How to Build Muscle

You want to build muscle. Did you know the foods you eat play just as an important role as your training regimen? This document will give you an overview on the three macronutrients, which make up all of the foods we eat, and how to best combine them to put on muscle.

<table>
<thead>
<tr>
<th>Carbohydrates</th>
<th>Protein</th>
<th>Fat</th>
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<td>Carbs are the preferred source of energy for the body. Carbohydrates put the body in the right condition to actually build muscle, making this macronutrient essential to a muscle building program.</td>
<td>Protein is very important for muscle building, as protein feeds the muscles and supply the building blocks for putting on additional muscle mass.</td>
<td>Fat is not directly involved in building muscle, however, a great source for adding calories to the diet, helping to prime the body to be in an anabolic, muscle building state.</td>
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Each of these nutrients is essential for the body to have optimal functioning. Protein and carbohydrates provide 4 calories per gram, whereas fats provide 9 calories per gram. This means that if the same amount of protein, carbs and fat are eaten at a meal, the fat will be the most calorically dense.

It is important to note that while it is not impossible, it is very difficult to build muscle mass in a caloric deficit. In order to build muscle mass efficiently, a caloric surplus is ideal, as the body can utilize the nutrients from food to build muscle rather than pulling from glycogen or fat stores. However, this surplus can significantly vary depending on individual body composition and thus it is recommended to consult a dietitian or local healthcare professional in order to obtain the right macronutrient and calorie breakdown for you.
Carbohydrates are the preferred source of energy for the body and are an essential part of a muscle-gaining program.

Carbs are important because they fill our muscles with glycogen, the storage form of carbohydrates. Once glycogen is stored in the muscle, the body is in an anabolic state and actually able to build muscle. For this reason, carbs are as important for muscle gaining as protein, often the macronutrient that gets more attention.

To put on muscle, research recommends around 1.2 grams of carbs per kilogram of body weight per day for optimal muscle building and muscle recovery (1). For context, this would suggest that a 130lb individual consume around 60 grams of carbs per day, and a 180lb individual would consume around 82 grams of carbs per day in order to maintain full glycogen stores and optimize muscles for recovery after a training session. This amount can vary drastically depending on age, sex, activity level and end goal. We recommend you speak with your trainer about the right amount of carbs for you.

What are common sources of carbs?

- **Fruits & vegetables**
- **Grains like rice, oats & breads**
- **Legumes like beans & lentils**

Also, not all carbs are created equal. Complex carbs, like whole grains, are considered more nutritious as they also contain some protein. In addition, they contain fiber and, as a result, are slower to digest, helping to keep you full for longer. With this being said, any source of carbohydrates will work in a pinch. If you have a daily carbohydrate goal, it is important to hit this goal for optimal muscle building. Ultimately, consumption of carbs pre and post workout will optimize the body for muscle building, as glycogen stores will consistently be replenished.
Protein is an essential nutrient for building & maintaining muscle mass. Protein provides the building blocks, or amino acids, which are essential to feed muscle.

Generally, it is recommended that individuals consume around 1.2-1.6 grams of protein per kilogram of body weight in order to gain muscle mass (2). For the 130lb individual, this would equate to 156-195 grams of protein per day and for the 180lb individual, this would equate to 216-270 grams of protein per day. Research shows that adequate protein intake in conjunction with regular physical activity has been proven to help preserve muscle mass (3). Want to find out how much protein you should be eating? Use Strength.com’s Protein Calculator – strength.com/protein-calculator

What are common sources of protein?

- Poultry, red meat, & fish
- Dairy (milk, yogurt, cheese)
- Plant-based: soybeans, tofu, tempeh, nuts, seeds

For building muscle, lean versus non-lean sources of protein does not matter as much, as non-lean sources of protein such as fattier cuts of meat will provide the body with extra calories, also helping to build muscle. Protein powders can be a helpful source of protein, especially for the student athlete who is on-the-go. Protein powders are very handy post-workout to help optimize recovery as protein powder can be consumed immediately to help rebuild torn muscle that occurs during a workout. It can be added to baked goods, oatmeal, smoothies, or simply to milk to help meet the demands of a higher protein diet. See the recipe below for one idea of how to use protein powders.

- Recipe idea: 1 scoop protein powder, 1 frozen banana, 2T peanut butter, 1 cup almond milk

Ultimately, because the body uses protein to build and repair muscle tissue, protein intake is essential for your muscle building regime. As you lift weights and gain strength, you are constantly tearing and repairing muscles, making protein your trusty recovery sidekick.
Fats are important for muscle building, as fats are able to supply energy to the muscles during daily activities and exercise.

Generally, it is recommended that fats make up around 20-35% of one’s total daily calories for muscle building (4). While fats do not play as direct of a role in the muscle building process as carbs and protein, fats should not be ignored due to their importance for overall optimal functioning. When focusing on fats, aim for heart healthy fats, or mono and polyunsaturated fats, while aiming to minimize saturated and trans fats.

What are common sources of fats?

| Oils, nuts, seeds, avocados | Full fat milk, yogurt & cheese | Fatty fish |

Heart healthy fats, or omega-3 fatty acids, found in some of the fat sources above have been proven to be anti-inflammatory and may even help to reduce one’s risk for heart disease and/or stroke through their ability to decrease bad cholesterol (5). While these do not make up the building blocks of muscle, fats are an important source of calories that aid in muscle building. Fats will boost metabolism and optimize hormonal functioning, priming your body for muscle building success.

Overall, each macronutrient is important for building and maintaining muscle mass. While carbs and proteins have a direct role in the muscle building process, fats are important for optimizing functioning. Because body composition and needs vary from individual to individual, consult a trainer, dietitian or healthcare professional in order to get a custom macronutrient plan to help you best achieve your goals.
NUTRITION PLAN
8 tips for putting on muscle mass

In order to effectively put on muscle mass, it is helpful to have a guide or tools to reference to help ensure success. Here are 8 tips for putting on muscle mass:

1. Determine your maintenance caloric intake using your age, height, weight, sex and physical activity level. (There are formulas online to do this or ask your trainer)
   - Increase this amount by about 15%. This will help ensure a caloric surplus and optimize the body for anabolism.

2. Track macronutrients and activity in an app or using a program.

3. Protein can be consumed at 1.6 grams of protein per kilogram of body weight.
   - Make sure to eat protein post-workout.

4. Carbohydrates should be consumed with each meal to ensure full glycogen stores.
   - Eat carbs pre and post workout.

5. Fats should be consumed with each meal to optimize cellular functioning.
   - Can be consumed at any time throughout the day.

6. Aim to increase calories by consuming larger meals and/or eating more frequently throughout the day.
   - Carry snacks, meal prep, schedule grocery shopping times.

7. Focus on a whole-foods diet, getting protein, carb and fat sources from meat, poultry, fish, dairy, grains, fruits, vegetables, seeds, nuts, legumes and oils.
   - “Eat the rainbow” is an easy tip to remember to ensure you are getting enough colors/variety.

8. Stay hydrated, aiming for a minimum of 64oz of water per day.

As stated previously, a ‘day of eating’ should be individualized based on an individual’s anthropometrics and goals. The example day below is a plan that may work for some individuals but should simply be used as a guide or template for further personalization.
**EXAMPLE DAY OF EATING**

What does that look like?

**BREAKFAST**

- **OPTION 1**
  - 2 packets of unsweetened oatmeal with 1-2 scoops of protein powder, ¼ cup mixed berries, ½ cup unsweetened almond milk

- **OPTION 2**
  - 2 scrambled eggs, 1 scrambled egg white, ½ avocado, ½ baked potato

**SNACK**

- 2 rice cakes with 3-4 tablespoons of peanut butter and ½ banana

**LUNCH**

- **OPTION 1**
  - 4 oz salmon, 1 cup brown rice, 2 cups vegetables, 1-2 tablespoons of mustard and/or other dressing

- **OPTION 2**
  - 4-6 oz grilled chicken, 1 cup brown rice, ½ avocado, 1-2 tablespoons barbecue sauce/honey mustard/etc.

**SNACK**

- 1 cup Greek yogurt with ½ cup cantaloupe and ¼ cup unsweetened granola or mixed nut

**DINNER**

- **OPTION 1**
  - 4 oz lean ground beef, 1 cup cooked veggies (broccoli, brussels sprouts, cauliflower, green beans, asparagus), ¼ cup shredded cheese, ½ cup brown rice

- **OPTION 2**
  - 4 oz lean ground turkey, 1-2 taco shells, ½ cup black beans, ½ cup rice, 1 cup veggies, 2-3 oz shredded cheese, ¼ avocado (1-2 tablespoons guacamole), salsa

**SNACKS**

- **OPTION 1**
  - 1-3 stalks of celery and/or 10-15 pretzels/crackers and 4-5 tablespoons of nut butter

- **OPTION 2**
  - Protein shake with protein powder, peanut butter, ½ banana and almond milk

- **OPTION 3**
  - Turkey slices with sliced cheese and mustard
References


