HOW

TO

KETO

Duncan Lewis
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Why You Are Doing This

This lifestyle diet has the following aims:

1. Improve your health by reversing or lowering your risk of falling victim to diabetes, heart disease, stroke and cancer. You do this by:
   a. Providing your body with nutrients it does need
   b. Eliminating food that your body does not need

   **SPECIFICALLY
   Low Nutrition carbohydrate-dense food**

2. Effective and consistent weight loss by following these general food guidelines:
   - Very Low carbohydrate intake - less than 20 grams per day
   - Medium-low protein intake
   - Very High fat intake

   To be sure of achieving these aims, you must follow the guidelines set out in the following pages.

   Consume only allowed foods and drinks and take note of the amounts allowed for certain foods.

Try to follow these general rules

- Eat when you are hungry & stop when you begin to feel full
- Don’t worry about fat in food. Fat is your friend
- You are trying to avoid eating empty carbohydrates
Food – Storage, Cooking and Nutritional Information

FOOD STORAGE

The food you eat can be any of the following:

• Fresh
• Vacuum packed
• Chilled
• Frozen
• Canned
• Pickled
• Smoked
• Cured

COOKING

You can cook food in using any normal method:

• baked
• boiled
• stir-fried
• sautéed
• roasted
• grilled
• microwave oven
• fried

No flour, breading or cornmeal

EATING OUT

• As much as possible; try to cook and prepare all your own food.
• It will be less processed, more nutritious and you will know exactly what you are eating.
• You must take control of what you are putting in your body.
• If you eat out, don’t be afraid to make special requests or ask about the ingredients in a dish.
• Most large food outlets provide easily accessible nutrition information on their websites – use it.
• The USDA food nutrient database online has vast amounts of nutrition information about foods.  ndb.nal.usda.gov
Base Your Meals on a Source of Protein

- Although vegetarian versions of this diet are possible it is usually easier to base each meal around a fatty piece of meat, **poultry, fish or eggs**

**MEATS**

- Beef (including hamburger and steak)
- Pork, ham (must be unglazed – check the label for carbohydrate), bacon
- Lamb, veal, or other meats
- Processed meats (sausage, pepperoni, hot dogs) check the label
- Carbohydrate count should be about 1 gram per serving (preferably organic and nitrate free)

**POULTRY**

- Chicken
- Turkey
- Duck
- Any other fowl

**FISH AND SHELLFISH**

- Any fish, including:
  - Tuna
  - Salmon
  - Catfish
  - Bass
  - Trout
  - Shrimp
  - Scallops
  - Crab
  - Lobster
  - (Avoid farmed seafood, there are too many toxins in them).

**EGGS**

- Eat as many eggs as you wish
Foods to Eat Every Day

SALAD GREENS

2 cups a day **minimum** – but eat as much as you wish

- Arugula
- Bok choi / pak choi
- Cabbage (all varieties)
- Chard
- Chives
- Endive
- Greens (all varieties, including beet, collards, mustard, and turnip)
- Kale
- Lettuce (all varieties)
- Parsley
- Spinach
- Radicchio
- Radishes
- Scallions (spring onion)
- Watercress

If it is a leaf, you may eat it.

FIBROUS VEGETABLES

2 cups a day **maximum**

- Artichokes (globe or French only – not Jerusalem)
- Asparagus
- Black Soybeans
- Broccoli
- Brussels sprouts
- Bamboo shoots
- Bean sprouts
- Cauliflower
- Celery
- Celeriac (celery root)
- Chayote
- Cucumber
- Edamame beans
- Eggplant (aubergine)
- Fennel
- Green beans (string beans)
- Jicama
- Mushrooms
- Okra
- Pepper
- Pumpkin
- Rhubarb
- Rutabaga (swede)
- Snow peas
- Sprouts (bean and alfalfa)
- Sugar snap peas
- Summer squash
- Tomatoes
- Turnip
- Wax beans
- Zucchini (courgette)
A Word About Sodium

Particularly in the first 2 weeks of any low carbohydrate diet you must actively increase your sodium intake.

Choose from:

- Stock cubes: e.g. Knorr, OXO, Bovril
- Marmite / Vegimite
- Clear broth (consommé)
- Table Salt (with added iodine)

Use these particularly when you first begin. It will help you to avoid:

- Headaches
- Fatigue
- Fogginess / concentration problems
- Muscle cramps

Your new lower level of insulin stimulates your kidneys to remove excess water from your blood - but sometimes, too much sodium is also removed.

If at any time you notice the symptoms above then you should increase your intake of sodium and green leafy vegetables.
Foods Allowed In Limited Quantities...

FATTY VEGETABLES

- Black or Green Olives - up to 6 a day
- Avocado – ½ a fruit a day

CHEESE

- Includes hard, aged cheeses such as Swiss and Cheddar,
- Brie, Camembert blue, mozzarella, Gruyere, cream cheese, goat cheeses.
- Avoid processed cheeses, such as Velveeta
- Always check the label; carbohydrate count should be less than 1 gram 100gram

CREAM

- Includes heavy, light, or sour cream
- Not half and half
- Not condensed or evaporated milk

MAYONNAISE

- Use full fat – not light or low fat
- Check label for carb content if unsure

YOGHURT

- Real Greek Yoghurt (10%+ fat) – always check the label (Greek Style is not the same)
- Normal Yoghurt has too much sugar but check the labels. Remember you are aiming for less than 20grams of carbohydrate per day
# NUTS AND SEEDS

Below is a list of nuts and seeds and their respective carbohydrate content for both per ounce and per 100g

**NOTE: Fibre has already been subtracted from the amounts.**

<table>
<thead>
<tr>
<th>Nut/Seed</th>
<th>Per Ounce</th>
<th>Per 100g</th>
</tr>
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<tbody>
<tr>
<td>Flax Seed</td>
<td>0.50</td>
<td>1.76</td>
</tr>
<tr>
<td>Pecan</td>
<td>1.20</td>
<td>4.23</td>
</tr>
<tr>
<td>Brazil Nut</td>
<td>1.30</td>
<td>4.59</td>
</tr>
<tr>
<td>Madadamia Nut</td>
<td>1.60</td>
<td>5.64</td>
</tr>
<tr>
<td>Chia Seed</td>
<td>1.70</td>
<td>6.00</td>
</tr>
<tr>
<td>Walnut</td>
<td>1.90</td>
<td>6.70</td>
</tr>
<tr>
<td>Coconut (dried &amp; unsweetened)</td>
<td>2.00</td>
<td>7.05</td>
</tr>
<tr>
<td>Hazelnut</td>
<td>2.00</td>
<td>7.05</td>
</tr>
<tr>
<td>Peanut</td>
<td>2.10</td>
<td>7.41</td>
</tr>
<tr>
<td>Almond</td>
<td>2.70</td>
<td>9.52</td>
</tr>
<tr>
<td>Pine Nut</td>
<td>2.70</td>
<td>9.52</td>
</tr>
<tr>
<td>Sunflower Seed</td>
<td>3.20</td>
<td>11.29</td>
</tr>
<tr>
<td>Sesame Seed</td>
<td>3.30</td>
<td>11.64</td>
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<tr>
<td>Pumpkin Seed</td>
<td>3.90</td>
<td>13.76</td>
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<tr>
<td>Pistachio</td>
<td>5.80</td>
<td>20.46</td>
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<tr>
<td>Cashew</td>
<td>8.10</td>
<td>28.57</td>
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<tr>
<td>Chestnut</td>
<td>10.50</td>
<td>37.04</td>
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# FRUIT

Some fruit is low in carbohydrate – eat **no more than 1 cup per day in total**

- Blueberries
- Strawberries
- Raspberries
- Blackberries
- Huckleberries
- Salmon berries
- Gooseberries
CONDIMENTS
• Lemon/Lime Juice: Up to 4 teaspoonfuls per day
• Yellow Mustard: Up to 2 tablespoons per day
• Soy Sauces: Up to 4 tablespoons per day - check label for carb content
• Salt and vinegar No Restrictions
• Ketchup / Brown / BBQ sauce – low carb versions only

PICKLES
• Recipes with dill or garlic pickle usually have no added sugar
• Pickled eggs (For the Brits)
• Branston pickle is a chutney so contains far too much sugar
• Avoid pickled food with added sugars Check the labels for carbohydrates and serving size

SNACKS
• Pork rinds/skins
• Pepperoni slices
• Ham slices
• Beef slices
• Turkey or chicken roll / slices
• Other meat roll-ups
• Deviled eggs

If food is packaged, check labels & calculate carbohydrate amount for your meal

A general guideline to follow if you are eating 3 meals a day:
• 2 grams or less for meat and dairy products
• 5 grams or less for vegetables

Remember! You do not have to avoid the fat that comes with the above foods.
The Primary Restriction - CARBOHYDRATES

Aim to eat no sugars (simple carbohydrates) and starches (complex carbohydrates)

Try to consume only the small amounts found in nutritionally dense, fibre-rich vegetables listed.

SUGARS: SIMPLE CARBOHYDRATE

Avoid anything containing:

• White sugar
• Brown sugar
• Honey
• Maple syrup
• Molasses
• Corn syrup
• Beer (contains barley malt)
• Milk (contains lactose)
• Flavored yogurts (usually have a lot of sugar)
• Fruit juice
• Dried Fruit
• Processed fruit

STARCHES: "COMPLEX" CARBOHYDRATE

Avoid:

• Grains (even "whole" grains),
• Rice
• Cereals
• Flour
• Cornstarch
• Breads
• Pastas
• Muffins
• Bagels
• Crackers
• Beans and legumes (pinto, lima, black beans, peas etc)
• Most Root vegetables – particularly carrots, parsnips, corn, potatoes, French fries, potato chips
Sweeteners and Desserts

If you feel the need to eat or drink something sweet, you should select the most sensible alternative sweetener(s) available.

Available alternative sweeteners are:

• Sucralose (Splenda)
• Aspartame / Acesulfame potassium (Nutra-sweet, Canderel)
• Stevia + Erythritol (Truvia, Sukrin)
• Saccharin (Sweet ‘N Low)
• Cyclamate (not available in USA)

SUGAR ALCOHOL SWEETENERS

Avoid food with these particular sugar alcohols:

• Sorbitol
• Maltitol

They have been found to cause digestive problems more than other sugar alcohols.
Fats and Oils

• All fats and oils, even butter, are allowed. Some oils are better for cooking.

• Coconut oil, butter, or lard is recommended for cooking as these are most stable at high temperatures.

• Reusing oil is not recommended – high temperatures damage fat molecules – particularly ones with high amounts of polyunsaturated fatty acids.

• Store oils in a cool, dark place and do not keep for more than a month once opened.
• Olive oil is recommended for cold dressings.
• Avoid margarine or any food containing hydrogenated oils also known as trans-fats – they are clearly proven to be a major cause of heart disease.

• For salad dressings, the ideal dressing is a homemade oil-and-vinegar dressing, with lemon juice and spices as needed.

• Blue-cheese, ranch, Caesar, and Italian are also acceptable if the label says 1 to 2 grams of carbohydrate per serving or less.

• Avoid “lite” dressings, because these commonly have more carbohydrate.

CHOPPED EGGS, BACON, AND/OR GRATED CHEESE MAY ALSO BE INCLUDED IN SALADS AS A FAT SOURCE

• Natural unprocessed fats, in general, are important to include, because they taste good and make you feel full.

• You are therefore permitted the fat or skin that is served with the meat or poultry that you eat, as long as there is no breading on the skin.

• Do not attempt to follow a low-fat diet!
Beverages

• Drink as much as you like of the allowed beverages
• Do not force fluids beyond your comfort
• The best drink is water
• Essence-flavored seltzers (zero carbs) and bottled spring and mineral waters are also good choices.

CAFFEINATED BEVERAGES

Some people find that their caffeine intake interferes with their weight loss and blood sugar control.

You may consume a maximum of one of the following
• 3 cups of coffee (black, or with artificial sweetener and/or cream)
• 6 cups tea (black, or with artificial sweetener and/or cream),
• 3 caffeinated diet sodas per day.

For example:
• 2 cups of coffee + 2 cups of tea
  ... or ...
• 1 cup of coffee, 1 soda and 2 cups of tea

ALCOHOL

• At first, avoid alcohol consumption on this diet.
• At a later point in time, as weight loss and dietary patterns become well established, alcohol in moderate quantities
• Low carbohydrate alcohol (spirits/hard liquor) may be added back into the diet.
Quantities

• Eat when you are hungry; stop when you begin to feel full
• Simply eat when you are hungry; try not to eat more than what will satisfy you
• Learn to listen to your body. A low-carbohydrate diet has a natural appetite-reduction effect to ease you into the consumption of smaller and smaller quantities comfortably
• Do not eat everything on your plate just because it’s there
• On the other hand, you should never go hungry or skip meals on purpose!
• You do not need to count calories
• If you are hungry in the morning you should start your day with a nutritious low-carbohydrate meal
• If you take medications that need to be taken with or after food then you might need to shape your meals around that. If a medication specifies it must be taken with food then there is a reason for it. Follow the instructions.

Important Tips and Reminders

The following items are NOT on the diet:

• Sugar
• Bread
• Cereal
• Flour-containing items
• Fruits, juices
• Honey
• Whole or skimmed milk
• Yogurt
• Canned soups
• Dairy substitutes
• Ketchup
• Sweet condiments and relishes
Avoid These Common Mistakes

- Beware of "fat-free" or "lite" diet products, and foods containing "hidden" sugars and starches (such as coleslaw or sugar-free cookies and cakes).

- Check the labels of liquid medications, cough syrups, cough drops, and or other over-the-counter medications that may contain sugar.

- Avoid products that are labeled "Great for Low-Carb Diets!"

Search the online USDA food nutrient database to find information about any foods not listed above

ndb.nal.usda.gov
LOW-CARB MENU PLANNING

What does a low-carbohydrate menu look like?

You can plan your daily menu by using the following as a guide:

• **Breakfast**
  - Meat or other protein source (usually eggs)
  - Fat source —this may already be in your protein; for example, bacon and eggs have fat in them. But if your protein source is "lean," add some fat in the form of butter, cream (in coffee) or cheese.
  - Low-carbohydrate vegetable (if desired)—this can be in omelet or a breakfast quiche.

• **Lunch**
  - Meat or other protein source
  - Fat source - If your protein is "lean," add some fat, in the form of butter, salad dressing, cheese, cream, or avocado.
  - 1 to 1 ½ cups of salad greens or cooked greens
  - ½ to 1 cup of vegetables

• **Snack**
  - Low-carbohydrate snack that has protein and/or fat.

• **Dinner**
  - Meat or other protein source
  - Fat source—if your protein is "lean," add some fat in the butter, salad dressing, cheese, cream, or avocado. 1 to 1½ cups of salad greens or cooked greens
  - ½ to 1 cup of vegetables
A Sample Day May Look Like This

• Breakfast
  - Bacon or sausage
  - Eggs

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

• Snack
  - Pepperoni slices and a cheese stick

• Dinner
  - Burger patty or steak
  - Green salad with other acceptable vegetables and salad dressing
  - Green beans with butter
Reading Food Labels for Carbohydrate

• Check the nutrition facts for serving size, total carbohydrate, and fibre

• Subtract fibre from total carbohydrate to get the effective or net carb count

  *For example, if there are 7 grams of carbohydrate and 3 grams of fiber, the difference yields 4 grams of effective carbohydrate*

  *That means the effective carbohydrate count is 4 grams per serving.*

• Do not worry about calories or fat

• Effective carbohydrate count of vegetables should be 5 grams or less

• Effective carbohydrate count of meat or condiments should be 1 gram or less

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

All of these are names for sugar:

• Sucrose
• Dextrose
• Fructose
• Maltose
• Lactose
• Glucose
• Honey
• Agave syrup
• High-fructose corn syrup
• Maple syrup
• Brown-rice syrup
• Molasses
• Evaporated cane juice
• Cane juice
• Fruit-juice concentrate
• Corn sweetener
• Invert syrup
• Partially inverted sugar
• Maltodextrin
Loosely based upon
"No Sugar, No Starch" Diet
From
Lifestyle Medicine Clinic Duke University Medical Center