

# VENICE PLASTIC SURGERY

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*Cosmetic, Reconstructive, Face, Breast, and Hand Surgery*

## **Essential protein elements**

The human body may be around 70 percent water and 30 percent solids. Of the solid portion about half is made of proteins. We think of these proteins as the structural elements of muscle, skin, bone, nails, hair and other structures. Digestive enzymes and transporters, hormones and the basic immune system components are also made largely from proteins. They may also be disassembled and made into fats or burned as fuel in the form of carbohydrates.

Proteins are actually made of smaller units called amino acids. There are about 20 altogether. Most of these can be made by your body while others cannot. Those must be consumed in your diet, just like vitamins. These essential amino acids include leucine, valine, lysine and phenylalanine to mention a few. Those with kidney trouble or liver disease will have additional problems. They may not be able to produce amino acids that the body can make when working under otherwise normal conditions.

Dietary sources of protein include, meats, poultry, fish, and some dairy products. Plant sources include grains, legumes and vegetables. The mucous and digestive enzymes your body normally uses early in the digestive process are themselves digested and are therefore additional protein sources. Since all consumed proteins are digested it is of little use to eat more for muscle building. Bodybuilders mistakenly think that they will make more muscle if they eat more protein. Excess proteins are made into fats then stored making you just fatter.

Meats generally have all types of proteins and therefore supply all necessary amino acids. Plants are often missing several essential amino acids and should be mixed. Some people just eat a lot of certain food groups as just rice and grains or mostly legumes. Doing this will result in protein malnutrition over time. You must mix groups to get all the different amino acids. A varied diet is of course the best. There is the bread and grain variety of protein sources. We have nuts and seeds, also leafy vegetables and the bean group. One does not have to consume every group with every meal. You just need to mix things up over a few days time.

Children, especially the very young are more prone to protein malnutrition. This does occur in developing countries. There are a few disease states in these conditions. They are marasmus and kwashiorkor. They may occur in starving individuals that clearly are ill from a variety of medical conditions. Those with marasmus are generally thin, weak and starved looking. People with kwashiorkor are usually normal appearing but are very sick.

I could discuss proteins in greater detail but I would guess that few in this country are lacking enough to develop pure protein malnutrition. I have heard of weight control diets that are the high protein types, the high fat types and the high carbohydrate type. There is no doubt that some individuals get into trouble with these lopsided dietary behaviors. My personal weight loss diet is to eat normal ratios of all the food groups but just eat less. It is called portion control.

**The above represents the opinion of A. E. Haas, M.D.  
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**Just call us directly. No referral needed unless required by your insurance company**

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