Why Athletes Need More Protein

1. In addition to water and a variety of electrolytes such as potassium, magnesium or chloride, nitrogen is also lost through sweating.

2. Protein loss occurs through compression hemolysis, which occurs when erythrocytes (red blood cells) are actually crushed through intense muscle contraction. This causes the release of hemoglobin, the formation of free radicals, and a consequent loss of protein and iron.

3. Up to 5-10% of an athlete's total energy supply may be derived through the breakdown and oxidation of protein, and in particular, from the branched-chain amino acids leucine, isoleucine and valine. Many athletes push exercise to the point of muscle glycogen deficiency, forcing amino acid reserves or muscle tissue, or both to be used as a secondary source of fuel. Exercise also causes muscle to release large quantities of alanine and glutamine, which are mostly excreted from the body and lost.

4. Heavy exercise elicits a stress response, which raises plasma cortisol levels. Cortisol inhibits the uptake and transfer of amino acids into muscle cells and stimulates a direct proteolytic effect, which increases protein turnover. Cortisol induced muscle catabolism is much more likely to occur on a protein deficient diet.

5. Nitrogen balance can drop well below optimum levels as a result of strenuous workouts. A negative nitrogen balance means that the body has an insufficient intake of high-quality protein and essential amino acids. Although the liver and several hormones control nitrogen used for building muscle, it's impossible to build a substantial quantity of muscle mass without maintaining a positive nitrogen balance.

Protein Is Safe

The prime directive with protein, and this principle applies to all vitamins, minerals, and dietary nutrients, is to provide the body with optimum quantities sufficient to supply the biological demand. Excessive quantities of anything, including protein, fat and carbohydrates and even water, will always create problems. On the other hand, an inadequate provision of the essential amino acids or EFAs will result in deficiency, sub-optimal performance, and even premature death.

Despite irrefutable evidence to the contrary, many people still believe that protein is toxic, hard on the kidneys or harmful to the body when consumed in quantities greater than 0.8g/kg. If protein was really that bad, don't you think we'd see more direct evidence, especially if you consider the fact that hundreds of thousands of athletes and bodybuilders across North America have been consuming 2-3 times more than what governments suggest for decades without any evidence of harm or damage? In addition, there is no published evidence that a "high" protein diet produces negative effects on kidneys and liver metabolism in athletes (although as I have mentioned, consuming denatured protein without any moisture has a huge downside).

Anti-protein groups correlate high protein diets with increased rates of cancer and heart disease, but such correlation fails to differentiate between the source and species of protein, as in wild game meat versus domesticated, such as a farm hog fried in grease compared to eating fresh barracuda right from the sea. How the protein was prepared, the degree to which it was cooked and the fat content of the protein are also seldom if ever itemized.

In addition, the argument against protein does not account for the simultaneous high consumption of processed food in Western countries, including refined sugar, milled flour and commercial oils. Almost everyone consuming high quantities of refined food eats extremely hazardous forms of over cooked, high-fat animal protein, which dehydrates and acidifies the body, encourages the formation of nitrosamines and corrupts the GI tract. To really put protein to the test, we'd have to eliminate all others foods for a good period of time and back up it up with plenty of blood and urine assessment.

Anthropological evidence and analysis of both current and past traditional hunting/gathering societies demonstrates no such correlation, in fact the opposite is true. Like Dr. Schmid, I consider the native diet of our ancestors to be ideal. It consisted solely of fruits, vegetables and low-fat wild game, and in fact grains, which represent a high percentage of calorie intake among North Americans today, were not even consumed prior to the agricultural age, which anthropologists estimate began approximately ten to twenty thousand years ago.

Dr. Peter Lemon of Kent State University and Dr. Vernon Young of MIT have both confirmed through their research how heavy exercise and certain medical conditions, such as cancer and AIDS where muscle wasting is common, increases the demand for protein and antioxidants beyond the RDA. Both situations compromise nitrogen balance, causing a protein deficit and an impaired immune response. Of course, every individual is unique and all the variables pertaining to each case should be evaluated by a competent health professional.

Dr. Barry Sears, author of the best selling book *The Zone* (1995), advocates a general increase in protein and fat intake and a decrease in carbohydrate consumption. He believes that the kidneys actually improve in function on a higher intake of protein once the initial adaptation phase is complete. Dr. Sears also confirms that high-quality protein is not toxic unless consumed in large quantities at one time. A typical serving size of protein for women is about 20-25 grams, whereas a typical serving size for men is in the range of 25-35 grams.

To be objective however, protein does create nitrogenous waste in the form of ammonia, which the body converts into urea for excretion through the kidneys. High levels of ammonia are harmful to cells, and excessive levels of urea can poison the blood. For those concerned about the possibility of consuming too much protein, Dr. Richard Passwater recommends a Blood Urea Nitrogen (BUN) test for measuring urea in the blood. Normal ranges for good health measure between 10 - 14 milligrams per deciliter. Medical doctors also diagnose kidney function and muscle chemistry by measuring the urinary excretion of creatinine, which is a decomposition by-product of creatine phosphate (CP).