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Client: Elite Training Boston

Simplifying Ketosis: The Essentials of the Ketogenic Diet

Every year, we're introduced to a new dietary trend promising fast weight loss, more muscle mass, or enhanced athletic performance. All too often, these big claims fall all too short. Every once in a while, a diet comes along that is easy to get started, simple to maintain, and proven to work. The diet that has met these characteristics during the last decade is the ketogenic diet.

What is the Ketogenic Diet?

The ketogenic diet flies in the face of many modern-day recommendations. It is a fat-focused diet where the bulk of your caloric intake – up to eighty percent – comes from healthy and high-quality fat sources.

Your protein intake will be moderate at around fifteen percent. This might frighten some muscle-focused people, but don't worry, the ketogenic diet has been shown to maintain levels of lean muscle tissue without the risk of catabolism (muscle breakdown), which I'll talk more about below.

What about carbohydrates? The ketogenic diet is a low-carbohydrate diet. Ideally, only five percent of your total daily caloric intake should come from healthy carbohydrate sources. Again, this might inspire doubt because the current dietary recommendations from the official MyPlate website suggest carbohydrates should provide between fifty-five percent and sixty-five percent of your daily intake.

The goal of the ketogenic diet is to enter a state called ketosis. This is where the body ceases to use glucose as its primary energy source, instead relying on ketone bodies. These ketone bodies are produced in the liver from fatty acids. Since you are consuming primarily fats on the ketogenic diet, the body has a plentiful source to create these ketone bodies.

Health Benefits of Ketosis

A variety of studies have been released showing the benefits of entering ketosis and using ketone bodies as the fuel source for the body and the brain.

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Weight Loss

It may seem ironic, but a fat-based diet has been shown to be an effective way to combat obesity and promote long-term weight management. One [study](#) showed that obese subjects lost a significant amount of weight on the ketogenic diet. More importantly, subjects were able to keep off the weight.

Here's how the ketogenic can boost weight loss: First, you are no longer consuming simple carbohydrates, specifically the simple, sugar-based carbohydrates. This type of carbohydrate has been [linked with weight gain](#) along with a higher risk of cardiovascular disease, especially diabetes.

Second, when you are no longer consuming carbohydrates and your body is focusing on producing ketone bodies for fuel, it will be looking for fatty acids. Stored fat is an excellent source for the body to use to create ketone bodies.

Muscle Building

The ketogenic diet is not going to turn you into the next Phil Health; however, it can support your goals of lean muscle mass. Think about it: What do most people want in regards to their fitness goals? To burn fat and build muscle. The ketogenic diet can allow you to have both as long as long as you are following an effective resistance training program.

If you don't have a workout program, keep reading. I supply you with exactly what you need to get started.

As for how the ketogenic diet can help with muscle building: Since your body is utilizing ketone bodies as its fuel source, you won't have to be concerned with protein breakdown, unless you aren't eating enough or if you're over-training. Following the diet accordingly, the keto diet will [protect lean muscle tissue while burning fat](#). The moderate amount of protein that you'll be eating on the ketogenic diet will provide necessary amino acids for lean tissue development and protection.

Neurological Disorders

Your brain loves ketone bodies. This is because the brain is made up of sixty percent fat. The ketogenic diet benefits your brain health by improving cognitive performance and protecting against neurological disorders.

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A recent [study](#) showed that the ketogenic diet was effective in boosting your cognitive performance and social behavior. While the mechanisms aren't completely clear, the benefits might have to do with the energy pathways, and how your brain prefers ketone bodies over glucose.

Now, let's talk about brain disorders that the keto diet can help with. The ketogenic diet was first used for epilepsy in the 1920s, and the response was dramatic with a substantial [reduction in seizures](#) in patients who were placed on the diet. Some even had their seizures stop completely.

The ketogenic diet is also being seriously considered as a way to [combat Alzheimer's disease](#) and dementia. Studies show great promise for subjects, suggesting the diet as a way to halt or slow the disease.

Disease Risk

Ketone bodies may be a more [effective fuel source](#) than glucose. What's more, ketone bodies don't create the same oxidative waste left behind after being utilized as fuel when compared to glucose. In other words, ketone bodies are a relatively cleaner source of energy for the body to use. The brain, in particular, prefers ketone bodies as the brain is made up mostly of fat.

What does this have to do with disease? Oxidative damage, waste from energy usage, and inflammation all combine to increase the risk for disease. In the body, this can show as cardiovascular disease, and in the mind, this could be an increased risk for Alzheimer's and dementia.

The ketogenic diet has been shown to reduce inflammation and [decrease cardiovascular risk factors](#) such as cholesterol, triglycerides, and blood glucose.

How Do You Achieve Ketosis?

Convinced about starting the ketogenic diet? Right now, you're probably wondering, "How am I going to be able to start the keto diet and achieve ketosis?"

First, let's make sure you understand that in order for you to be successful, you should focus on gradually modifying your diet until you've achieved: 80% fats, 15% protein, 5% carbs. A good place to start is to use this [ketogenic calculator](#) to determine your dietary intake.

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Once you know your total number of calories, along with grams of fat, protein, and carbohydrates, you can begin to focus on buying the best sources of each. Let's discuss the most important macronutrient on the Ketogenic Diet: fat.

Best Sources of Fat

The best sources of fat will actually be spread out between the fat and protein categories. The following items listed in the fat category are extremely high in healthy fats and not much else, whereas the foods found in the protein category contain both protein and healthy fats. For now, let's take a look at ten options that will help you get in enough fat with every meal.

1. Walnuts
2. Flaxseed
3. Coconut oil
4. MCT oil
5. Olive oil
6. Beef jerky
7. Greek yogurt
8. Sour cream
9. Lard
10. Animal fats (e.g., chicken fat)

How Much Fat Per Day?

Take a look at the number you received from the ketogenic calculator. Depending on the number of grams of fat per day you should be eating, you will have to break it up between twenty and forty grams per meal. This will be easier than it sounds as high-fat foods such as coconut oil contain fourteen grams of healthy fats from just one tablespoon.

Quality of Fat is Important

It's not enough to just eat fatty foods. There's a big difference between a processed piece of lunch meat and an all-natural cut of meat. When purchasing your fat-based foods, be sure to select all-natural and wholesome choices. Stay away from processed items as much as you can. Here are a few examples:

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All Oil Isn't the Same: Don't buy processed vegetable oil. Buy an oil that is rich in natural healthy fats; olive oil is my favorite. Some keto-adapted athletes even drink a couple table spoons of warm olive oil.

Coconut Oil: Cooking vs. Food Grade: On the same note from above, watch out for the type of coconut oil that you buy. Some are made specifically for cooking, not eating.

Buy Local: See if you can find a local farm that makes their own bacon, butter, or milk-products. You can also inquire about buying fresh meat or bones (for bone broth).

Mercury Testing: Salmon is an excellent high-fat, high-protein food, but mercury and contaminants have become a big problem. Buy brands that are known to provide the lowest levels of these metals.

Best Sources of Protein

While your protein intake is moderate, it's still essential as your body needs the amino acids for daily processes. What's more, many of the best protein sources contain fatty acids that can help with your keto diet. Animal-based proteins are very low in carbohydrates – if any at all – and provide the perfect portion of protein.

1. Grass-fed beef
2. Lamb
3. Liver
4. Turkey
5. Chicken
6. Cage-free eggs
7. Wild caught tuna
8. Wild caught trout
9. Wild caught salmon
10. Sardines

Role of Carbohydrates

It's next to impossible to completely avoid carbohydrates, because they are naturally occurring in most foods. Your goal is to choose low-carb options while keeping your total daily carbohydrate consumption at or lower than what was recommended to you with the ketogenic calculator.

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I also recommend using [MyFitnessPal](#) to keep track of your daily caloric intake, especially when watching your carbohydrates.

Your biggest concerns for foods with carbohydrates that are allowed on the ketogenic diet will be fruits and vegetables. Let's take a look at the best sources of both that are keto-friendly.

Best Sources of Vegetables

1. Butter lettuce
2. Mushrooms
3. Boy choy
4. Broccoli rabe
5. Asparagus
6. Spinach
7. Celery

Best Sources of Fruits

1. Blackberry
2. Avocado
3. Raspberry
4. Tomato
5. Strawberry
6. Coconut
7. Melon

Things to Avoid

Grains: Packed with carbohydrates, grains can easily throw you out of ketosis. Examples include:

- Whole-wheat bread, pasta, or crackers
- Brown rice
- Buckwheat
- Bulgur
- Oatmeal
- Popcorn

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Starches: Just like grains, starches are high in carbohydrates and will quickly put you past your daily limit. Some starches even cross over into the grains category. Examples include:

- Peas
- Corn
- Potatoes (including sweet potato)
- Beans
- Pasta

Processed/Refined Carbohydrates: Pretty self-explanatory here. Not only are you including carbohydrates in your diet, but you're also ingesting processed food choices. Remember that we want to focus on high-quality and all-natural food options, even with our limited carbohydrate choices. Examples of processed carbohydrates to avoid include:

- Refined bread, pasta, or crackers
- Refined rice

Eating Too Much (Even of Fat): Yes, it's important to eat and eat well, but if your goal is weight loss, you won't achieve it by overeating. Be sure to follow your daily recommended caloric intake so you can successfully enter ketosis to see the greatest weight loss results.

Be Wary of Allergies: Before starting the ketogenic diet, be sure you are aware if you are allergic to certain foods. Even though nuts fall under the menu of the ketogenic diet, I would recommend to exercise caution because many people have nut allergies, and may not know that they are allergic to them. Some experts suggest that a diet high in certain nuts has been shown to exacerbate joint pain. Another allergy example is avocados, which are considered ketogenic foods, but I'm allergic to them.

Timeline of When to Start the Ketogenic Diet

The last thing that you want to do is jump into a full ketogenic diet, unless you are already eating a fair amount of healthy fats in your current diet. Best to play it safe and build up gradually. I would recommend starting small changes one month out.

One Month Before Full Ketogenic Diet

- Slowly eliminate unhealthy carbs
- Increase fat

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- Increase your water intake
- Add in food choices that will be common on the keto diet (e.g., coconut oil)
- Incorporate exercise throughout the week

Two Weeks Before Full Ketogenic Diet

- The only carbs in your diet should be what has been suggested above
- High quality fats and protein should be the bulk of your diet
- Water intake should remain elevated to help with the transition – Use a mineral-based water
- Most of the recommended fat-based options should be in your daily meal plan
- Incorporate exercise throughout the week

Full Ketogenic Diet

- You should be at (or very close to) eighty percent of fat in your daily meal plan
- Carbohydrates should now be at an acceptable level (reference your keto calculator results)
- Water intake **MUST** remain elevated at this point – Use a mineral-based water
- Buy the supplements which I discuss below to help
- Incorporate exercise throughout the week

How to Know You're in Ketosis

After a month of gradually moving towards a full ketogenic meal planner, you may begin to wonder when you'll achieve full ketosis. Let's review a few signs to watch for that let you know you've achieved ketosis.

Breath Changes: Many people who start the ketogenic diet make mention of having breath that can be described as sweet or fruity. No need to worry, this is a byproduct of ketone body production in the liver.

Thirst: Remember how I kept recommending to increase the amount of water you drink? This is because those people on the ketogenic diet find themselves to be thirstier than usual. This is because your body is burning through the last of the glucose while eliminating waste and electrolytes.

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Brain Boost: There's no denying that some people feel more tired during the first week of being on the complete ketogenic diet – this is why I recommend a month to build up – but after that initial jump, many confirm feelings of alertness and focus.

Weight Loss: The most exciting sign that you've entered ketosis is weight loss. Once your body burns through the last of the carbohydrates, and begins producing ketone bodies, it will take from your fat stores resulting in fat loss.

Stomach Issues: Another reason that I recommend building up to a full ketogenic diet is that you are drastically cutting down on a macronutrient that your body has been accustomed to for many years, and you're replacing it with another that you may not have had much of. If you experience some stomach issues such as diarrhea, don't worry as this is common and short-lived. Symptoms usually subside upon hitting ketosis.

How to Be Sure You're in Ketosis

Naturally, you might be anxious to know whether you've achieved full ketosis without leaving it to chance. There are three ways to test this, although I highly recommend the first option that I list (the blood test). The best time of day to measure your ketone levels is in the afternoon; ideally, you'll be in a fasted state.

Once you've got ketosis dialed in, it is unnecessary to continually test. If you fall off the band wagon and give in to a high-carbohydrate meal, then you might want to test again to confirm that you're back in a ketogenic state.

Blood Test: In terms of accuracy, nothing beats the blood test. It effectively measures levels of the most common ketone body, beta-hydroxybutyrate. If you're not a fan of blood tests, don't worry. It's fast, simple, and you don't feel it (or you'll barely feel it). Personally, I use the [Keto Mojo](#).

Now, understandably, budget might be an issue, and some of you may really hate the sight of blood. With that said, there are two more ways to test whether or not you're in a ketogenic state.

Breath Test: A single purchase that doesn't require refill strips like the blood test is a breath meter. The idea here is that when beta-hydroxybutyrate is metabolized, a compound called acetate is produced. Acetate levels can be traced through your breath, which is where it's

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released from the body. Not as accurate as the blood test, but pretty close, and it's perfect for those who don't have the budget to keep replacing keto strips.

Urine Test: The other way to test your ketogenic levels is through the urine. These strips aren't nearly as expensive, but the accuracy isn't as good as the blood or breath tests. Here's how it works: When your body has become a ketone-producing machine, you will begin to excrete ketone bodies in the urine. A ketone body called acetoacetate is most abundant in urine excretion, and that's what the urine tests look for.

Keto Flu and the Ketogenic Diet

One problem that is common with those new to the ketogenic diet has been dubbed the "keto flu." As the name suggests, this is when your body begins producing symptoms similar to a mild flu; most notably, fatigue, nausea, spaciness or clouded thoughts, mood swings, and extreme cravings.

These symptoms are the result of eliminating carbohydrates too quickly and not replacing your electrolyte levels. When you eliminate an entire macronutrient then replace it with one that you've never eaten, your body may respond in a negative way. The keto flu is only temporary, but you can definitely avoid it.

First, as I mentioned above, gradually place yourself on the keto diet, don't just jump into it. Take a month, slowly cut out carbs, introduce fats, and focus on mineral (electrolyte-based) hydration options.

Second, be sure to exercise. I provide you with a workout program below, but if you have your own, it's important to keep at it during that month you're gradually building up to the diet. At the very least, be sure to take an hour to walk a day: thirty minutes in the morning and thirty minutes in the evening.

Third, make sure you are sleeping enough. Your body gets rid of waste, toxins, and build-up from the day during the hours you're sleeping so be sure to get seven to nine hours each night.

Finally, there are supplements that can make your transition into ketosis a breeze. I'll list the ones that I personally take in the order of importance.

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Necessary Supplements on the Keto Diet

Supplements can have a dramatic impact on your transition from a carb-heavy diet to the ketogenic diet.

Himalayan Pink Salt: Packed with all of the trace minerals you'll need to keep electrolyte level stabilized, Himalayan Pink Salt should replace all of your table salt.

Electrolyte Supplements: Pink salt is helpful, but if you want to ensure you keep those electrolyte levels high, you need to get yourself an electrolyte supplement with a focus on potassium, magnesium, and sodium. I recommend the following:

- [Trace Minerals: 40,000 Volts](#)
- [Trace Minerals: Performance Electrolytes](#)
- [Keto Sports: Pro180](#)
- [Trace Minerals: Liquid Mega Magnesium](#)
- [Standard Process: Magnesium Lactate](#)
- [Pure Encapsulations: Magnesium \(Citrate\)](#)

Vitamin B Complex: Along with electrolytes, your body is going to toss out a lot of your B-vitamins. This can exacerbate the keto flu symptoms so the best thing to do is take a high-quality B-vitamin complex supplement. I recommend the following:

- [Nature's Bounty: B-Vitamin Complex](#)

Epsom Salt Baths: While you obviously don't ingest Epsom salts, they are a type of external supplement that can help with aches and pains, helping to alleviate symptoms of the keto flu. I recommend soaking in Epsom salts before bed. Here's the brand I recommend:

- [Salt Works: Ultra Epsom](#)

Optional Supplements

If you want to ensure a successful ketogenic transition, you can try using the following supplements as well. These aren't as important as the ones I listed above, but they can certainly help if your budget allows.

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Bullet Proof Coffee/Collagen/MCT Oil: One of the most popular ketogenic-friendly fads is taking your normal coffee and upgrading it with medium chain triglycerides (MCT) and collagen. It's a tasty combination and one that can really help with your ketogenic diet. Brands I recommend:

- [Keto Sports: MCT Powder](#)
- [Great Lakes: Gelatin-Collagen-Hydrolysate](#)

Beta-Hydroxybutyrate: This is an actual ketone body, and one that can help to instantly mimic a state of ketosis for a short period of time. I have personally found BHB more effective when I take several doses every five to seven days. It helps increase my workout capacity, decreases inflammation, and is an excellent supplement for suppressing appetite. I recommend:

- [Keto Sports: Keto Blitz](#)

Ancestral Supplements: These supplements take it back to the basics with bone and organs; both of which have become the subject of numerous studies, pointing to a variety of benefits including less inflammation, better digestion, and greater immunity. I recommend taking one to three bone marrow capsules daily, and 1 beef liver capsule daily.

- [Ancestral Supplements: Grass-Fed Bone Marrow](#)
- [Ancestral Supplements: Grass- Fed Beef Liver](#)

Exercising on Ketosis

From transition to maintenance on the ketogenic diet, exercise is going to be key. Not only will it improve your weight loss and muscle building, but it will also help you get through the toughest part of the keto diet. You can read more about [how to maximize your strength](#) with my ultimate guide, but here is a workout program to get you started, complete with pictures and video demonstrations.

You should perform the following workout three days per week. I recommend having a rest day in between each exercise day since this workout can be tough and tiring. For example, perform the following workout on Monday, Wednesday, and Friday. I'll cover what to do on your rest days below.

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Quick Tips

- Rest for thirty seconds between each set
- Make sure you stay hydrated throughout the workout with electrolytes such as the Trace Minerals supplement I mentioned above
- Sleep between seven to nine hours each night while performing this workout
- Listen to your body: If it's telling you to stop, then stop and rest – You don't want to push yourself too hard with these exercises as it may result in an injury

[Pushup with Kettlebell Pull Through](#)

- 12 repetitions at 35 lbs.
- 9 repetitions at 45 lbs.
- 7 repetitions at 50 lbs.
- 5 repetitions at 60 lbs.

[Bench Press](#)

- 12 repetitions at 125 lbs.
- 11 repetitions at 150 lbs.
- 8 repetitions at 170 lbs.
- 6 repetitions at 190 lbs.

[Deadlift](#)

- 12 repetitions at 100 lbs.
- 8 repetitions at 150 lbs.
- 3 repetitions at 200-300 lbs.

[Weighted Lunges](#)

- 12 repetitions at 35 lbs.
- 11 repetitions at 40 lbs.
- 8 repetitions at 50lbs.
- 6 repetitions at 60lbs.

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[Weighted Bear Crawl](#)

- 12 repetitions at 35 lbs.
- 11 repetitions at 40 lbs.
- 8 repetitions at 45lbs.
- 6 repetitions at 50lbs.

[Overhead Medicine Ball Slams](#)

- 16 repetitions at 25 lbs.
- 12 repetitions at 35 lbs.
- 10 repetitions at 40 lbs.
- 9 repetitions at 45 lbs.

[Ab Crunch with Weighted Plate](#)

- 12 repetitions at 25 lbs.
- 11 repetitions at 30 lbs.
- 8 repetitions at 35 lbs.
- 6 repetitions at 40 lbs.

[Kettlebell Frog Leaps](#)

- 12 repetitions at 25 lbs.
- 11 repetitions at 30 lbs.
- 8 repetitions at 35 lbs.
- 6 repetitions at 40 lbs.

Secret Strength Protocols

The following secret strength tips aren't required, but I highly recommend them. I personally use these techniques, and they have dramatically improved my results.

Limit Ejaculation: Guys, I know this sounds crazy, but listen up: From my experience, limiting ejaculation will enhance strength and athletic performance on the ketogenic diet. Men can still have sex, but don't ejaculate.

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Meditation: Focusing on your breathing with your eyes closed in a seated position has been shown in many studies to [reduce anxiety, pain, and inflammation](#).

Wim Hof Breathing: Rapid deep breathing followed by holding your breath for as long as you can. Studies suggest the Wim Hof method can [reduce inflammation and improve immunity](#).

What Questions Do You Have About the Ketogenic Diet?

Have you tried the keto diet before? Are you curious about the ketogenic diet, but you want more information? Ask your questions in the comments below, and I'll be happy to answer them!