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FITNESS

# Nutrition

A deeper understanding  
of Macronutrients

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I am assuming you read “Nutritional Guidelines to Soar Above The Rest.” On top of that, I hope you have been following our 8 keys to be successful in the kitchen. In this EBook I want you to have a deeper understanding of nutrition, specifically “macro-nutrients”. Our goal is for you to understand nutrition enough to make great healthy decisions and understand why it is a healthy decision.

## Chapter I

# Understanding Macro-Nutrients



Nutrients in general are substances the body uses to produce energy, promote growth, and assist with functions of the body. There are many different types of nutrients, depending on their specific need, the body either needs a small amount or a large amount. The large amounts that are needed are referred to as macronutrients.

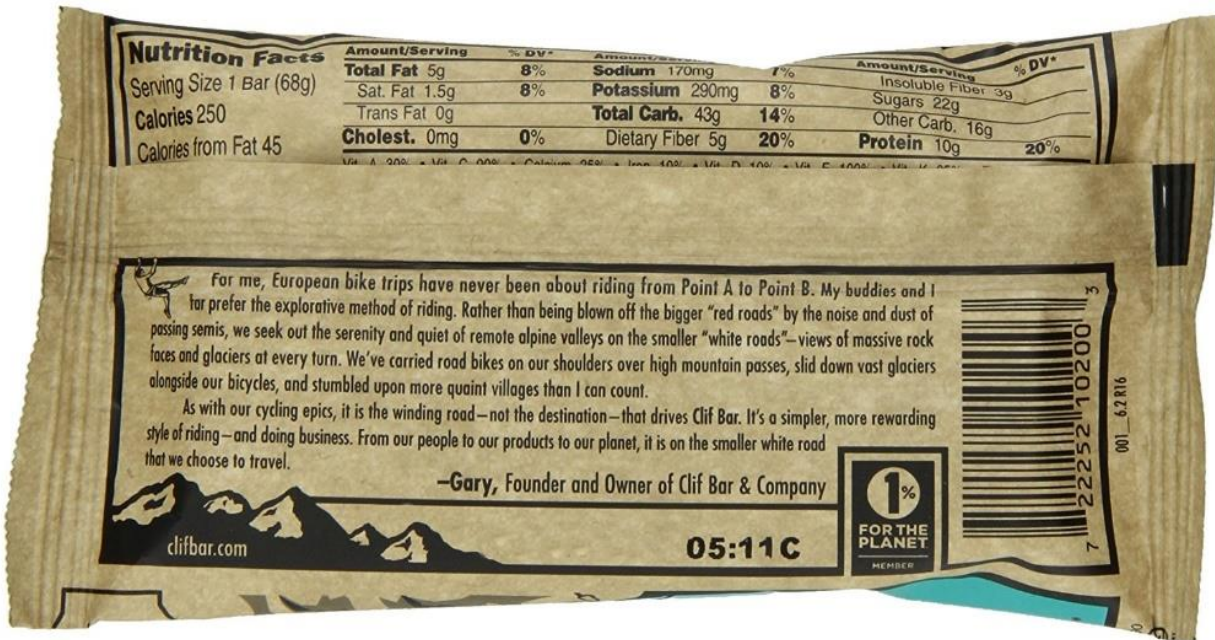
Humans have three macronutrients that are essential to keep the body properly running. Proteins, Lipids (Fats), and Carbohydrates. These macronutrients provide our bodies with calories that our body uses for energy (Much like gasoline is fuel for cars). Every Macronutrient provided the body with a different number of calories per gram:

In carbohydrates, there are 4 calories per gram.

In proteins, there are 4 calories per gram.

In lipids (fats) there are 9 calories per gram.

To put this into perspective, look at this food label from the popular Cliff Bars.



There is a total of 250 calories in this bar. From those 250 calories, there are 5 grams of fat, 43 grams of carbs, and 10 grams of protein.

From this cliff bar the body will get 40 calories from proteins, 172 calories from carbs, and 45 calories from fats (lipids).

While your body is in-taking all these calories at the same time, it will burn each macronutrient in different ways. So, while all these macronutrients have calories, their effect on the body is not equal.

# Carbohydrates



Also known as “carbs” are needed most in a typical diet. They make up 45-65% of our recommended daily caloric intake. Carbs are the easiest macronutrient for the body to metabolize- to metabolize is simply the means by which each nutrient is chemically broken down.

These carbs are used as the primary source of energy in the body. The importance of carbs is they are broken down into glucose when digested into the blood system. Glucose is simply the form of a carb when it is used as energy, here is the cool part; every tissue in the body has the ability to use glucose (made from carbs) as its primary energy source. The awesome thing about the body using carbs as its primary energy source is it allows the other macronutrients to be used elsewhere in



the body. This is important because the other macronutrients can now be used for things like promoting tissue growth and muscle repair. Without the carbohydrates these functions would be put aside so that the body may use these other macronutrients as its fuel.

**Side note:** When glucose is not used it is stored in the muscles and liver as glycogen (energy for later).

While carbs sound amazing and like the bodies best friend, sadly our bodies can only store minimal carbohydrates as glycogen. When our body reaches its maximum capacity of glycogen all the excess carbs must find a way to be spent. If you are not able to be active and call upon the assistance of these carbs then they will be converted into the thing we all hate: FAT!

This is where Carbs get a bad rep, people (myself included) make the common error of eating too many carbs all day long. This is why I cannot stress enough the importance of eating most of your carbohydrates early in the day and eating little to none right before bed. Eating carbs at the right time is essential to reaching your goals!

Carbohydrates are found in many foods, primarily starchy food such as potatoes and grains.

Examples of Carbs would be: Bread, Potatoes, Sweet Potatoes, Yams, Nuts, Beans, Rice, and Pasta.

**Note:** You may have heard the terms “complex carbs” and “simple carbs.”

While carbs are used as energy not every carb is the same, some have greater health effects on the body than others.

Complex carbs are unprocessed carbs that contain natural sugar and fiber to help with digestion, nervous system and brain function. Studies suggest eating these types of carbs is directly linked to an improved metabolic health as well as being at a lower risk for disease.

**Examples** of complex carbs are vegetables, fruits, potatoes and whole grains.

Simple carbs are processed, most of the natural nutrients such as fiber have been stripped away from these carbs. Many experts refer to these simple carbs as “empty” calories (having no substance). These simple carbs can cause spikes in blood sugar levels due to the added sugars. These have been linked to health problems such as obesity and diabetes.

**Examples** of simple carbs are sugar-sweetened drinks, pastries, white rice, white bread.



## Proteins



This macro nutrient is essential to the body, more so when frequent exercise is being performed. Proteins are used to produce new tissues (promote growth), repair tissue that has been broken down (when weight lifting we break down the tissue), as well as regulating and helping to maintain body function. Proteins are also the structure in which many enzymes are built upon- enzymes the body uses for protection, digestion, etc.

Unlike carbohydrates and fats, the body does not store protein (amino acids). This means the body needs fresh protein daily to continue working properly.

Lastly Proteins can be used as a source of energy when carbohydrates are not available. This is known as gluconeogenesis, while this is a form of fueling the body I would never recommend this. When proteins are called upon they are gathered from protein filled sources in our body, primarily our muscles. So, while we are able





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to function we are tearing into our muscle mass which we work to achieve while exercising. It is self-destructive to our exercise routines.

Protein is broken down into amino acids when consumed, amino acids are the building blocks of the human body. While 500 amino acids exist, there are only 21 which are necessary for life, out of these 21 nine of them are ESSENTIAL due to them not being produced within the body. These 9 amino acids must be consumed from protein sources. These sources that contain all 9 essential amino acids are known as "complete" proteins. Most meats from animals are considered a "complete protein.

Protein sources that are lacking one or more of the "essential" amino acids are considered to be "incomplete proteins." Examples of these proteins would be vegetables, nuts, grains, etc.

Proteins make up 10-35% of our recommended daily caloric intake. Most American diets contain more protein than is essential for a properly working body.

*The recommended amount of protein is .8-1 gram per KG of body weight.* If you are wanting to gain muscle it is recommended to eat 1.2 - 1.5 grams of protein per KG body weight. So, if you weigh 160 Lbs. then 128-160 grams of protein per meal is recommended, or 192 – 240 if muscle gain is your goal.

Protein is found in beef, fish, cheese, milk, turkey, chicken, and other meats.

## Fats (lipids)



Fats are substances that do not dissolve when in water, these are essential for us to survive. So, while “fats” as a whole get a bad reputation they are actually needed to live. They are needed in 20-35% of our daily recommended calories.

So why are they needed so much? They help to maintain cellular membranes (made from lipids), they help us absorb fat-soluble vitamins, they provide needed materials for our hormones and while we may joke about fat keeping our muscles warm and safe, it is actually true. Lipids act like cushions to our organs and insulate the human body. Fats are also responsible for the “full” feeling after eating.

Fats are the body’s most concentrated energy source, it provides more than twice the energy of a carbohydrate or protein- Fats are 9 calories per gram, carbs and



proteins are 4 calories per gram. When fat becomes stored (within muscle fibers) it is formed into a triglyceride, when exercising these triglycerides become fatty acids, these are transported through the blood stream to muscles for fuel, this is a slower process when compared to the carbohydrate breakdown, but is an unlimited source unlike the limited glycogen stores.

These fats are used primarily to fuel low to moderate physical activity, anything below 65% of your maximum heart rate will use fat as its primary source of fuel. This gives the glycogen reserves a break when long duration of exercise is taking place (the heart rate drops), the fuel from fats becomes important. This break from the use of glycogen causes a delay in fatigue and helps build the body's endurance level.

When eating fats, it is important to eat enough to keep your body functioning at a high level but also low enough to cut out the unnecessary calories. Remember every gram of fat is equivalent to 9 calories, it is very easy to eat too many fats because of this, so please watch your consumption.

**Note:** The average person (no matter their body fat) has enough fat stored in fat cells and muscle fibers to burn 100,000 calories exercise

**Note:** Not all fats are created equal. There are 3 major types of fat. Unsaturated, saturated and Artificial trans-fat.

**Unsaturated (Poly & Mono):** Unsaturated fats SHOULD be eaten consistently but be careful, they are high in calories. They have essential fatty acids which our bodies don't produce (omega 3, omega 6). These essential fatty acids lower blood pressure, fight inflammation and help assist in blood clotting They also help in reducing cholesterol levels and raise HDL levels.

**Examples** of Unsaturated fats: Avocado, Nuts, Vegetable Oils, Canola and olive oil.



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**Saturated Fats:** Saturated fats are recommended to be below 10% of your total calorie intake. For a 2,000 calorie diet this would mean no more than 200 calories or around 20 grams per day. Saturated fats increase the risk of cardiovascular disease and raises bad cholesterol levels.

**Examples** of saturated fats: Animal products such as cheese, butter, whole milk, pork, lard.

**Trans Fat:** Trans fats are the worst possible substance you can consume (my opinion). These should be limited to bare minimum if not completely eliminated from your diet. These fats are found in most if not all processed and fried foods. They are essentially liquid oils with tons of hydrogen used to preserve foods.

These will increase your LDL (Bad cholesterol) and lower your HDL (good cholesterol).

Be careful when consuming a product that states trans-fat free, by law they are able to label it this way if trans-fat is less than a half a gram per serving. If the word "hydrogenated" is on the label it has trans-fat.

**Examples** of trans fat: Donuts, Cookies, crackers, muffins, pie, cake, fast food.

## Chapter II

# Determining Your Macros



If you've made it this far then I am assuming you have a basic understanding of Macro- nutrients and their role to the body. You should be able to determine the good from the bad forms of these nutrients as well as being able to read a nutrition label properly.

Our next task when understanding macro nutrients is determining YOUR macro nutrient needs.



First, we must find our basal metabolic rate (BMR). BMR is basically an estimate on the minimum amount of calories necessary to keep your body functioning if you were to do nothing but rest for 24 hours. This measurement takes breathing and keeping your heart beating into account. BMR does not include any calories you would burn from doing everyday activities.

## Step 1: Finding your BMR

### Women:

$$\text{BMR} = 655 + (4.35 \times \text{weight in pounds}) + (4.7 \times \text{height in inches}) - (4.7 \times \text{age in years})$$

### Men:

$$\text{BMR} = 66 + (6.23 \times \text{weight in pounds}) + (12.7 \times \text{height in inches}) - (6.8 \times \text{age in years})$$

## Step 2: Maintenance

This number is how much energy (calories) is needed to maintain your lifestyle needs, this number is calculated based on how active your lifestyle is.

You take your BMR and multiply it by the appropriate number based on activity level.

**Sedentary** (little or no exercise, desk job). BMR x 1.2

**Lightly Active** (light exercise/sports 3-5 days/week). BMR x 1.3-1.4

**Moderately Active** (moderate exercise/sports 3-5 days/week). BMR x 1.5-1.6

**Very Active** (hard exercise/sports 6-7 days per week). BMR x 1.7-1.8

**Extremely Active** (hard daily exercise/sports and physical job). BMR x 1.9-2.0



## Step 3: Determining your surplus/deficit

This is where we determine how many calories we must consume daily in order to achieve our goals. To lose weight we must have a deficit in our calorie intake, to gain weight we must have a surplus.

**Determining a deficit:** Take your maintenance number and subtract it by 15% of your maintenance caloric needs.

$$\text{BMRM} - 15\% = \text{Calorie needs to lose weight.}$$

**Determining a surplus:** Take your maintenance number and add 15 % of your maintenance caloric needs.

$$\text{BMRM} + 15\% = \text{Calorie needs to gain weight}$$

## Step 4: Determining your Macros

Remember proteins and carbs both have 4 calories per gram, fats have 9m calories per gram. The next number depends on your Macros plan (low carb, low fat, low protein, etc.).

Take your BMR deficit/surplus number (from step 3) and multiply it by the percentage per macro nutrient that is needed for your diet.

For example, the recommended American diet is made up of 50% Carbs, 30% Protein and 20% Fats.

The needed BMR is 2000 calories for this example.

So, to find our carbohydrate needs we multiply 2000 (BMR) by 50% (Amount of carbs needed).

$$2000 \times 50\% = 1000.$$



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Next, we divide that 1000 by 4 (every gram of carbs is equivalent to 4 calories).

$$1000/4=250 \text{ grams of carbs per day.}$$

You do the same for proteins and fats, remember you divide proteins by 4 (calories per gram) and fats by 9 (calories per gram).

Proteins for this example would be:

$$2000 \times 30\% = 600.$$

Followed by:  $600/4=150$  grams of protein per day.

Lastly the fats for this example would be:

$$2000 \times 20\% = 400.$$

Followed by:  $400/9=44$  (rounded down) grams of fat per day.

There you have it! After reading and completing steps 1-4 you should have a GEAT understanding of nutrition and how it effects our body. More importantly you should have your Calorie and Macro Nutrient daily intake necessary to achieve your fitness goals.

Following the exercise program written for you paired with these calorie/macros numbers WILL get you the results you are looking for. I guarantee when both are followed properly and CONSISTENTLY your results WILL come.

All we can do is give you the tools necessary, the only thing standing in the way of you and achieving your fitness goals is YOU!





# Inspired?

Good, we want you to be!

We have complete faith in you and know you will soon be in the best shape of your life.

Accountability is key, so be sure to log everything in the Soaring Eagle Fitness App (Download from the App store).

Contact myself or Madi and always know we are here for you.

We love when you ask questions and are happy to give you the answers you seek.

Email Cesar: [Cesarponce@soaringeaglefitness.com](mailto:Cesarponce@soaringeaglefitness.com)

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