

VitalRemedy

THE QUARTERLY NEWSLETTER OF THE FOUNDATION FOR PREVENTIVE AND INTEGRATIVE MEDICINE

\$3.95

APRIL 2008

It's not just for building muscles.
Protein plays a vital role in building,
maintaining and repairing lean body tissues:

WRITTEN BY LAURA DENSON BAUM, M.D.

muscles, tendons, ligaments, circulatory system, brain, immune system, skin and other organs. In fact, every cell in the human body contains protein. Proteins are complex organic compounds that are composed of smaller "building blocks" called amino acids. When you consume foods that contain protein, your body breaks down the protein into its amino acids, and rebuilds them in specific sequences to form the structures it needs. Amino acids are

classified into two groups: *essential* amino acids, which cannot be made by the body and must be supplied by food, and *nonessential* amino acids, which are made by the body from the essential amino acids or through normal breakdown of proteins.

We require protein in our diet to allow for tissue repair and growth. Inadequate protein consumption can cause impaired development, loss of muscle mass, decreased immunity, weakening of the heart and respiratory system, and death. In many parts of the world, protein malnutrition causes kwashiorkor—you've seen the haunting images of a young child afflicted with this condition, naked and emaciated, but for the characteristic swollen belly. For most of us living in developed countries, getting sufficient protein is easy, but just like with the fats and carbohydrates, not all protein is created equal. A protein that contains all the amino acids needed to build new proteins is called a *complete* protein. Complete proteins are found in animal foods such as meat, fish, poultry, eggs, milk, and milk products such as yogurt and cheese. Soybeans are the only plant source of protein considered to be a complete protein. In contrast, *incomplete* proteins lack one or more of the essential amino acids. Sources of incomplete protein include beans, peas, nuts, seeds, and grain. A small amount of incomplete protein is also found in vegetables. Plant proteins can be combined, however, to provide all of the essential amino acids and form a complete protein. Examples of combined, complete plant proteins are rice and beans, barley and corn, and lentil soup with potatoes.

We know that protein is critically important for growth and development during childhood, adolescence, and pregnancy, but there are other conditions associated with increased protein requirement including low calorie weight reduction diets and endurance and strength training. With regard to weight loss, recent studies have suggested that for most adults a high-protein, low carb diet may keep you leaner than a traditional high-carb, low-fat diet. This is partly because high protein foods slow the movement of food from the stomach to the intestine, delaying hunger. Also, protein's moderate, steady effect on blood sugar and insulin levels avoids the quick, steep rise and fall that drives carbohydrate cravings after eating rapidly digested high glycemic foods. Finally, the body uses more energy to digest protein than it does to digest fat or carbohydrate. When a low calorie diet is used to accomplish a daily negative caloric intake, the goal is weight loss, meaning fat not muscle. This is why increasing protein in the diet is critical. If we do not receive adequate calories from food, the body will compensate by drawing on its own reserves, both its fat stores and lean body tissue. Ideal weight loss will occur only when there is a daily deficit of calories, coupled with adequate amounts of high quality protein that will allow for fat loss while preserving lean body mass.

Exercise, particularly weight training, can also lead to a daily protein requirement that exceeds the current recommended daily allowance of 0.8 grams per kg (about 0.4 gm/lb) body weight for a sedentary adult. Daily



SETH J BAUM, MD, FACC
Medical Director

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Medical News

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Editor in Chief

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The Power of Protein

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Proper protein consumption helps preserve lean body mass while losing unwanted fat.

intake for the adolescent or adult athlete should be in the range of 1.0 – 2.0 gm/kg (0.5-1.0 gm/lb) body weight. Protein requirements of athletes and physically active adults are increased above those of sedentary people due in part to changes in amino acid metabolism induced by exercise. A small amount of protein is used as fuel during endurance exercise, and muscle and whole-body protein synthesis is suppressed during exercise. Increases in exercise intensity and duration further depress protein synthesis. Catch-up occurs after exercise when protein synthesis increases. Extra protein

is then needed to repair injuries to muscle fibers and to remodel muscle tissue in response to endurance and strength training. Unless a protein-containing meal is consumed during recovery, breakdown will exceed rebuilding of muscle mass. Several studies indicate that protein synthesis during recovery is enhanced when the recovery meal contains both carbohydrate and protein. Whether you're an elite athlete or simply an individual who's looking to build body mass, lose body fat, and increase strength, proper protein consumption is essential.

Did You Know...?

Strength training is a vital part of the equation when it comes to maintaining and improving your health. Incorporating muscle-building exercise in your daily routine will help:

- Increase metabolism and maintain proper weight
- Increase muscle strength and tone
- Improve balance and reduce incidence of falls
- Increase bone density and decrease risk for fracture
- Relieve symptoms of arthritis
- Improve glucose control and management of diabetes
- Improve heart health
- Decrease stress and improve state of mind
- Improve duration and quality of sleep

medical news and events

Statins Found To Reduce CoQ10 Levels

A study published in the *Journal of Clinical Pharmacology* evaluated the results of a double blind, placebo controlled study on the effects of statin drugs on plasma CoQ10 levels. Study results determined that treatment with HMG-CoA reductase inhibitors lowers both total cholesterol and CoQ10 plasma levels in normal volunteers and in hypercholesterolemic patients. CoQ10 is essential for the production of energy and also has antioxidative properties. The authors suggested that a decrease of CoQ10 availability may be the cause of membrane alteration with consequent cellular damage.

J Clin Pharmacol. 1993 Mar;33(3):226-9.

CoQ10 Supplementation Relieves Muscle Pain and Weakness

A study published in the *American Journal of Cardiology* examined the effect of CoQ10 supplementation on myopathic symptoms (muscle pain and weakness) in patients treated with statins. Patients with symptoms were randomized to receive 100 mg CoQ10 or 400 IU of vitamin E for 30 days. Results showed that after a 30-day intervention, patients reported a 40% decrease in pain severity and a 38% reduction in pain interference with daily activities in the group treated with CoQ10. No changes were observed in the group treated with vitamin E. The results suggested that CoQ10 supplementation may offer an alternative to stopping treatment with statin drugs.

Am J Cardiol. 2007 May 15;99(10):1409-12.



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StatinGuard® was formulated to help maintain healthful Coenzyme Q10 levels and promote cardiovascular health.*

CoQ10 levels are known to decrease with aging. In addition, since CoQ10 shares a common synthetic pathway with cholesterol, drugs that inhibit cholesterol synthesis, like the Statins, can reduce CoQ10 levels, which may cause side-effects like muscle pain and weakness.

Maintaining healthful levels of coenzyme Q10 is important for heart health.* **CoQ10** functions as an electron carrier in the mitochondrial respiratory chain as well as serving as an important intracellular antioxidant. CoQ10 is found throughout the body with the highest concentration in the cells of organs that require large amounts of energy such as the heart and kidneys. **L-carnitine** and **alpha liponic acid** are included in StatinGuard® because of their uniquely beneficial interplay with CoQ10.

* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

our MISSION

is to discover
through scientific
research and
empower through
education

Tandoori Swordfish

- 1 cup plain low-fat yogurt
- 2 Tablespoons vegetable oil
- 1 Tablespoon fresh lemon juice
- 2½ teaspoons curry powder
- 1½ teaspoons minced garlic
- 1½ teaspoons grated peeled fresh ginger
- 1½ teaspoons ground cumin
- 1½ teaspoons ground coriander
- 1 teaspoon salt
- ½ teaspoon cayenne pepper
- 2 lbs swordfish steaks, trimmed, cut into 1 inch cubes
- 1 Tablespoon coarsely chopped fresh cilantro (optional)
- 6 bamboo skewers, soaked in water 30 minutes



Combine first 10 ingredients in a large bowl to blend. Add swordfish to yogurt mixture; toss gently to coat. Cover with plastic wrap and refrigerate at least 1 hour. Turn grill on medium-high heat or preheat broiler. Thread swordfish pieces onto skewers. Grill or broil swordfish until just cooked through, turning frequently. Transfer to plates, garnish with chopped cilantro, and serve immediately. (Serves 4)

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Foundation for Preventive and Integrative Medicine

2300 Glades Road, Suite 305 East
Boca Raton, FL 33431

