Dietary Protein

When we eat protein rich foods like meat or tofu, our intestines break them down into their component amino acids for absorption. Just as the 26 letters of the English alphabet can be recombined into millions of different words, the 22 different amino acids building blocks can be recombined into the thousands of different proteins our body needs like muscle, skin and connective tissue, tendons and that sort of thing.

Dietary protein, unlike the other macronutrients, carbohydrates and fat, is not primarily a source of energy or calories but it's really a source of amino acids that are needed to replace old proteins. So how much protein do we need to eat? There are a wide range of estimates but we suggest sticking to the official Recommended Daily Amount of 0.8 g/kg/day. This figure was estimated in the 1950s by measuring the average protein intake of a sample of healthy people, which was 0.6 g/kg/day and then adding 25% to that for a margin of safety. So the RDA of 0.8 g/kg/day is actually much more than healthy Americans were eating in the past. Even then, it's not a lot, and the average American eats about 50% more than this at roughly 1.2-1.5 g/kg/day. Our body cannot store this extra amino acids, so when we eat more protein than we need, the excess is converted into glucose or fat by the liver.

What happens if we eat less than 0.8 g/kg/day such as during longer fasts? Generally nothing, particularly if you are overweight. We can break down our existing proteins to recycle the amino acids into new proteins, so the requirements to eat protein are much lower than you would generally expect. It is estimated that overweight people have about 50% more protein than normal weight people. So the process of weight loss is not just about losing fat, but also about losing proteins, such as the excessive skin and connective tissue that goes along with it. We've noted fewer problems with excessive skin after weight loss in our clinics. We've treated thousands of patients, and some people have lost over 100 pounds, but we've never yet referred anybody for skin removal surgery. We believe that fasting stimulates the body to break down the excessive protein in the skin and connective tissue.

After fasting, when you start to eat again, the body will rebuild the proteins it needs. If you've lost body fat, then the excess skin and blood vessels and connective tissue is superfluous and not rebuilt. Human growth hormone increases during fasting, which helps the body maintain and rebuild the proteins it needs, like bone and muscle.

How much protein is 0.8 g/kg/day? In North America, the average weight of a 40 year old woman is 175 pounds (79 kg) and 200 pounds (91 kg) for men. Multiplying it by 0.8 means an average sized woman needs 63 grams of protein and the average male 73 grams per day. This is not the same as 63 or 73 grams of meat, because protein makes up only about 16 to 25 percent of the weight of meat, depending on the type and leanness of the cut. About 6-8 ounces of chicken breast or ground beef will provide this amount of protein by itself.

This formula assumes you're a healthy body composition and not trying to lose weight. Protein recommendations are determined by the amount of lean mass you have. This is because your fat cells don't generally need any protein for normal maintenance. So your protein needs are the same if you weigh 150 or 250 pounds.

Dietary protein can come from either animal or plant sources. We are animals, so we digest and use animal proteins such as meat, fish and eggs much more effectively and efficiently. Meat is also a complete source of amino acids, meaning that all our amino acids that we need can be obtained by simply eating meat. Plant sources are not complete because plants are so different from us. When we eat the muscle protein from an animal, we can easily take those amino acids to build our own muscle proteins. Plant proteins are not as easily assimilated by our body so vegetarians must eat a variety of plant proteins to get all the different amino acids they need. Good plant sources of protein include tofu, lentils, chickpeas, nuts and beans.

Dietary Protocols

We've talked about the three different macronutrients, carbohydrates, fats and proteins, but we eat foods, not macronutrients, so let's put it all together and talk about diets. Proper nutrition depends two things

- What we eat – our diets
- When we eat – meal timing and fasting

In our previous lessons, we've reviewed fasting, but that does not tell you anything about the proper diet. Fasting is the number of hours that you do not eat. Fasting may be used with any diet, but certain diets work better including:

- Paleo
- Low Carbohydrate, Healthy Fat (LCHF)
- Ketogenic

We suggest to gradually transition your diet to one of these dietary protocols as you increase your fasting. These diets all share some common factors. They reduce sugar, sweeteners, refined carbohydrates, and processed foods, allowing moderate protein and no restriction on

natural fats. This naturally lowers insulin levels and promotes satiety which keeps us full and makes fasting easier. The low fat, low calorie diets of the 1980s and 1990s were the exact opposite – they raised insulin levels and decreased satiety, which led to the obesity epidemic. But there are few distinctions between these diets.

The Paleo is sometimes called the caveman diet because it only allows foods available in prehistoric times. It promotes ancient, ancestral foods like vegetables, meat, poultry, fish, seafood, wild game, fruit and nuts and seeds. The diet excludes modern additions to the human diet such as grains, sugars, dairy and legumes. All processed or refined foods, including bars and shakes are obviously restricted. A Paleo diet is not necessarily low in carbohydrates, because it allows many starchy root vegetables.

The low-carb, healthy fat (LCHF) diet focuses on eating real, unprocessed foods while reducing carbohydrate intake, taking a moderate (but not high) amount of protein and eating plenty of natural fats. Starchy, root vegetables are high in carbohydrates and are therefore limited on the LCHF diet. Net carbohydrate intake, calculated as the grams of carbohydrates minus grams of fibre, is limited to less than 50 grams per day, compared to an average American diet with 200-300 g/day.

The low carb dietary approaches generally limit most fruits except for berries, avocados and olives which are lower in carbohydrates. Vegetables are limited to leafy greens and non-starchy vegetables that grow above the ground, such as brussels sprouts, cauliflower, bell peppers and broccoli. Meat, fish, seafood, nuts, seeds, berries and dark chocolate are all compatible with a low carb diet.

The ketogenic diet is the more stringent form of the LCHF diet, only allowing only 20 grams of net carbohydrates or less per day. Normally, the body can power itself on one of two fuels – glucose (sugar) or fat. If you eat very little glucose from carbohydrates, then the body must burn fat. The brain cannot use fat directly and the liver must produce ketones to fuel the brain. The ketogenic diet is so low in carbohydrates that the body must primarily fuel itself on fat. Many people like to measure these ketones in their breath, urine or blood to ensure they are in ‘fat-burning’ mode. A vegetarian keto diet is more difficult to achieve, but it’s not impossible! Make nuts, seeds, legumes and organic tofu your main sources of protein, and limit grains.

There are many places to find great recipes. It is simple to find cookbooks for either the Paleo or LCHF approach. I also wrote the Obesity Code Cookbook and that is available now as well.