



# “Big 3 Macronutrients”

**understanding  
the Basics**



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# THE BIG 3 MACRONUTRIENTS

## METABOLISM

### What is Metabolism?

Metabolism is the process that converts energy (calories) from food and/or stored energy (from fat or glycogen) into a usable type of energy (fuel) in your body. A by-product of this conversion is heat. The heat that is created is important because as our bodies heat up we burn calories.

### What is Resting Metabolism?

The amount of energy (calories) it takes at rest, in a neutral temperature environment, while your digestive system is inactive to sustain daily life without activity. A person's resting metabolism decreases with age and with a loss of lean body mass (muscle mass). When one consumes more calories than their resting metabolism, their weight increases.

### Macronutrients Refers to:

1. Carbohydrates
2. Protein
3. Fat

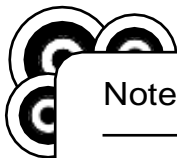
## CARBOHYDRATES

### Carbohydrates = 4 calories/gram

There are many misconceptions out there about the type and amount of carbohydrates a person should eat. The program is here to set the record straight and eliminate all the confusion surrounding this vitally important macronutrient. Carbohydrates are our body's primary and preferred source of energy. Our brains and red blood cells rely exclusively on carbohydrates for fuel. Not all carbohydrates are created equal. These are the facts about carbohydrates.

### The Blood Sugar Story

All carbs are digested into sugar (glucose) when eaten. This glucose either gets used right away for fuel or gets stored as fat for later use. In order for this process to happen there is a chain of events that must take place.



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## The Process Goes Like This:

- You eat a carb (fruit, bread, rice, etc.);
- Carb gets digested into sugar and enters your blood stream;
- Cellular respiration occurs and converts the sugar into a usable form of energy called glucose;
- Blood glucose levels rise;
- INSULIN, a hormone that is secreted from the pancreas in response to elevated blood glucose levels, enters the blood cells;
- Insulin is responsible for transporting the glucose out of the blood and delivering it to your working muscles and brain to be used for energy to fuel your body.

## The Problem

Insulin signals the body to store the excess glucose into fat since it can't be used as fuel! This is how carbs can contribute to weight gain. When we consume too many carbs at one time or we choose processed, sugary carbs that are devoid of fiber, we elevate our blood glucose levels too high and too fast causing an over secretion of insulin. When our bodies can't utilize all of that fuel from the carbs we ate, the fuel inevitably gets stored as fat for later use. We also experience a blood glucose crash leaving us feeling tired, irritable, light headed and craving more carbs. When we give into our carb cravings the cycle repeats itself until you take the necessary steps to balance out your blood glucose (sugar) levels.

## The Solution

Remember that not all carbs are created equal. Some elevate your blood glucose (sugar) levels much faster and higher than others. **The key to keeping your blood sugar stable is to choose carbs that are high in water and fiber content and therefore low on the glycemic index/load.**

## Fast and Slow Digesting Carbs

The fast carbs are the simple, high glycemic (sugar), processed or refined carbs like white bread, potatoes, desserts, granola bars and most cereals. These carbs do not contain adequate sources of water or fiber and, therefore, convert quickly into sugar. This process gives your body more energy than it needs at any one time.



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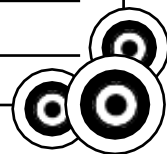
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## Fast and Slow Digesting Carbs

The slow carbs are the complex, low glycemic, high fiber, high water carbs like vegetables, fruits, legumes and whole grains. These types of carbohydrates provide your body with a slower release of sugar over a longer period of time. This slow release of sugar into your blood stream enables you to have lasting energy and keeps you feeling full for longer.

## Key Point

The trick to eating carbohydrates and maintaining a healthy weight, without having your mood, energy level, and mental clarity affected, is to choose the slow carbs and pair them with the other 2 macronutrients, protein and fat.

## PROTEIN

### Protein = 4 calories/gram

Protein is made up of amino acids. There are 22 amino acids that are broken down into two categories: non-essential, meaning the body can make them, and essential, meaning that the body cannot make them and we must acquire them through our food.

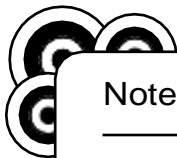
Protein makes up about 20% of your body weight and is a primary component of our muscles, hair, nails, skin, eyes and internal organs – especially the heart and brain. Our immune system requires protein for the formation of antibodies that help fight infections. Proteins also manufacture hormones, antibodies and enzymes and preserve the proper acid-alkali pH balance in the body.

**Lean proteins should be consumed with every meal!**

## How Does Protein Help You to Lose Weight?

### Thermogenic Effect of Food

“Thermo” means heat and “genic” means creating; therefore, “thermogenic” means “heat-creating.” When you create heat after eating food you will ultimately burn more calories and have fewer available calories to be stored as fat.



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Protein is a highly thermogenic food. Proteins are big and contain lots of molecules that need to be broken down into single amino acids before they can be absorbed and used as fuel. When you have a lean protein source with your meal your body creates heat while breaking it down, which burns calories!

## Blood Sugar Regulation

Proteins are important for weight loss because they facilitate the release of the hormone GLUCAGON. This hormone has the opposite effect to INSULIN. Glucagon helps regulate blood sugar by slowing down the speed of the carbohydrate turning into sugar in your blood. Adding a lean protein to every meal lowers the secretion of insulin. This ultimately keeps your hormones balanced and prevents your food from being stored as fat!

## FAT

### Fat = 9 calories/gram

The debate between 'good' fat versus 'bad' fat is a confusing one. In order to have a balanced whole foods diet you must consume fat on a daily basis. Fats are important for transporting nutrients, including vitamins A, D, E, K and other fat-soluble vitamins. Fat is also responsible for protecting the vital organs from trauma and temperature change while also providing padding and insulation. Moreover, fats are essential for the nervous system and in the manufacturing of steroid and sex hormones. The inclusion of good fat in the diet helps to keep you feeling full. Not enough good fat can contribute to allergies, inflammation, arthritis, depression and learning disabilities. An excess of bad fats are linked to a variety of illnesses and diseases, namely cardiovascular disease and obesity. The different types of fats are listed on the next page.



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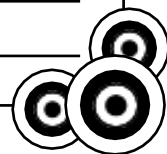
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## Types of Fat:

### 1. Trans fats (Partially Hydrogenated Oils)

- These are manufactured fats found in margarine, packaged foods, fried foods and microwave popcorn.
- They increase LDL (bad cholesterol) and lower HDL (good cholesterol).
- They cause hardening of the arteries, increase the risk of Type II Diabetes, and amplify your exposure to free radicals, thereby escalating your risk for cancer.
- AVOID COMPLETELY.

### 2. Saturated Fats

- Usually found in animal foods – red meat, dairy, and palm kernel oil.
- Saturated fats indicate a positive correlation with the risk of cardiovascular disease, mainly due to cholesterol raising effects from the consumption of man-made processed foods.
- Saturated fat can both raise and lower cholesterol levels depending on the type and amount of saturated fat you consume.
- When choosing saturated fats, ensure they are unprocessed and from a whole foods source.

### 3. Polyunsaturated Fats (PUFAs)

- Found in most vegetable oils – corn, safflower, soybean and sunflower.
- Lowers your bad cholesterol, may also lower the good cholesterol.
- Unstable when heated and can increase exposure to free radicals.
- Most are a source of Omega-6 fatty acids.
- Okay to eat as long as you don't have too much.

### 4. Monounsaturated Fats

- Are considered to be “good fats”.
- Found in olive, canola and peanut oils and avocados.
- Heart healthy and anti-inflammatory in nature.
- It's best to use extra virgin olive oil.

### 5. Essential Fatty Acids (EFAs): Omega 3 and Omega 6

- EFAs from food are essential as your body cannot make them.
- The two types of EFAs are Omega 6 (Linoleic Acid) and Omega 3 (Linolenic Acid).
- Every living cell in your body needs EFAs to rebuild and produce new cells.
- Too much Omega 6 in the form of processed vegetable oils can create an imbalance in the ratio of Omega 6:Omega 3.
- Omega 3 and Omega 6 need to be kept in a 1:1 ratio balance for optimal health.
- Only Omega 3s contain EPA and DHA which are vital for your brain and cardiovascular health.
- Omega 3 EFAs are found in fish oil supplements, flaxseed oil, deep-water fish, walnuts and walnut oil.