



# Low-Carbohydrate and Very Low-Carbohydrate Eating Patterns in Adults with Diabetes: A Guide for Health Care Providers

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# THANK YOU

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# Content

Introduction	4
Potential Benefits	5
Indications and Contraindications	6
Determining and Reassessing a Carbohydrate Goal	8
Tools and Strategies for Eating Pattern Education	11
What to Emphasize	12
Resources for Patient Education	15
Overview	15
Foods Lists for Low Carbohydrate Meal Planning	16
Getting Started	20
Low Carbohydrate Starch Alternatives	21
Low Carbohydrate Plate Method	22
Very Low Carbohydrate Plate Method	23
Sample Meal Plans (Structured)	24
Sample Meal Plan (Build Your Own)	26
References	27



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# Introduction

The American Diabetes Association® (ADA) has identified low-carbohydrate (LC) and very low-carbohydrate (VLC) eating patterns as options that can achieve improved outcomes in adults with type 2 diabetes.<sup>1</sup> The ADA defines these eating patterns as follows:



## **LOW-CARBOHYDRATE**

Reducing carbohydrates to  
26–45% of total calories



## **VERY LOW-CARBOHYDRATE**

Reducing carbohydrates to  
< 26% of total calories

Of note, a VLC eating pattern is frequently referred to as a ketogenic eating pattern.

While these eating patterns differ in the percentage of total calories being derived from carbohydrate-containing foods, both patterns emphasize consumption of:

- Non-starchy vegetables
- Fat from animal foods, oils, butter, and avocado
- Protein from meat, poultry, fish, shellfish, eggs, cheese, nuts, and seeds

Additionally, both eating patterns deemphasize consumption of:

- Starchy foods
- Sugary foods
- Refined carbohydrates

This guide was designed to assist registered dietitians and other qualified health care practitioners in successfully assessing the appropriateness of and subsequently implementing an LC or VLC eating pattern as an intervention in adult patients with type 2 diabetes.



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# Potential Benefits

Based on current literature, the ADA has reported various potential benefits for both an LC and a VLC pattern including:

- Hemoglobin A1C reduction<sup>2,3</sup>
- Reduced need for antihyperglycemic medications<sup>4</sup>
- Weight loss
- Lowered blood pressure<sup>4</sup>
- Increased high density lipoprotein cholesterol (HDL-C) and lowered triglycerides<sup>3</sup>







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## Indications and Contraindications

A LC eating pattern may be appropriate for some adults with type 2 diabetes. Before selecting an LC eating pattern for an individual, consider factors such as:

- Personal food preferences
- Personal previous experiences with an LC or VLC eating pattern
- Personal goals
- Previous medical history related to cardiovascular disease

Included is a list of factors that our expert advisors have found may predict success, or lack thereof, of an LC or VLC eating pattern in adults with type 2 diabetes. Success is defined as concordance with the prescribed eating pattern.



## Factors Predictive of Success

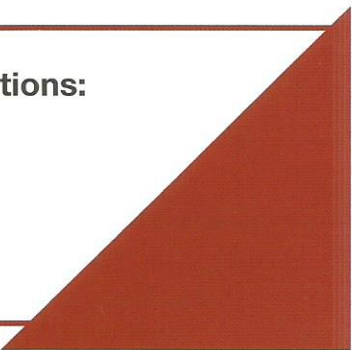
- Excessive hunger is the main reason why an individual has not been successful with other approaches
- Carbohydrate intake significantly raises post-prandial blood glucose or blood glucose throughout the day
- Cravings for fruits, sweets, and/or starchy foods and is willing to avoid these foods to eventually diminish these cravings
- If an individual enjoys vegetables, high protein, and high fat foods
- Willingness to try new meal ideas and enjoys cooking
- Eating out frequently (a LC plan can be successful due to the simple rules to follow and not having to worry about the fats added during cooking)
- An interest, motivation, and open-mindedness toward the intervention
- Associated health issues as motivators
- If an individual has insulin resistance, edema, and/or chronic heart failure
- A strong support system

## Factors Predictive of Lack of Success

- A high intake of fruits and/or starchy foods and would feel “deprived” of these foods
- Preference of a vegan diet (a lower carb diet could work, but ketogenic is much more challenging)
- Yo-yo dieting, diet culture, unrealistic goals, blame/shame, and/or restricting/binging behavior (esp. sweets/carbohydrates)
- Competing priorities (e.g., external stressors)

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### **A VLC diet is currently not recommended in the following situations:**

- If an individual is pregnant
  - If an individual has chronic kidney disease
  - If an individual is on SGLT2 inhibitors
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# Determining and Reassessing a Carbohydrate Goal

Personalizing the carbohydrate goal will help to ensure that the goal is appropriate and realistic for an individual. Two methods are often used to determine appropriate carbohydrate goal:

## Method 1


Start with VLC Intake and Increase (VLC Eating Pattern)

## Method 2

Start with Current Carbohydrate Intake and Decrease (LC Eating Pattern)

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**When deciding between Method 1 and Method 2 for an individual, it is helpful to consider the individual's:**

- Motivation to change and what they are willing and/or able to do
  - Preference for carbohydrate reduction (rapid versus gradual)
  - Personal goals for carbohydrate intake
- 

## Method 1

### Start with VLC Intake and Increase (if desired)

In this method, the starting carbohydrate recommendation is the level of carbohydrate restriction required to induce ketosis. Calories do not need to be counted and portion sizes do not need to be measured with this method; however, an individual needs to understand what foods contain carbohydrate, carbohydrate counting, and nutrition label reading (see “Tools and Strategies for Eating Pattern Education on page 11). This method has three phases:

### Phase 1: Ketosis Induction

Begin with 20 grams or less of carbohydrate per day for 3 to 12 months. Total grams of carbohydrate or net grams of carbohydrate can be used but it is recommended to use total carbohydrates for maximal weight loss and blood glucose improvement. During this phase, vegetables are the primary carbohydrate source. Fat is allowed in unlimited portions, but trans fats should be avoided due to their well-documented negative health effects. Protein is allowed in unlimited portions, but legumes, lentils, and milk should be avoided until phase 2.



Within three to four days after starting this eating pattern, individuals can check their urine (or blood or breath) ketones each morning. This can serve as a marker for adequate reduction in carbohydrate intake for both the individual and the practitioner. Ketones do not need to be large. Any color change on the urine ketone test strip indicates successful ketosis.

Starting from day one of this phase, the following supplementation is often recommended<sup>5</sup>:

<b>Supplement</b>	<b>Dosage</b>
Potassium	16–20 mEq daily
Calcium	1000–1200mg daily
Multivitamin*	1 tablet daily
Sodium**	At least 1500mg daily
Fiber	As needed

\*advise patients to avoid gummy vitamins due to their carbohydrate content

\*\*can be provided as at least ¾ teaspoon of salt, 1–2 bouillon cubes, or electrolyte tablets in water

### **Proceed to phase 2, if any of the following applies:**

- An individual nears their weight goal ( $\leq 15$  pounds to goal weight or is more than halfway to goal after several months of phase 1)
- An individual is satisfied with their weight loss
- An individual has a high level of physical activity
- An individual is having difficulty following the eating plan, wants more food variety, and is willing to lose weight at a decreased rate

## **Phase 2: Carbohydrate Re-introduction**

This phase is designed to determine an individual's personal tolerance for carbohydrates.

Increase carbohydrate intake by 5 grams per day (for a total of 25 grams of carbohydrate daily) for one week. If the individual still experiences weight loss after one week, increase their carbohydrate by another 5 grams per day (for a total of 30 grams of carbohydrate daily) for one week. Continue adding an additional 5 grams of carbohydrate per day each week, until the individual stops losing weight or regains weight. Then, the daily grams of carbohydrate from the week prior will be their goal for maintenance (phase 3). There may be a lower level of carbohydrate intake where weight stays stable and a higher level where weight increases.

When re-introducing carbohydrates, it is recommended to introduce one new food each week using the following progression as a guide:

**Week 1:** Berries, melon, cherries or an increased amount of non-starchy vegetables

**Week 2:** Whole milk yogurt and fresh cheeses

**Week 3:** Legumes

**Week 4:** Tomato and vegetable juices

**Week 5:** All fresh fruits

**Week 6:** Starchy vegetables

**Week 7:** Whole grains

The re-introduction progression will be variable among individuals and is recommended to be individualized as long as processed foods are avoided.

\*\*Of note, many individuals may not complete the entire progression.



### **Phase 3: Maintenance**

The patient should continue a lifelong low carbohydrate lifestyle to maintain the eating pattern's long-term benefits.

### **Method 2**

#### **Start with Current Carbohydrate Intake and Decrease**

In this method, a starting carbohydrate goal is decided based on an individual's usual eating pattern as obtained via dietary recall or food frequency questionnaire. Based on the individual's current carbohydrate intake and their preference for carbohydrate reduction a suitable goal can be set. Reduction of carbohydrates to

this goal should be individualized based on weight goals, health goals, and predicted adherence.

Total grams of carbohydrate or net grams of carbohydrate can be used but it is recommended to use total carbohydrates for maximal weight loss and blood glucose improvement.

Food lists are particularly useful in helping individuals significantly reduce their carbohydrate intake without counting grams of carbohydrate (see pages 16 - 19 for "Food Lists for LC Meal Planning").





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# Tools and Strategies for Eating Pattern Education

To follow an LC or VLC eating pattern, it may be helpful for an individual to understand how to count grams of carbohydrate. Methods for teaching these skills are discussed below. When teaching these methods, it is important to consider the individual's prior nutrition education, their desire and capacity to learn, and which eating pattern they are electing to follow.

## 01

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### **Carbohydrate Containing and Non-Carbohydrate Containing Foods**

It is essential that the individual can identify carbohydrate containing and non-carbohydrate containing foods. A common way to educate an individual on this topic is to provide them with food lists and teach them how to utilize these lists when grocery shopping or preparing meals. This guide provides food lists specifically created for individuals following an LC or VLC eating pattern (see pages 16 - 19 for "Food Lists for LC Meal Planning" patient education resource).

## 02

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### **Help the Individual Identify the Carbohydrates within their Current Eating Pattern**

To ensure the individual has a strong ability to identify carbohydrate containing and non-carbohydrate containing foods, the practitioner should help the individual identify these foods within their current eating pattern. A detailed 24-hour diet recall can be used to understand the individual's current eating pattern. Then, the individual, with the help of the practitioner as needed, can practice using food lists to identify carbohydrate containing foods within their current daily intake.

## 03

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### **Nutrition Label Reading**

Nutrition label reading is a beneficial skill for individuals following an LC eating pattern and may be especially helpful for those following a VLC eating pattern.





## 04

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### **Carbohydrate Counting**

Since the VLC diet requires a specific carbohydrate threshold, counting grams of carbohydrate is helpful. When teaching carbohydrate counting, provide guidelines for grams of carbohydrate for each meal and total for the day. Additionally, teach an individual how to determine proper portion sizes of carbohydrate containing foods utilizing measuring cups, a food label, and/or a phone application. Helping the individual develop daily eating plans is also often helpful.

## 05

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### **Plate Method**

The plate method works well for many individuals, especially for those who have had limited previous nutrition education or have limited literacy and numeracy skills (See page 22 for “Low-Carbohydrate Plate Method” and page 23 for “Very Low-Carbohydrate Plate Method” Patient Education Resource). When teaching the plate method, provide guidelines for servings of carbohydrates for each meal and total for the day. Teach with portion sizes of carbohydrate containing foods.

### **What to Emphasize**

There are common points to emphasize during patient education when teaching an LC or VLC diet.

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#### **Focus on Quality, not just Quantity of Carbohydrate**

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When teaching an LC or VLC eating pattern, it is essential to focus on the quality, not just the quantity of carbohydrates. Complex carbohydrates should not be labeled as “good” while refined carbohydrates labeled as “bad”; instead, their differences should be highlighted. The table provides a comparison of complex carbohydrates versus refined carbohydrates that can be discussed during a patient education:



Complex Carbohydrates	Refined Carbohydrates
Contain fiber slowing their digestion and making them less likely to cause a rapid spike in blood glucose	Do not contain fiber leading to rapid digestion making them more likely to cause a spike in blood glucose
Naturally high in vitamins and minerals	Low in vitamins and minerals as they are removed during processing

### **An LC Eating Pattern is NOT a No Carbohydrate Eating Pattern**

It is important to discuss that it is impossible to eliminate all carbohydrates from the diet, and not necessary or desirable to do so. One way to do this is by discussing how carbohydrates are processed by the body and what they provide. Another way to do this is to encourage the individual that any decrease in carbohydrate intake has benefits.<sup>3</sup>

### **Monitoring Blood Glucose**

Emphasizing the importance of checking blood glucose levels and signs/symptoms/treatment of hypoglycemia is important when initiating an LC or VLC eating pattern.

### **The “Keto Flu”**

If an individual will be following a VLC eating pattern (<20g of carbohydrate per day), it is important to make them aware of the “keto flu” and how to manage its symptoms. The “keto flu” is common in the initial two to three days (up to one to two weeks) of this eating pattern as the body is transitioning into ketosis. Symptoms include

dizziness, lightheadedness, and headache and can be improved with increasing fluid (preferably water) and salt (see page 9 for salt recommendations) intake. Explain that this side effect is temporary and should self-resolve once they achieve ketosis.

### **Dehydration and How to Treat It**

Reducing carbohydrate intake places an individual at increased risk of dehydration as carbohydrate-containing foods normally provide the body with around 20% of its daily fluid intake. Thus, individuals following this eating pattern should be encouraged to consume at least 64 ounces of carbohydrate-free fluids daily. Another way to estimate appropriate daily fluid intake is to divide the individual’s body weight in pounds by two (e.g., a 200-pound individual requires 100 ounces of fluid daily).

It is recommended to make individuals aware of the signs of dehydration such as extreme thirst, dark-colored urine, less frequent urination, fatigue, dizziness, and confusion. Encourage individuals to drink more fluids when they experience these symptoms.

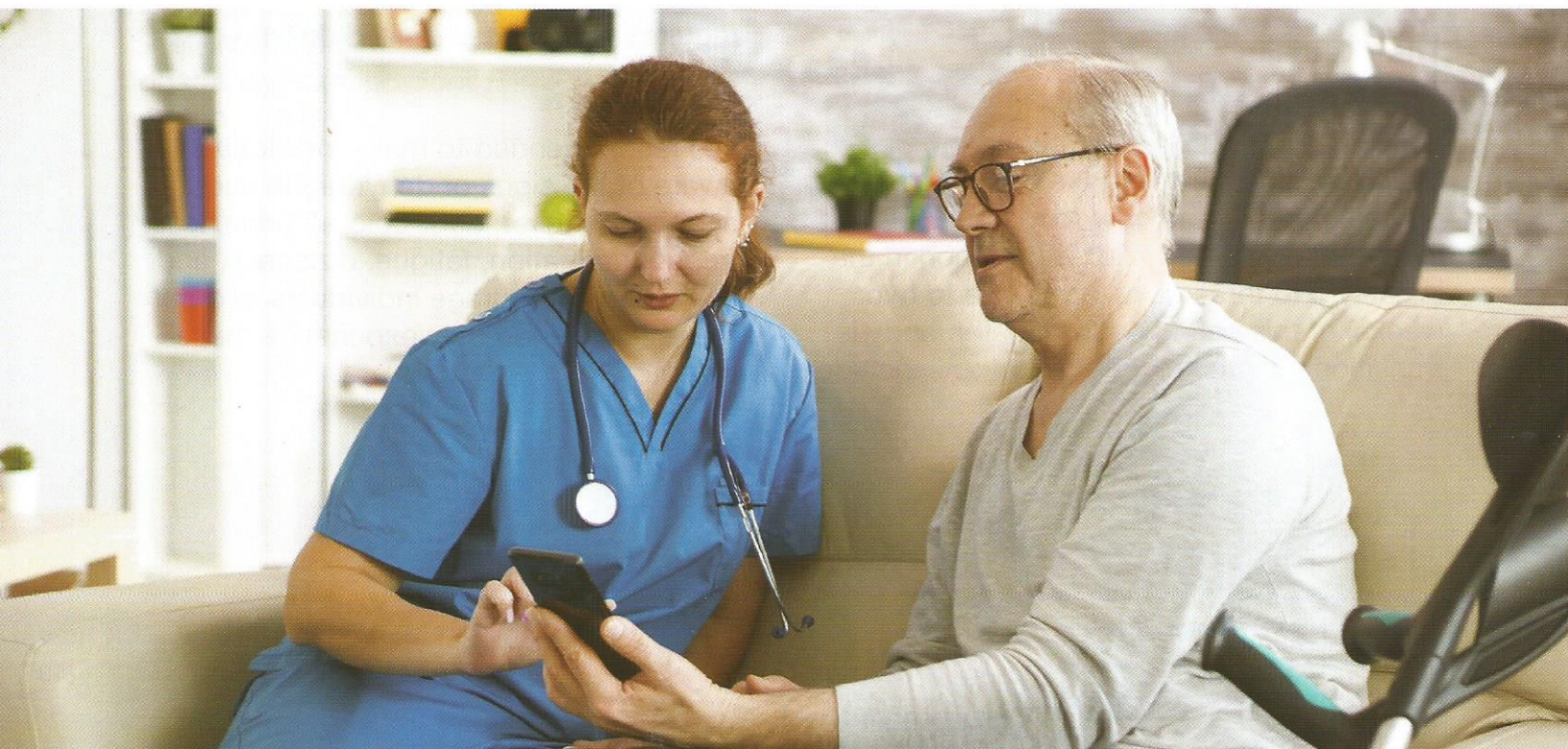


## Contact with Medical Provider

When a patient is starting an LC or VLC eating pattern, it is essential to emphasize the importance of connecting with their primary care provider, endocrinologist, or diabetes educator for the following reasons:

- Blood glucose must be regularly monitored. Insulin and any insulin secretagogues need to be reduced substantially at the time an individual starts reducing their carbohydrate intake substantially.
- Blood pressure should be regularly monitored. Blood pressure medications, especially diuretics, may need reduction at eating pattern initiation or over time with weight loss.
- It is important for the individual to have support from someone knowledgeable who can troubleshoot and provide tips.

For more detailed information on medication management, please reference “Low-Carbohydrate Nutrition Approaches in Patients with Obesity, Prediabetes, and Type 2 Diabetes” on GuidelineCentral.<sup>6</sup>







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# Resources for Patient Education

## Overview

The following resources were created for health care practitioners to use when providing nutrition counseling to individuals who desire to follow and would potentially benefit from a low-carbohydrate (LC) or very low-carbohydrate (VLC) eating pattern.

## Resources Included:

Foods Lists for Low Carbohydrate Meal Planning ..... page 16

Getting Started ..... page 20

Low Carbohydrate Starch Alternatives ..... page 21

Low Carbohydrate Plate Method ..... page 22

Very Low Carbohydrate Plate Method ..... page 23

Sample Meal Plans (Structured) ..... page 24

Sample Meal Plan (Build Your Own) ..... page 26



# Foods Lists for LC Meal Planning

When following a low carbohydrate eating pattern, it is good to know what foods contain carbohydrates. The lists below can be used to determine the amount of carbohydrate in different foods.

## Zero Carbohydrate Foods

These foods contain 0 grams of carbohydrate per serving.

### Meats

Food	1 Serving
Beef	3 oz
Lamb	3 oz
Pork	3 oz
Veal	3 oz

### Fish/Shellfish

Food	1 Serving
Fish	3 oz
Salmon, fresh or canned	3 oz
Sardines, canned	3 oz
Tuna, fresh or canned in water or oil	3 oz
Shellfish: clams, crab, lobster, oysters, scallops, shrimp	3 oz

### Poultry

Food	1 Serving
Chicken	3 oz
Cornish hen	3 oz
Duck	3 oz
Goose	3 oz
Turkey	3 oz

### Fats

Food	1 Serving
Oil: canola, olive, peanut, etc.	1 tsp
Margarine	1 tsp
Mayonnaise, regular	1 tbsp

### Eggs

Food	1 Serving
Egg	1 egg
Egg whites	1 egg





## Very Low Carbohydrate Foods

These foods contain less than 5 grams of carbohydrate per serving.

### Leafy veggies

(1 serving = 1 cup raw or ½ cup cooked)

- |            |             |              |
|------------|-------------|--------------|
| ▪ Arugula  | ▪ Kale      | ▪ Romaine    |
| ▪ Chicory  | ▪ Lettuce   | ▪ Spinach    |
| ▪ Endive   | ▪ Radicchio | ▪ Watercress |
| ▪ Escarole |             |              |

### Non-starchy veggies

(1 serving = 1 cup raw or ½ cup cooked)

- |   |                                       |                           |
|---|---------------------------------------|---------------------------|
| ▪ Artichoke and artichoke hearts            | ▪ Fennel                              | ▪ Radishes                |
| ▪ Asparagus                                 | ▪ Gourds                              | ▪ Rutabaga                |
| ▪ Baby corn                                 | ▪ Green beans and wax beans           | ▪ Seaweed                 |
| ▪ Bamboo shoots                             | ▪ Green onions, scallions, and chives | ▪ Squash                  |
| ▪ Bean sprouts                              | ▪ Greens (collard, mustard, turnip)   | ▪ Snap peas and snow peas |
| ▪ Beets                                     | ▪ Hearts of palm                      | ▪ Swiss chard             |
| ▪ Bok choy                                  | ▪ Jicama                              | ▪ Tomatoes                |
| ▪ Broccoli and Chinese broccoli, broccolini | ▪ Kimchi                              | ▪ Turnips                 |
| ▪ Brussel sprouts                           | ▪ Kohlrabi                            | ▪ Water chestnuts         |
| ▪ Cabbage                                   | ▪ Leeks                               | ▪ Zucchini                |
| ▪ Carrots                                   | ▪ Mushrooms                           |                           |
| ▪ Cauliflower                               | ▪ Nopales                             |                           |
| ▪ Celery                                    | ▪ Okra                                |                           |
| ▪ Chayote                                   | ▪ Onions and shallots                 |                           |
| ▪ Cucumber                                  | ▪ Pea pods and pea shoots             |                           |
| ▪ Daikon                                    | ▪ Peppers (all varieties)             |                           |
| ▪ Eggplant and Chinese eggplant             |                                       |                           |



## Others

Food	1 Serving	Grams of Carbohydrate per Serving
Almond milk, unsweetened	1 cup	1
Avocado	2 Tbsp (1 oz)	2
Cheese	1 oz	0.5–1
Egg substitutes, plain	¼ cup	1
Olives, black	8 small/medium olives	1.5
Olives, green	10 large olives, 1.5 oz	1.5
Tahini sauce	1 Tbsp	2
Tofu	3 oz	1–2

## Low Carbohydrate Foods

These foods contain 5–10 grams of carbohydrate per serving.

## Others

Food	1 Serving	Grams of Carbohydrate per Serving
Almonds, whole	1 oz (24–28 medium)	5.5
Brazil nuts	1 oz (8 medium)	3.5
Cashews	1 oz (14 large, 18 medium, 26 small)	9
Flaxseed	3 Tbsp, 1 oz	9
Hazelnuts, chopped	¼ cup, 1 oz	5
Macadamia, shelled	1 oz (17 medium, 14 small)	4
Peanuts, shelled	1 oz	4.5
Pecans, halved	1 oz	4
Pine nuts	1 Tbsp	1.5
Pistachios, shelled	¼ cup, 1 oz	8.5
Pumpkin, sesame, or sunflower seeds	1 Tbsp	2
Walnuts	1 oz	3



## Berries

Food	1 Serving	Grams of Carbohydrate per Serving
Blackberries, fresh	½ cup, 2.5 oz	10
Blueberries, fresh	½ cup, 2.5 oz	10
Raspberries, fresh	½ cup, 2 oz	7
Strawberries, fresh	6 medium, 3 large, 2 oz	4

## Low Carbohydrate Treats

- Diet or sugar-free gelatin
- Diet or sugar-free pudding

## Zero Carbohydrate Beverages

- Water
- Sparkling water
- Coffee or tea
- Diet or sugar-free soda, seltzer water, or club soda





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# Getting Started

The level of detail provided in the previous lists (pages 16-19) can be too much for most people starting out with a VLC approach. Thus, many have recommended a more simplified approach such as outlined in the lists that follow.

## Zero Carbohydrate Foods

These foods contain 0 grams of carbohydrate per serving.

- |   |   |
|---|---|
| <ul style="list-style-type: none"><li>▪ Meats (e.g. beef, pork, lamb)</li><li>▪ Poultry (e.g. chicken, duck, turkey)</li><li>▪ Fish (e.g. bass, catfish, trout, tuna, salmon)</li></ul> | <ul style="list-style-type: none"><li>▪ Shellfish (e.g. crab, lobster, scallops, shrimp)</li><li>▪ Eggs</li><li>▪ Most fats (exceptions include: avocados, olives, nuts, and seeds)</li></ul> |
|---|---|

## Very Low Carbohydrate Foods

These foods contain less than 5 grams of carbohydrate per serving.

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>▪ Leafy veggies (e.g. arugula, kale, spinach)</li><li>▪ Avocado</li><li>▪ Olives</li></ul> | <ul style="list-style-type: none"><li>▪ Non-starchy veggies (e.g. artichokes, asparagus, celery, tomatoes)</li><li>▪ Cheese</li><li>▪ Tofu</li></ul> |
|--|--|

## Low Carbohydrate Foods

These foods contain 5–10 grams of carbohydrate per serving.

- Nuts
- Fresh berries
- Low carbohydrate wraps

## Low Carbohydrate Treats

These treats contain less than 5 grams of carbohydrate per serving.

- Sugar-free gelatin
- Sugar-free pudding



## Zero Carbohydrate Beverages

- Water
- Sparkling water
- Black coffee
- Tea
- Diet soda

## Low Carbohydrate Starch Alternatives

### Bread alternatives

- Low carbohydrate wraps (<5 grams net carbs)
- Cauliflower “pizza crust”
- Lettuce “wraps”
- Cucumber or zucchini “sub sandwich”
- Stuffed bell peppers

### Rice alternatives

- Cauliflower or broccoli “rice”

### Pasta alternatives

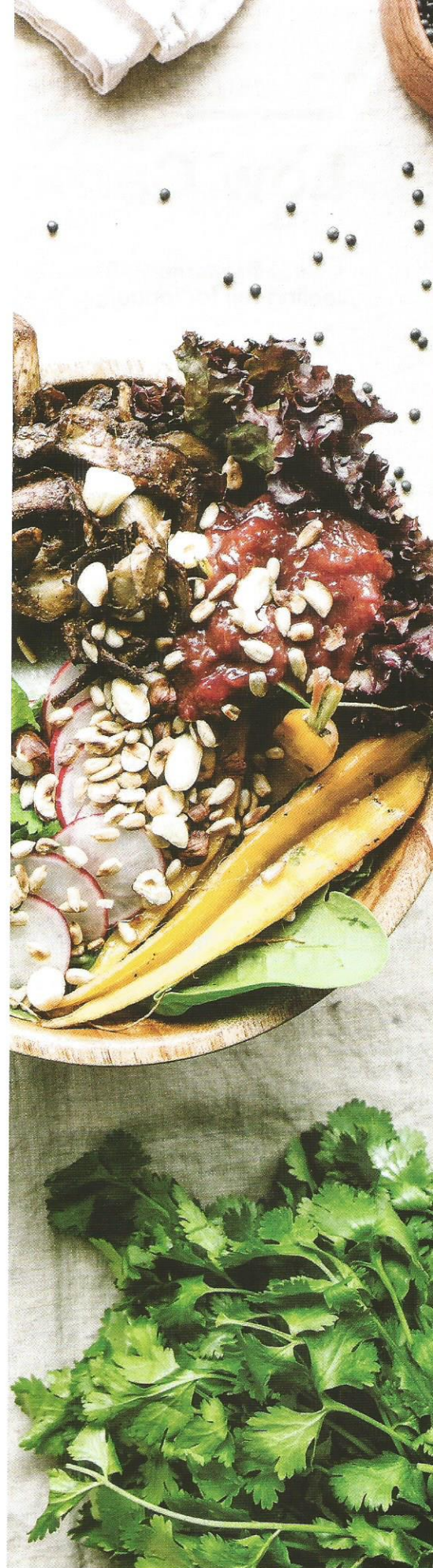
- “Zoodles” - zucchini or squash noodles
- Eggplant “lasagna”

### Potato alternatives

- Cauliflower “mashed potatoes”

### Snack alternatives

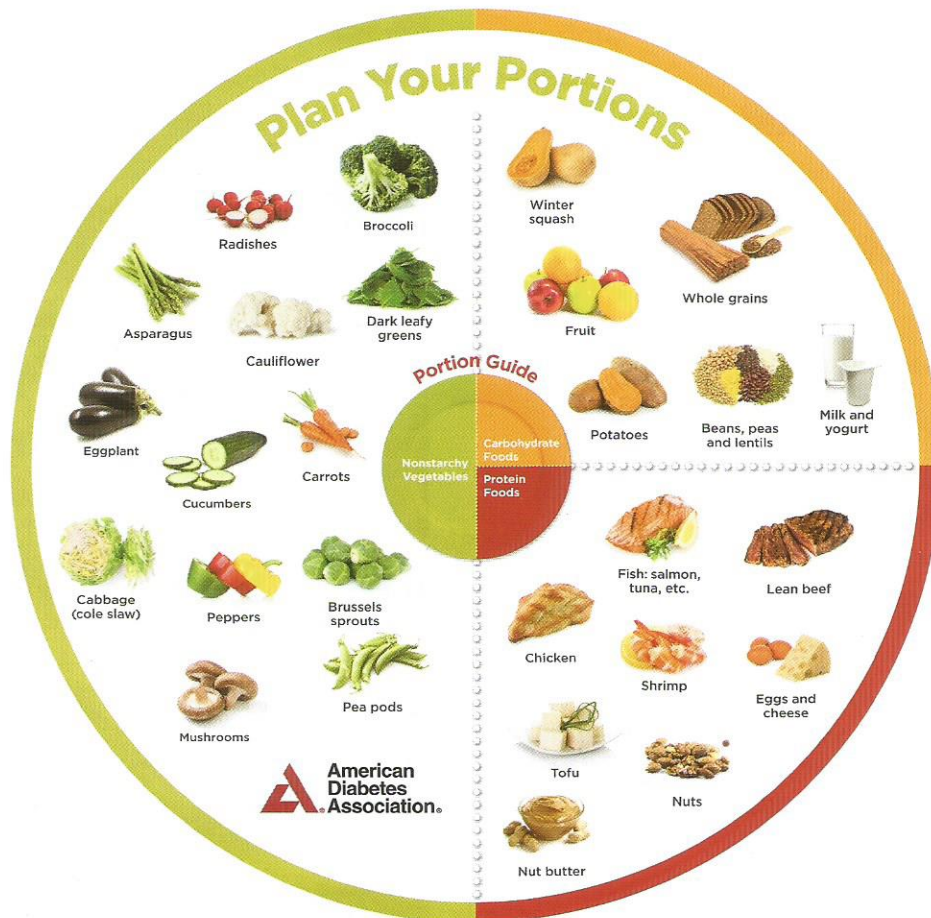
- Kale “chips”





# Low Carbohydrate Plate Method

Eating a balanced meal will help provide you with energy, help you focus, and help keep you feeling full for longer.



## Handy Portion Guide

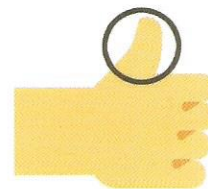
General Guide for Estimation of Portion Sizes



A fist equals about 1 cup



A palm equals about 3oz



A thumb equals about 1oz



# Very Low Carbohydrate Plate Method

Eating a balanced meal will help provide you with energy, help you focus, and help keep you feeling full for longer.



**Non-Starchy Vegetables**  
1 cup raw or 1/2 cup cooked

**Meat/Protein**

## Nutrition Facts

Serving Size 2 pieces (31g)

Amount per serving

**Calories** 190

Total Fat 9g 12%

Saturated Fat 9g 25%

Trans Fat

Cholesterol 0mg 0%

Sodium 25mg 1%

Total Carbohydrate 18g 7%

Dietary Fiber 1g 4%

Total sugar 0g

Added Sugar 0%

Sugar Alcohol 15g

Protein 2g

## Reading Food Labels for Carbohydrates

There are four types of carbohydrates that are counted toward the Total Carbohydrate you see displayed on a nutrition label:

Starches      Sugar  
Fiber      Sugar alcohol

Even though fiber and sugar alcohols do not have a big impact on our bodies since they are difficult to digest. for maximum accuracy it is suggested to count" total" carbohydrates rather than "net" carbohydrates.



# Sample Meal Plans (Structured)

This three-day meal plan is designed to help you implement a simple LC diet at home.

## Carbohydrate Level 1 (10–20 grams)

Day	Breakfast	Snack	Lunch	Snack	Dinner
1	Omelet: 2 eggs, ½ to 1 cup of sautéed non-starchy vegetables (red peppers mushrooms, onion), 1 oz cheese, and crumbled bacon	1 serving of nuts or seeds	Chicken salad: 6 oz of chicken with regular mayo, salt, pepper, and shredded cheese	1 oz walnuts and 1 string cheese	Spaghetti: 1.5 cups cooked spaghetti squash topped with ½ cup zero carbohydrate spaghetti sauce, 3 oz of lean ground beef, ½ cup of sautéed non-starchy vegetables (peppers, mushroom, onion), and ½ ounce grated parmesan cheese
2	Sausage Bowl: 2 ounces crumbled sausage, 1 oz sharp cheddar cheese, ½ cup sautéed non-starchy vegetables (e.g. peppers, onion)	2 hard boiled eggs	Cobb salad: 6 oz salmon, 1 boiled egg, 1.5 cups arugula, tomatoes, red onion, and 2 tbsp blue cheese dressing	Pepper and/or cucumber with 2 tbsp of Ranch dressing	Lettuce wraps: Bibb lettuce topped with beef, cauliflower rice, tomatoes, and sour cream
3	Avocado Egg Boats: ½ avocado (with 1 tbsp taken out) filled with 1 egg. Bake at 350 degrees F for 20–25 mins. Top with crumbled bacon and chives.	Pepperoni slices and dill pickles	Hamburger: turkey or beef patty topped with cheese, mustard, dill pickle, and lettuce leaf “bun”	Celery sticks with 1 tbsp of unsweetened peanut butter	“Zoodles”: 4 oz of chicken or shrimp with zucchini “pasta” and zero carbohydrate tomato sauce

Do not forget to drink at least 64 ounces or eight glasses of fluids daily!



## Carbohydrate Level 2 (20–70 grams)

Day	Breakfast	Snack	Lunch	Snack	Dinner
1	Smoothie: 1 cup unsweetened almond milk with ½ scoop vanilla flavored whey protein powder, 1 cup baby spinach, ¼ avocado, ½ cup frozen strawberries, 1 Splenda or 2 Stevia packets. Blend and add extra water to reach desired consistency.	2 hard-boiled eggs	Tuna salad: 6 ounces of tuna, 3 tbsp mayonnaise, 1 ½ stalks chopped celery, 1 tbsp chopped red onion. Serve over 2 cups of spring greens and ½ tbsp olive oil	1.5 oz almonds, ½ cup fresh raspberries	Caprese Salad: 1 sliced tomato topped with 3 oz whole milk mozzarella, basil leaves, and drizzled with 1 tbsp olive oil, ½ tbsp balsamic vinegar. Season with salt and pepper to taste.
2	Veggie Scramble: 2 large eggs with ½ cup diced non-starchy vegetables (e.g. red peppers, mushrooms, onion) cooked in 2 tsp olive oil, 2 pieces of bacon	1 cheese stick and ¼ cup of sunflower seeds	Lettuce Wraps: 2 large Bibb lettuce leaves topped with 3 oz turkey, 2 tbsp hummus, tomato, 4 tbsp avocado	¼ cup walnuts and ½ cup fresh strawberries	Chicken Caesar Salad: 3 cups romaine lettuce, 4 ounces grilled chicken, 4 tbsp full fat Caesar salad dressing and ½ oz grated parmesan cheese
3	1 cup full fat cottage cheese with 2 tbsp crushed walnuts and ½ cup fresh raspberries	Celery stalks with 4 tbsp cream cheese	Low carb wrap with 2 tbsp peanut butter and 1 tbsp sugar free jelly	1 hard-boiled egg and ½ cup fresh blueberries	Chicken fajitas: 6 oz chicken, 1 ½ cups of sautéed non-starchy vegetables (e.g. onions, peppers, mushrooms), 4 tbsp sour cream, 4 tbsp avocado. Serve over 1 cup sautéed spinach cooked in ½ tbsp olive oil

Do not forget to drink at least 64 ounces or eight glasses of fluids daily!



# Sample Meal Plan (Build Your Own)

## Carbohydrate Level 1 (10–20 grams)

Breakfast	Snack	Lunch	Snack	Dinner
<ul style="list-style-type: none"> <li>Protein</li> <li>Fat</li> <li>0.5–1 cup non-starchy vegetable</li> </ul>	<ul style="list-style-type: none"> <li>Protein</li> <li>Fat</li> </ul>	<ul style="list-style-type: none"> <li>Protein</li> <li>Fat</li> <li>1–1.5 cup greens</li> </ul>	<ul style="list-style-type: none"> <li>Protein</li> <li>Fat</li> </ul>	<ul style="list-style-type: none"> <li>Protein</li> <li>Fat</li> <li>1–1.5 cups greens</li> <li>0.5–1 cup non-starchy vegetable</li> </ul>

Do not forget to drink at least 64 ounces or eight glasses of fluids daily!

## Carbohydrate Level 2 ( 20–70 grams)

Breakfast	Snack	Lunch	Snack	Dinner
<ul style="list-style-type: none"> <li>Protein</li> <li>Fat</li> <li>0.5–1 cup non-starchy vegetable</li> <li>0.5 cup berries</li> </ul>	<ul style="list-style-type: none"> <li>Protein</li> <li>Fat</li> </ul>	<ul style="list-style-type: none"> <li>Protein</li> <li>Fat</li> <li>0.5–1 cup non-starchy vegetable</li> </ul>	<ul style="list-style-type: none"> <li>Protein</li> <li>Fat</li> <li>0.5 cup berries</li> </ul>	<ul style="list-style-type: none"> <li>Protein</li> <li>Fat</li> <li>0.5–1 cup non-starchy vegetable</li> </ul>

Do not forget to drink at least 64 ounces or eight glasses of fluids daily!



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