

Low Carbohydrate Lifestyle

Overview

Excess body weight

- ♦ **IS NOT** the result of lack of will power or desire to be healthy
- ♦ **IS** the result of a hormonal response to carbohydrate intake which leads to hunger, fatigue, and fat storage.

Why should I lower my carbohydrate intake?

- ♦ This approach will lower your insulin levels to promote fat burning.
- ♦ You may notice that you are no longer hungry!
- ♦ The lower carbohydrate lifestyle is a decadent way of eating with a focus on “real” foods (i.e. you don’t have to cut out the dietary fat to lose weight).
- ♦ You may be able to reduce or completely eliminate certain medications you are taking.

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Introduction

The low-carb way of eating is low in sugary and starchy foods. Starches and sugars are easily digested and increase circulating blood glucose, therefore both sugar AND starchy foods must be avoided. It is important to remember that elevated blood glucose causes your body to secrete the hormone insulin. Insulin can be thought of as a hormone that prevents your body from using fat for fuel and wants your body to use glucose for fuel. By avoiding sugary and starchy foods in the diet, you will consume a diet of mostly whole foods such as meats, eggs, fish, cheese, salads, and vegetables. The plan will provide your body with the proper nutrition it needs, and it will allow your body to switch from relying on glucose for energy to using fat as a fuel.

Sugars and starches are also known as carbohydrates, and can be counted as grams. To maximize your fat burning, you should limit your carbohydrate intake to less than 20 grams per day. This means you may need to avoid some foods that you normally eat, such as breads, flours, pasta, fruit, and any other food that has a lot of carbohydrates. When you lower your intake of these sugary and starchy foods, your hunger will go away, and you will eat less and lose weight. A list of acceptable foods are provided to assist you in keeping your intake of carbohydrates to below 20 grams per day.

Medical supervision is recommended for any weight loss program., especially if you are currently taking any medications. As your medical condition improves and your weight decreases, the dosage of your medications may also need to be adjusted. Blood should be drawn to ensure your lab values are within normal ranges. Many people also report that routine check-ups help them to follow the diet.

Possible Side Effects: Removing the sugar and starch from your diet has possible side effects, as does any weight loss program. Although the side effects will not seriously impact your health and will disappear quickly, they can be bothersome. These side effects include sugar cravings, flu-like symptoms, constipation, and bad breath. The following recommendations can help you minimize or avoid these effects of removing carbohydrates from your diet.

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Possible Side-Effects

Drink Water: It is very important to drink an adequate amount of liquid each day—preferably water.

Constipation: If you are experiencing constipation (hard stools or hard-to-pass stools), there are a number of ways you may address this issue.

- ◆ Use 1 teaspoon of milk of magnesia at bedtime daily
- ◆ Add 1/2 cup of fiber-rich vegetables to your diet each day
- ◆ Use sugar-free Metamucil twice a day

Breath: Some people experience bad breath in the initial stages of the diet. This can be avoided by drinking plenty of water and engaging in good hygiene. This includes seeing a dentist, brushing your teeth and tongue twice a day, and flossing your teeth daily. If the problem persists, try sugar-free gum or mints in limited quantities.

Sugar Cravings: As your body adjusts to your new way of eating, you may experience initial cravings for sugary or starchy foods, but these cravings will pass. Like stopping anything that you are accustomed to, or addicted to, the fewer the carbohydrates you have in your diet, the sooner the cravings will stop. The cravings can be temporarily treated with a sugar-free beverage such as diet soda, or sugar-free jello topped with sugar-free heavy whipped cream.

Flu-like Symptoms: Occasionally, people experience fatigue, headaches, body aches, difficulty concentrating, or other flu-like symptoms when they stop eating carbohydrates. These symptoms are usually fairly mild and pass quickly. They are a sign that your body is going through a transition period from burning primarily carbohydrates to burning fat for fuel. To help prevent these symptoms, we recommend drinking beef or chicken broth (bouillon), or a commercial electrolyte (salt) solution, 1 or 2 times each day. Do not consume these drinks if you have high blood pressure or heart failure. To make the broth, drop one bouillon cube into a cup of hot water. Electrolyte drink mixes (such as LMNT) can be purchased on line. Although your energy level will soon return to normal, many patients report enjoying these drinks and continue to use them.

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Ketosis and Other Benefits

Ketosis is okay—it just means your body is burning fat.

When you burn fat as a fuel, you will produce ketone bodies, which are also a type of fuel. These ketones are sometimes detectable in your blood, urine, and breath. They are a normal part of human metabolism, and are not dangerous. The production of detectable ketones can be referred to as "ketosis." Although ketosis is safe and healthy, it is commonly confused with "ketoacidosis," a serious condition that can occur in individuals with diabetes. If you are curious to see if you are burning fat, you can measure your urine or blood ketones at home with urinary or blood test strips. However, be aware that not everyone has measurable ketones even when they are in ketosis and successfully burning fat.

What happens if I “slip”?

Once you begin this way of eating, you must follow it strictly. Any small intake of carbohydrates may stop the weight loss process up to 3 days. This means you will come out of ketosis (fat burning), and gain back several pounds of water weight. The most important thing to do if this happens is to get back on track for the next meal. You may be surprised that it is not difficult to be strict because your hunger will be decreased or gone entirely.

Your weight is not the only thing that will improve.

If you adhere to your new way of eating, you can expect to lose pounds and inches. You may experience improved energy level, better appetite control, and, in general, a reduction in the frequency and severity of the symptoms of a number of health problems you may have experienced before.

If you have diabetes, you can expect better blood glucose control. A reduction in your diabetes medications may have to be made on the day you stop eating carbohydrates. Some people are able to stop taking their diabetes medications completely. However, if you are taking diabetes medications including insulin, do not change the dosage or stop taking the medication without consulting with your health care provider.

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Additional Information

Vitamins and Supplements:

Although the low carbohydrate approach provides a very nutritious diet, we recommend that you take an iron-free multivitamin to ensure you are getting all of the vitamins and minerals you need, unless you are told to take iron by a doctor.

Cholesterol:

Many people ask about how the low carbohydrate diet will affect cholesterol levels since it is not a low fat diet. This way of eating will reduce cardiovascular disease risk factors by lowering blood triglycerides and increasing “good” HDL cholesterol.

Exercise and Stress:

In addition to changing your eating habits, you may want to change some other lifestyle habits to improve your overall health. Stress and inactivity can negatively impact your health and even make it more difficult for you to lose weight. Stress management techniques may make it easier to handle dietary temptations, sugar cravings, and emotional eating patterns. Increasing your activity level may help you reduce stress, decrease appetite, build muscle, and improve bone density.

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List of Permitted Foods

This diet is focused on providing your body with the nutrition it needs (protein and fat), while minimizing the foods it does not need (carbohydrates). To be most effective, you will need to keep your **carbohydrate intake to less than 20 grams per day**. Your diet will be made up exclusively of foods from this list. It does not matter how the foods are prepared. Foods can be microwaved, baked, broiled, stir-fried, sautéed, roasted, fried (no breading), or grilled.

A. When hungry, eat as much of these foods until satisfied (they have no carbs)

Meat: Beef (hamburger, etc.), pork, ham, bacon, lamb, veal, sausage, pepperoni, or other meat

Poultry: Chicken, turkey, duck, or other fowl

Fish and Shellfish: Any fish including, salmon, tuna, catfish, bass, trout, shrimp, crab, lobster

Eggs: Whole egg

Don't avoid fat. Oil and butter have no carbs.

You do not have to deliberately limit quantities, but you should stop eating when you feel full.

B. Salad greens and non-starchy vegetables must be eaten everyday, but in limited quantities.

Leafy greens: 2 cups per day. Including arugula, bok choy, cabbage, chard, chives, endive, greens (all varieties—beet, collard, mustard, turnip), kale, lettuce (all varieties), parsley, spinach, radicchio, radishes, scallions, and watercress.

C. Non-starchy vegetables: 1 cup per day (measured uncooked). Including: artichoke, asparagus, broccoli, Brussels sprouts, cauliflower, celery, cucumber, eggplant, green beans, jicama, leeks, mushrooms, okra, onions, peppers, pumpkin, shallots, snow peas, sprouts (bean and alfalfa), sugar snap peas, summer squash, tomatoes, rhubarb, wax beans, zucchini.

If you **DO NOT** have high blood pressure or heart failure, then use bouillon or electrolyte drinks as needed during the first few weeks to minimize headache or fatigue.

Bouillon: up to 2 times per day. Unless told you need to restrict your sodium intake, do not use low sodium broth. Commercial electrolyte drinks (such as LMNT) may also be used.

D. FOODS THAT ARE ALLOWED IN LIMITED QUANTITIES:

Cheese: up to 4 ounces per day. Includes: swiss, cheddar, brie, camembert, bleu, mozzarella, Gruyere, cream cheese, goat cheese. Always check carbohydrate count on labels.

Cream: up to 2 tablespoons per day. Includes: whipping, heavy, light, or sour cream

Mayonnaise: up to 2 tablespoons a day.

Olives: up to 6 a per day.

Avocado: up to 1/2 a fruit per day.

E. OTHER:

Lemon/lime juice: up to 2 teaspoons per day.

Soy sauces: up to 2 tablespoons per day

Pickles (dill or sugar-free): up to 2 servings per day

Zero-carb snacks: sugar-free Jello (gelatin), pork rinds, pepperoni slices, ham, turkey, beef jerky, deviled eggs

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Fats, Sweets, and Foods to Avoid

Fats and Oils

All fats and oils are allowed (even butter). Olive oil and peanut oil are encouraged for cooking. **Avoid margarine and other hydrogenated oils.**

For salad dressings, use oil and vinegar, bleu cheese, ranch, Caesar, or Italian. Avoid “light” dressings, these commonly have more carbohydrates. Chopped egg, bacon, and grated cheese may be included in salads.

Fats are important to include in your diet because they contribute to fullness and satiety. You can eat the fat or skin that is served with meat or poultry as long as there is no breading.

Do not attempt to follow a low fat diet!

Sweeteners and Desserts

Artificial or alternative sweeteners to sugar are acceptable if you desire something sweet. Liquid carbohydrate-free sweeteners such as liquid stevia or liquid sucralose (brand name Ez-Sweetz) may be used in unlimited quantities. Powdered sweeteners such as Splenda (sucralose), Nutrisweet or Equal (aspartame), Truvia (stevia/erythritol blend), Sweet & Low (saccharin) must be used in limited quantities because they contain 1 gram of rapidly digesting carbohydrate (maltodextrin) per serving, which will cause an increase in your blood glucose. Erythritol ("Swerve") is great for baking.

Foods to Avoid Completely

Sugars are simple carbohydrates. Do not eat: white or brown sugar, honey, maple syrup, molasses, corn syrup, beer (contain barley malt), milk (contains lactose), flavored yogurts, fruit juice, and fruit.

Starches are complex carbohydrates. Do not eat: grains (even “whole” grain), rice, cereals, flours, cornstarch, breads, pastas, muffins, bagels, crackers, or starchy vegetables such as slow-cooked beans (pinto, lima, black beans, etc.), carrots, parsnips, corn, peas, potatoes, French fries, potato chips, etc.

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Thirst and Hunger

Beverages

Drink as much of the allowed beverages as you would like, but do not force liquids beyond your capacity. The best beverage choice is water. Essence-flavored seltzers (zero-carb), bottled, or mineral waters are also good options.

Caffeinated beverages are allowed, but for some patients they interfere with weight loss and blood sugar control. With this in mind, you may have up to **3 servings** of coffee (black or with artificial sweetener and/or cream), tea, or diet soda per day.

Alcohol: At first, we ask that you avoid alcoholic beverages with this lifestyle. As weight loss and diet patterns become well-established, alcohol in moderate quantities may be added back into the diet. Distilled spirits, such as vodka and gin, are preferred, as they are free of carbohydrates. Limited amounts of "light" beer and dry wine can be consumed.

Let hunger be your guide.

Eat when you are hungry; stop when you become full. The diet works best on a "demand feeding" basis. You DO NOT have to eat if you are not hungry. You must learn to listen to your body. The low carbohydrate approach will naturally suppress your appetite and you will begin to eat smaller quantities. Remember not to eat something just because it is on your plate. We will not restrict calories so it is very important to think about how you are feeling.

Additional Resources

The New Atkins for a New You, by Dr. Eric Westman

Protein Power, 1001 Low-Carb recipes, by Dana Carpenter

The Low Carb Cookbook, Living Low-Carb, by Fran McCullough

Websites:

Linda's Low-Carb recipes and menus <http://genaw.com/lowcarb/>

Active Low-Carbers Forum <http://www.lowcarb.ca>

Dana Carpenter's website <http://holdthetoast.com>

Jackie Eberstein's website <http://www.controlcarb.com>

Diet Doctor website <http://www.dietdoctor.com>

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Get to Know the Nutrition Label

There are two ways to count carbohydrates: TOTAL GRAMS and NET GRAMS

- ◆ X Use TOTAL GRAMS
 - 1) Look only at total grams of carbohydrates
 - 2) Look at serving size
 - 3) TOTAL GRAMS are used in clinic applying the ketogenic diet approach
- ◆ _____ Use NET GRAMS
 - 1) You may subtract fiber from total carbohydrates to get the “net carb grams”
 - 2) In the example below: 5 grams carbohydrate– 2 grams of fiber= 3 net carbs
 - 3) Net carb grams of a vegetable should be 5 or less
 - 4) NET GRAMS can be used in generally healthy individuals

Nutrition Facts	
Serving Size 1/6 medium head (99g)	
Amount Per Serving	
Calories 25	Calories from Fat 0
%Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	0%
Cholesterol 0mg	0%
Sodium 30mg	1%
Total Carbohydrate 5g	2%
Dietary Fiber 2g	8%
Sugars 2g	
Protein 2g	
Vitamin A 0%	Vitamin C 100%
Calcium 2%	Iron 2%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

IMPORTANT: Always check the ingredient list! Some foods will be listed as “0” grams of total carbohydrates, however, they may still contain over 1 gram per serving.

Look for ingredients such as:

- 1) Maltodextrin
- 2) Dextrose
- 3) Maltitol

These ingredients may cause a sharp rise in your blood glucose levels, thus increasing insulin and causing your weight loss to stall.

Some common foods containing these ingredients include: protein or diet bars (even the Atkins brand), powdered artificial sweeteners, some brands of pork rinds (Golden Flake), turkey bacon bits.

Remember:

- ◆ This approach places an emphasis on “real” foods. Try to avoid processed products.
- ◆ Try to avoid products labeled as “Great for low-carb dieters”, “carb balance”, or “carb control”. Many times these will cause an increase in blood glucose.

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Ideas for Snacking

- ◆ Sugar-free Jello with sugar-free whipped cream
- ◆ Celery with cream cheese
- ◆ Roll-up (meat and cheese)

Remember...

- ◆ Stop eating when you feel satisfied.
- ◆ Eat when you feel hungry
- ◆ Drink plenty of water
- ◆ Drink broth (especially mid-afternoon when diastolic blood pressure may drop and cause fatigue)
- ◆ Use only liquid carbohydrate-free sweetener
- ◆ Eat fat, burn fat
- ◆ Eat carbs, store fat



Meal Plan
(<20 grams)

<u>Breakfast</u>	Food List	Serving	Example
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Protein Choice	A		
Vegetable Choice	C	1/2 cup	
Fat choice	D		

<u>Lunch</u>	Food List	Serving	Example
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Protein Choice	A		
Salad or Cooked Greens	B	1 to 1 1/2 cups	
Vegetable Choice	C	1/2 to 1 cups	
Fat choice	D		

<u>Dinner</u>	Food List	Serving	Example
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Protein Choice	A		
Salad or Cooked Greens	B	1 to 1 1/2 cups	
Vegetable Choice	C	1/2 to 1 cups	
Fat choice	D		