High Protein Low Carbohydrate Diets

How do these diets work?

By restricting carbohydrates drastically to a mere fraction of that found in the typical American diet, the body goes into a different metabolic state called ketosis, whereby it burns its own fat for fuel. Normally the body burns carbohydrates for fuel -- this is the main source of fuel for your brain, heart and many other organs. A person in ketosis is getting energy from ketones, little carbon fragments that are the fuel created by the breakdown of fat stores. When the body is in ketosis, you tend to feel less hungry, and thus you're likely to eat less than you might otherwise. However, ketosis can also cause health problems, such as kidney failure (see below).

As a result, your body changes from a carbohydrate-burning engine into a fat-burning engine. So instead of relying on the carbohydrate-rich items you might typically consume for energy, and leaving your fat stores just where they were before (alas, the hips, belly, and thighs), your fat stores become a primary energy source. The purported result: weight loss.

What are the health risks associated with high protein, low carb diets?

High protein diets can cause a number of health problems, including:

Kidney failure. Consuming too much protein puts a strain on the kidneys, which can make a person susceptible to kidney disease.

High cholesterol. It is well known that high protein diets (consisting of red meat, whole dairy products, and other high fat foods) are linked to high cholesterol. Studies have linked a high cholesterol levels to an increased risk of developing heart disease and cancer.

Osteoporosis and kidney stones. High protein diets have also been shown to cause people to excrete more calcium than normal through their urine. Over a prolonged period of time, this can increase a person's risk of osteoporosis and kidney stones.

Cancer. One of the reasons high protein diets increase the risks of certain health problems is because of the avoidance of carbohydrate-containing foods and the vitamins, minerals, fiber and anti-oxidants they contain. It is therefore important to obtain your protein from a diet rich in whole grains, fruits and vegetables. Not only are your needs for protein being met, but you are also helping to reduce your risk of developing cancer.

Unhealthy metabolic state (ketosis). Low carb diets can cause your body to go into a dangerous metabolic state called ketosis since your body burns fat instead of glucose for energy. During ketosis, the body forms substances known as ketones, which can cause organs to fail and result in gout, kidney stones, or kidney failure. Ketones can also dull a person's appetite, cause nausea and bad breath. Ketosis is prevented by eating at least 100 grams of carbohydrates a day.
Is this diet right for me?

These theories of weight loss remain unproven, and most experts are concerned that high-protein, low carb diets can cause a host of problems, particularly for the large segment of the population that is at risk for heart disease. What's more, the plan doesn't permit a high intake of fruits and vegetables, recommended by most nutrition experts because of the numerous documented health benefits from these foods.

The experts say to achieve permanent weight loss you must change your lifestyle. This means following a lower calorie diet that includes grains, legumes, fruits and vegetables combined with participating in regular physical activity.

Before starting this or any diet, be sure to talk with your doctor to determine what approach is right for you.

Reviewed by The Department of Nutrition Therapy at The Cleveland Clinic.
Edited by Charlotte E. Grayson, MD, Web MD, August 2004.
Copyright © 2005, The Cleveland Clinic.