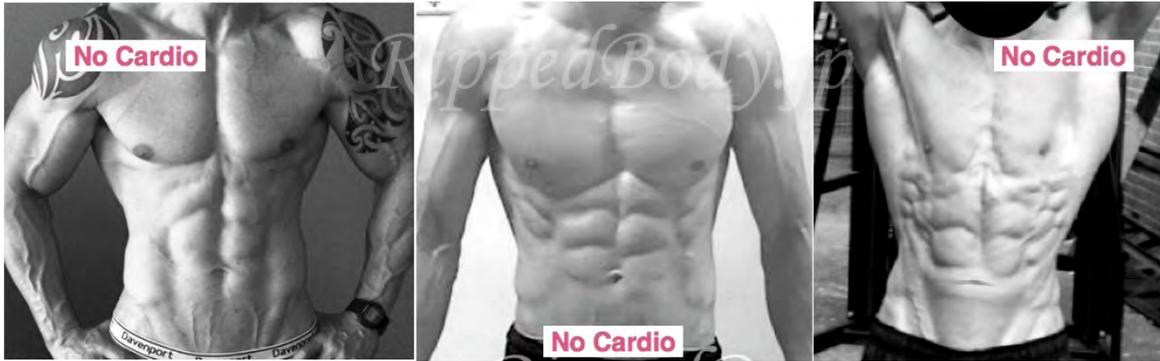
I don't personally use it as it gives me headaches and diarrhoea.

Tell me more about the fish oils, should I take them?

If you can afford the addition then perhaps consider them. Use the information on examine.com to make your decision. Just watch out for the EPA, DHA content in your capsules as there is a lot of stuff out there with little of that good stuff you want.

What about Yohimbine HCL?

You probably want to get to Scott, Jeff and Phil's level of leanness before this is going to prove useful (assuming you're doing everything else right) and even then, cardio comes first.



Why would it be useful then and not before?

Fat loss happens in pretty much a predetermined order. As we get leaner, it gets more and more difficult to shift the fat. The very last places where fat comes off – lower abs, glutes, thighs (for the women) – are like that due to poorer blood flow in those areas (put your hand on your butt, is it colder?) and the alpha/beta receptor ratio.

Yohimbine HCL will help with the blood flow issue to those areas, but isn't going to do anything to help those areas that already have sufficient blood flow to mobilise fat once it is released from the stores*.

You may see that it's banned in your country. – This has nothing to do with people taking it for fat loss and everything to do with men mega-dosing with it to correct erectile dysfunction and killing themselves when their blood pressure drops.

(*If that flash of science ticked your fancy, may I direct you to a wonderful afternoon's reading that is [The Stubborn Fat Solution](#), by Lyle McDonald, which will teach you more about fat oxidation than 99.99% of the population.)

What do you think about supplement 'x'?

Check out [examine.com](#). It's an excellent and unbiased resource on supplements.

"Give a man a fish and you feed him for a day; teach a man to fish and you feed him for a lifetime."

What dosage should I take of...?

Check out [examine.com](#).

Anything else to share?

- **Protein powders** are a cheap way to hit your protein targets but food is going to keep you fuller. Food is thus better when dieting, powder can be helpful when bulking. Whey in the day, casein at night (if you can).

- **BCAAs** can taste terrible depending on the brand. Check out some online reviews regarding the flavour of any product you are thinking of buying first. Scivation's *Extend* gets good reviews and I like it. BSN's Amino-X supposedly tastes good too.
- Good video by Eric Helms with more info on supplements [here](#).

You could have just written all of the above in a traditional article.

A tongue-in-cheek conversational FAQ was the only way I could overcome my apathy to write an article on supplements.

So what are your thoughts on pre-workout supplements then?

You can't supplement to cover your own lack of mental focus, yet this is what I see a lot of.

Switching your phone off, putting some headphones in so you don't get drawn into conversations, and visualising your next set going perfectly during your rest times will do more for your workouts than any supplement can.

Feeling tired? Have a cup of coffee.

What To Do Next

If you've opted to download the e-mail course, that's going to show you the five places that I see people screw things up the most often. I'm pushing 80,000 e-mail responses and 15,000+ comment answers, so you can rest assured that I know very well what these things are.

I recommend that you read my Goal Setting Guide, the Tracking Guide, and you start working your way through the training guides. Here are those links,

Related guides you may find useful:

- **The Goal Setting Guide**
- **How To Track Your Progress**
- **How To Count Macros – A More Flexible Approach**
- **The Core Principles of Effective Training**

SOME CREDITS & THANK YOU'S

I said at the top of the page that this guide is based on the teachings of the best guys in the industry, and then refined through my work with clients. It is quite impossible to list all the sources where I have taken individual pieces of information from, but I would like to list specific names of my biggest influences, for I have them to thank for my education.

- Martin Berkhan, before he disappeared from the scene entirely in 2011.
- Lyle McDonald, Alan Aragon, and Eric Helms, through their websites and research.
- Greg Nuckols' *Strengththeory.com* – quickly becoming the best strength training site in the world.
- Sol Orwell's *Examine.com*, Alan Aragon's monthly '*Research Review*', and Chris Beardsley & Bret Contreras' monthly *Strength & Conditioning Research*.

I listen to podcasts nearly every day as a way of continuing my education while on the move. The top three I find myself coming back to again and again are:

- Kevin Larrabee's '*The Fitcast*'
- Danny Lennon's '*Sigma Nutrition Radio*'
- Laurent Bannock's '*Guru Performance*'

I owe a debt of gratitude to Greg Nuckols & Armi Legge for their critique of some of my work, specifically on the nutrient timing sections. If you have some, don't hesitate to contact me as I welcome it as a way to improve.

Thank you to the readers for all their questions and feedback in the comments across this series as a whole in the last 18 months. This has been instrumental in making it what it is today, and will continue to be instrumental in improving it from here.

Specifically I'd like to thank Joel Minden, Craig Comperatore, and Matt Lehrer for taking the time to point out a number of grammar errors, typos and broken links. These have all been fixed and updated copies of the book will be mailed out.

I'd like to thank Lyndsey Nuckols & Sol Orwell, for believing in me and encouraging me to do this. Your kindness will never be forgotten.

Finally, to my late dear friend Hideki Yoshida, who is no doubt reading this in heaven, smiling at all my screw ups.

Sincerely, thank you for reading this.

I'm here in the comments (use the links below) if you need help, so don't hesitate to ask if you have questions or need clarifications.

- Andy.

