

# General Education

## VOL 1

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## Table Of Contents

### Section 1: Understanding Nutrition

- 1) What is a calorie
- 2) Macronutrients (Macors)
- 3) Vitamins, Minerals, and Fiber

### Section 2: Weight loss vs weight gain

- 1) What is BMR
- 2) How to lose fat
- 3) How to gain muscle

## Section 1: Understanding Nutrition

### I. What is a Calorie?

A calorie is usually defined as **the energy needed to raise the temperature of 1 gram of water through 1 °C (now usually defined as 4.1868 joules)**. Okay but how does that help me you may ask. Calories are what make us move, grow, and give us life. In simpler terms its energy for people.

### II. Macronutrients

These are the things that make up calories. Each one is responsible for different things: proteins hold everything together, carbs give energy, and fats regulate hormones.

Protein 4 calories/gram

Carb 4 calories/gram

Fat 9 calories/gram

\*\*Alc 7 calories/gram

### III. Vitamins, Minerals, and Fiber

#### **FAQ: Why do I need these?**

Vitamins and minerals boost the immune system, support normal growth and development, and help cells and organs do their job. They are essential for proper function, like a well oiled machine. Too little is not good and too much can be too dangerous in some cases. If you aren't getting enough through your diet it is recommended to take a multivitamin but make sure to follow proper serving size instructions.

As for fiber, dietary fiber specifically, it will make your bowel movements better and maintain bowel health. However, just like vitamins and minerals it is not good to consume too much. Women should aim for 20-25 g while men can get away with 30-38g per day

## Section 2: Weight Loss vs Weight Gain

### I. What is BMR?

BMR stands for Basal metabolic rate. This is the amount of energy your body burns if you were to just exist for 24hrs, no movement, just laying there. You can calculate this number with the following link:

<https://www.calculator.net/bmr-calculator.html>

This is the amount of calories you don't want to be below this number when eating for the day.

### II. How to Lose Fat

Calories in calories out. The only way to lose fat is through a calorie deficit. What does that mean? Basically you want to expend more energy throughout the day than what you consumed. Calories are burned by BMR + Sedentary Movements + Activity Level. The calculator you just used will have an amount for sedentary so then you just need to track activity level. So take your total consumed - total burned = -amount.

This is all that is needed to lose weight. Every person is different and may or may not require a slightly larger or smaller deficit, but at the end of the day it's all thermodynamics, scientific Law.

#### **FAQ: How do I lose 10 lbs?**

One pound of fat is equivalent to 3500 calories. So if we want to lose weight at a safe rate, say one lbs a week, we would need to have a deficit of  $3500/7 = 500$  calories a day. Then in about 10 weeks time with a good diet and a constant 500cal deficit we should lose 10lbs of mass.

Just as a note keep in mind that all the weight lost isn't fat, the majority might be but it is very difficult to lose 100% fat some muscle will be lost. You can minimize this by maximizing the amount of protein you eat during this time, within safe limits of course.

### III. How to Gain Muscle

This is similar but the opposite of losing weight. Instead of being in a deficit you want to be in a surplus. 100-300 calories in addition to BMR + Sed + Activity is sufficient along with anaerobic exercise i.e. weight training, calisthenics, sprinting, etc.

### **FAQ: How can I convert my fat to muscle?**

This is a fairly common misconception. Fat is lost over time and the muscle is then revealed. This is the same case when people say “I just want to get toned”. What that translates to in reality is losing a little fat and revealing the muscle I worked so hard to gain.

While very difficult it is possible to gain muscle and lose fat at the same time it is possible. Those just starting out may be able to accomplish this by accident since they are rapidly improving. However, for a more experienced person the only other way to accomplish this is by eating within 50-100 calories of your maintenance (BMR+Sed+Activity). This is very difficult sometimes because measuring foods can be off or tracking activity can. Most people that do this have their workouts and diets down to a T and have been training for a decade or more.

If you ever need a program feel free to look at the ones in the server or ask for a session to make a custom one!