

# KETO CYCLING & EXERCISE

*How to manage your intake of carbs for maximum energy*



*HOW KETO  
CYCLING WORKS*

*TARGETED KETO  
DIETING*

*BOOST YOUR  
ENERGY FOR  
TRAINING AND  
WORKOUTS*

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## INTRODUCTION: WHAT IS THE KETOGENIC

A ketogenic diet is one high in healthy fats, moderate in protein, and very low in carbohydrates. The keto diet forces the body to burn fat for energy, instead of carbohydrates, which is its default energy source.

In a normal diet that contains high amounts of carbohydrate, the body converts carbs into glucose, which is used by the body, as well as the brain, for fuel and any leftover glucose that is not used is then stored as fat.

In a ketogenic diet, also referred to as low-carb, the body has very little amounts of carbohydrates to turn into glucose, so it does the next best thing: it turns to the liver.

The liver, then, takes the body's fat supply and turns it into fatty acids, which are converted into ketones and so begins the metabolic process known as ketosis, which uses the body's fat stores for energy.

Ketones are also a major source of energy for healthy brain activity.



## WHAT IS KETOSIS

Ketosis is a metabolic state that gets the body to go from burning carbohydrates for fuel – the body's default state – to burning fat.

This results in quick and continuous weight loss. It also regulates blood glucose levels, curbs the appetite, and inhibits food cravings.

Ketone production only occurs when blood insulin levels are very low, which naturally happens in a low carb diet that includes very low glycemic load foods. The lower the insulin levels, the higher the ketone production, the more the body burns fat for energy.

Of course, the main point of all this is weight loss, which occurs naturally as a result of ketosis and the elimination of carbs.

## WHAT FOODS ARE ALLOWED

A ketogenic diet includes eating an ample amount of healthy fats, a moderate amount of protein and of course, a limited amount of foods low in carbohydrate content, which are primarily non-starchy vegetables.

No starches or sugar is allowed, in other words, no insulin triggers, or those high on the glycemic index.

The Glycemic Index (GI) is a number from 1 to 100 that is a direct reflection of how a certain type of food affects one's blood sugar (glucose) level) that cause blood sugar spikes.



## **BENEFITS**

One of the many advantages of a ketogenic diet is that it turns fat into ketones in the liver, which are a great source of energy for the brain and other vital organs.

Keto is also one of the most effective ways to burn body fat, even more so than low fat diets, as shown by numerous studies, which is the main reason many people follow a low carb diet.

Additionally, it ensures stable blood sugars and avoids insulin trigger foods so it helps people manage and possibly prevent type 2 diabetes along with managing type 1 diabetes.

The keto diet is also used to treat various medical conditions and several studies have shown low carb eating to promote heart health and healthy blood pressure as well as reduce risks for heart disease and some cancers.

## **THE DOWNSIDE IN EXERCISE**

Since everything has its pros and cons, the only downside of this diet is that those who regularly engage in intense exercise, athletes, and bodybuilders will typically not derive the energy needed to perform during strength training, intense weight lifting sessions, sprinting or intense workouts of any kind.

This is because when you lower the amount of carbohydrates in your diet, you're also lowering your glycogen levels, which is the default energy source for muscles during workouts, and when glycogen is lacking, so is performance.

The good news is that strength trainers, bodybuilders, sprinters or anyone doing intensive training do have options in following a low carb lifestyle, so they can enjoy the numerous benefits it offers without sacrificing the performance needed for training.

## THE CYCLICAL KETOGENIC DIET

One of the options to go low carb and still train at your maximum is with the cyclical ketogenic diet.

### HOW CKD WORKS

A cyclical ketogenic diet (KCD) means you're refeeding your body – through a cycle that lasts a week with a certain amount of complex carbohydrates, limited amounts of fat, and protein.



### Plan Details

- 5 days ketogenic, then 2 days carb load with high to medium GI (glycemic index) foods.
- On the 2 days when you do a carb-load, you increase your carb intake by 50 – 60%. This high amount is typically above a person's usual dietary intake, but the reason behind this increase is to immediately refill the glycogen levels in the liver and revamp muscle energy, but leave nothing behind to be stored as fat.

This means you increase your carb intake significantly during the cyclical “refeed,” also known as carb-load.

Another option is a bi-weekly cycle where a ketogenic diet is followed for 10 – 12 days, followed by 3 to 4 days of carb loading.

Both can yield good results, but it mainly depends on your own training schedule, goals, preference, and results.



## THE GOALS OF CKD

1. The first goal of this type of diet is to provide you with a break of sorts from going with barely little or no carbohydrates at all as in a standard ketogenic diet, to eating a high carb load in line with your workout needs.
2. The second goal is to modulate your hormone levels and thyroid gland, which becomes suppressed during dieting.
3. The third goal is to replenish your body's dwindling supply of glycogen right when your body needs it the most so it's used as energy, rather than being stored as fat.

## WHO BENEFITS FROM CKD

The only way not to gain weight on a CKD plan is to use your refueled glycogen levels for high-intensity training, as a way of increasing your endurance and maintaining muscle mass.

- **This allows those engaging in athletics, weight lifting, or strength training to maximize fat-loss while building lean mass.**

This sort of training would be extremely hard, if not impossible by only eating low carb.

For this reason, the time between carb-loads is very important, as well as the kinds of foods you eat during the carb-load is critical for the success of this diet and the continued health of your body.

It mainly depends on how intense your training is, as well as your overall fitness goals.



## IMPLEMENTING CKD

1. For starters, you will need to start a carb-load once a week. Adjusting the intervals between carb-loads is the trick and it will take some time to get it just right, as individual results will vary.
2. The key is to implement carb loads, but not allow the body to slip out of ketosis.
3. Measure how much your carb intake is during a load then gauge ketone levels in the urine in the following couple of days. Remember to give your body time to adjust to this new diet and metabolic state.
4. Limit your fat intake while you're loading up on carbs but keep the amount of protein intake the same, or maybe even increase it slightly in line with the intensity of your training.

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## EXAMPLE FORMULA

A simple way to make sure you're getting the right amount of nutrients during the low-carb part of this diet is as follows:

This calculation is based on a person whose lean body mass is 150 lbs. and who follows a 2000-calorie/day diet. To compute your lean body mass you can use this calculator

[http://www.bodybuilding.com/fun/lbm\\_calculator.htm](http://www.bodybuilding.com/fun/lbm_calculator.htm) or any of the many others available online.

- Protein intake should be at 1 gm/lb. of lean body mass = 150 gm of protein daily
- Carb intake should be 0.1- 0.2 gm/lb. of lean body mass = 15 – 30 gm daily
- Proteins and carbs have 4 calories/gram which means the total amount of calories so far is  $(150 + 30 \text{ {or less}}) \times 4 = 720$  calories

- Fat intake will be measured according to how many calories are leftover to reach the 2000 calories/day goal ( $2000 - 720 = 1280$ ), and since 1 gm of fat has 9 calories,  $1280/9 = 142$  gm/day is the amount of total fat intake for one day

Therefore, your daily nutrient intake would be as follows:

- 150 grams of protein
- 30 grams of carbohydrate
- 142 grams of fat

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## STARTING YOUR CARB-LOAD

1. Begin roughly 5 hours before your final workout of the week, and eat about 25 – 50 grams of carbohydrates in addition to some protein and fats. This will help commence the production of liver enzymes.
2. Then 1 – 2 hours before the workout, eat anywhere from 25 – 50 grams of both glucose (brown rice, yogurt, oats and milk) and fructose (fruit) to replenish the liver glycogen levels.
  - **Low Fructose:** Lime, apricot, lemon and rhubarb have .5 grams per gram
  - **Moderate Fructose:** 1 cup of diced cranberries, ½ a small peach, 1/4 cup of cantaloupe, and 1/4 cup of strawberries have between 0.51 gram and 1 gram.
  - **High Fructose:** 1/2 cup of pineapple, 1/2 a grapefruit, and 1/2 cup of raspberries have 1 to 2 grams of fructose.
  - **Very High Fructose:** 1/2 cup of blueberries, 5 cherries, and 1 kiwi have 2 or more grams of fructose.
3. The next 48 hours will mainly be based on your own personal preferences and body needs, but a basic guideline of the carb-load is as follows:



- **1<sup>st</sup> day:** 70% of your total caloric intake should be nothing but carbs (4.5 grams/lb. of lean mass), mainly those with a high GI such as white bread and rice, bagels, potatoes; protein and fats should be evenly split, with each taking only 15% of your total caloric intake
- **2<sup>nd</sup> day:** 60% carbohydrates (2.25 grams/lb. of lean mass), preferably those with a bit lower GI (raisins, bananas, pita bread, basmati rice all have a medium GI of 56-69; beans in all its forms, seeds, walnuts, cashews, certain fruits have a low GI of 55 or less); increase the amount of proteins to 25%; fat remains at 15%

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## RETURNING TO KETOSIS

Remember that the longer you've been following this diet, the easier it will be for your body to enter ketosis and readjust.

Make sure you pick your carbs wisely because those with a lower GI will make it easier for you in the long run. Additionally, the more you train, the easier it is to enter ketosis because depleting glycogen supply will be quicker.

**Consistency is key!**

**The foolproof method of emptying your liver's glycogen supply in order to re-enter ketosis is by following these simple steps during your first three days after a carb-load:**

- **Day 1:** Refrain from eating after 6pm
- **Day 2:** Wake up and do a HIIT workout or an intense weight-training workout before you have breakfast. Start your ketogenic diet with only 0 – 2% carb intake
- **Day 3:** Wake up and do a medium intensity workout or a medium intensity weight training workout before breakfast; begin a normal ketogenic diet of about 3 – 5% carb intake
- **Days 4 & 5:** Same as day 3

## CONCLUSION

The Cyclic Ketogenic Diet is designed for **professional athletes, sprinters, bodybuilders and really anyone who is engaging in high intensity workouts or power lifting**. It is a strict regimen with carefully measured carb intake.

It **features periods of higher carb eating called refeeds**, typically one time per week in order to supply the body with the muscle glycogen needed to perform well during high intensity workouts.

The cyclic ketogenic diet **supports intense workouts, bodybuilders and athletes by providing them with the carbs they need to perform**, and is a strict regimen with carefully measured carb intake, well planned out depletion workouts along with strict adherence to very low carb eating for the rest of the week.



If this sounds like something that would benefit you, consult a fitness or nutrition expert to make sure you're on the right track in order to successfully reap in the rewards of your hard work.

## TARGETED KETOGENIC DIET

### WHAT IS TKD

The targeted ketogenic diet is another option to maintain high levels of training performance while also following a keto lifestyle.

A targeted ketogenic diet (TKD) means following the typical very low carb keto diet on the days you don't work out, then increasing intake of carbohydrates by 25-50 grams prior to your exercise routine on the days you exercise.



What this does is **boost your blood sugar (glucose) levels during the time you're physically active** to supply vital glycogen to muscles that supplies the optimal amount of energy to get through the workout.

It also allows your body to go right back into ketosis once the workout is completed.

### BENEFITS OF TKD

You get the benefits of being on a ketogenic diet while, at the same time, providing your body with the energy it needs to train at a higher intensity level.

The trick is that it allows you to consume a certain amount of carbohydrates 30-60 minutes your workout session and right after your weight training session.

This way, you're raising your blood glucose levels on a temporary basis in order to perform at an optimal level during your workouts but the intake of carbs occurs at a time they are least likely to turn into body fat.

In other words, you're providing your body with a stock of energy so you can perform your workouts at optimum, high-intensity levels.

This maybe ideal for those who lift weights to build lean muscle mass, or engage in high intensity interval training where carbs are needed to fuel a workout.

## HOW IT WORKS

Experts recommend experimenting to identify what works best for you, but typically, in TKD you will eat 25-50 grams of carbohydrates about twenty to thirty minutes before a workout to enhance performance.

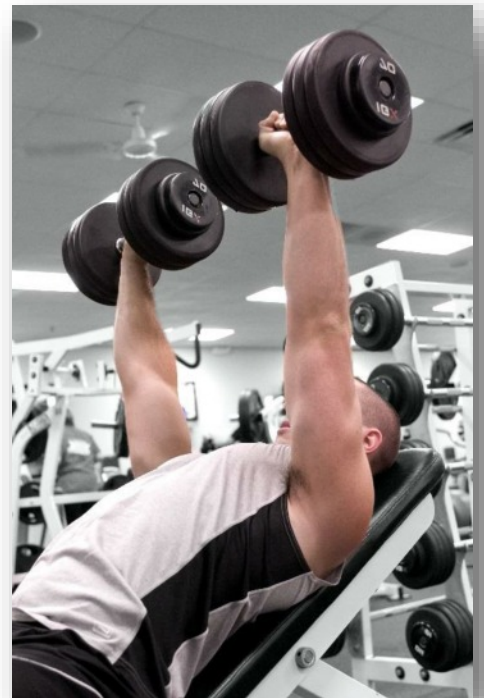
The types of carbohydrates you choose is not very important and you are encouraged to experiment with different foods to evaluate your results.

Many prefer easy to digest carbs in the form of liquids such as sports drinks or high Glycemic Index foods as they absorb quickly in the body and prevent stomach upset while training.

- Candy, one bagel, oatmeal, milk, cereal, and natural maple syrup are widely used.
- If you choose a low GI carb then eat it 1 to 1 1/2 hours before the workout, if you choose high GI carbs eat 30 to 45 minutes before the workout.

However, you need to adjust this amount according to your own personal goals. For instance, if you're trying to build muscle, you should increase your carbohydrate intake; if you're trying to shed pounds, then you should lower it.

**The key is to experiment to identify what works best for you.**



## GLYCEMIC INDEX

If you are going to do TKD, it is important to learn which foods have a high, low, and moderate Glycemic Index (GI).

The Glycemic Index is a number from 1 to 100 that is a direct reflection of how a certain type of food affects one's blood sugar (glucose) level.

It's good to bear in mind that eating **foods with a high GI are easily digestible and will help you avoid an upset stomach**, as well as help you to **maintain optimal energy levels during the workout for a longer period of time without disrupting the ketosis process for too long.**

In addition, keep mind that **glucose-based (brown rice, oats, yogurt, and milk) carbs will raise glycogen levels in the muscle**, while **fructose-based (fruit) carbs raise glycogen levels in the liver.**



## AFTER YOUR WORKOUT

What you eat after your workout should be low in fat. It is true that fat is good for you in keto, but after exercising foods high in fat may impair the absorption of nutrients and the time needed for your muscles to recover.

- **Post-exercise foods should be low in fat but high in protein**

On the days when you're not working out, it's a matter of personal choice whether to keep the carb intake at a slightly lower level or simply remove it altogether.



## RETURNING TO KETOSIS

Research for the most part has shown that consuming carbs before exercise should not negatively affect ketosis, but again, individual results may vary as some find they drop out of ketosis transiently as result of pre-workout carbs.

Experiment and check your ketones with one of the many ketone test kits available.

There will be a short period of time following a workout where blood insulin levels will be elevated and free fatty acid availability needed for ketone production is decreased, but as blood glucose is pushed into the muscles, insulin levels will drop allowing ketogenesis to resume within several hours.



## CONCLUSION

TKD is especially suitable for those who take part in high intensity exercises. If you're a sprinter, for example, or lift weights or even participate in HIIT (high intensity interval training), then this diet may be idea for you.

It will put you at an advantage and help you reach favorable results since it provides the body with ample levels of glycogen to support you during your workouts while allowing you to maintain a low carb lifestyle otherwise for optimal fat burning.

This type of diet is also perfect for those who want to maintain stable blood sugar levels and gain muscle at the same time.

If you don't want to completely eliminate carbs, but still want to benefit from the combined power of ketosis and intense exercise, then this diet is for you.