

Lifestyle Medicine Clinic
Duke University Medical Center
“No Sugar, No Starch” Diet

Introduction

This way of eating is a diet low in sugary and starchy foods. Because starches are easily digested to sugar, starchy foods are similar to sugar, and must be avoided as well. This way of eating focuses on eating “real” food and includes meat, fish, cheese, eggs, salads, and vegetables. This eating plan will provide your body with the nutrition that it needs, and will change the fuel that your body uses from mainly sugars and starches to mainly fat.

Sugars and starches are also known as carbohydrates and can be measured in ‘grams.’ To maximize fat burning, your carbohydrate intake will be 20 grams or less per day. This means that you will need to avoid sugar, bread, fruit, flour, pasta, or any other sugary/starchy food that has a lot of carbohydrates. When you limit the carbohydrate intake, your hunger will go away, and if you have extra weight on your body, you will eat less and lose weight. A list of the foods initially allowed is provided to assist you in changing your eating patterns.

Medical supervision is recommended for any weight loss program, especially if you are currently taking any medications. As your weight decreases and your medical conditions improve, medications will probably have to be adjusted. Blood work should be checked periodically to make sure that your values are within the normal range. Many people report that their regularly-scheduled appointments help to ensure that they follow the diet.

Possible Side Effects

The “no sugar, no starch” diet does have some possible side effects, as does any effective weight loss program. Although they will not seriously impact your health and will disappear quickly, they can be bothersome. These side effects include sugar cravings, and flu-like symptoms, constipation, and bad breath. The following recommendations can help you avoid or minimize these side effects.

Drink Lots of Liquids: It is important to drink an **adequate** amount of fluid per day – preferably water or another non-caffeinated beverage.

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

- use 1 teaspoon of milk of magnesia at bedtime daily
- add ½ cup of fiber-rich vegetables to your diet per day
- have 1 to 2 servings per day of sugar-free gum or sugar-free candy that contains sorbitol or another sugar alcohol
- use sugar-free Metamucil twice a day

When we have determined which approach will be best for you, you may use that method until symptoms resolve. If the issue persists and you need additional assistance, consult your health care provider.

Breath: Some people experience bad breath in the initial stages of a “no sugar, no starch” diet. This can usually be avoided by drinking plenty of water and performing good oral hygiene. This includes seeing a dentist, brushing your teeth twice a day (including your tongue), and flossing your teeth daily. If the problem persists, try sugar-free gum or mints.

Sugar cravings: As your body adjusts to your new way of eating, you may initially experience cravings for the sugary/starch foods that are not on this diet, but the cravings will pass. Like stopping anything that you are accustomed to, or addicted to, the fewer carbohydrates you have in your diet, the sooner the cravings will subside. Sugar cravings can be temporarily treated with a sugar-free beverage, such as diet soda or a sugar-free flavoring, or sugar-free jello with whipped cream.

Bouillon: Occasionally, people can 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 carbohydrates to burning fat for fuel. To help prevent these symptoms, we recommend drinking beef or chicken broth one to three times a day. Do not use bouillon if you have high blood pressure or heart failure. To make the broth, drop a cube of bouillon into a cup of hot water and drink it. Although your energy levels will soon return to normal, many patients have reported they enjoy the broth and continue drinking it beyond the first week.

Ketosis

Ketosis is okay—it just means that your body is burning fat. (Ketosis is commonly confused with ‘ketoacidosis’- a serious condition that can occur in individuals with diabetes.) You can measure your urine or blood ketones at home if you wish with urinary or blood ketone test strips. Not everyone has measurable ketones in the urine even when they are successfully fat-burning and losing weight. So if there are no ketones in the urine, it does not necessarily mean that you are not burning fat.

What happens if I “slip”?

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

Vitamins and Supplements

Although the “no sugar, no starch” diet is very nutritious, we recommend that you take an iron-free multivitamin to be sure that you are getting all of the vitamins and minerals that you need, unless you are told to take iron by your doctor.

Cholesterol

Many people ask how the “no sugar, no starch” diet will affect cholesterol levels since it isn’t a low-fat diet. The predictions about how this way of eating would adversely affect the blood cholesterol didn’t come true when the studies were finally done. This way of eating reduces the cardiac risk factors by lowering blood triglycerides and increasing the good cholesterol (HDL). To ensure happens for you, have your health care provider measure your fasting lipid profile periodically.

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 levels, 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 sugar control and 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 without consulting with your health care provider.

Increasing Activity and Reducing Stress

In addition to changing your eating habits, you may wish to change some other aspects of your lifestyle in order 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 improve your ability to handle dietary temptations, sugar cravings, and emotional eating patterns. Increasing your activity level may help reduce stress, decrease appetite, build muscle, and improve bone density.

Support for Lifestyle Change

We understand that making changes to your lifestyle can be challenging. To assist you, we have formed a support group for individuals in the community who are following or are interested in following a low carbohydrate lifestyle. The Low Carb Support Group (also the name of the facebook group) meets at Spartacus Restaurant in Durham at 6:30 pm on the First Tuesday of the month. SEATING IS LIMITED. Please register at least 48 hours in advance at RSVP.low.carb.meeting@gmail.com.

Contact Information

It is important to us that you feel comfortable contacting us about any issues you may have with the lifestyle change. Please use the following information to keep in touch.

Duke Lifestyle Medicine Clinic Office: (919) 620-4061

Email: ewestman@duke.edu

Fax: (919) 620-1294

“No Sugar, No Starch” Diet

List of Permitted Foods

This diet is focused on providing your body with the nutrition it needs (protein and fat), while minimizing foods that your body does not need (carbohydrates). To be most effective, you will need to keep the dietary carbohydrate to **less than 20 grams per day**. Your diet is to be made up exclusively of foods and beverages from this handout. It doesn't matter how the food is cooked. Food can be cooked in a microwave oven, baked, boiled, stir-fried, sautéed, roasted, fried (with no flour, breading, or corn meal), or grilled.

When hungry, EAT AS MUCH AS YOU WANT OF THESE FOODS. (These foods have no carbs.)

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

Poultry: Chicken, turkey, duck, or other fowl.

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

Eggs: Whole eggs are permitted without restrictions.

Don't avoid the fat. Oils and butter have no carbs.

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

Salad greens and nonstarchy vegetables MUST BE EATEN EVERY DAY, but the amount is limited:

Leafy greens: 2 cups a day. Includes: arugula, bok choy, cabbage (all varieties), chard, chives, endive, greens (all varieties including beet, collards, mustard, and turnip), kale, lettuce (all varieties), parsley, spinach, radicchio, radishes, scallions, and watercress. (If it is a leaf—you can eat it.)

Nonstarchy vegetables: 1 cup (measured uncooked) a day. Includes: artichokes, asparagus, broccoli, Brussels sprouts, cauliflower, celery, cucumber, eggplant, green beans (string beans), jicama, leeks, mushrooms, okra, onions, peppers, pumpkin, shallots, snow peas, sprouts (bean & alfalfa) sugar-snap peas, summer squash, tomatoes, rhubarb, wax beans, zucchini.

If you do not have high blood pressure (hypertension) or heart failure, then use bouillon AS NEEDED during the first few weeks of the diet to minimize headache or fatigue.

Bouillon: up to 2 times daily—as needed for sodium replenishment. Clear broth (consommé) is strongly recommended. Unless we tell you that you need to restrict your salt intake, DO NOT USE LOW SODIUM BOUILLON.

FOODS THAT ARE ALLOWED IN LIMITED QUANTITIES:

(Check the labels to be sure there is not added carbohydrates.)

Cheese: up to 4 ounces a day. Includes: hard, aged cheeses such as Swiss, cheddar, brie, camembert, bleu, mozzarella, Gruyere, cream cheese, goat cheeses. Check the carbohydrate count.

Cream: up to 2 tablespoonfuls a day. Includes whipping, heavy, light, or sour cream.

Mayonnaise: up to 2 tablespoons a day.

Olives (black or green): up to 6 a day.

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

Lemon/lime juice: up to 2 teaspoonfuls a day.

Soy sauces: up to 2 tablespoons a day.

Pickles, dill or sugar-free: up to 2 serving a day.

Zero Carb Snacks: Sugar-free jello, pork rinds; pepperoni slices; ham, turkey, beef jerky, deviled eggs

The Main Restriction: Carbohydrates

On this diet, no sugars (simple carbohydrates) and no starches (complex carbohydrates) are eaten. The only carbohydrates we encourage are the nutritionally-dense, fiber rich vegetables listed on page 4 and 5.

Sugars are simple carbohydrates. **Avoid these kinds of foods:** white sugar, brown sugar, honey, maple syrup, molasses, corn syrup, beer (contains barley malt), milk (contains lactose), flavored yogurts, fruit juice, and fruit.

Starches are complex carbohydrates. **Avoid these kinds of foods:** grains (even “whole” grains), rice, cereals, flour, cornstarch, breads, pastas, muffins, bagels, crackers, and “starchy” vegetables such as slow-cooked beans (pinto, lima, black beans, etc.), carrots, parsnips, corn, peas, potatoes, French fries, potato chips, etc.

Fats and Oils

All fats and oils, even butter, are allowed. Olive oil and peanut oil are especially healthy oils and are encouraged in cooking. Avoid margarine and other hydrogenated oils.

For salad dressings, use oil and vinegar, bleu cheese, ranch, Caesar, Italian. Avoid “lite” dressings, as these commonly have more carbohydrate. Chopped eggs, bacon, and/or grated cheese may also be included in salads.

Fats, in general, are important to include because they taste good and make you feel full. You, therefore, can eat the fat or skin that is served with the meat or poultry that you eat, as long as there is no breading on the skin. **Do not attempt to follow a low-fat diet!**

Sweeteners and Desserts

If you feel the need to eat or drink something sweet, you should select the most sensible sweetener(s) available—just not sugar. Some available alternative sweeteners are: Splenda (sucralose), Nutrasweet (aspartame), Truvia (stevia/erythritol blend), Sweet & Low (saccharin), sugar alcohols (sorbitol, maltitol). Sugar alcohols can occasionally cause stomach upset.

Beverages

Drink as much as you would like of the allowed beverages, but do not force fluids beyond your capacity. The best beverage is water. Essence-flavored seltzers (zero carbs) and bottled spring and mineral waters are also good choices.

Caffeinated beverages: Some patients find that their caffeine intake interferes with their 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 (unsweetened or artificially sweetened), or caffeinated diet soda per day.

Alcohol

At first, we ask that you avoid alcohol consumption on this diet. As weight loss and dietary patterns become well-established, alcohol in moderate quantities may be added back into the diet at a later point in time. We can help you make the best choices for low-carbohydrate alcoholic beverages if needed.

Quantities

Eat when you are hungry; stop when you are full. The diet works best on a “demand feeding” basis; i.e., eat when you are hungry. If you are not hungry, you don’t have to eat. Learn to listen to your body. A low-carbohydrate diet has a natural appetite reduction effect to ease you into the consumption of smaller and smaller quantities comfortably. You do not have to eat everything on your plate “just because it’s there.” You are not counting calories. Enjoy losing weight comfortably, without hunger or cravings.

Important Reminders

The following items are NOT on the diet: sugar, bread, cereal, flour-containing items, fruits, juices, honey, whole or skimmed milk, yogurt, canned soups, dairy substitutes, catsup, sweet condiments and relishes.

Avoid these common mistakes: Beware of “fat-free” or “lite” diet products and foods containing “hidden” sugars and starches (such as coleslaw or sugar-free cookies and cakes). Check the labels of liquid medications, cough syrups, cough drops, and other over-the-counter medications that may contain sugar. Avoid products that are labeled “Great for Low-Carb Diets!”

Books and Websites

You may find the following books and websites informative:

The New Atkins for a New You (especially as you transition to a low-carbohydrate lifestyle.)

Dr. Atkins Diabetes Revolution, Dr. Atkins’ New Diet Revolution, Atkins for Life, and Dr. Atkins’ New Diet Cookbook, Protein Power, 1001 Low-Carb Recipes by Dana Carpender; *The Low-Carb Cookbook* and *Living Low-Carb*, both by Fran McCullough.

Linda’s Low-Carb Menus & Recipes: <http://genaw.com/lowcarb/> This has a terrific collection of kitchen-tested recipes.

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

Dana Carpender’s website: <http://www.holdthetoast.com>

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

Jimmy Moore’s website: <http://www.livinlavidalocarb.blogspot.com>

Lauren Benning’s Healthy Low-Carb Treats: <http://www.healthyindulgences.blogspot.com>

Although the information in these books and websites may be helpful to you, if there is conflicting information, use the information from this book—not diet instruction from another book or website.

Low-Carb Menu Planning

What does a low-carb menu look like? You can plan your daily menu by using the following as a guide:

Breakfast

Meat or other protein source (usually eggs)

Fat source -- *This may already be in your protein, for example, bacon & eggs have fat in them. But if your protein*

source is "lean", add some fat in the form of butter, cream (in coffee), or cheese.

Low-carb vegetable (if desired) – *This can be in an omelet or breakfast quiche.*

Lunch

Meat or other protein source

Fat source -- *If your protein is "lean"—add some fat with butter, salad dressing, cheese, cream, avocado, etc.*

1 to 1 ½ cups of salad greens or cooked greens

½ to 1 cup of vegetables

Snack

Low-carb snack that has protein and/or fat

Dinner

Meat or other protein source

Fat source -- *If your protein is "lean"—add some fat with butter, salad dressing, cheese, cream, avocado, etc.*

1 to 1 ½ cups of salad greens or cooked greens

½ to 1 cup of vegetables

A Sample Day

Breakfast

Bacon or sausage

Eggs

Lunch

Grilled chicken on top of salad greens and other vegetables, with bacon, chopped eggs, and salad dressing

Snack

Pepperoni slices and a cheese stick

Dinner

Burger patty or steak

Green salad with other vegetables and salad dressing

Green beans with butter

Reading a Nutrition Facts Label

There are two ways to count carbs: TOTAL GRAMS or NET GRAMS

- Use TOTAL GRAMS
 - Look only at the Total Carbohydrate Content
 - Look at serving size
 - TOTAL GRAMS are used in clinics using the low carbohydrate ketogenic diet
- Use NET GRAMS
 - You may subtract fiber from total carbohydrate to get the “net carb grams”
 - In the example below, **7 grams carbohydrate – 3 grams fiber = 4 grams of net carbs**
 - That means the net carb count of cauliflower is 4 grams per serving.
 - Net carb count of vegetables should be 5 grams or less
 - Net carb count of meat or condiments should be 1 gram or less
 - NET GRAMS are used in generally healthy individuals

Also check the ingredient list. Avoid foods that have any form of sugar or starch listed in the first 5 ingredients.

CAULIFLOWER:	
Nutrition Facts	
Serving Size 1/4 med. head, raw (146g)	
Amount Per Serving	
Calories 35	
	% Daily Value*
Total Fat 0g	0%
Sodium 45mg	2%
Potassium 400mg	11%
Total Carbohydrate 7g	2%
Dietary Fiber 3g	12%
Sugars 3g	
Protein 3g	
Vitamin A **	• Vitamin C 150%
Calcium 2%	• Iron 2%
Vitamin D **	• Vitamin E **
Vitamin K **	• Thiamin **
Riboflavin **	• Niacin **
Vitamin B6 **	• Folate **
Vitamin B12 **	• Biotin **
Pantothenic Acid **	• Iodine **
Magnesium **	• Zinc **
Selenium **	• Copper **
Manganese **	• Chromium **

Not a significant source of calories from fat, saturated fat, and cholesterol.

**Contains less than 2 percent of the Daily Value of these nutrients.

*Percent Daily Values are based on a 2,000 calorie diet.

No Sugar No Starch Diet Reminders

“Carbs make you hungry”

“Fruit makes you fat”

“Fruit is nature’s candy”

“There is only one teaspoon of sugar in the human bloodstream”

“Eat fat to burn fat”

“Don’t fear the fat”

“It makes sense to eat fat when your body is a fat-burning machine”

“Corn is fed to animals to make foie gras”

“It’s not YOUR fault—it’s the carbs’ fault”

“You don’t have to eat everything on your plate!”

“Eat when hungry, drink when thirsty”