



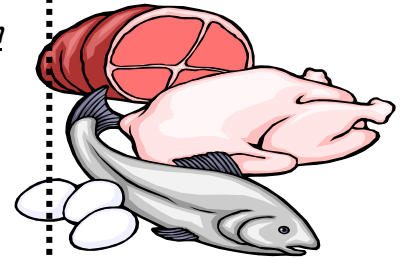
NutritionMatters

Nutrition Services | Health Services Department

The Truth about High-Protein Low Carbohydrate Diets



Books like The Zone, Protein Power, and Sugar Busters seem to be a dieter's dream come true, promising fast yet almost effortless weight loss. These high protein diets are not something new. In fact, they've been around since the 1970's, when The Scarsdale Diet and Dr. Atkins' Diet Revolution first promoted high protein eating as a quick and easy method to shed unwanted pounds. Do these diets really work? Are they a healthy way to lose weight?



Scientific research shows that high protein diets are not effective for long-term weight loss and in fact may pose serious health threats for those that follow them for the long term.

What are the characteristics of these diets?

Imagine having scrambled eggs and bacon (no toast) for breakfast, a cheeseburger without the bun and a small salad for lunch, and a large steak, salad and diet jello for dinner. This sample meal plan is typical of high protein, low carbohydrate diets.

These diets emphasize foods that are high in protein such as meat, eggs and milk products, and limit the

consumption of carbohydrate-rich foods such as breads, cereals, pasta, rice, legumes, vegetables and fruit. These diets are often low in calories, high in fat and/or saturated fat and cholesterol.

Eating less whole grains, vegetables and fruit results in a lower intake of dietary fibre and all the vitamins and minerals found in these foods. These diets lack variety and in most cases, do not meet the nutrient recommendations from *Canada's Food Guide to Healthy Eating*.

What is the theory behind these diets?

High-protein low carbohydrate diets are based on the theory that eating carbohydrate-rich foods stops the body from burning fat, and that restricting carbohydrates will “dissolve” fat tissue. According to the authors of these diets, a high carbohydrate diet increases blood insulin levels, which in turn promotes the storage of body fat. What is not mentioned by the authors is that protein also stimulates insulin secretion. To date, there are no scientific studies proving that a low carbohydrate diet will result in less insulin production. Higher blood insulin levels (insulin resistance) are seen in overweight and obesity, or when there is a lack of physical activity.

Why do we need carbohydrates?



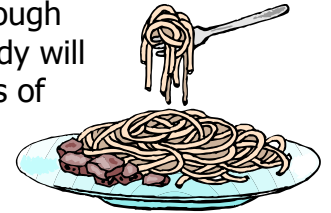
Just as your car runs on a certain type of fuel, so does your body. Carbohydrates in our bodies are broken down to form glucose (blood sugar) - the preferred fuel for most body functions. It is especially important as the chief fuel of nerve cells, including those of the brain, which depend almost exclusively on glucose for energy. For this reason, the lowest amount of carbohydrate that people should consume each day is 130 grams. This recommendation is based on the minimum amount of carbohydrate needed to produce enough glucose for the brain to function properly.

For example, a slice of bread contains about 15 grams of carbohydrates, 1 cup

of pasta or rice contains about 30 grams, ½ cup of carrots contains about 10 grams and 1 cup of milk contains about 12 grams.

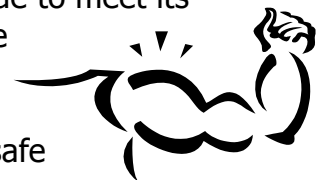
What happens if we do not eat enough carbohydrates?

When you don't eat enough carbohydrates, your body will quickly use up its stores of glycogen (carbohydrate stored in the body). This results in water loss because for every gram of carbohydrate stored as glycogen, there are 3 grams of stored water.



When you cut back drastically on carbohydrates for a number of days and glycogen stores are used up, your body is then forced to get energy from other sources, such as body fat. Body fat is broken down for energy and compounds called ketones are produced. These chemicals decrease appetite, but they can also cause headaches, irritability, dizziness, fatigue, nausea and bad breath. (“Keto breath” has been said to smell like a combination of nail polish and overripe pineapples!)

In addition, when you do not eat enough carbohydrates, your body breaks down muscle tissue to meet its energy needs. As we lose muscle, we also lose body fluid, often times, resulting in rapid but unsafe weight loss!



Why do these diets seem to work in the short-term?

When it comes to losing weight, what matters is “**calories**”. High protein diets are generally **low in calories** – a loss of appetite as a result of ketosis, and restricting the type and amount of food eaten both lead to an overall lower intake of calories.

Studies show that if you reduce total calories you will **lose** weight. It does not matter if you are cutting fat, protein, or carbohydrate. A calorie is a calorie is a calorie!

As explained above, the rapid short-term weight loss seen with these diets is mostly due to loss in body fluid, muscle tissue and some fat tissue.

What happens if you stop the diet?

Since these diets lack variety, they quickly become boring and difficult to follow. When you start to eat more carbohydrates, you gain weight back as water, then fat. Muscle only returns if you exercise.

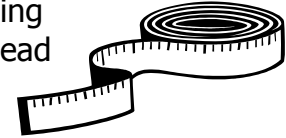
What health problems may be associated with a high protein, low carbohydrate diet?

Heart disease – These diets are high in animal protein, fat and cholesterol. High fat diets have been linked to increased cholesterol levels, a well-documented risk factor for heart disease.

Cancer – These diets are low in vegetables and fruit. Current research indicates an increased risk of certain

cancers with a diet low in fruits, vegetables, whole grains and legumes.

Overweight and obesity – There is no metabolic ‘magic’ to low carbohydrate diets. Those who continue to lose weight after the first week do so because of decreasing calories. This may lead to boredom and cravings.



Recent studies are showing that a high protein meal leads to a greater tendency towards bingeing of foods, high in sugar and fat, later in the day.

Gout (inflammation of the smaller joints) – High protein foods such as meat, poultry, seafood and eggs are high in purines. Purines are broken down into uric acid. A diet high in purines increases uric acid levels and may cause gout.

Deficiencies in essential vitamins and minerals – The lack of variety in these diets may cause deficiencies in certain essential vitamins and minerals. The long-term effects may lead to disorders associated with the lack of essential vitamins and minerals.

Constipation – High protein diets are generally low in fibre. Diets that are low in fibre can lead to irregular bowel movements and constipation.

Liver and kidney problems – Excess protein is not used efficiently by the body and may put extra “stress” on the kidneys and liver to process and excrete what is not required by the body.



High blood pressure - Ensuring adequate intake of fruit, vegetables and low-fat milk products can optimize blood pressure. These foods are rich in potassium, calcium and magnesium, which help regulate blood pressure.

Pregnancy – These diets are not recommended for pregnant or breast-feeding moms as they may put the fetus/baby at risk.

Do diets work?

Research has shown that attempts to lose weight through “fad” diets have not paid off. In fact, most people who lose weight through “fad” diets gain it back within five years. Often the weight gain is more than the original weight.

The bottom line is...

There are many ways to lose weight, but some methods are not healthy in the long run. High-protein diets can result in rapid weight loss for a short period of time, but at a cost to your good health. Our recommendations for weight management may not sound nearly as exciting, but they work and are healthy.

If you are struggling with your weight, consider the following:

1. *Give up weight loss diets* – Focus on *Canada’s Food Guide to Healthy Eating*. Enjoy a variety of foods from each of the food groups every day.

2. *If your goal is weight loss, no more than one to two pounds per week* – This is considered healthy weight loss. Losing weight at a slow pace improves the odds of keeping it off. Successful weight loss occurs most frequently when a nutritionally adequate diet is followed, reducing calories by 500 calories a day.
3. *Watch portion sizes and total calories* – Follow *Canada’s Food Guide to Healthy Eating* to help with portion sizes. Use measuring cups and spoons to give accurate measurements until you are familiar with portion sizes.
4. *Eat for the right reasons* – Be aware of why you are eating, such as for emotional and social reasons as opposed to actual physical hunger. Find other things to do to replace your desire to eat when it is not related to actual hunger. Eat when you are hungry and stop when you are comfortably full.
5. *Live actively* – Find a time in the day that works for you to do 30 to 60 minutes of physical activity that you enjoy.
6. *Talk to a dietitian* – If you are still struggling with your weight, call a Registered Dietitian.

