Your Protein Requirement is Higher Than You Think

It may seem odd, but health professionals have only recently been able to figure out what we need to eat. Prepare yourself for a shock if you have never investigated your daily protein requirement. If you talk to friends and family members about protein, you’ll discover that most people are somewhat fuzzy about the difference between a protein and a carbohydrate.

Fortunately, there are tools available to help determine how much protein to eat. Professional cyclists and body builders are the first groups to learn that total daily protein should be total usable protein due to missing amino acids in foods called limiting factors. For humans, two foods with the fewest number of limiting factors are eggs and milk products making them the most efficient protein foods.

Protein has been called the chief actor within the cell due to the number of functions this class of molecules performs. Proteins are made of amino acids that may not be able to be synthesized by the body. The group of amino acids that cannot be synthesized by the body are called essential because they need to be consumed in food.

A protein deficiency may go unrecognized for a long time. Eventually, physical symptoms that result from eating too little protein will include muscle wasting, bone loss, and hair loss.

Daily Protein Requirements
To make daily protein requirement numbers more meaningful, let’s look at daily protein requirements for cast members of television’s Emmy Award-winning Modern Family. The show is about three families living in Los Angeles who are interrelated through Jay Prichett and his adult children, Claire and Mitchell.

Protein requirements vary according to age, gender, level of activity, height and frame size. Modern Family has twelve regular characters and all three families have children making the cast an ideal group for a daily protein study.

Gathering Data
The chart below lists four of Modern Family’s main characters as well as infant twins who take turns playing Jay Pritchett’s newborn son. Some of the data we need to calculate daily protein requirements is available on ABC’s Modern Family Wiki, and the rest we will need to improvise.

Notes:
1. Numbers required for age, height and frame size are guess-estimates for calculation purposes.
2. Frame size is the size of a person's bone structure. To determine frame size, wrap your middle finger and thumb around your wrist.
   - If your fingers overlap, you are a small frame.
   - If your fingers just touch, you are a medium frame.
   - If your fingers do not meet, you are a large frame.

<table>
<thead>
<tr>
<th>Category</th>
<th>Actor</th>
<th>Character</th>
<th>Age</th>
<th>Height</th>
<th>Weight</th>
<th>Frame Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Man</td>
<td>Ed O’Neill</td>
<td>Jay Francis</td>
<td>South side of 6 ft.</td>
<td>210</td>
<td>Medium</td>
<td></td>
</tr>
</tbody>
</table>
Your Protein Requirement is Higher Than You Think

Protein Calculators

We’ll need a protein calculator to provide a number reflecting the total number of grams of protein that should be consumed each day. The University of Maryland’s Medical System has the most advanced calculator on the Web, but for comparison purposes, we’ll try typing numbers into calculators created by large companies such as Nestle, Kellogg’s, and GNC. Finally, we’ll look at the amount of usable protein in protein foods to determine how much food would need to be consumed each day to meet the recommended totals.

- **University of Maryland Medical System (UMMS)**
  UMMS has a calculator that provides daily protein requirement based on age, height, weight, frame size and activity level.

- **Meals.com**
  Nestle’s Meals.com site has a calculator that provides daily protein requirements based on age, gender, body weight (in lbs. or kgs.), height (in ft. or in.), activity level and fitness goal.

- **Kashi site**
  Kellogg’s Kashi site has a protein calculator that calculates daily protein requirement based on weight and activity level, but surrounding ad copy says Kashi cereal has as much protein as an egg (quantity maybe, but not equivalent protein).

- **General Nutrition Center (GNC)**
  GNC’s protein calculator calculates daily protein requirement based on age, gender, weight, type of physical training, activity level and health/exercise goal. Unfortunately, the page that’s returned contains a general health plan that recommends margarine and mostly plant-based protein that is not as efficient as animal protein.

- **WebMD**
  WebMD has a page devoted to daily protein requirement with rounded totals (no calculator) for adults, teens and infants in a list form.

Calculate Your Total

If you would like to compare your daily protein requirement for the totals we’ll calculate for the Modern Family cast, use the link above and go to the University of Maryland’s Medical System Web site.

**Jay Francis Pritchett Played By Ed O’Neill**

<table>
<thead>
<tr>
<th>Protein Calculator</th>
<th>Ed’s Total Protein/Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMMS</td>
<td>101 Grams</td>
</tr>
<tr>
<td>Nestle’s Meals.com</td>
<td>134 Grams</td>
</tr>
<tr>
<td>Kellogg’s Kashi site</td>
<td>76-143 Grams</td>
</tr>
<tr>
<td>GNC</td>
<td>86 Grams</td>
</tr>
<tr>
<td>WebMD</td>
<td>56 Grams</td>
</tr>
</tbody>
</table>

The calculator sites all describe their results as daily minimums, yet give results that are not even close to each other. If we average the numbers from the two medical sites (UMMS and WebMD), Jay’s daily total would be 78.5 grams which is very close to...
What's missing from the protein calculator sites is advice about foods that contain the highest amount of usable protein. Protein foods with the highest amount of usable protein are the most efficient foods to add to your diet because they contain the most essential amino acids.

Later in this article, we'll look at possible food choices for Jay that demonstrate how much usable protein he needs to eat to reach his daily requirement.

Gloria Pritchett Played By Sofia Vergara

<table>
<thead>
<tr>
<th>Protein Calculator</th>
<th>Sofia's Total Protein/Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMMS</td>
<td>73 Grams</td>
</tr>
<tr>
<td>Nestle's Meals.com</td>
<td>83 Grams</td>
</tr>
<tr>
<td>Kellogg's Kashi site</td>
<td>47-89 Grams</td>
</tr>
<tr>
<td>GNC</td>
<td>53 Grams</td>
</tr>
<tr>
<td>WebMD</td>
<td>46 Grams</td>
</tr>
</tbody>
</table>

If we average the numbers from the two medical sites (UMMS and WebMD), Gloria's daily total would be 59.5 grams that is approximately in the middle of the Kellogg range.

Like Jay, Gloria will want to eat protein foods that contain the highest amount of usable protein to make sure she obtains all of the necessary essential amino acids.

Fulgencio Joseph (Joe) Pritchett Played By Unnamed Twins

Fulgencio Joseph (Joe) Pritchett, born in January 2013, is 11 months old at the time this article was assembled.

None of the protein calculators on the Web have advice for infants (0 to one year) or lactating women except the WebMD site. An article titled, "Protein: Are You Getting Enough?" provides the following amounts:

- Infants require about 10 grams of protein a day
- Lactating women need 71 grams of protein a day

As we'll see later in this article, plant protein is missing essential amino acids that are present in animal protein. As a result, children who are given formula made from plant protein will not be getting all of the amino acids that they need.
### Manny Delgado Played By Rico Rodriguez

<table>
<thead>
<tr>
<th>Protein Calculator</th>
<th>Rico’s Total Protein/Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMMS</td>
<td>88 Grams</td>
</tr>
<tr>
<td>Nestle’s Meals.com</td>
<td>95 Grams</td>
</tr>
<tr>
<td>Kellogg’s Kashi site</td>
<td>58-109 Grams</td>
</tr>
<tr>
<td>GNC</td>
<td>65 Grams</td>
</tr>
<tr>
<td>WebMD</td>
<td>52 Grams</td>
</tr>
</tbody>
</table>

The UMMS protein calculator is not designed to calculate daily protein requirements for children or teens. For example, the calculator’s minimum height is 5 feet 2 inches and Manny’s height of 5 feet was outside the range of the calculator.

If we average the numbers from the two medical sites (UMMS and WebMD), an adult daily total would be 70 grams which is 10 grams higher than Gloria’s daily total.

If you notice the WebMD sites says teenage boys needs more daily protein than women making 70 grams a good target.

Like Jay and Gloria, Manny will want to eat protein foods that contain the highest amount of usable protein to make sure he obtains all of the necessary essential amino acids.

### Alex Dunphy Played By Ariel Winter

<table>
<thead>
<tr>
<th>Protein Calculator</th>
<th>Ariel’s Total Protein/Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMMS</td>
<td>65 Grams</td>
</tr>
<tr>
<td>Nestle’s Meals.com</td>
<td>60 Grams</td>
</tr>
<tr>
<td>Kellogg’s Kashi site</td>
<td>35-65 Grams</td>
</tr>
<tr>
<td>GNC</td>
<td>39 Grams</td>
</tr>
<tr>
<td>WebMD</td>
<td>46 Grams</td>
</tr>
</tbody>
</table>

If we average the numbers from the two medical sites (UMMS and WebMD), Alex’s daily total would be 55.5 grams which is approximately in the middle of the Kellogg range.

Like Jay, Gloria, and Manny, Alex will want to eat protein foods that contain the highest amount of usable protein to make sure she obtains all of the necessary essential amino acids.

### Protein Usability

As stated at the beginning of this article, proteins are made of amino acids that can be synthesized in the body, or derived from proteins consumed. All proteins are made up of combinations of 21 amino acids. In humans, there are nine essential amino acids (EAAs) that cannot be synthesized. Eggs and milk contain the highest number of amino acids that humans need.

Compare these two efficient foods to meat, poultry and fish:

- Eggs (90% usable)
- Milk products (76% usable)
- Meat, poultry and fish (15-20% usable)

For humans, eggs and milk products contain a larger number of essential amino acids than plants. Cereal grains (e.g. Kellogg’s) will be missing the nine essential amino acids including lysine, which is called a “limiting” amino acid in cereal grains.

As twentieth century scientists learned about protein synthesis, they began to understand what would happen if an amino acid was in short supply, particularly the essential amino acids that needed to be consumed. If a diet is inadequate in any essential amino acid, protein synthesis cannot proceed beyond the rate at which that
amino acid is available. This is called a limiting amino acid.

Poor populations that subsist on plant protein eat combinations of a cereal grain (e.g. corn or rice) with a legume (beans). Together, the two plant foods complement each other:

<table>
<thead>
<tr>
<th>Plant</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereal Grain</td>
<td>Lysine</td>
<td>Methionine</td>
</tr>
<tr>
<td>Legume</td>
<td>Methionine</td>
<td>Lysine</td>
</tr>
</tbody>
</table>

In spite of the lysine and methionine that can be made up through food combining, they are still missing amino acids found in animal protein.

**Corn and Soy**

Since the early 1940s, corn and soy have grown to become the United States' first and second largest crops. Eighty percent of all corn grown in the U.S. is consumed by domestic and overseas livestock, poultry, and fish production.

The United Nations’ Food and Agriculture Organization (FAO) promotes the use of corn and soybeans as animal feed due to their low cost and complementary limiting factors. For large-scale operations, these plants are also easy to handle, but they ignore animals’ nutritional needs. Ruminants (cattle, sheep, goats, buffalo, deer, and elk) have a digestive system designed for grass. Chickens are carnivores, needing bugs and worms as a protein source, yet they’re fed the same complementary plant food as larger animals.

**Top Ten Reasons Why Humans and Animals Should Not Eat Soy**

Although fermented soy foods are suitable for human consumption, raw soy has ten glaring problems that are summarized on the Weston A. Price Foundation's Web site's Soy Alert page. If soy is the second largest crop in the United States, it’s clear why you’ll never hear about soy from mainstream news.

**Carole Middleton’s French Diet Doctor**

A diet that emphasizes protein is considered a high-protein, low-carbohydrate diet that will help shed extra pounds. In 2011, just before Britain’s royal wedding, Carole Middleton revealed that she was using the Dukan diet. Although Dukan is misinformed on fat and artificial sugar, his book is valuable because he understands the truth about carbohydrates (that he learned by accident):

> Carbohydrates are not essential for life.

Dukan worked with an obese patient in Paris when he was a young doctor. His patient said, "Put me on whatever diet you want, deprive me of whatever food you want, anything, but not meat. I like meat too much." Dukan told his patient to eat nothing but meat for five days and five days later, his patient had lost twelve pounds. After an additional five days, his patient had lost another five pounds. Dukan and his patient were amazed at the amount of weight lost after several days of eating nothing but meat.

Carbohydrates make you fat. In the 80s, people ate "low-fat" foods that are high in carbohydrates (this seems to cause confusion). Very few diet book authors understand that carbohydrates are not essential for life.

**What Should Jay, Gloria, Manny and Alex Eat?**

The four daily totals for the Modern Family stars are 78.5 (Jay), 59.5 (Gloria), 70 (Manny) and 55.5 (Alex).

Reaching your daily total will be impossible if you don't eat protein at every meal, and difficult if you limit your protein to meat, poultry and fish. Eggs and fermented dairy (e.g. yogurt, cottage cheese, kefir) are recommended foods to get you to your total with ease. It is a good idea to search for egg recipes that are easy-to-make. Here are a few foods to compare:

<table>
<thead>
<tr>
<th>Food</th>
<th>Portion Size</th>
<th>Usable Protein</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grilled Chicken Breast, 4 ounces</td>
<td>Medium</td>
<td>5 Grams</td>
</tr>
</tbody>
</table>
Egg Salad (2 Large Eggs) | Medium | 11.34 Grams
Baked Custard (1 Large Egg/Cup) | Medium | 11.75 Grams
Deviled Eggs (2 Large Eggs) | Medium | 11.34 Grams
Cottage Cheese (1 Cup) | Medium | 22.8 Grams
Yogurt (1 Cup) | Medium | 9.12 Grams
**Total** |  | 71.35 Grams

**Notes:**

1. Cottage cheese is an extremely efficient protein food (see: amount of usable protein in the list above).
2. If you eat bread, select sourdough that is fermented. Sourdough originated in ancient Egypt around 1,500 B.C. Fermented foods are easy-to-digest.

**Daily Total**

The 71.46 gram total in the list above would be more than enough for Gloria, Manny and Alex, but not enough for Jay. Jay's total can easily be reached with a larger portion of an efficient protein food.

**Extras For Experts**

This article's "extras" include a report about Dr. Weston A. Price's visit to Switzerland's Loetschental Valley and what to do about constipation that Dukan says is a problem when you eat a high-protein diet.

**Dr. Price's Visit to Switzerland**

Dr. Weston A. Price, who wrote *Nutrition and Physical Degeneration*, was a dentist who lived in Cleveland, Ohio, in the early twentieth century. Due to his interest in teeth, Price and his wife traveled around the world to study the diets of fourteen primitive societies who were free of tooth decay and dental deformities. When Price examined the teeth of children in the Loetschental Valley (an isolated part of the Swiss Alps), he found that those eating unprocessed dairy were nearly free of cavities and all had straight teeth.

Young adults who had left the valley experienced tooth decay but showed evidence of remineralization when they returned. Loetschental dairy samples that Price had analyzed were shown to be far higher in minerals and vitamins than samples of commercial dairy products analyzed from the rest of Europe and North America. For more details about Dr. Price's research, visit [www.westonaprice.org](http://www.westonaprice.org).

**Constipation is a Symptom of a Parasite Infection**

In his diet book, Dr. Pierre Dukan warns that a high-protein diet causes constipation. He recommends oat bran and provides a recipe for a small oat bran pancake he calls a gallette. Oat bran helps constipation, but it does not solve the underlying problem which is a parasite infection.

An antiparasite tea made of herbs that Dr. Hulda Clark discovered will get rid of your parasites and constipation. Purchase the herbs listed below. Buy at least 6 ounces of each of the light weight herbs and 9 ounces of the heavier herbs (e.g. Burdock Root and Cloves). [Jean's Greens](http://www.jeansgreens.com) is a resource near Albany, New York that sells all of the herbs except two of Hulda's original herbs. You'll need to search for Black Walnut Hull tincture and Wormwood tincture at a health food store. Use a drip coffee maker to brew a combined recipe with all the herbs using the following steps.

**Steps:**

1. Place two black tea bags in a coffee filter inside your coffee maker.
2. Add half a tablespoon of each of the following herbs:
   - Cloves
   - Boneset
   - Birch Bark
   - Burdock Root
   - Cardamom Pods (ground)
   - Fennel Seeds
   - Thyme
3. Add 7-8 cups of spring water and turn on your coffee maker.
4. When the tea has finished brewing, add 12 drops of Black Walnut and
Wormwood tincture, or open a capsule of each of these herbs if you can only find capsules

5. Drink the tea.

6. Repeat this recipe until your constipation has disappeared.

Notes:

1. Killing parasites and improving nutrition will often make chronic health problems disappear.

2. Parasites lay eggs that are very small and difficult to see. Everyone, including healthy people, will need to repeat antiparasite tea and take it as a preventative health measure.

References

1. Hair Loss Caused by Lack of Protein, WebMD Medical Reference, April 25, 2013, American Society for Dermatologic Surgery. American Academy of Family Physicians, reviewed by Debra Jaliman, M.D.


3. Lysine and other amino acids for feed: production and contribution to protein utilization in animal feeding, Yasuhiro Toride, Ajinomoto Co., Inc., Japan

4. Frontline Interview with Michael Pollan, April 18, 2002.

5. Origin, History, and Uses of Soybean (Glycine max), Lance Gibson and Garren Benson, Iowa State University, Department of Agronomy, March 2005.


9. The Cure and Prevention of All Cancers, Hulda Regehr Clark, Ph.D.