

LOW-CARB FOR ANY BUDGET

A Low-carb Shopping and Recipe Starter
Begin a Life Free of Dieting and Indulge Yourself in Health

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Companion piece to the Clinical Guideline Low-carbohydrate Nutrition Approaches in Patients with Obesity, Prediabetes, and Type 2 Diabetes



ABOUT THE AUTHOR

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I am a family doctor working in West Virginia, the state with the highest obesity and diabetes rates in America. I started my medical training in the 1980s, and since 1990, the incidence of both of these conditions have tripled: we now have an adult rate of type 2 diabetes close to 20% and obesity (BMI >30) well north of 40% in my state (with other states not far behind). Early in my career, until 2012, I was aware of these increasing rates but felt helpless and hopeless in how to help. The advice I was giving — eat less, exercise more, reduce fat, increase medications — often led to poor outcomes. As clinicians, we often viewed it as the patient's fault for not "complying." This was embedded in our training. The drugs I prescribed at best poorly managed these problems. I left the office fatigued and often felt as if we both had failed — myself and the patient.

A six month assignment in 2012 with the U.S. Air Force to re-design the running program changed my life. Realizing that obesity was a large driver of fitness test failures, I traveled to dozens of military bases asking whether anyone in the room had lost 50 lb and kept it off for a year. Usually a handful (or two out of about 100) would volunteer, and I would query what they did. From base to base, the answer was very similar: they had given up all bread and sugar or had done a paleo-type diet, which in those days was not paleo junk food. The food was mostly eggs, meat, fish, and vegetables, and a few even had the courage to say they had done "Atkins."

I started reading about the history of obesity as well as the science. The early works of Gary Taubes in *Good Calories, Bad Calories* opened my mind to new ideas. These ideas were confirmed by the premier scientist Dr. Timothy Noakes in South Africa as we did a couple of courses together in his country. Paradoxically, at the same time, my blood glucose was in the prediabetic range since I was developing an insulin insufficiency type of diabetes. For many years I had been a runner, eating the traditional runner's diet of high carbohydrate and low fat. So I started a low-carb lifestyle myself. A short experiment with a continuous glucose monitor showed the dramatic response my body had to any form of carbohydrate whether it was fruit, starchy veg, cereal, any bread product, and undoubtedly the low-fat frozen yogurt. At the time I did not realize they were all basically the same thing: turned into sugars once they hit my system. For the last eight years I have enjoyed every day free of medication, staying below the threshold for full diabetes.

I came back to my hospital at West Virginia University after this tour and immediately started implementing a low-carb option for patients with diabetes as we monitored their blood sugars in the hospital. The results were instantaneous and dramatic, and many staff started changing their own lifestyle and eating patterns. We even got sugary drinks out of the hospital for all patients, staff, and visitors. Since this time, millions around the world have been adopting a low-carb lifestyle, including many of my patients. These amazing people are not just managing the diabetes but rather putting it into remission and coming off their medications safely. Many other medical conditions such as blood pressure, lipid problems, joint pains and swelling, headache conditions, fatigue, skin and respiratory conditions, as well as a multitude of gastrointestinal symptoms, also seem to improve with this way of eating.

I'm often asked if this is an expensive way of eating. The short answer is definitely not. The first thing to look at is the savings you will have from all the junk food and fast food that tends to end up in your shopping cart and through your car window. Seasonal vegetables, especially the ones on sale, and local produce at the farmers market or from your own garden, are very affordable. We have a program here that doubles the value of SNAP (Supplemental Nutrition and Assistance Program) at Farmers' Markets.

Extremely nutrient-dense natural foods high in essential fatty acids and proteins are not expensive if you can learn how to shop and cook. Look for less expensive varieties of chicken, pork, ground beef, and fish if you live near the sea. Eggs or cheese are incredibly nutrient-dense and inexpensive. Try new things and be a bit adventurous in your shopping and cooking. Break out of old patterns and see the effect in how you feel and the effects on health conditions. Imagine a life without dieting. It's easy if you try.

Note of Caution: When you reduce the carbohydrates in your diet, your blood sugar and blood pressure tend to improve rapidly and often dramatically, so if you are on medications for these conditions, please consult your physician about adjusting them. If you live near me, I am available to help at the West Virginia University Center For Diabetes And Metabolic Health.

To Restoring Your Health!

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A NOTE ON THE RECIPES AND COOKING

With the recipes, we want you to develop an instinctive relationship with the ingredients and the flavors. This helps you keep creative and eat with the seasons. Low-carb eating makes this style even more important since you are working with a determined range of ingredients. When shopping, you will learn to buy the foods that are healthy for you and often decide what to make with them when you get home.

Some will plan a week's meals in advance and shop accordingly. Some will do a big weekend cook-up and eat off of that for the whole week. Flexibility and knowledge, mixed with a little creativity and adventurous spirit to try new things, makes this fun. Involve your family in the cooking and have a willingness to fail every now and then.

The approach of this book is like a starter instruction manual. We provide some easy basic meals, simple and available ingredients, as well as being budget-friendly. The recipes allow for variability in tastes and liking. Be resourceful and try different things with different amounts and varieties of spices. You can make swaps with the low-carb veggies and mains (meats/fish/eggs). This way of eating can be adopted to vegetarian patterns also.

We are here to give you hope and joy, not despair.

Enjoy!

—Mark



"The best time to plant a tree was 20 years ago.
The second best time is right now."

—Chinese Proverb

OVERVIEW

Prevalence of Diabetes and Prediabetes

The prevalence of prediabetes and type 2 diabetes has increased dramatically over several decades in parallel with the increasing prevalence of obesity (which now is over 40% of adults, across all ages).

Over half of Americans have prediabetes (hemoglobin A1c 5.7–6.4%) or type 2 diabetes (hemoglobin A1c $\geq 6.5\%$ or on diabetes medication). These numbers have tripled since 1990.

Obesity, prediabetes and type 2 diabetes are all risk factors for cardiovascular disease (CVD), and their increasing prevalence is now leading to an increase in the prevalence of CVD.

Key Points

- A low-carb diet is powerful for improving Type 2 Diabetes, Metabolic Syndrome, High Blood Pressure, and Obesity.
- If done correctly, low-carb nutrition is healthy since it can improve blood pressure, blood sugar, and metabolism. Consult your physician before starting a low-carb diet to review whether medication changes are necessary.

Basics of Low-carb

- **Eat:** Meat, fish, eggs, most vegetables growing above ground, and natural fats.
- **Avoid:** Bread, pasta, rice, beans, and potatoes, and other sugary and starchy foods. Also avoid refined, processed vegetables and seeds such as canola, soybean, and margarine.

Eat only when you're hungry and stop when you're satisfied. Foods with protein and fat create satiety (the feeling of being full).

▶ Studies of low-carb for obesity: www.phcuk.org/rcts

▶ Studies of low-carb for Type 2 diabetes: www.phcuk.org/t2d

ASSESSMENTS



Vitals and Basic Testing Essentials

It is important to keep track of your progress and vital signs while following low-carb nutritional approaches. This log can also be shared with your healthcare provider at each visit.

Weight and Waist Circumference

- **Start at the top of the hip bone, then bring the tape measure all the way around your body**, level with the umbilicus. You can hold the beginning of the tape measure at the umbilicus and rotate 360° in front of you to accomplish this.
- **Make the tape snug but not tight** and record the measurement right after exhalation. Note: if waist circumference multiplied by two is greater than your height, then risk is higher for metabolic syndrome. Use the same unit of measurement for both (e.g., inches).



Blood Pressure and Heart Rate

- **You should be seated, relaxed, and rested for five minutes prior to measurement.** Use an appropriately sized cuff since a cuff that is too small falsely elevates the reading. Note: Many individuals with diabetes have stiff arteries, which can cause a falsely elevated blood pressure reading.
- While not tracked at every visit, **it's also important to keep a log of the following:**
 - ▶ Lipid panel, including: Total cholesterol, HDL, LDL, and triglycerides
 - ▶ Thyroid-stimulating hormone (TSH)
 - ▶ Hemoglobin A1c (HbA1c)
 - ▶ Vitamin D

Date	Weight	Blood Pressure	Heart Rate	Waist Circumference	Comments

TESTING BLOOD GLUCOSE



Testing Blood Glucose is Empowerment and a Behavior Modification Tool

Standard Glucometer versus Continuous Glucose Monitor (CGM)

Testing your blood glucose before and after meals as well as with exercise is essential to figure out how your body works. In the authors' opinion, there is nothing more powerful than seeing your own response to food and glucose curve and correspond to how you feel. The technology has become more accessible, affordable, and user friendly in the last year with the Freestyle Libre as an entry level CGM. Watch for reactive hypoglycemia.

Large post-meal spikes are a big issue with patients who have standard high carbohydrate dietary patterns, are insulin-resistant, and in later stage T2D with beta cell insufficiency. The CGM shows these patterns as well as a resolution of patterns with an individualized approach.

Is Low-carb Right for Me?

- Do you have obesity, diabetes or another metabolic problem (high blood pressure, fatty liver, PCOS, cardiovascular disease, sleep apnea)?
 - Are you interested in losing belly fat, halting or reversing diabetes, and/or lowering your likelihood of cardiovascular diseases?
- If you answered "YES" to any of the above, low-carb may be right for you!**

- Do you have any acute, unstable medical conditions?
 - Are you currently pregnant or breastfeeding?
 - Are you taking any medication for diabetes or high blood pressure?
- If you answered "YES" to any of the above, talk to your doctor before starting low-carb!**

DESCRIPTION OF APPROACHES

Table 1. Low-carb Eating Patterns^a

Eating Pattern	Total Carbs grams/day	Meat	Poultry	Fish and Shellfish	Eggs	Tofu
Very Low-carb Keto	≤30 ^c	No Limit ^d	No Limit ^d	No Limit ^d	No Limit ^d	—
Low-carb Keto	30–50 ^c	No Limit ^d	No Limit ^d	No Limit ^d	No Limit ^d	—
Mediterranean	50–150	No Limit ^d	No Limit ^d	No Limit ^d	No Limit ^d	No Limit ^d
Paleo ^e	50–150	No Limit ^d	No Limit ^d	No Limit ^d	No Limit ^d	—
Primal ^e	50–150	No Limit ^d	No Limit ^d	No Limit ^d	No Limit ^d	—
Vegetarian	100–150	—	—	—	No Limit ^d	No Limit ^d

Carbohydrates

Eating Pattern	Total Carbs grams/day	Non-Starchy Veggies	Starchy Veggies ^b	Leafy Greens	Berries	Fruit	Grains
Very Low-carb Keto	≤30 ^c	1 cup	—	2 cups	—	—	—
Low-carb Keto	30–50 ^c	2 cups	1 cup	2 cups	1/2 cup	1 cup	—
Mediterranean	50–150	3 cups	1 cup	No Limit ^d	1 cup	1 cup	2 svgs
Paleo ^e	50–150	3 cups	1 cup	No Limit ^d	1/2 cup	1/2 cup	—
Primal ^e	50–150	3 cups	1 cup	No Limit ^d	—	—	—
Vegetarian	100–150	No Limit ^d	No Limit ^d	No Limit ^d	1 cup	1 cup	4 svgs

Note: "No Limit" does not mean "eat to excess". Enjoy these foods, eat slowly and mindfully, but you do not need to count servings or grams.

^a This table is based on the most common approaches, and some variants of each nutritional approach may differ slightly from the table.

^b Examples are potatoes, corn, peas, beans/legumes, acorn or butternut squash, carrots, parsnips.

^c Suggest a minimum of 15 grams total carbs daily in the form of non-starchy vegetables.

^d May be consumed to satiety. While no limit is specified for these foods, consuming them excessively or beyond satiety can adversely impact weight management.

^e Paleo/Primal food quality emphasized: grass-fed beef, grass-fed butter, limiting omega-6 fatty acids (vegetable oil, seed oil). Major difference between the two is that Primal allows dairy, nightshade vegetables, and legumes.

COUNTING CARBS

Figure 1. Reading a Nutrition Facts Label

There are two ways to count carbs: **TOTAL CARBS** or **NET CARBS**

Total Carbs

- ▶ Look at the serving size and total carbohydrate sections.

In this example, 4 grams carbohydrate = 4 total grams of carbohydrate per 1 cup of cauliflower.

- ▶ **TOTAL CARBS** is used when individuals are trying to lose weight most effectively.

Net Carbs

- ▶ Look at the serving size, total carbohydrate, and dietary fiber sections.

- ▶ Subtract dietary fiber from total carbohydrate to get the "net carbs".

In this example, 4 grams carbohydrate – 2 grams fiber = 2 grams "net carbs" per 1 cup of cauliflower.

- ▶ **NET CARBS** is more often used for individuals trying to lose weight more gradually or maintain body weight.

- ▶ **Packaged or processed low-carbohydrate foods often contain sweeteners called sugar alcohols** (e.g., erythritol, maltitol, xylitol, isomalt) that are carbohydrates. Some people think sugar alcohols can be subtracted similar to fiber when calculating "net carbs," but most of them contain about half the calories per gram that carbohydrates contain.

Nutrition Facts	
4 servings per container	
Servings size	1 cup (85g)
Amount Per Serving	20
Calories	%Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 25mg	1%
Total Carbohydrate 4g	1%
Dietary Fiber 2g	7%
Total Sugars 2g	
Includes 0g Added Sugars	0%
Protein 2g	
Vitamin D 0mcg	0%
Calcium 19mg	2%
Iron 0mg	0%
Potassium 250mg	6%
Vitamin A 0mcg	0%
Vitamin C 41mg	45%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2000 calories a day is used for general nutrition advice.

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

INGREDIENTS: CAULIFLOWER.



Individualizing Carbohydrate Intake Level

The effective carbohydrate intake level can vary considerably from person to person, as can strategies for determining that level.

The level depends on several factors including age, gender, metabolic rate, insulin sensitivity, activity level, and quality of carbohydrate (glycemic index/load).

One effective strategy is to start at a level that is effective for most everyone, typically less than 50 grams of total carbohydrate per day (less than 20 grams is more effective in many). This level achieves weight loss and dietary ketosis (safe) in most individuals. In coronavirus terms, this is a hard lockdown on sugar and processed carbs!

Then, small amounts of carbohydrate (~5 grams) can be added to the daily amount each week in the following situations:

- ▶ As each individual reaches the goal for weight or another goal, such as blood glucose control.
- ▶ If cravings for carbohydrates might lead the individual to abandon the eating plan.
- ▶ If side effects of the eating pattern (e.g., fatigue or cravings) cannot be managed otherwise and threaten continued adherence.



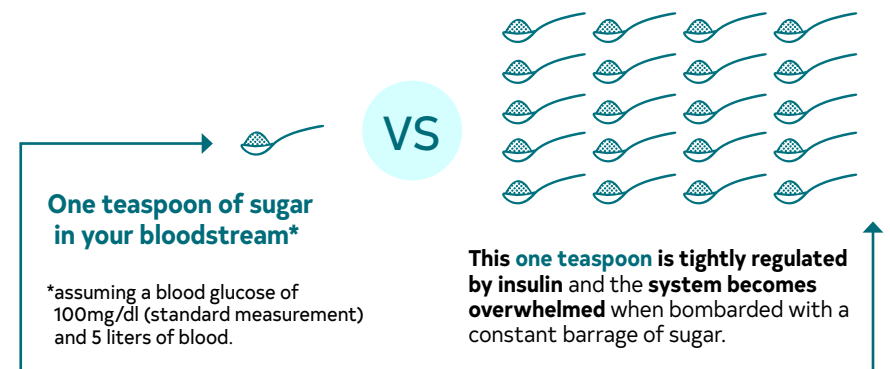
Ideally, 5 grams of carbohydrate from one type of food (e.g., ½ cup berries, 1 cup of non-starchy vegetables or 1 oz of nuts) is added daily for 1 week.

- **If weight loss (or weight stability, if that is the goal) continues**, then another 5 grams of carbohydrate from the same or another type of food can be added.
- **In this manner, the individual can identify** a level of carbohydrate intake below which *weight loss* can be achieved and a higher level at which *weight stability* can be achieved.

98 NAMES FOR SUGAR (+ HIDDEN SUGAR)



Agave	Dried oat syrup	Maltol
Agave nectar	Ethyl maltol	Maltose
Anhydrous dextrose	Evaporated cane juice crystals	Mannose
Barbados sugar	Evaporated cane juice	Maple sugar
Barley malt	Evaporated cane syrup	Maple syrup
Barley malt syrup	Evaporated sugar cane	Malasses
Beet sugar	Florida crystals	Muscovado sugar
Blackstrap molasses	Free-flowing brown sugars	Nectar
Brown sugar	Fructose	Palm sugar
Buttered syrup	Fructose crystals	Pancake syrup
Cane juice	Fruit juice	Panocha
Cane juice crystals	Fruit juice concentrate	Powered sugar
Cane juice solids	Fruit juice crystals	Raw sugar
Cane sugar	Galactose	Refiner's syrup
Cane syrup	Glazing sugar	Rice syrup
Caramel	Glucose	Saccharose
Carob syrup	Glucose solids	Simple syrup
Castor sugar	Glucose syrup	Sorbitol
Coconut palm sugar	Golden sugar	Sorghum
Coconut sugar	Golden syrup	Sorghum syrup
Confectioners' sugar	Granulated sugar	Sucanat
Corn sweetener	Grape sugar	Sucrose
Corn syrup	Gum syrup	Sugar
Corn syrup solids	High-fructose corn syrup	Sugar (granulated)
Crystalline fructose	Honey	Superfine sugar
Date sugar	Icing Sugar	Sweet sorghum
Dehydrated cane juice	Invert sugar	Syrup
Demerara sugar	Invert syrup	Treacle
Dextran	King's syrup	Turbinado sugar
Dextrin	Lactose	White sugar
Dextrose	Malt sugar	Xylose
Diastatic malt	Malt syrup	Yellow sugar
Diatase	Maltodextrin	



GENERAL EATING PRINCIPLES



A low-carbohydrate nutritional approach has a natural appetite reduction effect to ease you comfortably into the consumption of smaller and smaller quantities. Therefore, counting calories is not required.

- ▶ Eat when you are hungry and **stop when you are comfortably full.**
- ▶ You do not have to eat everything on your plate **"just because it's there."**
- ▶ **You do not have to eat if you are not hungry.** This usually happens spontaneously after a few weeks. Skipping meals is acceptable as long as you do not overeat or eat high carbohydrate foods later due to delayed hunger.

Overview of Eating and Suggestions

Reduce Starchy Carbs A LOT!

- Cut out the "white stuff" like bread, pasta, rice, and potatoes.
- **Cut sugar out altogether** (remember The 98 Names for Sugar).
- Cakes and cookies are a mixture of sugar and starch that make it almost impossible to avoid food cravings; they just make you hungrier!

Fruit is Tricky

- Some tropical fruits like bananas, oranges, grapes, mangoes or pineapples have too much sugar.
- **Berries are better and can be eaten in limited amounts.** Apples and pears are also lower in sugar, but limit to a small one.

Leafy Green Vegetables and Salads are Fine

- **Eat these daily.**
- Fill your plate at mealtime by substituting veggies such as broccoli or cauliflower for your potatoes, pasta, or rice.

Eat Healthy Proteins

- **Non-processed meats, eggs, and fish are fine** and can be eaten freely.
- Plain full fat yogurt makes a good breakfast with nuts and a few berries.
- Highly processed lunch meats are not as healthy and should only be eaten in moderation.

Natural Fats are Fine!

- Olive oil is very useful in cooking and as a dressing for salads.
- Butter is tastier than margarine and is better for you.
- Coconut oil is great for stir fries.
- Four essential vitamins A, D, E, and K are only found in natural fats or oils.
- **Be mindful of the amount if you are aiming for weight loss.** You want to burn the fat on your belly, not the fat you eat.
- Avoid processed fats such as margarine, corn oil, and vegetable oils. **Beware "low fat" foods:** they often have extra sugar or sweeteners added to make them palatable.
- Full fat mayonnaise and pesto are definitely fine!

Tips for Eating Out

- Plan ahead — check menus online, always remove bread from option (sub in a bowl or bunless burger).
- **Eliminate the starch:** ban the bread and potato; choose alternate sides.
- **Add healthy fat.** Get extra fresh butter or olive oil for salad.
- Keep an eye on sauces and condiments as many contain sugar.
- **Choose drinks with care:** choose water and absolutely no "free refill" sugary drinks!
- **Rethink dessert** — try a coffee or tea with cream, or berries and cream.

Low-carb Beverages

- If you need some fizz, try seltzer water with natural flavors and no artificial sweeteners.
- Water, up to 2 liters per day, will keep you hydrated.
- Drink coffee, tea, or herbal tea, **but do not add sugar to your drinks.** You may add cream to your coffee or tea.
- **Most alcoholic drinks are full of carbs, so be careful!**
- The occasional serving of dry red wine (cabernet sauvignon, merlot, malbec, pinot noir), dry white wine (sauvignon blanc, pinot grigio) or spirits can be acceptable.

A Word on Snacks

- You will be eating a good amount of protein at each meal, and, if you are eating adequate meals, you should not be hungry between meals.
- If you crave a snack between meals, **try to notice if you are hungry or experiencing another emotion like boredom.**
- If you are truly hungry between meals, have a small low-carb snack such as a piece of cheese, hard boiled egg, salami, unsalted nuts, or a low-carb snack bar.

Eating lots of vegetables with protein and healthy fats leaves you properly full in a way that lasts!

MEDICATION MANAGEMENT



Monitoring and Adjusting Medications

It is VERY important when following a low-carbohydrate nutrition therapy to adjust medications to minimize the risk for hypoglycemia and hypotension. Consult with your physician. **Checking your blood glucose and blood pressure at home is essential.**

- **Reducing carbohydrate intake potentially reduces blood glucose level**, which means that diabetes medications can be reduced or even stopped in some cases.
- **Reducing carbohydrate intake also leads to water loss.** As a result, blood pressure can decrease and dehydration can occur if water and sodium are not replenished, especially if you are taking a diuretic.

Insulin should be adjusted down and sulfonylureas (i.e., glipizide/glyburide) should be stopped ON THE SAME DAY that you are starting the new eating plan.

As weight loss continues, blood glucose levels will decline and further medication reductions may be necessary.

As you improve your insulin resistance, medications which can lower blood glucose will likely need to be reduced or eliminated. Check your blood sugar regularly! Blood pressure can improve also, so monitor with a home cuff and consult with your doctor.

- ▶ **Diabetes medications—insulin and sulfonylureas:** Doses should be REDUCED or STOPPED BEFORE starting a low-carb diet to prevent hypoglycemia (low blood sugar).
- ▶ **Metformin:** Can be used in a low-carb diet.
- ▶ **Blood pressure medications:** A low-carb diet can improve blood pressure. If you have a pressure below 110 mmHg, headache, or feel lightheaded, your blood pressure medications may need to be changed. Diuretics especially should be reduced.
- ▶ **Blood thinners:** Coumadin (warfarin) should be monitored more frequently when transitioning to a low-carb diet, especially if vegetable-intake changes.

Figure 2. Adapting Diabetes Medication for Low-carb Management of Type 2 Diabetes

- Sulfonylureas (i.e., Glipizide, Glyburide, Amaryl)
Risk of weight gain and hypoglycemia.
 - Meglitinides (i.e., Prandin, Starlix)
Risk of weight gain and hypoglycemia.
 - SGLT2 inhibitors (i.e., Jardiance, Invokana)
Risk of euglycemic diabetic ketoacidosis.
 - Bolus meal time insulin (i.e., Humalog, Apidra, Novolog)
Risk of hypoglycemia. Might need small amounts to correct high blood sugar.
 - Combination insulins (70/30) — switch to basal long acting (i.e., Levemir, Lantus, Tresiba, Toujeo)
 - Alpha-glucosidase inhibitors (i.e., Acarbose)
Blocks glucose absorption so not needed in carb reduction.
- STOP**
- 
- Basal long acting insulins (see brand above) — may need to reduce dose by up to 50%.
Follow blood sugars and adjust as needed
 - Thiazolidinediones (i.e., Actos, Avandia)
Contributes to weight gain.
- REDUCE**
- 
- Biguanides (i.e., Metformin, Glucophage)
Assists with insulin resistance.
 - GLP1 Agonists (i.e., Ozempic, Victoza, Trulicity)
Can suppress appetite and assists in weight loss.
 - DPP4 Inhibitors (i.e., Januvia, Tradjenta)
Effects similar to GLP1 but not as potent.
- SAFE**
- 
- **CAUTION**
- 
- When reducing medication, you must be checking your blood glucose frequently and communicating with your clinician.

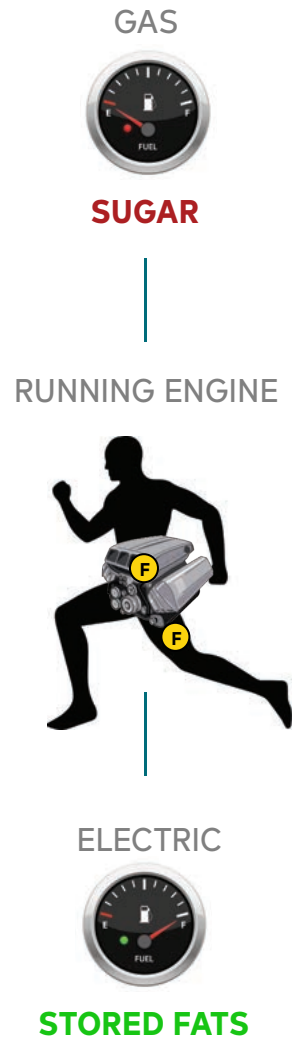
MAINTENANCE AND ADHERENCE



Low-carb Timeline

General

- ▶ It's important to know about some of the possible pitfalls associated with low-carb eating; that way you can take steps to prevent them, you will know what to do if you encounter difficulties, and you will understand the importance of giving your body some time to adjust to the diet.
- ▶ Your body is used to using easily digestible and available carbohydrate for energy. With this new eating plan, your body will transition to using fat for fuel.
- ▶ Remember: When insulin is up, you are storing fat, and when insulin is low, you can mobilize fat. The longer you have been insulin-resistant (obese or type 2 diabetic), the longer it may take to turn the fat-burning switch on.
- ▶ The carbs you eat will have lots of fiber. This will reduce insulin levels through the day and night, and insulin sensitivity will improve. Fiber also helps to create a healthier "microbiome" (the intestinal bacterial environment).



The First 3 Days: Beat the Carb Withdrawal

You may experience carb (sugar) cravings because your prior way of eating may have had many processed carbs and your body needs time to adjust. Sugar is a powerful dopamine stimulus to the brain that triggers the "reward" response. Dietdoctor.com is a great resource.

- ▶ **Don't go hungry!** A low-carb diet reduces hunger, and there's no need for snacking if you're doing it right. If you're hungry between meals, consider increasing the portion size of fat or protein a bit. Make sure to eat until you're satisfied at every meal. Remember, the initial goal is not calorie restriction or even weight loss, but rather to reduce your insulin load and improve metabolism and blood glucose.
- ▶ **Don't try heavy exercise.** Get plenty of lifestyle physical activity and movement but resist doing high intensity exercise for a couple of weeks until your body adapts to using fat as fuel.
- ▶ **Be good to yourself!** You are making a big change and deserve all the pats on the back you can get. It's important to take care of yourself, learn how to deal with cravings, and reward the little milestones. This will help you feel better about the entire experience.
- ▶ **Get support.** Everybody needs a buddy. Find people who are on your side. There are lots of people who have experienced the same things you are experiencing right now. Whether online or in-person, you can find support from others who are happy to answer questions and share their own experiences.
- ▶ **Eat lots of fiber and good fats and proteins at every meal.** Fat, protein, and fiber together produce a high degree of satiety, the feeling of being full.
- ▶ **Drink lots of water.** It seems simple, but having plenty of water by your side can do wonders for your body and mind during these first days.
- ▶ **Don't overeat the foods on your allowed list.** Because you're keeping your carbs lower, initially, you may find yourself reaching for more of the macronutrients you don't have to restrict: protein and fat. So be cautious with overdoing it on the meat, cheese, and nuts, as these foods contain a lot of calories. Going lower-carb isn't a license to eat as much of these foods as you want. Eat when you're hungry, and stop when you are comfortable. Your brain is being trained too, and you are learning.
- ▶ **Plan delicious things to eat.** You will be giving up some of the foods you are used to eating. Rather than focusing on the things you are eliminating, find the yummiest foods your plan allows and enjoy them!

Days 3 to 5: Watch Out for "Carb Crash" or "Keto Flu"

Some people experience a phenomenon known as "carb crash" after a few days on a lower-carb diet. Your body is adapting to mobilizing body fat, and this can be sluggish at first compared to the quick release of the processed carbs you may be used to. Some of the symptoms people experience include feeling shaky or jittery, feeling irritable, feeling fatigued, or just not feeling "right."

- ▶ **If you feel shaky, fatigued, or otherwise unusually bad, add a few high-quality carbs to your diet.** If this makes the feeling go away, you know you are in a carb crash. You should then modify your plan for the next few days to include a bit more carbohydrates and monitor your symptoms.
- ▶ **Drink bouillon — have a cup of bouillon a day!** Dissolve half a bouillon cube in a cup of hot water and drink it. Doing this daily during the first week will help you get enough water and salt. This can help you avoid early side effects, like headache, lethargy or irritability. These side effects are common when starting a strict low-carb diet, but with the bouillon (broth) they are usually minor.
- ▶ **By the end of the first week of your new eating plan, you should start to reap the rewards of your low-carb diet.** This is the stage where many people begin to experience increased energy, better mental concentration, less compulsive eating, and few or no carb cravings. Some say it's as if a fog lifted that they didn't even know was there.
- ▶ **Avoid the temptation for a weekend "cheat day."** Remember that sugars have addictive qualities, and "moderation" often does not work. If you were quitting tobacco, you would not have a cheat day. A high carb day early in the process can also sabotage the adaptation to mobilizing fat as fuel.

Week 2: Restore Your Motivation

Getting through the first week on a low-carb diet is, indeed, the hardest part. It's crucial to keep going during the first week. After the first week, you'll likely feel good. You may see signs that your weight is dropping, even a notch off the belt, and energy is up. Your desire to snack is gone. You are learning new recipes and shopping habits. Keep up with your electrolytes. Here is a primer on electrolytes going into week two:

- **Sodium:** Most should not restrict sodium on low-carb diets and will likely need additional sodium and hydration, especially in the first several weeks. 3–4 grams and sometimes more per day is appropriate and can be supplemented with bouillon cubes or broth. Hyponatremia may be exacerbated by SGLT2 inhibitors, diuretics, and other medications.
- **Potassium:** Potassium can also become depleted, especially with diuretics (thiazides and lasix) or inadequate sodium intake. Attention should be given to adequate dietary potassium and sodium intake. Leafy greens are your friend.
- **Magnesium:** Magnesium is commonly inadequate in modern diets, and an association between low magnesium intake and metabolic syndrome has been suggested. Electrolyte changes induced by a low-carb diet may increase magnesium losses. Magnesium supplementation with Slo-Mag or Mag 64 are simple, low-cost options.

- ▶ **Long-term sustainability may be improved by behavioral analogies like budgeting.** The expectation is not avoidance of all carbohydrates but specific choices of foods low in digestible carbohydrate.
- ▶ **Cravings for carbohydrate-rich foods are common,** and unplanned deviations from any dietary pattern or lifestyle plan are normal and to be expected. Counseling emphasis should be placed on returning to the prescribed eating pattern and developing plans to remove, avoid, or respond differently to triggers.
- ▶ **Critical for success:** developing your "binge management strategies" and "emotional management strategies" initially and periodically is essential.
- ▶ **Vegetarian dietary patterns, even vegan patterns, can be adapted to a low-carbohydrate goal** with the inclusion of vegetable products which are high in protein content — e.g., soybeans, tofu, tempeh, and vegetable fats such as avocados, olives, nuts, seeds, and nut butters.

1. Build your low-carb house with bricks — not straw!

- No matter if you're just thinking about starting low-carb or you've been doing it for a while now—it's important that you build a solid foundation. If you don't, it's much easier for you to crumble and fail. What does it take to build a brick low-carb house? Clean out all the processed, grainy, sugary junk from your kitchen! Stock it with low-carb friendly foods that you LIKE. Make sure some of them are quick and easy to prepare—frozen broccoli or frozen diced cauliflower and chopped chicken tossed quickly in a skillet, topped with some olive oil and pesto: simple and delicious!

2. Set aside prep time for your week.

- Schedule time on Sunday (or whatever day provides more downtime) to get in gear for the week. You can plan some recipes (and leftovers), hit the grocery store, and pre-cook/wash/chop anything you can. That way when you come home drained from the day, you'll already know what's on the menu and be able to throw together all the prepared ingredients into a tasty low-carb meal. Low-carb tip: make double, or more, of everything so that you can re-purpose one night's dinner for tomorrow's lunch.

3. Prioritize you!

- When we get busy we tend to take care of everyone and everything else at the expense of our own health and goals. Make "you" a priority. If it really seems like time is getting away from you, set a calendar appointment once a day or however often you need to commit to yourself. You can use this time to meal prep, meditate, move—whatever helps you with your low-carb goals!

Use affirmations and say to yourself daily:

"For my body, over eating and sugar are poisons. I need my body to live. I owe my body this respect and protection."

PHYSICIAN-PATIENT COMMUNICATION TOPICS



Dispelling Myths

- ▶ **Myth:** Low-carb nutritional approaches are a fad.
Response: Over the past several decades, many randomized controlled trials, both short term and long term (up to 2 years or more), have demonstrated that a low-carbohydrate eating pattern is effective for weight loss, metabolic improvement, and weight maintenance.
- ▶ **Myth:** Low-carb is bad for your heart.
Response: Carefully controlled randomized trials have demonstrated reduction in cardiometabolic risk factors and carotid intimal thickness.
- ▶ **Myth:** Low-carb is not sustainable long-term.
Response: Reducing daily carbohydrate intake has the effect of decreasing appetite and increasing satiation or sense of fullness and corresponding biomarkers. This effect assists in long term maintenance. Randomized trials typically show that patients persist with low-carbohydrate eating plans similarly to comparison diets.
- ▶ **Myth:** Ketosis is dangerous.
Response: Restricting dietary carbohydrates has been an established treatment option for children with hard-to-control epilepsy since the 1920s and has no proven deleterious effect on cognitive function or health.
- ▶ **Myth:** Plant foods are reduced on a low-carb program.
Response: Non-starchy vegetables (green leafy, cruciferous, zucchini, cucumber, celery, etc.) are the foundational foods of a low-carbohydrate eating pattern and are nutrient dense with abundant amounts of folate, potassium, vitamins, and phytonutrients. Proteins or fats can also be obtained from vegetable sources such as nuts, tofu, tempeh, olive oil, avocado, and others.
- ▶ **Myth:** Ketone products and extra fats are necessary to get into nutritional ketosis.
Response: The most important factor to attain nutritional ketosis is to consume a small amount of carbohydrate. Adding ketones or fats or oils is not necessary.
- ▶ **Myth:** Low-carb eating patterns negatively influence kidney function.
Response: This myth stems from the confusion between low-carb eating patterns and high-protein eating patterns. Low-carb does not necessarily mean high protein. Further, for people without existing kidney disease, and for those eating to satiety, higher protein intake does not appear to be related to lower kidney function.



FREQUENTLY ASKED QUESTIONS



How Low is Low-carb?

- “Low-carb diets” can refer to a range of carbohydrate intake from less than 130 grams a day to a very low-carb or ketogenic diet where the goal is 20-35 grams of non-fiber carbohydrates per day. The goals are to reduce carbohydrate intake, which reduces your body’s insulin requirement and, in ketogenic diets, to produce ketone bodies for fuel.

What is Ketosis?

- Glucose (from sugar or other carbohydrates) is the most common fuel source for the body. Ketones are produced by the liver as an alternate fuel source when glucose is not available. Ketosis is the presence of ketones in the blood. Most people develop low levels of ketosis after an overnight fast or carbohydrate restriction. This low-level dietary ketosis is not harmful and can be therapeutic. Ketone levels induced by a low-carb diet will never approach the levels induced by frank insulin deficiency as in diabetic ketoacidosis. The breath of people in ketosis can be described as “fruity.”

How Will This Affect My Lipid Panel?

- A low-carb diet has higher dietary fat but has positive effects on the lipid panel. HDL (good cholesterol) can increase, and triglycerides usually decrease. LDL and total cholesterol usually remain stable, especially after the new weight is maintained. Cholesterol can go up during weight loss. In almost all cases this is fine. Discuss with your doctor.

What Else Can Help?

- A low-carb diet is part of a multifaceted lifestyle change. Adequate sleep, physical activity, reduced stress, learning to cook, support from friends and family all will help you restore your health.

Are There Any Side Effects?

- There are a few possible side effects, and most are minor and easily managed. See Table 2 on the following page to review the most common ones, and how to resolve them.

Table 2. How to Manage/Prevent Potential Side Effects

Potential Negative Effects	Prevention/Management Solution
Halitosis	Increase water intake, maintain good oral hygiene and use parsley, sugarless mints, or chewing gum. In some cases, modifications of macronutrient intake may be helpful.
Muscle cramps	Magnesium supplementation will normally resolve any cramps, as will good hydration.
Constipation	Increase fluid to 2 liters per day. Make sure you eat plenty of veggies.
Lightheadedness, weakness, fatigue	Check your blood pressure and make sure that you have enough salt (e.g., bouillon 1-2 cubes/day). These symptoms typically resolve in 7-10 days. Just like the flu, you should rest and avoid heavy exertion during this initial stage of the nutrition plan if symptoms occur.

Tips for Saving Money While Staying Low-carb

- 1. Buy meat and fish from the counters at supermarkets,** it's usually less expensive than straight from the fridges. If you can, go to your local butcher and fish shop since they can be even cheaper.
- 2. Buy loose fruit and vegetables,** it's usually less expensive than prepackaged fruit and vegetables, but sometimes frozen vegetables can be cheaper. Also, buy less popular fruits and vegetables or go direct to your local greengrocer or farm shop since both alternatives can offer an even better price.
- 3. Cook in bulk with dishes,** then store in containers for freezing and heating up quickly the next time.
- 4. Before going shopping, compare foods online** for the best prices and account for any coupons that might be available.
- 5. Don't go shopping on an empty stomach!**

STOCKING A LOW-CARB FRIENDLY KITCHEN



GREEN LIST FOODS

When you begin eating low-carb, the first and biggest obstacle can be, "What do I eat?" Use these handy shopping lists to help guide you through the grocery aisles. Green List Foods are nutrient dense, low in carbs, and satisfying.

Full-fat Dairy

Dairy adds fat, flavor, and some protein to each meal. It's also quick food to grab while on the go. Stores often have cheese sticks in mozzarella or cheddar cheeses, which are easy to pack in lunches.

Full-fat Dairy

- Butter
- Heavy cream
- Sour cream
- Cream cheese

Full-fat Cheeses

- Mozzarella
- Fresh parmesan
- Cheddar
- American
- Gouda or smoked gouda
- Provolone
- Swiss
- Havarti
- Blue cheese
- Feta
- Goat cheese

Meats, Fish, and sources of protein

Look first for sources of protein. Purchase meats on sale. Used canned meats to make cold salads such as chicken salad or tuna salad by adding a little mayonnaise, chopped dill pickles, and salt. Canned meats can also be used to make a quick casserole.

- | | | |
|----------------------|------------------------|----------------------|
| Bacon | Chicken thighs w/ skin | Pork tenderloin |
| Beef (ground) | Deli meat | Pork (pulled) |
| Beef (stewed) | Eggs | Pepperoni |
| Beef Roasts | Flounder | Ribs |
| Beef bones (broth) | Hot dogs (w/o fillers) | Salmon |
| Canned tuna | Liver | Sausage |
| Cod | Lamb (ground) | Shrimp |
| Chicken breasts | Pork (ground) | Steak |
| Chicken wings | Pork roasts | Shaved steak |
| Chicken (whole) | Pork steaks | (Philly cheesesteak) |
| Chicken quarters | Pork shoulders | Turkey breast |
| Chicken feet (broth) | Pork butts | Turkey (whole) |

GREEN LIST FOODS

(cont'd)

Produce

Look for veggies that grow above ground. Lettuces are very low carb, so you can enjoy a salad with some meat and no-sugar salad dressing. Just skip the croutons. Cabbage fried in bacon fat is another great side dish. Add some bacon for even more flavor! Jalapeños can be stuffed with cream cheese and cheddar cheese and baked in the oven, cauliflower makes a great substitute for mashed potatoes if you squeeze the moisture out and load it up with cream, butter, and salt.

Be sure to use veggies as a vehicle for healthy fats, which will keep you from feeling hungry. *Note: Healthier fats are fats found in their natural form and they taste good in their natural form. Use real butter, olive oil, coconut oil, and lard. Highly processed fats are less healthy, and margarine and seed/vegetable oils are less tasty.*

Avocado	Cabbage	Mushrooms	Spinach
Asparagus	Cauliflower	Olives	Sauerkraut
Bell pepper	Cucumber	Onion	Tomatoes
Broccoli	Green onions	Pickles	Zucchini
Brussels sprouts	Jalapeño	Romaine lettuce	

Pantry Items

Once you clear the high carb items from your cabinets, you may want to gradually replace them with some shelf-stable items you can use for cooking low-carb.

Fats	Nuts	Vinegars
Ghee	Macadamia	Apple cider vinegar
Avocado oil	Almonds	White vinegar
Coconut oil	Walnuts	
Sesame oil	Pecans	
Olive oil		Condiments
Bacon fat (rendered from cooking bacon)	Seasonings and Spices	Mustard
	Garlic powder	Sriracha
Canned goods	Onion powder	Mayonnaise
Tomato sauce	Dried onions	Worcestershire sauce
Green beans	Chili powder	Hot sauce
Sauerkraut	Italian seasoning blend	Lemon juice
Diced tomatoes	Cumin	Buffalo sauce

YELLOW LIST FOODS

Foods on the Yellow List offer multiple health benefits but may hinder your weight loss journey if consumed without restriction. Thus, foods on this list are meant to be enjoyed in moderation.

Fruits

Apples
Apricots
Bananas
Blueberries
Blackberries
Cherries
Clementines
Fresh figs
Grapes
Guava
Jackfruit
Kiwi
Mangoes
Nectarines
Orange
Papaya
Pears
Peaches
Persimmon
Pineapple
Plantain
Plums
Pomegranates
Raspberries
Starfruit

Strawberries
Tangerines
Watermelon

Vegetables

Beetroot
Butternut squash
Baby corn
Carrots
Calabash
Cassava
Celeriac
Corn
Edamame
Golden beets
Parsnips
Peas
Potatoes
Pumpkins
Rutabagas
Spaghetti squash
Sweet potatoes

Fermented foods

Water kefir
Kombucha

Nuts and Treats

Peanuts
Sugar-free nut butters
Dark chocolate (85% and above)
Almond flour
Coconut flour

Legumes and Pulses

All legumes
Alfafa
Beans
Chickpeas
Lentils

Dairy

Milk
Milk substitutes
Cottage cheese
Cream cheese
Full fat yogurt
Sour cream

LIGHT RED LIST FOODS

You should hardly ever consume foods on this list.

Smoothies and vegetable juices

Fruit and yogurt smoothies (without frozen yogurt or ice cream)

Vegetable juices (without added fruit juice)

Treats and chocolate

Dark chocolate (80% and below)
Dried fruit
Honey
Pure maple syrup

Gluten-free grains

Amaranth
Arrowroot
Buckwheat
Bran
Gluten-free pasta
Millet
Oats
Popcorn
Quinoa
Rice
Sorghum
Tapioca
Teff

Flours

Corn
Chickpea
Maize meal
Pea
Polenta
Rice



RED LIST FOODS

Foods to avoid and not have in the home!

General foods

Fast food
Foods w/ added sugar
Chips
Sugary condiments
(ketchup, dressings,
marinades)

Dairy-related foods

Coffee creamers
Cheese spreads
(commercial)
Condensed milk
Ice cream
Commercial frozen yogurt

Drinks

Energy drinks
Soft Drinks
Commercial juices
Commercial iced teas
Flavored milks
Milkshakes

Gluten

Barley
Bulgur
Couscous
Durum
Einkorn
Farina
Graham flour
Khorasan wheat
(kamut)
Matzo
Orzo
Rye
Semolina
Spelt
Triticale
Wheat
Wheat germ

Grain-based products

All commercial breaded
(or battered foods)
Breakfast cereals
All crackers

Sweets

All candies
Chocolates
(non-dark)
Agave
Canned fruit
Coconut sugar
Cordials
Fructose
Glucose
Jam
Malt
Rice malt syrup
Golden syrup

TOP 10 TIPS

Getting Started on Low-carb or Keto

1. Count Your Net Carbs

- Calculate Net Carbs by taking the grams of total carbs minus grams of fiber (which has virtually no impact on your blood sugar) and keep track of those. By tracking Net Carbs you will leave more room in your plan for vegetables and other fiber-rich carbohydrates that are an important part of a healthy diet: you could have a big salad at lunch, a side salad at dinner, and still have several servings of your favorite cooked veggies. And most importantly, don't use your carb allowance for foods that are high in sugar and starches, and low in fiber. And by all means, don't cut your Net Carbs thinking fewer is better.

2. Drink Your Water

- Eight daily cups is the standard recommendation, but the larger and more active you are, the more you need. Two cups can come from coffee or tea (caffeinated is fine), herb tea, sugar-free sodas or broth. As long as your urine is clear or very pale, you're drinking enough. Don't ever skimp on fluids in a misguided effort to see a lower number when you hop on the scale. Not drinking enough water actually makes your body retain fluid as a protective mechanism.

3. Consume a Little Salt

- Put some salt in your diet (or broth or tamari/soy sauce) to avoid experiencing weakness, headaches, muscle cramps or lightheadedness as your body transitions to primarily burning fat for energy. Since low carb diets are naturally diuretic, you don't need to avoid salt to minimize water retention. The symptoms mentioned above can be the result of an electrolyte imbalance caused by losing minerals along with fluid. Caution: continue to limit salt if your doctor has advised you to limit sodium intake of if you are sodium sensitive.

4. Eat 4 to 6 Ounces of Protein at Each Meal

- This is dependent on your height and gender. A petite woman may be satiated by 4 ounces; a guy may need 6 ounces. A very tall guy may even need a bit more. Eating too much protein—or eating only protein and not vegetables and fats—or conversely, skimping on protein or fat, will interfere with weight loss and/or leave you hungry and subject to carb cravings.

Food for Thought — Ask These Questions:

- Was the food once alive?
- What are the ingredients?
- Are the ingredients nutritious?
- Where did the ingredients come from?

Hint: Did your food come from something living or was it made in a plant?
Buying locally-sourced food is always best.

Visit www.realmealrevolution.com for more on the world famous food lists and variation.

5. Eat Enough Fat to Feel Satisfied

- Some people mistakenly assume that a marriage of low-carb and a low-fat diet is the best of both worlds. Not so! As long as you're restricting carbohydrates, the dietary calories from fat are used directly for energy and are unlikely to be stored. Yummy foods like nuts, guacamole, olives, aioli, chicken salad, pesto, and butter help provide satiety so you can keep your appetite under control. They also ensure an adequate calorie intake so your metabolism doesn't dial itself down to "low," slowing weight loss. Protein can't do the job on its own. The tag team of fat and protein keeps you from feeling deprived.

6. Know What You're Eating

- By carefully reading package labels, you can avoid those added sugars and other sneaky carbs. Just because a package says it's low in calories doesn't mean it's low in carbs. Avoid low-calorie products unless they're labeled as low carb. Likewise, use full-fat versions of mayonnaise, salad dressing, and the like. Low-fat versions of packaged foods almost invariably add sugar to replace the flavor carried by oil. If the label is unclear, check out the food in a carb counter.

7. Hold Off on Alcohol

- Even if spirits have no carbs, your body will burn alcohol for energy before carbs and fat; you're slowing down the process by having a cocktail. Alcohol lets down our inhibitions, so you're more apt to eat foods you're better off avoiding after a drink or two.

8. Write It Down

- Record what you eat in a diet journal every day. Putting pen to paper (or fingers to keyboard) allows you to see patterns you might miss otherwise. You'll also quickly see if you're consuming more carbs than you think you are.

9. Watch the Scale, But Not Too Much

- Weigh and measure yourself weekly or use weight averaging. Your weight naturally varies across a three- or four-pound range from day to day, so weighing yourself daily is setting yourself up for disappointment and frustration. Moreover, if you are working out, you may actually be building muscle even as you shed fat, which may keep your weight constant, even as you trim inches and your clothes fit better. (Muscle is denser than fat and therefore takes up less space.) If you could lose four pounds or fit into a smaller size, most likely you'd opt for the latter.

10. Focus on Small Changes

- Wait a week or more until you've become accustomed to your new way of eating before starting or increasing exercise.

A Few Extra Credit Tips From Dr. Mark

- ▶ **Drink according to thirst.** Beverages that you can drink while following a low-carb diet include water, tea with no sugar added, and coffee. Tip: make your water more tasteful by adding cucumber slices, lemon pieces, mint, or ginger parts.
- ▶ **Cook extra for leftover day!** Meals that have more than one portion can be enjoyed on other days.
- ▶ **If you remain hungry, then add more fat and protein** to your cooking (i.e., additional cream/butter/meat/fish/egg) to help you feel full. You may also eat more vegetables.
- ▶ **Try not to eat snacks in between meals.** But if you feel the need, then choose hard cheese or salami, snack on a handful of nuts, or a hard-boiled egg.
- ▶ **Stop eating when full and eat only when hungry.** You are welcome to skip meals if you don't feel hungry and to eat larger portions at other meals if you are hungrier. Save any leftovers for your next meal.
- ▶ **Drink your food and chew your drink** (this means chew and enjoy the foods, and drink slowly).
- ▶ **The portions given in the recipes are just guidelines.** Everyone is different and may need more or less to feel full.
- ▶ **Prepare low-carb meals in advance.** That way, you will not be tempted to buy any snacks/meals that are not low-carb friendly.

Low-carb Tips from Lance Paul King who lost 150 pounds and no longer has diabetes

1. Record your BMI (a simple calculation you can do with weight and height).
2. Know the difference between being hungry and being thirsty.
3. It takes about 5 weeks to break a habit and about 5 weeks to form a habit.
4. Measurements are important because you may lose inches and not weight at times.
5. Non-Scale Victories (NSV) are important. Good for moral support.
6. Don't let the scale get in your head. Don't worry too much about the scale. Follow the program for maximum benefit.
7. MYTH: You cannot do low-carb without a gallbladder. I have heard this from hundreds of people and have been asked lots of times. FACT: You can. You may need an ox bile supplement at first, but not always.
8. Exercise is not a must initially; however, once you start losing weight and/or regaining your health, you will feel more like doing activities you did before (exercising, hiking, roller-skating, etc.).
9. Pickle juice and mustard are good for muscle cramps.
10. Magnesium is good for constipation.
11. Keto flu for beginner: use bouillon twice a day or a pinch of salt.
12. Community is important. Reach out to a local low-carb group on social media.
13. Be cautious about portion size on trigger foods, such as nuts.

GROCERY STORE SHOPPING LIST



Works for Most Discount Stores and Many Dollar Stores

Cooking interesting versus cooking average is all about what you have in the fridge and freezer with a few pantry staples. This is your toolbox for adding variety, flavor, and fun. There are lots of low-carb options at reasonable prices.

Here is an example of one shopping trip as well as some staples (spices, oils, and flavors). This basic list can be applied at almost any discount grocer and even at dollar stores. Starting on the opposing page, you'll find a list of simple recipes and meals that can be created with these ingredients.

Non-perishables

- Almonds
- Anchovies
- Canned chicken
- Canned tomatoes
- Canned tuna
- Coconut milk (high fat)
- Coconut oil
- Dark chocolate (at least 85%)
- Extra virgin olive oil
- Low-carb mayonnaise
- Mustards (Dijon)
- No-sugar nut butters
- Pork rinds
- Stevia, erythritol, monkfruit
- Tomato puree
- Tomato sauce (no sugar added)
- Vinegars (white or red wine)
- Walnuts

Perishables

- Bacon
- Bologna (1 package)
- Butter (8 oz)
- Cabbage (1 head)
- Cheddar cheese (sharp, 8 oz)
- Chuck roast
- Country sausage (1 lb)
- Cream cheese
- Deli meat turkey
- Eggs (large, 1 dozen)
- Garlic (minced, 1 jar)
- Greek yogurt (Full-fat plain, 1 tub)
- 73% Ground beef (2 lbs)
- Ham steak
- Heavy cream (1 pint)
- Hot dogs (1 package)
- Jalapeño peppers (1 bag)
- Mozzarella cheese (shredded)
- Onions (yellow, 1 bag)
- Pepper jack cheese (8 oz)
- Pepperoni (1 package)
- Pickles
- Radishes (1 bag)
- String cheese
- Zucchini

Get Spicy (Try a few)

- Allspice
- Cinnamon
- Cloves
- Coriander
- Cumin
- Hot sauce
- Mustard seeds
- Nutmeg
- Oregano
- Paprika
- Star anise
- Turmeric

RECIPES



Protein, Fat, and Carb Counts are estimates. For precision, read labels and measure.

Main Dishes

CRISPY NACHO CHICKEN THIGHS

Makes 6 servings

Prep time: 10 minutes

Cook time: 40 minutes

Ingredients:

- 30 grams parmesan chips
- 1 tsp chili powder
- 2 large eggs
- 1 tbsp olive oil
- ¼ cup water
- 48 oz bone in chicken thighs
- 1 whole can chipotle peppers en adobo
- ¼ cup mayonnaise



Net carbs: 0.2 grams
Protein: 33.9 grams | **Carbs:** 0.2 grams
Fat: 30.4 grams | **Fiber:** 0.4 grams

Instructions:

1. Arrange rack in center of oven. Heat oven to 400° F. Line a large baking sheet or broiler pan bottom with foil or parchment paper. Top with an ovenproof rack that will provide good air circulation, such as a cooling rack.
2. Process the parmesan cheese crackers (these are made only of cheese and are baked in an oven) and chili powder in a food processor to crumbs; set aside.
3. Whisk eggs, oil and water together in a large bowl. Add thighs and turn to coat.
4. Lift chicken from egg mixture, letting excess drip back into bowl; coat chicken in crumbs and place on rack on prepared baking sheet. Bake until deep golden and chicken is cooked through, about 40 minutes.
5. For Chipotle Sauce: While chicken is cooking, dice the chipotle and combine with the mayonnaise in a small bowl; cover with plastic wrap and chill until ready to use. Serve with chicken thighs.



Note:

These may also be baked as larger or smaller meatballs depending on your use. For example, these may be baked as smaller meatballs and served as cocktail meatballs as an appetizer for a party. Just consider baking them less if smaller, or for longer if larger than golf ball size.

BAKED MEATBALLS

Makes 4 servings

Prep time: 10 minutes

Cook time: 35 minutes

Ingredients:

- 1 tbsp olive oil
- ½ large green onion/scallion
- 1½ tsp minced garlic
- 1 lb ground beef
- ½ lb ground pork
- ½ cup grated parmesan cheese
- 2 large eggs
- ½ tsp salt
- ¼ tsp black pepper

Net carbs: 1.2 grams
Protein: 47.85 grams | **Carbs:** 1.4 grams
Fat: 34.1 grams | **Fiber:** 0.1 grams

Instructions:

1. Heat oven to 375° F. Thinly slice the onion and mince the garlic.
2. In a small skillet over medium-low heat, warm oil and cook onion and garlic for about 1 minute stirring frequently, until softened and aromatic.
3. Transfer the onion and garlic to a bowl and mix in ground meats, cheese, eggs, salt, and pepper. Roll into golf ball-size meatballs, about 2 ¾ tablespoons each (or 16 meatballs for 4 servings). Place on a jelly roll pan.
4. Bake 20–25 minutes, until browned and cooked to an internal temperature of 160° F. Each serving is 4 meatballs (made from about 2 ¾ tablespoons meat mixture each).

SALMON AND ASPARAGUS SHEET PAN

Makes 2 servings

Prep time: 5 minutes

Cook time: 15 minutes

Ingredients:

- 1 bunch thin spear asparagus
- 1 tbsp + ¼ tsp extra virgin olive oil
- ⅓ tsp salt
- 2 (4-oz) salmon fillets, no more than ¾-inch thick
- 1 pinch black pepper
- 3 tbsp olive oil-based mayonnaise
- 1 tbsp lemon juice
- 1 tsp Dijon mustard
- ¼ tsp minced or pressed garlic
- 1 tbsp grated Parmesan cheese



Net carbs: 4.4 grams
Protein: 29.1 grams | **Carbs:** 7.21 grams
Fat: 37.39 grams | **Fiber:** 2.8 grams

Instructions:

1. Heat oven to 425°F.
2. Wash and snap off woody ends of asparagus. Place on a rimmed baking sheet and toss with 1 tablespoon olive oil and a pinch of salt. Arrange in a single layer, leaving space for the two salmon fillets.
3. Place salmon skin side down on the baking sheet. Brush with remaining olive oil, season with a pinch of salt and pepper. Place in oven and bake for 12 minutes.
4. While fish cooks, combine the mayonnaise, lemon juice, mustard, and garlic in a small bowl.
5. Remove sheet pan from oven, sprinkle asparagus spears with parmesan cheese and place back in oven to cook another 3 minutes, or until fish reaches an internal temperature of 145° F and asparagus spears are tender and beginning to brown on the tips.
6. Plate one fillet of salmon and half the asparagus, drizzle each plate with about 2 tablespoons of the mayonnaise sauce, and serve.



EGG SALAD

Makes 4 servings

Prep time: 5 minutes

Ingredients:

- 7 large boiled eggs
- 1½ tbsp chopped red onion
- ¼ cup mayonnaise
- 2 tsp fresh lemon juice
- ½ cup chopped celery
- ¼ tsp salt
- ¼ tsp ground black pepper
- 4 small leaves butter lettuce

Net carbs: 1.8 grams

Protein: 11.2 grams

Fat: 19.3 grams

Carbs: 2.1 grams

Fiber: 0.4 grams

Instructions:

1. Dice the eggs and onion.
2. Combine eggs and onion with the mayonnaise, lemon juice, celery, salt, and pepper in a bowl.
3. Serve on top of lettuce either alone or in a sandwich by rolling it up in the lettuce leaves.

HAM AND CHEESE ROLL-UPS

Makes 6 servings

Prep time: 15 minutes

Ingredients:

- 6 thin slices fresh ham
- 6 slices Swiss cheese
- 6 spears pickles
- 2 tbsp mayonnaise
- 2 tbsp Dijon mustard

Net carbs: 2.4 grams

Protein: 13.3 grams

Fat: 14.9 grams

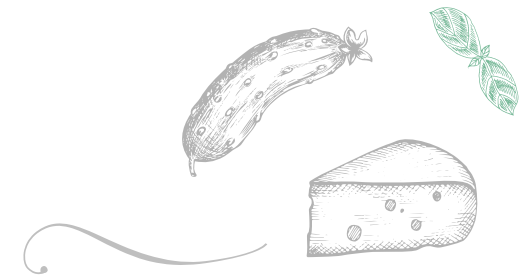
Carbs: 2.7 grams

Fiber: 0.4 grams



Instructions:

1. Trim ham, cheese, and pickles to equal lengths.
2. Lay out ham slices and top with cheese slices.
3. Combine mayonnaise and mustard; spread onto cheese.
4. Lay pickle in center and roll up tightly. Cut into bite-sized pieces.





EASY PEPPER AND ZUCCHINI SAUTÉ

Makes 1 serving

Prep time: 6 minutes

Cook time: 6 minutes

Ingredients:

- 1 tbsp olive oil
- 1 tbsp chopped onion
- ½ cup sliced zucchini
- ¼ cup sliced red bell pepper
- ¼ cup sliced green bell pepper
- ⅛ tsp salt

Net carbs: 4.93 grams

Protein: 1.7 grams

Fat: 13.7 grams

Carbs: 7.3 grams

Fiber: 2.3 grams

Instructions:

1. Heat a medium skillet over medium heat.
2. Add the oil and allow to warm.
3. Add the onion and sauté, stirring frequently, until fragrant, about 1 minute.
4. Add the remaining vegetables and continue to sauté, stirring frequently until the peppers and zucchini have softened, about 5 more minutes.
5. Season with salt and enjoy!

CAULIFLOWER RISOTTO

Makes 4 servings

Prep time: 10 minutes

Cook time: 15 minutes

Ingredients:

- 2 cups cauliflower
- 1 tbsp olive oil
- 1 tbsp chopped shallots
- ½ cup vegetable broth
- 2 tbsp heavy cream
- 2 tbsp parsley
- ½ cup grated parmesan cheese

Net carbs: 2.84 grams

Protein: 6.3 grams

Fat: 9.8 grams

Carbs: 4.2 grams

Fiber: 1.3 grams



Instructions:

1. Pulse cauliflower florets in a food processor until they are the size of grains of rice.
2. In a skillet over medium heat, cook shallots in the olive oil until tender.
3. Add cauliflower and toss to coat; add vegetable stock and cook until tender, about 10 minutes.
4. Add cream, chopped parsley and cheese.
5. Season with salt and freshly ground black pepper to taste.





PUMPKIN SPICE CHAFFLE

Makes 1 serving

Prep time: 5 minutes

Cook time: 5 minutes

Ingredients:

- ½ cup shredded whole milk mozzarella
- 1 egg
- 2 tbsp canned pumpkin
- 1 tbsp sugar-free maple syrup
- 1 tsp coconut flour
- ½ tsp pumpkin pie spice
- ¼ tsp baking powder

Net carbs: 4.8 grams

Protein: 19.5 grams | **Carbs:** 7.8 grams

Fat: 17.9 grams | **Fiber:** 2.8 grams

Instructions:

1. Preheat waffle maker.
2. In a medium bowl, use a fork to mix all ingredients until evenly combined.
3. Pour batter into the center of waffle maker (following manufacturer's instructions) and spread to edges.
4. Cook for 3–6 minutes, or until the waffles are evenly golden and crispy on the edges. Serve warm.

CRUSTLESS SPINACH QUICHE

Makes 4 servings

Prep time: 15 minutes

Cook time: 25 minutes

Ingredients:

- 2 tbsp canola oil
- ½ cup chopped scallions
- 6.5 oz frozen spinach
- 1 cup heavy cream
- 1 cup shredded muenster cheese
- ¼ tsp salt
- 4 large eggs
- ⅛ tsp nutmeg
- ¼ tsp black pepper



Net carbs: 3.6 grams

Protein: 16.1 grams | **Carbs:** 5.7 grams

Fat: 38.1 grams | **Fiber:** 2.1 grams

Instructions:

1. Preheat oven to 350° F. Lightly grease a 9-inch pie pan.
2. Heat oil in a large skillet over medium-high heat. Add onions and cook, stirring occasionally, until onions are soft.
3. Cut frozen spinach into chunks, add to skillet and continue cooking until spinach is warm throughout and excess moisture has evaporated.
4. In a large bowl, combine eggs, cream, cheese, salt, ¼ tsp nutmeg and pepper. Add spinach mixture and stir to blend. Pour into prepared pie pan.
5. Bake in preheated oven until eggs have set, about 30 minutes. Let cool for 10 minutes before serving.

ABOUT MAKING TREATS AND DESSERTS



That sweet tooth doesn't just go away because you've gone low carb. Most often you can fight cravings with high fat options like bacon or pork rinds dipped in softened butter. But for those times when only a sweet treat will do, you still have options.

- ▶ **The real trick to making low carb treats that you can enjoy is finding a sweetener that you like.** Whether it's stevia, erythritol, monkfruit, or something else, it can often take trial and error to find something you like. Be sure to add only small amounts of sweetener at a time and use the guide on the packages to see what might be the best amount to add.
- ▶ **One easy way to taste test sweeteners is to add coffee or tea** before using the sweetener in a recipe. That will give you an idea of how sweet the product is when compared to real sugar.
- ▶ **Another important consideration for making treats is to keep them as an option for truly special occasions,** so that they aren't consumed frequently. One tip that many find helpful is to make small treats so that portion control is easier.
- ▶ **A second option is to freeze portions so that treats are available, but not immediately so.** Having an option on hand in the freezer is especially helpful for cravings, but keeps those items out of sight to avoid mindless eating.



CAUTION

Low-carb desserts are not low calorie. May stall weight loss.

Desserts

"SUGAR" COOKIES

Makes 4 servings

Prep time: 25 minutes

Cook time: 10 minutes

Ingredients:

- ¼ blanched almond flour
- 2 tbsp coconut flour
- 2 tbsp truvia (erythritol-stevia blend)
- ¼ tsp baking powder
- ¼ tsp salt
- 3 tbsp unsalted butter
- 1 tsp vanilla extract



Net carbs: 2.9 grams
Protein: 2.6 grams | **Carbs:** 10.7 grams
Fat: 11.6 grams | **Fiber:** 1.8 grams

Instructions:

1. Heat oven to 350° F and prepare a baking sheet with parchment paper.
2. Into a medium bowl, sift together the almond flour, coconut flour, truvia (i.e., erythritol-stevia blend), baking powder, and salt. Use a fork to blend in melted butter and vanilla until well combined.
3. Measure out 2 packed tablespoons (or a 1-ounce cookie scoop) of dough and shape into a ½-¾ -inch thick cookie until all the dough is used. Note that the thinner you press the cookies, the crispier they will be after cooling.
4. Bake for 8-10 minutes, until golden brown around the edges, watching closely to ensure they do not burn. Cool on the cookie sheet for 10 minutes and then for an additional 10 minutes on a cooling rack to allow the cookies to hold together, as they will be very crumbly when hot.

SALTED CARAMEL CHEESECAKE BITES

Makes 18 servings

Prep time: 70 minutes

Ingredients:

- ½ cup heavy cream
- ½ cup vanilla whey protein powder
- 2 tbsp stevia in the raw
- 6 oz cream cheese
- ½ cup macadamia nuts
- 1 tbsp sugar-free caramel flavoring syrup
- 1 tsp vanilla extract
- ⅛ tsp xanthan gum
- ¼ tsp salt



Net carbs: 0.9 grams
Protein: 2.6 grams **Carbs:** 1.1 grams
Fat: 7.6 grams **Fiber:** 0.2 grams

Instructions:

1. Place the heavy cream in a large mixing bowl with the protein powder and stevia. Whisk until smooth.
2. Add the cream cheese, macadamia nuts (or almonds), caramel syrup, and vanilla extract, then blend until smooth. If the cream cheese clumps slightly, mix with a rubber spatula, breaking up the bits of cream cheese against the side of the bowl.
3. Sprinkle the mixture with the xanthan gum and mix again, about 30 seconds, the mixture will thicken slightly.
4. Cover a tray that fits in your freezer with a sheet of wax paper. Using a soup spoon, spoon out the mixture onto the tray.
5. Alternatively, coat a silicon candy mold or empty ice cube tray with olive oil spray and press the tablespoons of the cheesecake mixture into the molds. Sprinkle with sea salt and freeze at least one hour before serving. Store in the freezer for up to 1 month.

RESOURCES

- ▶ www.atkins.com
International site and starter guide with famous green/orange/red list created by Dr. Tim Noakes. Site accepts no advertising.
- ▶ www.phcuk.org
The Public Health Collaboration is a registered charity in the UK dedicated to informing and implementing healthy decisions for better public health. The "resource" page and "evidence" page are excellent.
- ▶ **Dr. Mark's Clinical Guidelines and Academic Articles on Low-carb Approach**
 - ▶ **Guideline Central: Low-Carbohydrate Nutrition Approaches in Patients with Obesity, Prediabetes, and Type 2 Diabetes**
USA: GuidelineCentral.com/LC
UK: GuidelineCentral.com/LC-UK
 - ▶ **Adapting Diabetes Medication for Low Carbohydrate Management of Type 2 Diabetes: A Practical Guide**
bjgp.org/content/69/684/360
 - ▶ **A Clinician's Guide to Inpatient Low Carbohydrate Diets for Remission of Type 2 Diabetes: Towards a Standard of Care Protocol**
www.openaccessjournals.com/articles/a-clinicians-guide-to-inpatient-lowcarbohydrate-diets-for-remission-of-type-2-diabetes-toward-a-standard-of-care-protocol-12898.html
 - ▶ **A Low-Carbohydrate Survey: Evidence for Sustainable Metabolic Syndrome Reversal**
insulinresistance.org/index.php/jir/article/view/30/88
 - ▶ **Clinical Guidelines For the Prescription of Carbohydrate Restrictions as a Therapeutic Intervention/Low Carb USA International Scientific and Clinical Advisory**
www.lowcarbusa.org/standard-of-care/clinical-guidelines/
- ▶ **Dr. Mark's Websites**
 - ▶ www.drmarksdesk.com
 - ▶ www.runforyourlifebook.com
 - ▶ www.sugarfreewv.org

FIND THIS GUIDE ONLINE
GuidelineCentral.com/lowcarbpatient

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WE ARE PRESCRIBING HEALTH AND RESTORATION!
CHOOSE LIFESTYLE MEDICINE VERSUS A LIFETIME OF MEDICINE.

*Healing starts from within.
Forgive yourself and heal the forgiving way.
The place where life begins is in ourselves...
and often outside of our comfort zone.
So start the journey despite the fear.*

We thank and acknowledge the hundreds of incredible clinicians, research scientists, investigative journalists, farmers, chefs, health advocates, and most importantly, the millions of individuals and patients who are changing the world and giving hope. We have learned so much and continue to learn from you.



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Disclaimer

This patient guide attempts to define principles of practice that should produce high-quality patient care. It focuses on the needs of primary care practice, but also is applicable to providers at all levels. This patient guide should not be considered exclusive of other methods of care reasonably directed at obtaining the same results. The ultimate judgment concerning the propriety of any course of conduct must be made by the clinician after consideration of each individual patient situation. Neither IGC, the medical associations, nor the authors endorse any product or service associated with the distributor of this clinical reference tool.



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