Learning more about Protein

The typical American diet provides plenty of protein -- more than the RDA in most instances. The RDA represents the minimum amount of protein needed to fulfill protein needs in 97.5% of the population. This value is equal to 0.8 g of protein per kg body weight per day. The average mixed American diet provides more than double of this.

Let's break it down. Proteins are the basic building blocks of the human body. They are made up of amino acids, and help build muscles, blood, skin, hair, nails and internal organs. Next to water, protein is the most plentiful substance in the body, and most of it (around 60% to 70%) is located in the skeletal muscles.

There are 20 amino acids that are required for growth by the human body and all but eight can be produced in an adult body. These eight amino acids are called essential amino acids and must be supplied to the body by food or supplements. The other twelve non-essential amino acids are manufactured within the body, but both essential and nonessential amino acids are necessary for the synthesis of tissue proteins. What does all this mean? It means that if you don't supply your body with the essential amino acids it needs, the amount of protein your body can use for building muscle is limited.

Foods that contain all of the essential amino acids are called complete proteins. That is, they contain all eight essential amino acids that cannot be synthesized in the body (isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan and valine). These foods include beef, chicken, fish, eggs, milk and just about anything else derived from animal sources as well as soy products. Incomplete proteins do not have all of the essential amino acids and generally include vegetables, fruits, grains, seeds and nuts. Plant protein sources, although good for certain essential amino acids, do not always offer all eight essential amino acids in a single given food. For example, legumes lack methionine, while grains lack lysine. What is needed are complementary proteins, various protein food sources that, eaten together, create a complete protein and enable a person to achieve an adequate biologic protein diet. Complete proteins are found in some plant sources such as quinoa, buckwheat, hempseed and amaranth among others.

So, how do you do you combine complementary proteins? Below is a chart listing some incomplete proteins. To get all of the essential amino acids, simply choose foods from two or more of the columns. You don't have to eat all these food items at a given meal. However, you should consume most or all of them during the course of the day to insure a well-balanced protein diet of high biological value. These can also be eaten with a complete protein (i.e. animal or soy source) to increase the level of protein consumed. This list is an example and is not complete. Just eat from all these categories and you'll get your protein and without the added fat found in animal products.

Grains	Legumes	Seeds & Nuts	Vegetables
Barley	Beans	Sesame Seeds	All Dark Leafy
Corn Meal	Lentils	Sunflower Seeds	Broccoli
Oats	Peas	Walnuts	
Rice	Peanuts	Cashews	
Pasta	Soy Products	Other Nuts	
Whole Grain Breads			