All you need to know about PROTEIN!

Proteins are considered the building blocks of life. For the body to repair and maintain itself, the body needs protein. The basic structure of protein is a chain of amino acids.

Every cell in your body contains protein. It is a major part of your organs, glands, skin and muscles. Protein is also important for growth and development during childhood, adolescence and pregnancy.

To function properly, your body needs a combination of amino acids to help break down foods. There are nine essential amino acids that your body can only acquire through food. You can eat these over the course of one day by balancing your meals and combining protein sources.

By eating whole foods and maintaining a balanced diet, your body will have enough protein that you won’t need additional supplements.

Commonly Eaten Protein Foods

What’s the deal with protein? Why is it so important?

Maintaining a complete protein package is key to maintaining a healthy lifestyle. Lack of protein in one’s diet can cause growth failure, loss of muscle mass, decreased immunity, weakening of the heart and respiratory system, and death.

There are different kinds of proteins: animal proteins and vegetable proteins.

- Animal proteins contain all the amino acids needed to build new proteins. They are called “complete” proteins, yet these proteins tend to have higher amounts of saturated fats. The best animal proteins are fish and poultry. If you are partial to red meat, choose lean cuts, moderate portion sizes and only eat it occasionally-no more than two 3 ounce servings per week, if you eat it at all. Avoid all processed meats (bacon, hot dogs, deli meats), which are very high in sodium and associated with higher disease risks.

- Vegetable proteins lack one or more “essential” amino acids and are called incomplete proteins. Thus, vegetarians should eat a variety of protein-containing foods each day. Overall, vegetable proteins are excellent dietary choices that offer healthy fiber, vitamins and minerals. If possible, vegetable proteins should be prioritized when choosing what protein type to consume. Check the protein chart on page 3 to find examples of vegetable proteins (legumes, soy, nuts and seeds).

Although protein is an important part of a healthy diet, daily amounts should be monitored and balanced. There’s no need to go overboard on protein and eat it to the exclusion of everything else. Many fad diets rank protein over other nutrients, yet whole grains and fruits are equally relevant to maintaining a healthy diet.

Source: http://www.hsph.harvard.edu/nutritionsource/protein-full-story/

Tips for Choosing Seafood:

Fish and shellfish contain high quality protein and other essential nutrients that contribute well to a healthy, balanced diet. However, there are certain types of fish to avoid if you fit into one of these categories:

- Pregnant
- Young Children
- Older Adults
- Persons whose immune systems are compromised
- Persons who have decreased stomach acidity

If one of these applies to you, it is best to avoid raw or partially cooked fish or shellfish. Additionally, if you’re pregnant, nursing, or thinking about becoming pregnant, you should avoid consuming too much methylmercury. This is found in certain fish, so do not consume:

- Shark
- Swordfish
- King Mackerel
- Tilefish

You can still eat fish that has low mercury content, such as:

- Shrimp
- Canned Light Tuna*
- Salmon
- Pollock
- Catfish

*Albacore (“White”) tuna has more mercury than canned light tuna. So, when choosing your two meals of fish and shellfish, you may eat up to 6 ounces of albacore tuna per week.

Source: http://www.fda.gov/food/
# Protein Portion Sizes: How Much Should I Eat?

## What is 1 ounce equivalent?

**Meats**
- 1 ounce cooked lean beef
- 1 ounce cooked lean pork or ham
- 1 small steak (eye of round, filet)= 3 1/2 to 4 ounces
- 1 small lean hamburger = 2 to 3 ounce equivalents

**Poultry**
- 1 ounce cooked chicken or turkey, without skin
- 1 sandwich slice of turkey
- 1 small chicken breast half = 3 ounce equivalents
- 1/2 Cornish game hen = 4 ounce equivalents

**Seafood**
- 1 ounce cooked fish or shellfish
- 1 can of tuna, drained = 3 to 4 ounce equivalents
- 1 salmon steak = 4 to 6 ounce equivalents
- 1 small trout = 3 ounce equivalents

**Eggs**
- 1 egg
- 3 egg whites = 2 ounce equivalents
- 3 egg yolks = 1 ounce equivalent

**Nuts and Seeds**
- 1/2 ounce of nuts (12 almonds, 24 pistachios, 7 walnut halves)
- 1/2 ounce of seeds (pumpkin, sunflower or squash seeds, hulled, roasted)
- 1 tbsp of peanut or almond butter
- 1 ounce of nuts or seeds = 2 ounce equivalents

**Legumes**
- 1/4 cup of cooked legumes
- 1/4 cup (about 2 ounces) of tofu
- 1 oz. tempeh, cooked
- 1/4 cup roasted soybeans
- 1 falafel patty
- 2 tbsp hummus
- 1 cup split pea soup = 2 ounce equivalents
- 1 cup lentil soup = 2 ounce equivalents
- 1 cup bean soup = 2 ounce equivalents
- 1 soy or bean burger patty = 2 ounce equivalents

**Daily Recommendations**

<table>
<thead>
<tr>
<th>Group</th>
<th>Age</th>
<th>Portion</th>
</tr>
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<tbody>
<tr>
<td>Children</td>
<td>2-3 years old</td>
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</tr>
<tr>
<td>Children</td>
<td>4-8 years old</td>
<td>4 ounces</td>
</tr>
<tr>
<td>Pre-teens</td>
<td>9-13 years old</td>
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</tr>
<tr>
<td>Females</td>
<td>14-18 years old</td>
<td>5 ounces</td>
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<td>6 1/2 ounces</td>
</tr>
<tr>
<td>Females</td>
<td>31-50 years old</td>
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<tr>
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<tr>
<td>Females</td>
<td>51+ years old</td>
<td>5 ounces</td>
</tr>
<tr>
<td>Males</td>
<td>51+ years old</td>
<td>5 1/2 ounces</td>
</tr>
</tbody>
</table>

Source: [http://www.choosemyplate.gov/food-groups/proteinfoods_counts_table.html](http://www.choosemyplate.gov/food-groups/proteinfoods_counts_table.html)

## 10 Tips for Choosing a Protein

1. **Vary your protein food choices.** Look at the Protein Portion Sizes chart and make sure you’re incorporating different types of protein into your daily diet.

2. **Choose seafood twice a week.** Select a variety and choose those that are higher in oils and low in mercury, such as a salmon, trout and herring.

3. **Choose lean or low fat meat and poultry.**

4. **Have an egg!** Make eggs part of your weekly choices, but limit egg consumption to one a day if you have normal cholesterol levels. Eggs have a high level of cholesterol (up to 93% of the daily limit), so on days that you eat eggs, avoid other animal proteins.

5. **Eat plant protein foods more often.** Try beans, peas, and soy products as main dishes three to four times per week.

6. **Nuts and seeds.** Choose unsalted nuts or seeds as a snack, on salads, or in main dishes to replace meat or poultry.

7. **Keep it tasty and healthy.** Try grilling, broiling, roasting or baking. Avoid breading meat or poultry, which adds calories.

8. **Make a healthy sandwich.** Choose turkey, roast beef, canned tuna or salmon, or peanut butter for sandwiches. Most deli meats are high in sodium and fat, so avoid them on a regular basis.

9. **Think small when it comes to meat portions.** Get the flavor you crave but in a smaller portion. Check the Daily Recommendation chart for more information!

10. **Check the sodium.** Check the Nutrition Facts label to limit sodium. Salt is added to many canned foods, processed meats and is even present in fresh chicken, turkey and pork that is brined in a salt solution. Avoid high sodium foods by cooking fresh foods.

Source: [http://www.choosemyplate.gov/food-groups/downloads/TenTips/DGTipsheet6WithProteinFoods_BlkAndWht.pdf](http://www.choosemyplate.gov/food-groups/downloads/TenTips/DGTipsheet6WithProteinFoods_BlkAndWht.pdf)

The amounts listed in the Daily Recommendations chart are appropriate for individuals who get less than 30 minutes per day of moderate physical activity, beyond normal daily activities. Those who are more physically active may be able to consume more while staying within calorie needs.

Source: [http://www.choosemyplate.gov/food-groups/proteinfoods_amount_table.html](http://www.choosemyplate.gov/food-groups/proteinfoods_amount_table.html)
### Zingy Lemon Chicken Pasta (Serves 4)

- 8 oz whole wheat spaghetti, uncooked
- 1 tbsp tub margarine
- 1 tsp olive oil
- 1 1/4 lbs boneless, skinless chicken breast, cut into 3/4 inch pieces
- 5 green onions, sliced
- 1 large clove garlic, minced
- 1/4 cup all purpose flour
- 1/4 tsp salt
- 1/8 tsp black pepper
- 1 1/2 tbsp olive oil
- 1 large clove garlic, minced
- 5 green onions, sliced
- 1 1/4 lbs boneless, skinless chicken breast, cut into 3/4 inch pieces

**Nutrition Facts per serving:**
- Calories: 280
- Protein: 14g
- Carbohydrate: 42g
- Fiber: 11g
- Fat: 135mg
- Cholesterol: 2mg
- Sodium: 135mg
- Potassium: 40mg

**Recipe Source:** [http://www.hsp.harvard.edu/recipes/cozy-red-lentil-mash/](http://www.hsp.harvard.edu/recipes/cozy-red-lentil-mash/)

### Garbanzo Beans with Spinach and Tomatoes (Serves 4)

- 2/3 cup tomatoes, diced
- 1 large white onion, diced
- 3 cups canned low sodium garbanzo beans, drained and rinsed
- 1/2 tbsp olive oil
- 16 ounces baby spinach, washed
- 2 tsp. chopped garlic

**Nutrition Facts per serving:**
- Calories: 260
- Protein: 17g
- Carbohydrate: 66g
- Fiber: 15g
- Sodium: 610mg
- Potassium: 210mg
- Cholesterol: 0mg


### Red Lentil Mash (Serves 4)

- 1 to 2 tbsp olive oil
- 2 tbsp unsalted butter (optional)
- 3 cups minced sweet onion
- 2 cups uncooked red lentils
- 5 cups water
- 1 tbsp salt
- 2 tsp balsamic vinegar
- Black pepper, to taste
- Cayenne (if desired)

**Nutrition Facts per serving:**
- Calories: 420
- Protein: 27g
- Carbohydrate: 66g
- Fiber: 15g
- Sodium: 160mg
- Potassium: 210mg
- Cholesterol: 0mg


### Fish Creole (Serves 4)

- 1/4 cup olive oil
- 1 onion, finely chopped
- 1/2 sweet green pepper, finely chopped
- 1 stalk celery, finely chopped
- 1/4 cup chopped parsley
- 2 cloves garlic, crushed
- 2 bay leaves
- 1 pound non-oily white fleshy fish scraps (such as monkfish), cut into large bite-sized chunks
- Hot pepper sauce (to taste)
- Cayenne pepper (to taste)

**Heat the oil in a large pot and sauté the onions, sweet green peppers, celery, parsley, and garlic until wilted and cooked through, about ten minutes.**

**Add the tomato puree, 1/2 cup water or stock, and the bay leaves. Simmer for twenty minutes, add the fish and remaining water or stock, if necessary, and cook for fifteen minutes, or until the fish flakes.**

**Add the hot pepper sauce and cayenne to taste. Serve over brown rice.**

**Nutrition Facts per serving:**
- Calories: 260
- Protein: 17g
- Carbohydrate: 16g
- Fiber: 3g
- Sodium: 480mg
- Potassium: 210mg
- Cholesterol: 25mg

**Recipe Source:** [http://www.hsp.harvard.edu/recipes/cozy-red-lentil-mash/](http://www.hsp.harvard.edu/recipes/cozy-red-lentil-mash/)
Exercise!

If I were to ask you what the most important meal of your day is, you would probably answer with a resounding “Breakfast, of course!” Well mom may have been right about a lot of things, but she was only partially right on this one, at least if you’re someone that exercises. For exercisers the meals consumed around a workout are also some of the most important meals of the day.

Now first I use the word meal loosely, as calorically this is more equivalent to a small snack. In total these “meals” will probably equal less than 300 calories when all is said and done. Secondly, meal shouldn’t suggest this is solid food, as meals around exercise must be consumed in a simple and easily digestible form. More on both of those in a second, we need to quickly establish why this nutritional period is so important.

Exercise is a significant stress to the body. When we exercise we rip and tear muscle fibers and we deplete the body of sugar. Both of which is a huge disruption to the body’s natural internal environment. The sooner we can recover from these disruptions, the sooner we can get on to the process of making positive physical changes to exercise (such as building muscle, improving performance, and pretty much every other fitness benefit derived from exercise).

Before and after exercise is the most critical nutritional window to respond to these stresses for a couple of very specific biological reasons. The biggest factor at play here is blood flow. When we exercise we send more blood to our active muscle than normal, to accommodate the demand for increased nutrition in the exercising muscle. In fact, muscles can uptake 5-10 times more nutrients around exercise than at any other point during the day. The other factor at play is a post-exercise rise in the hormone insulin. Insulin is one of the most important recovery agents in the body as it acts to store nutrients in the repairing muscle.

To properly take advantage of this window, as I mentioned above, you can’t have solid food. Because of the shift in blood flow during exercise (away from the stomach and to the muscles) only simple liquid nutrient sources can be consumed and utilized. Although there are some pre-made supplements out there that combine both simple sugars (sucrose or dextrose) with simple proteins (called whey protein), you don’t need to spend your money on expensive supplements. Mixing 8-16oz of Gatorade with a fruit or vanilla flavored whey protein can do the trick at a very low cost. Sixteen ounces of Gatorade provides you with about 30g of simple sugars that can be used from energy and to prevent muscle damage. One scoop of whey protein normally provides about 20g of high quality protein to begin the process of muscle repair.

Consuming one serving of this protein-carb mixture 20 minutes before exercise and one serving immediately upon stopping will result in better workout performance, less soreness, and greatly enhanced fitness adaptations to exercise. Don’t take my word for it though, try it for two weeks and after you’ve had some of the best workouts of your life, I can guarantee you won’t workout without it again.

By Michael Stack, BS CFP CSCS*D, Exercise Physiologist and Owner of Applied Fitness Solutions (www.appliedfitsolutions.com).
To contact Michael, email stack@appliedfitsolutions.com or call 734-994-8570.

What’s New at Food Gatherers?

Meet Kat! Kat is Food Gatherers’ newest team member. She is joining us as the Administrative Assistant. As someone new to Michigan, she is incredibly excited to be working with Food Gatherers and looks forward to integrating herself to the Ann Arbor community. Kat enjoys her position at Food Gatherers, as she is able to do a little bit of everything. Please welcome Kat the next time you see her!