
biOptimizers™
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BIOPTIMIZING
The Ketogenic Diet
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By Matt Gallant

Matt's first foray into keto started when he was 15 years old and his uncle told him he was fat. He was upset and hated his spare tire, so he decided to try Atkins to lose the excess body fat. He started doing keto and jogging and went from 190 lbs down to 147 lbs in about 6 months.

Then he felt too skinny, especially after seeing 2 professional bodybuilders at the beach. Being an impressionable 16 year old, he was inspired and felt like a scrawny teenager (fortunately they didn't kick any sand in his face). So he got bit by the bodybuilding bug.

Using a cyclical keto diet (CKD), called the Anabolic Diet, plus training twice a day, he ended up bulking up from 147 to 235 lbs in 3 years. It wasn't all muscle, he did gain fat along with it. Back in the day, "bulking was king." We'll talk more about cyclical keto strategies for building lean muscle and its benefits later in the chapter.

Then he decided to compete in his first bodybuilding show. He went from 235 lbs down to 171 lbs in 14 weeks. That's a 64 lb drop in 14 weeks and he made almost every mistake in the book. But for Matt, keto was an effective way to build muscle and lose weight.

At 19 years old, he helped his 400 lbs best friend lose 191 lbs in 18 months on a cyclical ketogenic diet. He had been a 20-year old virgin who never had a date. He became a new man, not just physically but also mentally and emotionally. He got married soon after. Seeing the whole transformation was so rewarding that Matt knew he wanted to create transformations like this for a living.

As a result of those transformations, he became a passionate advocate and even a bit of a keto zealot.

Over the past 26 years, the ketogenic diet has been his main dietary approach to optimize all three sides of the BiOptimization Triangle. He has also coached hundreds of clients to achieve great results with the ketogenic diet. However, he has also made many mistakes; one of them was assuming that keto was right for everyone.

In this chapter, you will learn:

- **How to know if the ketogenic diet is right for you and when NOT to do a ketogenic diet**
- How to smoothly transition into ketosis and reap the benefits while avoiding common keto pitfalls and side effects
- **Strategies to maximize benefits and metabolic flexibility for life-long benefits from keto, while living an awesome lifestyle without sacrifices or compromises**
- How you can use the ketogenic diet as a short-term nutritional strategy for longevity and metabolic benefits
- **The 5 unique health benefits of following a keto diet**

- The 4 phases of keto adaptation and how to go through the process of fat-adaptation so that your body never loses that ability and it becomes easier the next time
- **Keto is a magical weight loss diet, right? WRONG. Find out the appropriate genetics ideal for a person to truly THRIVE on keto, and the common mistakes you want to avoid**
- How to avoid experiencing digestive issues (constipation, acid reflux, or even "disaster pants") when you start on a ketogenic diet
- **Why optimizing your fats (based on your nutrigenomics and gut biome), AND doing a nutrigenomic test and looking at your blood work with a professional can make a big impact on your health**
- The reasons why you might want to consider the carnivore diet - ideal for those who experience inflammation, gut biome problems, or immune system triggers from plant-based substances
- **What exactly does a keto diet look like and how much can you eat while on a keto diet?**
- The potential downsides to the ketogenic diet and what to consider before you begin the lifestyle and plan out your unique goals

What Is A Ketogenic Diet?

Traditional ketogenic diets (aka "keto") are very low-carb, moderate protein, and high-fat. The goal of this diet is to enter "nutritional ketosis," or the state where your body is fueled primarily by ketones. Ketones or ketone bodies are made from short snippets of the fatty acids you eat or from your own body fat.

Our bodies adapted to handle:

- **Low to no carb diets.** Carl the Caveman didn't have access to fruits and veggies during long, cold winters.
- **Starvation phases.** When one stops eating for long enough to run out of glycogen reserves the body will start converting their body fat stores into ketones. This type of ketosis is called "starvation ketosis" or "fasting ketosis."

Ketosis is NOT the same as ketoacidosis. The latter is the dangerous state of having extremely high blood ketones, which only happens in uncontrolled type 1 diabetes. You don't have to worry about this if you're not a type 1 diabetic.

Keto is a type of low carb diet, but not all low-carb diets are keto. You can eat low-carb without being in ketosis if you eat too much protein. Your body can convert amino acids into sugar, which can kick you out of ketosis. Atkins diets are generally low-carb, but not necessarily keto. However, once you're highly fat adapted, you can start lowering fats and increasing proteins and stay in ketosis. More on this later in the chapter.

On a ketogenic diet, you deliberately cut out all carbs and eat mostly fats, causing the following to happen:

1 - **Your body uses up all the stored glycogen.**

2 - Your liver starts producing ketones from the fat you eat.

3 - **Your brain, muscles, and internal organs increase mitochondria and cellular enzymes that are involved in using ketones for energy.**

4 - Your anti-aging pathways, such as autophagy and sirtuins, are activated.

5 - **Your cells learn to shift back and forth between burning sugar and ketones for energy.**

Is Keto A Magical Weight Loss Diet?

NO. PERIOD. END OF STORY.

Matt was a fervent keto zealot putting all his clients on it and arguing with anyone who didn't agree that *"Keto was the best diet ever."* However, 30-40% of Matt's clients didn't do well.

Some had digestive problems. Some lost lean muscle. Some didn't have energy... or had fatty stools and skin problems. Matt didn't understand the importance of nutrigenomics at the time. Now we know that some people aren't genetically built to thrive on keto.

That being said, being in ketosis does provide some advantages... Some people who have the appropriate genetics THRIVE on keto. They find it easy to follow. Their food cravings are lower. They have more energy. Their skin complexion improves.

Unique Health Benefits Of Keto

One of the reasons ketogenic diets have taken the internet by storm is that it's an antidote to the high-carbohydrate Standard American Diet with the following health benefits.

A Boost in Brain Function and Cognitive Clarity

Ketones are a preferred fuel for the brain, especially in older adults. [1] Ketosis also protects neurons and boosts mitochondrial function in the nervous system, which is why it has been a successful treatment for epilepsy for over 80 years. [2] Therefore, if you enter ketosis, even temporarily or with ketone supplements, you will experience the brain enhancing benefits.

Some people may find that it stabilizes their mood or helps with psychiatric disorders, but individual responses vary. [3]

1 Cunnane, S. C., Courchesne-Loyer, A., Vandenberghe, C., St-Pierre, V., Fortier, M., Hennebelle, M., ... Castellano, C.-A. (2016). Can Ketones Help Rescue Brain Fuel Supply in Later Life? Implications for Cognitive Health during Aging and the Treatment of Alzheimer's Disease. *Frontiers in Molecular Neuroscience, 9*, 53. https://doi.org/10.3389/fnmol.2016.00053
2 Gasior, M., Rogawski, M. A., & Hartman, A. L. (2006). Neuroprotective and disease-modifying effects of the ketogenic diet. *Behavioural Pharmacology, 17*(5-6), 431–439. https://doi.org/10.1097/00008877-200609000-00009
3 Bostock, E. C. S., Kirkby, K. C., & Taylor, B. V. M. (2017). The Current Status of the Ketogenic Diet in Psychiatry. *Frontiers in Psychiatry / Frontiers Research Foundation, 8*, 43. https://doi.org/10.3389/fpsyt.2017.00043

Reduced Blood Pressure

Ketogenic diets will cause your kidneys to excrete more salt and water. Therefore, if you have hypertension, your blood pressure may normalize on a ketogenic diet. For people who naturally have low blood pressure, it's worth monitoring. When Matt was 20, he was following a strict keto diet and his blood pressure got too low. This is why properly mineralizing with sodium and potassium to help optimize cellular hydration is critical.

POWERMOVE:
Optimizing Hydration On A Keto Diet

The ideal ratio of sodium to potassium intake is **roughly 1:3** — that is, potassium intake would ideally be around three times our sodium intake. Most people's ratio is out of whack because their sodium is too high and their potassium is too low.

Adding ¼ to ½ tsp of high-quality salts (we recommend Himalayan or sea salt) to your water is an inexpensive way to get more minerals into your body. The sodium will help you absorb the water more.

For people on ketogenic diets, we also recommend adding ½ tsp of cream of tartar with the salt in 2 liters of water once a day to get the necessary amounts of potassium. We also recommend using 3 droppers a day of Primergen-M to get the necessary amounts of trace minerals.

Better Insulin Sensitivity and Stable Blood Sugar

Reducing carbohydrate intake typically reduces insulin, which improves insulin sensitivity. The ketogenic diet has also been shown to improve blood lipid profiles and overall metabolic health. [4]

Diminished Appetite and Cravings

Ketosis reduces appetite, even in caloric restriction during a weight loss program. [5] Even after weight loss, ghrelin (the hunger hormone) remains low in people who stay in ketosis. [6]

On a Standard American Diet, the high-carbohydrate content often triggers insulin and blood sugar fluctuations. The blood sugar lows can cause "hangriness," which drives people to overeat and crave sugary foods. In ketosis, such fluctuations are virtually eliminated. [7]

4 Gershuni, V. M., Yan, S. L., & Medici, V. (2018). Nutritional Ketosis for Weight Management and Reversal of Metabolic Syndrome. *Current Nutrition Reports, 7*(3), 97–106. https://doi.org/10.1007/s13668-018-0235-0
5 Gibson, A. A., Seimon, R. V., Lee, C. M. Y., Ayre, J., Franklin, J., Markovic, T. P., … Sainsbury, A. (2015). Do ketogenic diets really suppress appetite? A systematic review and meta-analysis. *Obesity Reviews: An Official Journal of the International Association for the Study of Obesity, 16*(1), 64–76. https://doi.org/10.1111/obr.12230
6 Sumithran, P., Prendergast, L. A., Delbridge, E., Purcell, K., Shulkes, A., Kriketos, A., & Proietto, J. (2013). Ketosis and appetite-mediating nutrients and hormones after weight loss. *European Journal of Clinical Nutrition, 67*(7), 759–764. https://doi.org/10.1038/ejcn.2013.90
7 Westman, E. C., Feinman, R. D., Mavropoulos, J. C., Vernon, M. C., Volek, J. S., Wortman, J. A., … Phinney, S. D. (2007). Low-carbohydrate nutrition and metabolism. *The American Journal of Clinical Nutrition, 86*(2), 276–284. https://doi.org/10.1093/ajcn/86.2.276

For these reasons, many people find it easier to lose weight and keep it off on a ketogenic diet than on other types of diets.

Keep in mind that if your goal is weight loss, calories out still need to exceed calories in. Because running on fat and less carbs may change your appetite, you may need to track your calories at least at first. Or if weight loss stalls, we usually recommend to start tracking your calories because you might need to lower calories further to continue losing body fat.

Reduced Inflammation

Ketone bodies have anti-inflammatory and antioxidant properties. [8] Therefore, some people may experience some reduction in pain or remission of a chronic condition.

Chronic low-grade inflammation can cause leptin resistance, increase hunger, and lead to weight gain. [9, 10]

Chronic inflammation goes hand in hand with mitochondrial dysfunction. [11] Ketone metabolism often boosts the mitochondria, which may reduce chronic inflammation. [12] A study compared low-carb/high-fat (56% fat, 33.5% protein, 9.6% carb) with high-carb/low-fat (22% protein, 25% fat, and 55.7% carb). They found that the first group had lower inflammation markers and an improvement in blood lipids than the latter group. [13]

Ketosis stimulates the production of more mitochondria and increases overall mitochondrial function. [14] In some cases, the boost in mitochondria increases metabolism. [15]

A clinical study compared the ketogenic and calorie-counting diets on weight loss for 6 months. Both groups lost a significant amount of weight, but the keto group lost more weight and had better insulin sensitivity. [16] In another study from Boston University, 20 obese subjects who lost 20.2 kg (44.5 lbs) with 4 months on a very low-calorie ketogenic diet, no reduction of resting metabolic rate was observed. [17]

While it doesn't mean you can eat more food, it might mean that you will find it easier to lose weight and keep it off.

8 Masino, S. A., & Ruskin, D. N. (2013). Ketogenic diets and pain. *Journal of Child Neurology, 28*(8), 993–1001. https://doi.org/10.1177/0883073813487595
9 Iikuni, N., Lam, Q. L. K., Lu, L., Matarese, G., & La Cava, A. (2008). Leptin and Inflammation. *Current Immunology Reviews, 4*(2), 70–79. https://doi.org/10.2174/157339508784325046
10 Cani, P. D., Amar, J., Iglesias, M. A., Poggi, M., Knauf, C., Bastelica, D., … Burcelin, R. (2007). Metabolic endotoxemia initiates obesity and insulin resistance. *Diabetes, 56*(7), 1761–1772. https://doi.org/10.2337/db06-1491
11 López-Armada, M. J., Riveiro-Naveira, R. R., Vaamonde-García, C., & Valcárcel-Ares, M. N. (2013). Mitochondrial dysfunction and the inflammatory response. *Mitochondrion, 13*(2), 106–118. https://doi.org/10.1016/j.mito.2013.01.003
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13 Ruth, M. R., Port, A. M., Shah, M., Bourland, A. C., Istfan, N. W., Nelson, K. P., … Apovian, C. M. (2013). Consuming a hypocaloric high fat low carbohydrate diet for 12 weeks lowers C-reactive protein, and raises serum adiponectin and high density lipoprotein-cholesterol in obese subjects. *Metabolism: Clinical and Experimental, 62*(12), 1779–1787. https://doi.org/10.1016/j.metabol.2013.07.006
14 Miller, V. J., Villamena, F. A., & Volek, J. S. (2018). Nutritional Ketosis and Mitohormesis: Potential Implications for Mitochondrial Function and Human Health. *Journal of Nutrition and Metabolism*, 2018, 5157645. https://doi.org/10.1155/2018/5157645
15 Paoli, A. (2014). Ketogenic diet for obesity: friend or foe? *International Journal of Environmental Research and Public Health, 11*(2), 2092–2107. https://doi.org/10.3390/ijerph110202092
16 Partsalaki, I., Karvela, A., & Spiliotis, B. E. (2012). Metabolic impact of a ketogenic diet compared to a hypocaloric diet in obese children and adolescents. *Journal of Pediatric Endocrinology & Metabolism: JPEM, 25*(7-8), 697–704. https://doi.org/10.1515/jpem-2012-0131
17 Gomez-Arbelaez, D., Crujeiras, A. B., Castro, A. I., Martinez-Olmos, M. A., Canton, A., Ordoñez-Mayan, L., … Casanueva, F. F. (2018). Resting metabolic rate of obese patients under very low calorie ketogenic diet. *Nutrition & Metabolism, 15*, 18. https://doi.org/10.1186/s12986-018-0249-z

How To Do A Ketogenic Diet

Simply put, to enter ketosis:

1 - **Cut out all sources of starch and sugar. In the beginning, your overall carb intake should be as low as possible, ideally under 30 grams per day, excluding dietary fibers. This can change in phase 2, 3, and 4 as we will discuss in a moment.**

2 - Eat good fats liberally within your calorie limit.

3 - **Eat just enough proteins to preserve your muscles and support your training, but not enough that they kick you out of ketosis. That's usually within 20-35% of total calorie intake. This will change as you adapt. More on that in a moment.**

Mastering Ketosis: The 4 Phases of Keto Adaptation

To be able to efficiently generate and burn ketones for energy, you need to get fat-adapted. Fat-adaptation can be divided into 4 phases. The first few weeks may be rough, but once you become fat-adapted, you will reap all the benefits of keto and enjoy diet breaks from time to time. Once you've gone through the process of fat-adaptation, your body never loses that ability. It's far easier the second time and so on.

Phase 1: Getting Into Ketosis (First 14 Days)

This phase is about forcing your body to use fat for fuel by depleting your glycogen stores and feeding it with mostly fat. Your liver will ramp up ketogenesis while your cells ramp up mitochondrial activities to burn ketones for energy.

During this phase, start with at least 65-75% of your calories as fat and 25-35% proteins. Aim for less than 30 grams of carbs a day.

Once you deplete glycogen stores, your body might feel "out of fuel" as your ketone production catches up. You may experience "keto flu," which could include fatigue, irritability, brain fog, headache, nausea, and sugar cravings. Your exercise performance will also drop significantly. Your body isn't effective at using fats as a primary fuel yet.

These symptoms may last from a few days to a week, so plan to take it easy during this phase. Don't stack phase 1 with your hardest workout weeks and work deadlines.

POWERMOVE:
Hacking The "Keto Flu"

Here are some "hacks" that will solve the keto flu issues: Medium chain triglyceride (MCT) oil, ketone salts, and ketone esters can quickly increase your blood ketones, which will help with a lot of the keto flu symptoms. Note that too much MCT oils can cause flushing diarrhea, so start slowly (1 teaspoon at a time) and gradually increase the dose.

Your appetite might be different than usual because your blood sugar will be low and your gut microbes want the carbs. During this phase, we usually eat keto-compliant foods to our heart's content. The primary goal is to become fat-adapted, not weight loss (although that usually happens naturally).

It's not unusual for people to lose 8-10 lbs the first 2 weeks on a keto diet. The majority of that is a loss of glycogen and water.

Phase 2: Becoming A Fat Burning Machine (2 Weeks - 3 Months)

After 2 weeks, your body learns to generate and burn ketones, so you will start to feel more energized. Your cravings and keto flu will be gone. Your body will literally become a fat burning machine. Your lipolytic pathways are improving. Fat will be its primary fuel source.

During this phase, you can start tweaking and optimizing your diet. You want to find out what kinds of foods work best for you and which foods are causing inflammation.

POWERMOVE:
Experiment With Fasting

Fasting and keto are like peanut butter and sugar-free jelly. They work great together. Why? Because your body is already in a fat burning state, it's easy to start using stored body fat for energy.

This means there's usually very little dips in energy. When people fast on a high-carb diet, they might experience what Wade calls "the carb toilet," which means their glycogen levels have dropped to the point where their energy drops with it.

Humans have genetically evolved to handle feast and famine cycles, rather than having abundant food all the time. During extended famines, our bodies entered ketosis to harness energy from fat. While we are not busy digesting and assimilating nutrients, our cells self-clean (autophagy) and upregulate many

rejuvenation processes. [18]

Phase 2 is a good time to start intermittent fasting because it will accelerate your results and force your body deeper into ketosis. Also, already being in ketosis will reduce much of the hunger. The easiest fasting protocol to start with is 16:8, 16 hours of fasting and 8 hours of feeding window. You can start by skipping breakfast and eating most of your food during lunch and dinner.

When you start intermittent fasting or skipping meals, your body may release ghrelin (the hunger hormone) an hour before your daily mealtime. Because you've been eating and your body gets into a circadian rhythm, you may feel hunger pangs for at least 4 days as your body starts to adjust to the new eating schedule. [19]

We don't recommend doing intermittent fasting (IF) every day. Why? We believe it's too catabolic, especially if you're training hard. Many people, including well-known health expert Peter Attia, have reported that their lean body mass dropped when they did a lot of fasting. Remember: one of our key objectives is to maintain lean body mass. Instead, do IF 2 or 3 days a week. This should slow down the metabolic adaptation compared to doing IF every day.

Another option is to fast 1 day a week. This is a powerful tool that we recommend using as you get deeper into your diet. It's a simple way to reduce your weekly calories by about 15%.

When you break your fast and eat large meals during your feeding window, you may experience some digestive issues. We suggest having Biome Breakthrough as your first meal. This will help rebuild your biofilm which can get thinner after extended fast. Then use kApex, HCL Breakthrough, and P3OM to optimize your digestion. kApex has some energizing ingredients that may keep you up, so you may want to use Masszymes for evening meals instead.

Phase 3: Metabolic Flexibility (3rd - 12th Months)

The longer you stay in ketosis, the better you are able to generate ketones and utilize them for energy. This is called fat adaptation. Your lipolytic pathways are getting stronger. Your body will also get better at preserving and refilling its glycogen stores if you're doing refeeds, so your strength and explosive performance will start to return.

At this stage, we recommend increasing proteins and decreasing fats. Your body will stay in ketosis even with the increased proteins because it's become more efficient at using fats. The increased protein will increase anabolism and also increase your overall "calories out" from food due to the thermic effect of protein. This makes it easier to lose body fat and maintain lean muscle mass in a caloric deficit.

We suggest decreasing fats to 40-60%, increasing protein levels to 30-50% and carbs can be increased to 10%. Here's a chart that will help you select lower fat animal proteins.

18 Bagherniya, M., Butler, A. E., Barreto, G. E., & Sahebkar, A. (2018). The effect of fasting or calorie restriction on autophagy induction: A review of the literature. *Ageing Research Reviews, 47*, 183–197. https://doi.org/10.1016/j.arr.2018.08.004
19 Mistlberger, R. E. (1994). Circadian food-anticipatory activity: formal models and physiological mechanisms. *Neuroscience and Biobehavioral Reviews, 18*(2), 171–195. https://doi.org/10.1016/0149-7634(94)90023-x

ANIMAL FAT AND PROTEIN PERCENTAGE CHART

FOOD NAME	TOTAL CALORIES	FAT GRAMS	% OF FAT CALORIES	TOTAL PROTEIN	% OF PROTEIN CALORIES
prime rib	341.00	27.7	73%	23	27%
beef ribs	351.00	28.8	74%	23	26%
pork rib	261.00	19.7	68%	21	32%
beef short rib	305.00	22.8	67%	25	33%
new york strip	310.00	22.9	66%	26	34%
pork shoulder	292.00	22.2	68%	23	32%
lamb chops	305.00	21.4	63%	28	37%
t bone	289.00	21.0	65%	25	35%
ground lamb	283.00	20.3	65%	25	35%
rib eye	271.00	19.0	63%	25	37%
ground turkey	258.00	17.6	61%	25	39%
ground beef	272.00	18.2	60%	27	40%
filet mignon	267.00	18.1	61%	26	39%
ground bison	238.00	15.8	60%	24	40%
top sirloin	243.00	15.0	56%	27	44%
lamb burger	228.00	18.7	74%	15	26%
dark meat chicken	214.00	13.6	57%	23	43%
lean ground beef	230.00	13.1	51%	28	49%
lean ground turkey	213.00	11.7	49%	27	51%
veal	231.00	12.3	48%	30	52%
pork loin chop	209.00	11.7	50%	26	50%
ground chicken	189.00	10.8	51%	23	49%
pork loin	192.00	9.8	46%	26	54%
flank steak	192.00	8.9	42%	28	58%
turkey	189.00	8.1	39%	29	61%
beef chuck	191.00	7.0	33%	32	67%
extra lean ground beef	175.00	6.6	34%	29	66%
ham	139.00	5.7	37%	22	63%
pork tenderloin	147.00	4.8	29%	26	71%
skinless chicken breast	165.00	4.6	25%	31	75%
extra lean ground turkey	151.00	2.6	15%	32	85%
venison	150.00	3.3	20%	30	80%
turkey breast	147.00	3.0	18%	30	82%

Leptin, the well-fed hormone, typically increases with insulin. On ketogenic diets, insulin and leptin are kept perpetually low like in prolonged fasting. [20] So, if you stay on keto non-stop, you may experience a stall in fat loss and some survival mechanisms kicking in. The following survival mechanisms could cause a reduction in sex drive, fatigue, feeling cold, or compromised immune function.

This is why we strongly recommend incorporating refeeds or what some people call "Cyclical Keto."

POWERMOVE:
Refeeding Your Body Carbs

Carb refeeding on a ketogenic diet is a powerful strategy. You consume an optimal amount of carbohydrates for 1 or 2 days. This will replenish your muscles and liver with glycogen. It will give your brain the pleasure of enjoying some of your favorite carbs again. Your workout performance will improve for 2-3 days. You'll look better (if you're lean) because your muscles will be harder and fuller.

Another reason for carb refeed is that it helps build muscles and, if you are in a major caloric deficit, maintain lean muscle mass. [21]

This approach is also one of the ultimate "lifestyle diets." This means that if you want to go out and enjoy restaurants during the weekends, you can be on a strict keto during the week (and be in a deficit) and then eat your favorite carbs during the weekend. It's usually pretty easy for people to stay at maintenance (meaning their weight doesn't go up or down) using this model.

Cyclical Keto Diet Strategies

CKD Strategy #1: Weekend Refeeds

Anabolic Diet: This was the strategy we started with. The Anabolic Diet was developed by Dr. Mauro DiPasquale, a brilliant physician and professional powerlifter. He built this diet to help bodybuilders get lean and build lean muscle mass. This diet includes 5 days of low calorie ketogenic diet and 2 days of high-calorie high-carb days.

- **If your goal is to lose body fat: do a 1 day refeed with a weekly calories below maintenance**
- If your goal is to recomp: do a 2 day refeed with a weekly calories at maintenance
- **If your goal is to gain lean muscle: do a 2 day refeed with a weekly calories at a slight surplus**

20 Brehm, B. J., Seeley, R. J., Daniels, S. R., & D'Alessio, D. A. (2003). A randomized trial comparing a very low carbohydrate diet and a calorie-restricted low fat diet on body weight and cardiovascular risk factors in healthy women. *The Journal of Clinical Endocrinology and Metabolism, 88*(4), 1617–1623. https://doi.org/10.1210/jc.2002-021480
21 Campbell, B. I., Aguilar, D., Colenso-Semple, L. M., Hartke, K., Fleming, A. R., Fox, C. D., ... Gorman, J. (2020). Intermittent Energy Restriction Attenuates the Loss of Fat Free Mass in Resistance Trained Individuals. A Randomized Controlled Trial. *Journal of Functional Morphology and Kinesiology, 5*(1), 19. https://doi.org/10.3390/jfmk5010019

Whether your goal is to gain, maintain, or lose weight, it will come down to your weekly energy balance.

The original Anabolic Diet protocol was two days of carb refeed. Keep in mind, that if you want to keep losing body fat, what matters is a WEEKLY CALORIC DEFICIT. So if you're eating at a surplus on the weekends, you need to do the math and be in a deeper caloric deficit during the week. Once your glycogen stores are filled up, and you keep eating, your body may start storing fat.

Many studies have shown that people who do carb refeeds or cycle their caloric intake achieve better weight loss results, even though they eat the same total number of calories. A study compared between refeeding and no refeeding among 27, young, well-trained subjects who ate a net 25% caloric deficit each week. The group who did 2 days of carb refeeds weekly and ate less during the next 5 days maintained more muscle mass and metabolic rate than the group that did not do refeeds. [22]

CONTINUOUS Group

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Weekly Average
-25%	-25%	-25%	-25%	-25%	-25%	-25%	-25%

x 7 weeks

REFEED Group

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Weekly Average
-35%	-35%	-35%	-35%	-35%	100%	100%	-25%

x 7 weeks

This is also the ultimate recomping strategy (your body weight stays the same, but you're getting leaner and adding muscle). Matt has been able to build 4-10 lbs of lean muscle mass while losing 4-10 lbs of body fat each year over the past 5 years with this strategy.

Your muscle mass expands all three sides of the BiOptimization Triangle: health, aesthetics, and performance. Refeeds help you maximize your lean muscle gains on a keto diet.

CKD Strategy #2: Targeted CKD: Ingest Carbs As A Performance Enhancer

Dom D'Agostino said on our podcast (*The Awesome Health Show*) that if you're fully adapted you can use carbs as a performance enhancer.

- **30 grams of carbs: easy weight lifting workout (arms, abs) or a H.I.I.T. workout**
- 45 grams of carbs: moderately hard weight lifting workout or a H.I.I.T. workout
- **60 grams of carbs: hard workout: back, chest**
- 80 grams of carbs: brutal workouts: squats, deadlifts

22 Campbell, B. I., Aguilar, D., Colenso-Semple, L. M., Hartke, K., Fleming, A. R., Fox, C. D., ... Gorman, J. (2020). Intermittent Energy Restriction Attenuates the Loss of Fat Free Mass in Resistance Trained Individuals. A Randomized Controlled Trial. *Journal of Functional Morphology and Kinesiology, 5*(1), 19. https://doi.org/10.3390/jfmk5010019

Because you're at Phase 3 fat-adaption, it means you can readily enter ketosis, even after a high-carb meal. At this stage, you can start trying carb refeeds to reap the metabolic and psychological benefits.

Reasons to do carb refeed:

1 - **Psychological break** - You may enjoy some non-keto foods or even have emotional memories associated with them. Even Peter Attia finds it hard to stay on keto because he misses rice. Being able to take a break from the restrictive diet can be a huge psychological plus. Lastly, programming in the refeed allows you to enjoy holiday and social gathering meals without feeling like you're "failing" or "cheating."

2 - **Anabolic response** - a temporary increase in calories and insulin can help build and maintain muscle mass.

3 - **Leptin reset** from eating carbs and eating above maintenance, which helps avoid metabolic adaptation

4 - **Improved exercise performance** - Your workout will be better, even if you return to ketosis for the next few days. We suggest doing your toughest training on your carb load days.

5 - **Metabolic flexibility** - Doing carb refeeds regularly helps maintain your ability to burn carbs, even though you stay in ketosis most of the time.

Reasons not to do carb refeed:

1 - **Medical conditions** - If you have a medical condition that is best managed by ketosis and may worsen with a carb refeed, then it is best not to do refeeds.

2 - **Emotional, food addiction, or disordered eating** - This is a tricky one. If you have one of these issues, you need to keep your refeeds structured and planned. Instead of having your refeeds be a "free-for-all," create a meal plan for the carb days. We suggest only eating unprocessed carbs, such as fruits, potatoes, sweet potatoes, and white rice. Do not use your refeed days to gorge on tubs of ice cream. Matt had a client who would eat 3 pints of Ben and Jerry's for breakfast on carb days. If you can't control yourself or get back to eating keto the next day, then maybe refeeding won't work for you.

Refeed Optimization Supplements:

1 - **Blood Sugar Breakthrough** can help control blood sugar and make your cells more sensitive to insulin. Take 2 capsules, twenty minutes before EVERY carb meal.

2 - **Gluten Guardian** contains both gluten and carb-digestive enzymes for high-carb meals. It will help eliminate any gas and bloating from carbohydrate-rich foods, especially gluten. The gluten-digesting enzyme also helps you fully break down A1 casein to reduce inflammation from it.

3 - **MASSZYMES** - We've had many bodybuilding clients go up to 100 capsules a day when they push their calories to 10,000. Adjust your dosage based on your calories.

4 - **HCL Breakthrough** can improve your stomach acid levels and ensure overall smooth digestion. We suggest 2-3 capsules with each meal. Synergizes with MassZymes.

5 - **P3OM** - P3OM will also help break down gluten and other proteins. Take 2-4 capsules with each meal. Synergizes with MassZymes and HCL Breakthrough.

Gluten Guardian and HCL Breakthrough will ensure that you have zero digestive distress, no matter what you eat when you are carb loading.

Phase 4: Total Fat Adaptation (12+ Months)

During this phase, you will have achieved full metabolic flexibility if you have been cycling in and out of ketosis. At this point, you have been going back and forth from carb to fat for months. You are now a full-on fat and carb-burning machine.

Signs that you are in phase 4:

1 - **You can bounce back into ketosis relatively quickly, even after eating carbs. Matt measures his ketones after a full day of carb loading, and he'd still be in ketosis with 0.5 millimolar of blood ketone. He did an experiment of eating 250+ grams of carbs a day for 10 days and he was still at 0.5 millimolars on his blood ketone monitor on the 10th day.**

2 - Your body learns to hold on to glycogen stores better and upregulate glycolytic pathways, so your strength and explosive performance will be closer to its peak. However, if you're a strength or power athlete, carbs are the way. More on this in a moment.

3 - **Your muscles will also look fuller due to replenished glycogen stores.**

Now is when you reap the most benefits from being in ketosis and enjoy the freedom from carb dependency.

Ketogenic Food Staples:

- **Avocados**
- Coconut and unsweetened coconut products (not coconut water or sugar)
- **Olives and olive oil**
- Cracklings/pork rinds
- **Rendered lard and tallow (unhydrogenated only)**
- Grass-fed, organic, and fatty cuts of meats
- **Sugar-free high-fat sausages, pepperoni, and other deli meats**
- Fatty wild-caught or organic fish, such as salmon or sardines
- **Seafood**
- Butter and ghee (if tolerated)
- **Sugar-free mayonnaise made from avocado oil, MCT oil, olive oil, bacon fat, or lard**
- Greens and other low-carb veggies, such as salad leaves, peppers, mushrooms, asparagus, kale, arugula, lettuce, spinach, cabbage, broccoli, cucumbers, and celery

Include these only if you are NOT sensitive or allergic to:

- **Pork, bacon, lard, and pork-derived products**
- A1 cream, cheese, and butter
- **Fish and seafood**
- Low-carb nuts and seeds, such as chia, flaxseeds, sunflower

Eat in reasonable amounts:

- **Macadamia nuts**
- Pecans
- **Walnuts**
- Low-carb spices and condiments

Drink:

- **Water**
- Plain coffee, tea, and herbal tea
- **Unsweetened soda**

Avoid or minimize:

- **Peanuts**
- Cashews
- **Almonds**
- All grains and pseudograins (quinoa)
- **Legumes and beans**
- High-carb vegetables, such as winter squashes, carrots, tubers, and potatoes
- **Sugar**
- Sugar-containing foods and condiments

- **Non-Caloric sweeteners, including stevia, monk fruit, sugar alcohols, splenda (sucralose), aspartame, and acesulfame K**
- Fruits
- **High-omega-6 vegetable oils such as canola, sunflower, rice bran, soybean, peanut, and sesame oil because they're pro-inflammatory**
- Processed and charred meats, which are sources of advanced glycation end products that age your cells, and cause heart diseases and cancers

BiOptimizing Your Ketogenic Diet

In the past 26 years, Matt has made many mistakes in his ketogenic diet journey. He also witnessed many problems with some of our coaching clients. The following tips will help you enter ketosis smoothly, while avoiding painful and costly mistakes:

1. Using Nutrigenomics

Do you have the right genes for the keto diet? Which keto foods are optimal for your body? Which ones should you minimize? Nutrigenomics can shine the light on those questions.

AMY1: The AMY1 gene provides instruction for amylase, an enzyme that digests starch in your saliva. If you have less copies of AMY1, you are more likely to do better on a low-carb or ketogenic diet. [23]

CPT1A gene is a key enzyme in mitochondrial fatty acid oxidation. The variant A (rs80356779) reduces ketogenesis, while T increases it. Surprisingly, the A variant is present in 68% of Northern Syberian inuits and many Canadians. [24] If you have the A variant, you're likely to do better on a ketogenic diet.

PPAR-alpha: PPAR-alpha activates other genes that are involved in lipid metabolism. Better PPAR-alpha function means that you will do better with fasting. There are multiple known variants within this gene. Weak versions of PPAR-alpha may reduce fatty acid metabolism, apolipoproteins, HDL, LDL, and ketone body production, making it harder to enter ketosis. [25] So, if you have weak PPAR-alpha, the ketogenic diet might not be for you.

ADRB2 (rs1043713 A) and **ADRB3** are thrifty genes. Certain variants of these genes are associated with belly fat and type 2 diabetes. [26, 27] People with weaker versions of these genes may need to be more careful with calories and saturated fats. So, if you have the weak versions of these genes, you may do better with a caloric deficit on a low-saturated fat ketogenic diet.

23 Falchi, M., El-Sayed Moustafa, J. S., Takousis, P., Pesce, F., Bonnefond, A., Andersson-Assarsson, J. C., … Froguel, P. (2014). Low copy number of the salivary amylase gene predisposes to obesity. *Nature Genetics, 46*(5), 492–497. https://doi.org/10.1038/ng.2939
24 Clemente, F. J., Cardona, A., Inchley, C. E., Peter, B. M., Jacobs, G., Pagani, L., … Kivisild, T. (2014). A Selective Sweep on a Deleterious Mutation in CPT1A in Arctic Populations. *American Journal of Human Genetics, 95*(5), 584–589. https://doi.org/10.1016/j.ajhg.2014.09.016
25 Contreras, A. V., Torres, N., & Tovar, A. R. (2013). PPAR-α as a key nutritional and environmental sensor for metabolic adaptation. *Advances in Nutrition , 4*(4), 439–452. https://doi.org/10.3945/an.113.003798
26 Takenaka, A., Nakamura, S., Mitsunaga, F., Inoue-Murayama, M., Udono, T., & Suryobroto, B. (2012). Human-specific SNP in obesity genes, adrenergic receptor beta2 (ADRB2), Beta3 (ADRB3), and PPAR γ2 (PPARG), during primate evolution. *PloS One, 7*(8), e43461. https://doi.org/10.1371/journal.pone.0043461
27 Brondani, L. A., Duarte, G. C. K., Canani, L. H., & Crispim, D. (2014). The presence of at least three alleles of the ADRB3 Trp64Arg (C/T) and UCP1 -3826A/G polymorphisms is associated with protection to overweight/obesity and with higher high-density lipoprotein cholesterol levels in Caucasian-Brazilian patients with type 2 diabetes. *Metabolic Syndrome and Related Disorders, 12*(1), 16–24. https://doi.org/10.1089/met.2013.0077

APOA2 is the "eat fat, get fat" gene, especially if it's saturated fat. Saturated fats tend to increase ghrelin, the hunger hormone in people with weaker versions of this gene. [28] If you have the strong version of APOA2, you're more likely to do well on a ketogenic diet. If you have the weak version, you may be able to do a ketogenic diet but with less saturated fats.

2. Optimize Your Digestion

Many people experience digestive issues when they start on a ketogenic diet. For some, the high fat meals and MCT oils cause "disaster pants," while others struggle with constipation due to the lack of fiber. Belching and acid reflux are also common.

When you first start keto, your gut biome is changing, and high-fat meals demand a lot of lipase and bile. All the bacteria strains that were feeding off the carbs and processed foods are starving, which can cause digestive distress. **P3-OM**, one of our probiotic products, can help alleviate the issue.

You may also experience digestive distress from fat indigestion. We built a special digestive enzyme called **kApex** for keto eaters. It has a lot of lipases and proteases, which help digest fats and proteins. The dandelion root in it also stimulates bile flow, which is important for fat digestion. kApex also contains some energizing ingredients, which helps you get through keto-adaptation fatigue.

Stomach acid is also crucial for overall digestion and to stimulate your natural bile flow. If you have heartburn and belching, **HCL Breakthrough** can help you with this.

A large high-carb refeed meal after a fast or doing keto for a while can be a shock to your digestive system. **MassZymes** is designed to maximize nutrient assimilation and refeeding benefits from these meals. Whereas **Gluten Guardian** is best to help with high-carb and gluten-containing meals like pizza, pasta, and bread. **Blood Sugar Breakthrough** will help manage your blood sugar and drive the glucose into the muscles.

3. Minimize Inflammation

If you are eating something that makes your body feel off due to inflammation, it is going to be difficult, if not impossible, to stay on the diet long-term. Inflammation can derail your weight loss goals. It makes keto-adaptation harder because it worsens keto flu and makes you hungrier due to increased leptin resistance. [29]

Don't rely on A1 dairy for your fat intake

A1 dairy, which is 80% of all cow's milk in North America, can cause gut inflammation and other inflammatory symptoms for many people. [30] It is also hard to digest. Some dairy has minute amounts of carbs as lactose.

28 Smith, C. E., Ordovás, J. M., Sánchez-Moreno, C., Lee, Y.-C., & Garaulet, M. (2012). Apolipoprotein A-II polymorphism: relationships to behavioural and hormonal mediators of obesity. *International Journal of Obesity , 36*(1), 130–136. https://doi.org/10.1038/ijo.2011.24
29 Ellulu, M. S., Patimah, I., Khaza'ai, H., Rahmat, A., & Abed, Y. (2017). Obesity and inflammation: the linking mechanism and the complications. *Archives of Medical Science: AMS, 13*(4), 851–863. https://doi.org/10.5114/aoms.2016.58928
30 He, M., Sun, J., Jiang, Z. Q., & Yang, Y. X. (2017). Effects of cow's milk beta-casein variants on symptoms of milk intolerance in Chinese adults: a multicentre, randomised controlled study. *Nutrition Journal, 16*(1), 72.https://doi.org/10.1186/s12937-017-0275-0

However, the proteins in dairy can trigger insulin spikes. [31] Some people that may have leaky gut can have inflammatory responses from A1 milk protein.

A common mistake is to start out keto by gorging on A1 cream, butter, and cheeses. If you are sensitive to A1 casein, which is a different sensitivity from lactose, it will cause a lot of inflammation and make you feel sick. Note that lactase (lactose-digesting enzyme) does not help with casein sensitivity. Gluten Guardian can help digest the A1 casein, but it doesn't eliminate 100% of the inflammation from casein.

Therefore, if you consume dairy, it is better to focus on dairy products from other animals, such as sheep, goats, bison, or camels. You can test these different types of dairy separately and see how your body responds.

4. Support Your Microbiome and Gut Barrier

Which foods does your gut biome easily digest and thrive on? And which foods can impact your health? This is why doing a gut health test every 6 months is smart.

Very high-fat meals can reduce the protective mucus that coat your gut barrier and reduce gut bacteria diversity, which may compromise the gut barrier. [32] Therefore, we don't advise doing highly restrictive ketogenic diets long-term unless you need it to manage medical conditions. Either way, you are going to have to work harder to support your microbiome and gut barrier on a ketogenic diet with the following tips.

More polyphenols and gut bacteria-friendly micronutrients: Use a Viome test to see the current status of your microbiome. It also provides you with a list of superfoods that are best for feeding your gut bacteria.

Dietary fibers are important foods for your microbiome, and their fermentation products are great for your gut. [33] If you do well on low-carb vegetables and some prebiotics, then they are good to include in your diet.

Vegetables and fruits: Test out some of these to see if they are kicking you out of ketosis. Doing the gut health tests can be helpful for choosing the best vegetables and fruits for you. As far as fruits go, once you're in phase 3 and 4, you can start to enjoy low carb berries such as strawberries, blueberries, and raspberries in moderation. Focus on vegetables and fruits that your gut test identifies as a "super food".

Biome Breakthrough contains IgYmax and a synergistic blend of probiotics, prebiotics, and collagen. It effectively reduces bad bacteria and improves the colonization of good bacteria. It also helps promote a healthy gut barrier. [34]

Lastly, make sure your digestive health is optimized with digestive enzymes (kApex and MassZymes) and probiotics. Undigested fats can be especially bad for your gut bacteria.

31 Tucker, L. A., Erickson, A., LeCheminant, J. D., & Bailey, B. W. (2015). Dairy consumption and insulin resistance: the role of body fat, physical activity, and energy intake. *Journal of Diabetes Research, 2015*, 206959.https://doi.org/10.1155/2015/206959
32 Rohr, M. W., Narasimhulu, C. A., Rudeski-Rohr, T. A., & Parthasarathy, S. (2020). Negative Effects of a High-Fat Diet on Intestinal Permeability: A Review. *Advances in Nutrition , 11*(1), 77–91.https://doi.org/10.1093/advances/nmz061
33 Myhrstad, M. C. W., Tunsjø, H., Charnock, C., & Telle-Hansen, V. H. (2020). Dietary Fiber, Gut Microbiota, and Metabolic Regulation-Current Status in Human Randomized Trials. *Nutrients, 12*(3). https://doi.org/10.3390/nu12030859
34 *Nutrition, I. (2016).* IgY Max Increases Beneficial Flora, Improves Gut Integrity. https://www.prnewswire.com/news-releases/igy-max-increases-beneficial-flora-improves-gut-integrity-300292061.html

5. Add Salt and Minerals

You may experience dizziness and other symptoms of low blood pressure as your kidneys dump minerals. Make sure you eat plenty of high-quality salt and mineral sources.

- **Salt your food liberally with Himalayan or grey sea salt**
- Take Magnesium Breakthrough as keto diets are typically low in magnesium
- **Use Primergen M for trace minerals**

Matt consumes about 10 grams of salt a day, which might seem high. However, he feels much better with a higher salt consumption. When his salt intake is too low, he loses too much water on keto. His "hack" to solve this is: put half a teaspoon of Himalayan pink salt and a quarter teaspoon of cream of tartar (a potassium source) into 2 liters of water and drink it throughout the day. This helps his body keep more water and prevent dehydration. Consult with your doctor before making any drastic changes to your diet.

6. Optimize Your Fats

Matt believes that optimizing your fats based on your nutrigenomics and gut biome can make a big impact on your health. This is where doing a nutrigenomic test and looking at your blood work with a professional can pay big dividends.

Here are some of the main considerations:

Increase your Omega-3 fatty acids: [35] Get as much omega-3 as possible from seafood and red meat. If it's not possible, due to reasons such as food allergies or other dietary restrictions, use a supplement to make sure you get 1 - 2 grams of DHA or EPA daily. DHA is critical for optimizing your brain function.

Nuts and seeds: Test to see if they cause inflammation or pull you out of ketosis before consuming ample amounts of them. The best nuts for keto diets are brazil nuts, macadamias, walnuts, and pecans due to their high fat and low carb content. Many nuts are high in phytic acids (such as almonds) which become problematic if too much is consumed. The biggest potential pitfall with nuts is overeating them. It's very easy to "sneak in" an extra 300 calories when you grab a handful of nuts. This is where measuring matters.

Be mindful of saturated fats: Many animal studies show that saturated fats are highly inflammatory. Still, the effects on humans are more subtle and may vary from person to person. [36, 37, 38] Genetics plays a role here. Some genotypes do better with mostly monounsaturated fats.

Before you drink ample amounts of fat coffee and gorge on coconut oil like they are superfoods, check

35 Costantini, L., Molinari, R., Farinon, B., & Merendino, N. (2017). Impact of Omega-3 Fatty Acids on the Gut Microbiota. *International Journal of Molecular Sciences, 18*(12). https://doi.org/10.3390/ijms18122645
36 Cândido, F. G., Valente, F. X., Grześkowiak, Ł. M., Moreira, A. P. B., Rocha, D. M. U. P., & Alfenas, R. de C. G. (2018). Impact of dietary fat on gut microbiota and low-grade systemic inflammation: mechanisms and clinical implications on obesity. *International Journal of Food Sciences and Nutrition, 69*(2), 125–143. https://doi.org/10.1080/09637486.2017.1343286
37 Lang, J. M., Pan, C., Cantor, R. M., Tang, W. H. W., Garcia-Garcia, J. C., Kurtz, I., … Lusis, A. J. (2018). Impact of Individual Traits, Saturated Fat, and Protein Source on the Gut Microbiome. *mBio, 9*(6). https://doi.org/10.1128/mBio.01604-18
38 Wolters, M., Ahrens, J., Romaní-Pérez, M., Watkins, C., Sanz, Y., Benítez-Páez, A., … Günther, K. (2019). Dietary fat, the gut microbiota, and metabolic health - A systematic review conducted within the MyNewGut project. *Clinical Nutrition , 38*(6), 2504–2520. https://doi.org/10.1016/j.clnu.2018.12.024

your biofeedback to see how your body responds to it. Matt's triglycerides skyrocket on coconut oil, so it is not a superfood for him.

Avoid *trans* and hydrogenated fats: These bad fats could be found in shortening, margarine, hydrogenated lard, and many processed foods. Trans and hydrogenated fats are very inflammatory and promote dysbiosis. [39, 40] Avoid them and any processed foods that contain them.

Minimize processed keto foods: They can often contain too many carbs, chemicals, insulinogenic, or inflammatory ingredients. Matt made the mistake of eating lots of "low carb foods" that supposedly had "low net carbs" and sabotaged his success. Monitoring your blood sugar response to packaged "keto foods" is one of the best ways to see how your body responds.

7. Experimenting with Carnivore

Many years before the term "carnivore" began being thrown around, Matt would do phases of just eating meat and fish, and cutting out all carbs from his diet. He usually did this when he wanted to lose body fat. He found it helpful to reduce food cravings even further and cut calories a bit more.

In the last couple of years, carnivore diets have become increasingly popular. For some people who have severe auto-immune issues, it's the answer. Some people can experience relief by going carnivore because they get inflammation, gut biome problems, or immune system triggers from plant-based substances.

Figure out which types of meat work best for you. Some of them could be causing inflammation and stress in your body. Also, you may not have the ideal gut bacteria for certain foods. As an example, Matt never digested chicken well and the Viome test revealed that he should minimize or avoid it. On the other hand, Matt always felt great eating beef and Viome says it's a "superfood" for his gut biome.

Very high-fat meals can reduce the protective mucus that coat your gut barrier and reduce gut bacteria diversity, which may compromise the gut barrier. [41] Therefore, we don't advise doing highly restrictive ketogenic diets long-term unless you need it to manage medical conditions. Either way, you are going to have to work harder to support your microbiome and gut barrier on a ketogenic diet.

You can also check out our "*Ultimate Carnivore Cookbook*."

8. Test, Don't Guess

As we keep stressing: DATA SHAPES DESTINIES. You can't manage what you can't measure, and that's why we want to use data to optimize a ketogenic diet.

Biofeedback is one of the most important things to find out if a food or the ketogenic diet itself is working

39 Carvalho, G. C. B. C., Moura, C. S., Roquetto, A. R., Barrera-Arellano, D., Yamada, A. T., Santos, A. D., … Amaya-Farfan, J. (2018). Impact of Trans-Fats on Heat-Shock Protein Expression and the Gut Microbiota Profile of Mice. *Journal of Food Science, 83*(2), 489–498. https://doi.org/10.1111/1750-3841.13997
40 Ge, Y., Liu, W., Tao, H., Zhang, Y., Liu, L., Liu, Z., … Xu, T. (2019). Effect of industrial trans-fatty acids-enriched diet on gut microbiota of C57BL/6 mice. *European Journal of Nutrition, 58*(7), 2625–2638. https://doi.org/10.1007/s00394-018-1810-2
41 Rohr, M. W., Narasimhulu, C. A., Rudeski-Rohr, T. A., & Parthasarathy, S. (2020). Negative Effects of a High-Fat Diet on Intestinal Permeability: A Review. *Advances in Nutrition , 11*(1), 77–91. https://doi.org/10.1093/advances/nmz061

for you. However, subjective biofeedback has its limitations. This is where hard data coming from blood work, urine tests, and other technologies come into play.

If you've read other keto diet books, not much we've said so far is new. Now it's time to take your keto diet to its full potential.

How Much To Eat On Keto

Although a lot of keto zealots want you to believe that you can eat however much you want on a ketogenic diet, keto isn't magical. Keto doesn't bypass the laws of thermodynamics. Eating too many calories on keto can cause body fat gain and blood lipids to go off the rails.

Most people will naturally be in a caloric deficit when they start keto and thus lose weight. The elimination of processed foods combined with the satiating nature of high-fat foods makes it easier for many people to eat less calories. That being said, most people on an extended weight loss journey will hit a plateau and at that point, calories should be tracked.

A good starting point formula for a diet is around 12 calories per pound of bodyweight. Follow this for two weeks and monitor your weight and the tape measurements. If they are going down, you're in a deficit. If you're not, target a 500 calorie deficit. This can be achieved by increasing exercise, increasing anabolism or decreasing calories.

After Phase 1, your calorie needs depend on your goals:

GOAL	CALORIES
Longevity and health span	Maintenance or slight caloric deficit (up to 15%)
Maximize athletic performance	Maintenance or up to 10% above maintenance
Build lean muscles	300-500 calories above maintenance
Fat loss	500 calorie deficit/day

What Does a Keto Diet Look Like?

You can still enjoy a variety of foods on keto. Here are some examples:

Day 1 - 3000 calories menu

Breakfast

1 Medium avocado
2 large eggs fried in 2 tbsp ghee
2 fatty beef sausages
1 large plate of spring mix
3 tbsp of olive oil to drizzle
Plain coffee

Lunch

2 cups roasted broccoli drizzled with 2 tbsp olive oil
6 oz ribeye grass-fed steak
2 tbsp fat to cook your steak, e.g. ghee, coconut oil, or tallow
6 tbsp fat to top your steak, e.g. olive oil, butter, marrow butter, or coconut butter

Dinner

4 oz wild-caught salmon
3 cups Cauliflower mash with ¼ cup fat and ½ cup of coconut cream
2 tbsp coconut butter for dessert

Day 2 - 3000 calories menu

Breakfast

Bulletproof coffee with 1 tbsp of MCT oil, 3 tbsp butter, and 2 tbsp collagen

Lunch

Shrimp curry with 6 oz shrimp, 2 cups coconut cream, and low-carb vegetables
2 cups cauliflower rice sauteed in 2 tbsp coconut oil

Dinner

Keto Shepherd's pie
6 oz grass-fed ground beef
4 cups cauliflower mash with at least ½ cup of fat (butter, coconut cream, or high-fat cheese)

Day 3 - 3000 calories menu

Breakfast

4 egg omelette with ¼ cup fat and 1 oz mozzarella
1 large plate of salad leaves
Optional: peppers, mushrooms, tomatoes
2 strips bacon

Lunch

Zucchini noodles with coconut cream (1 cup) alfredo and seafood (8 oz)
2 tbsp butter

Dinner

Grass fed short ribs (9 oz)
4 tbsp fat (olive oil, marrow butter, or butter)
Mixed low-carb vegetables

Blood Tests

Ask for the following tests from your doctor before and during your keto journey: [42]

- **Fasting blood glucose**
- HbA1c
- **Triglycerides**
- High-density lipoprotein cholesterol
- **Low-density lipoprotein cholesterol with particle size**
- Lipoprotein(a)
- **Fasted insulin**
- High-sensitivity C-reactive protein
- **Uric acid**
- Liver enzymes, including GGT
- **Thyroid panel**
- Sodium and potassium

We suggest doing blood work every 3 months when you do drastic dietary changes. Your doctor may also order lab tests to screen for kidney problems if they suspect it could be an issue.

42 Bourdua-Roy, E., & Scher, B. (2018). Lab tests — Diet Doctor. https://www.dietdoctor.com/low-carb/for-doctors/lab-tests

Hormone Tests

The DUTCH Complete test measures all the different hormone metabolites in your urine. It is an excellent way to track how the ketogenic diet affects your hormones and stress responses.

Wearable Biofeedback

At-home monitors that you can track with your Oura ring or similar devices include:

- **Body temperature**
- Heart Rate
- **Heart Rate Variability**

Matt has seen lower HRV and readiness scores in Oura readings with many clients who don't have the ideal genetics for keto. Does that mean they shouldn't do a keto diet for specific short-term goals? No. It's just another data point to consider.

Ketone and Blood Glucose Levels

To enter ketosis and monitor factors that bring you in and out of it, you need to track your ketones. Three different ketone bodies, i.e. beta-hydroxybutyrate, acetoacetate, and acetate are present in your blood in varying amounts. Some ketone tests detect one but not the other, which makes them less accurate.

On a ketogenic diet, you want to shoot for ketone bodies between 0.5-3.0 millimolar. Above 0.5 is considered being in ketosis.

Measuring Ketones:

- **Urine ketone strips** are the least expensive way to test your ketones, but only tests for excess acetoacetate that is excreted in the urine. It is therefore the least accurate ketone measurement. Avoid it.

- **Breath ketone test** measures acetone, which is the breakdown product of acetoacetate and acetate. It's the most convenient and least invasive option, as you only need to blow into the device. However, many other factors such as food and your respiratory rate can affect your results, making it rather inaccurate.

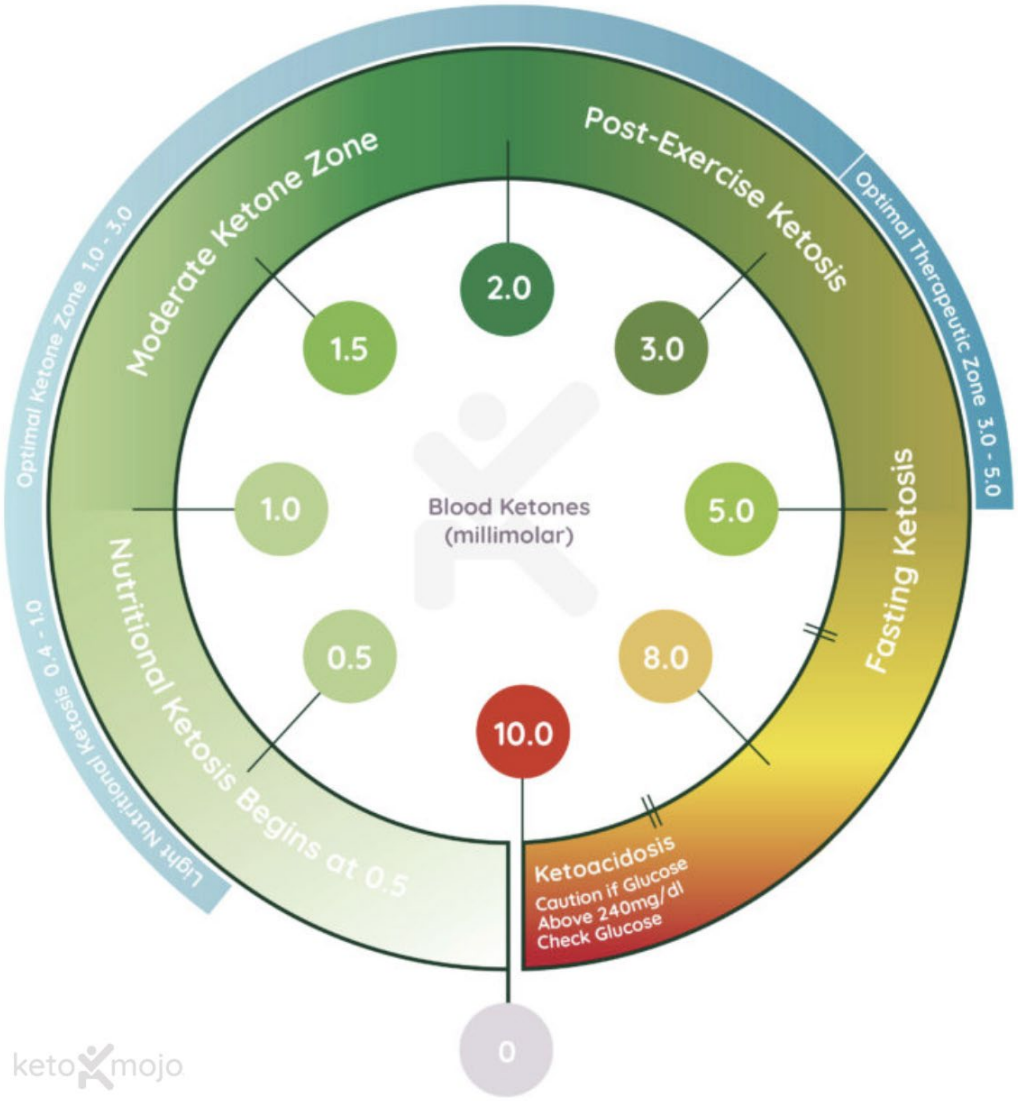
- **Blood ketone test** is the most accurate one. However, you need to poke your finger or get a blood draw. Blood ketone tests measure beta-hydroxybutyrate, which is the most active ketone body in your blood. The home devices measure both blood ketones and sugar using the same strips. This is the gold standard.

- **Carbon dioxide breath testing** can estimate the amount of carbs and fats you are burning based on the oxygen you inhale and carbon dioxide you exhale. While it may be helpful to track your ketosis, it is not a direct measure of ketones. Matt suggests avoiding it.

We recommend the Keto Mojo as the main tool to track both ketosis and blood glucose. It also has the lowest price per test strip, and comes with an app that makes it easier to record and track your results.

Don't get too caught up with ketone levels. What typically happens is higher ketone levels in the beginning of someone's keto journey and they lower over time. This is a positive sign that your body is more efficient at using ketones for energy.

Matt suggests measuring your ketone and blood sugar response to various foods you eat. This can help you identify which foods are ideal for you and which foods you should minimize or avoid. Once you've gathered data for a few weeks, testing your ketone levels becomes less useful.



Pros and Cons Of A Ketogenic Diet

With every diet comes tradeoffs. To determine if it's right for you, you should find the pros very attractive and the cons tolerable. Fortunately, most of these cons can be managed or avoided altogether if you follow the tips in the Keto Diet Considerations Section.

POTENTIAL DOWNSIDES OF KETOGENIC DIET

Health

Pros:
The ketogenic diet can improve biological markers of longevity, reduce blood pressure, and promote insulin sensitivity for many people.

Cons:
Reduced thyroid hormone: Free active thyroid hormone (T3), a mastermind of your metabolism, starts to drop, causing you to feel cold and lethargic. [43]

Increased Sex hormone binding glubulin and increased free testosterone: Dr. Paul Saladino, a Carnivore Diet expert, finds sex hormone binding globulin (SHBG) significantly increases for both him and his male patients. The high SHBG can reduce free testosterone, which affects your overall wellbeing and exercise response. [44]

It also has the potential to cause some side effects, such as:

1 - **Too low blood pressure**
2 - Kidney stones
3 - **Gallbladder issues**
4 - Digestive problems
5 - **Constipation**
6 - Nutrient deficiencies, e.g. vitamin C
7 - **May not be good for gut bacteria**
8 - May throw off blood lipids for some

43 Volek, J., Sharman, M., Gómez, A., Judelson, D. A., Rubin, M., Watson, G., ... Kraemer, W. (2004). Comparison of energy-restricted very low-carbohydrate and low-fat diets on weight loss and body composition in overweight men and women. *Nutrition & Metabolism, 1*(1), 13.https://doi.org/10.1186/1743-7075-1-13
44 View all posts by The New Neander's Physiological Literacy. (2019). Testosterone levels in athletes on carnivore diet. 'N=1' of Paul Saladino and Shawn Baker. https://nneandersphysiologicalliteracy.wordpress.com/2019/05/23/testosterone-levels-in-athletes-on-carnivore-diet-n1-of-paul-saladino/

Aesthetics: Lean Muscle Mass

Pros:
Many people find it easier to lose body fat and maintain weight because they're less hungry and thus it's easier to manage calories. Some cyclical keto-style diets, such as Anabolic Diets, can help optimize muscle growth. In Matt's opinion, it's the best way to recomp. Go for fat loss for 5 days by doing a calorie deficit in a keto diet. Then refeed with carbs and focus on gaining lean muscle for 2 days.

Cons:
Because your insulin will be perpetually low, you may find it harder to gain muscles on keto unless you do carb refeeds. If someone is obsessed with putting on as much lean muscle mass as possible, He would suggest following a high carb/high protein/low fat diet.

Aesthetics: Losing Body Fat

Also, because being keto-adapted allows you to tap into your body fat stores, you can just fast if you can't find the food or the time to eat. Ketosis is muscle-sparing, so you won't have to worry about losing lean muscle mass.

Athletic Performance

Pros:
Also, nutritional and supplemental ketosis can be great tools to support endurance performance.

Cons:
Reduced ability to handle carbs: Being in ketosis makes you slightly insulin resistant as your body wants to conserve all the glucose for the brain. [45] Also, once ketones become the preferred fuel, your cells dial down pathways that are involved in burning glucose. [46]

Power sport athletes should avoid ketogenic diets before and during competitions.
Strength, speed, and agility have been shown to drop when using a ketogenic diet. We suggest using a carb-based diet for competitive events. More specifically, start using carbs several weeks before the sporting event because you need to rebuild and strengthen your glycolytic pathways.

To prevent these from happening, you need to tell your body that food is abundant with carb refeeds. [47] The increase in leptin will jumpstart your metabolism and can help you bust through the fat loss plateau and reset your hormones. Although refeeding does not increase basal metabolic rate, [48] you may also feel a burst in energy, sex drive, vitality, and exercise performance in the days following your refeed.

45 Bergman, B. C., Cornier, M.-A., Horton, T. J., & Bessesen, D. H. (2007). Effects of fasting on insulin action and glucose kinetics in lean and obese men and women. *American Journal of Physiology. Endocrinology and Metabolism, 293*(4), E1103–11. https://doi.org/10.1152/ajpendo.00613.2006
46 Pete J. Cox, Tom Kirk, Tom Ashmore, Richard L Veech, Julian L. Griffin, Kieran Clarke. (2016). *Nutritional Ketosis Alters Fuel Preference and Thereby Endurance Performance in Athletes* (No. 24). CrossMark: https://www.cell.com/cell-metabolism/pdfExtended/S1550-4131(16)30355-2
47 Dirlewanger, M., di Vetta, V., Guenat, E., Battilana, P., Seematter, G., Schneiter, P., ... Tappy, L. (2000). Effects of short-term carbohydrate or fat overfeeding on energy expenditure and plasma leptin concentrations in healthy female subjects. *International Journal of Obesity and Related Metabolic Disorders: Journal of the International Association for the Study of Obesity, 24*(11), 1413–1418. https://doi.org/10.1038/sj.ijo.0801395
48 Dirlewanger, M., di Vetta, V., Guenat, E., Battilana, P., Seematter, G., Schneiter, P., ... Tappy, L. (2000). Effects of short-term carbohydrate or fat overfeeding on energy expenditure and plasma leptin concentrations in healthy female subjects. *International Journal of Obesity and Related Metabolic Disorders: Journal of the International Association for the Study of Obesity, 24*(11), 1413–1418. https://doi.org/10.1038/sj.ijo.0801395

Mental Performance

Pros:
For many this is the main edge. Ketosis boosts mental performance, and balances out the brain and cravings.

Cons:
Some people who don't have the right keto genes and thrive on carbs may experience significant drops in mental energy and focus.

Lifestyle

Pros:
In Matt's opinion, a cyclical keto diet is one of the best lifestyle diets. Even though you're carb restricting for 5 days, the two days of eating whatever you want is great for a foodie lifestyle.

Cons:
It can be socially isolating to be on such a restrictive diet.

Psychological Considerations

Pros:
Keto works well if you find a diet with less options easier to stick to. Matt is one of these people. It also stabilizes mood and mental health for some people. [49]

Cons:
You may miss your favorite non-keto foods. For some people, the lack of variety makes it psychologically impossible to stick to.

Should You Try a Ketogenic Diet?

Here are the factors to take into account to decide whether or not to try a ketogenic diet:

1. Your mother's and grandmother's metabolism

Everyone inherits their mitochondria from their mother. Human and mouse studies have shown that women with obesity and insulin resistance develop abnormal mitochondria. These women then transmit their mitochondria to their children and grandchildren.

The children and grandchildren inherit the abnormal mitochondria and epigenetic changes that make them

49 Brietzke, E., Mansur, R. B., Subramaniapillai, M., Balanzá-Martínez, V., Vinberg, M., González-Pinto, A., ... McIntyre, R. S. (2018). Ketogenic diet as a metabolic therapy for mood disorders: Evidence and developments. *Neuroscience and Biobehavioral Reviews, 94*, 11–16. https://doi.org/10.1016/j.neubiorev.2018.07.020

glucose intolerant and insulin resistant. As a result, they are at an increased risk of obesity, cardiovascular disease, and diabetes. [50]

The ketogenic diet powerfully boosts mitochondrial function and reverses insulin resistance. So, if obesity and insulin resistance run in your family, there is a chance that a ketogenic diet could be the healthiest diet for you.

2. Do you have the keto genetics?

Your genes create a genetic tendency but the tendency doesn't always play out. However, understanding your genes will provide you with powerful knowledge to control the outcome.

As a generalization (not a hard rule), northern European genetics are great for ketogenic diets. Why? Because they've had to endure hard winters and usually live off wild animals. The lack of fruits and vegetables forced people to switch to animal fat and protein to survive.

Your diet, lifestyle, and environment determines if your tendency will play out by changing your epigenetics and microbiome. Together, they create phenotypes (traits or symptoms). Therefore, to determine if your genetic tendency is playing out, you need to correlate between your genotype and your biofeedback.

Genes that may make you do better on a ketogenic diet:

AMY1: The AMY1 gene provides instruction for amylase, an enzyme that digests starch in your saliva. Having more copies of AMY1 means that you tolerate carbohydrates better. Whereas having less copies of AMY1 means you are more likely to do better on a low-carb or ketogenic diet. [51]

CPT1A gene is a key enzyme in mitochondrial fatty acid oxidation. The variant A (rs80356779) reduces ketogenesis, while T increases it. Surprisingly, this variant is present in 68% of Northern Syberian inuits and many Canadians. [52]

PPAR-alpha: PPAR-alpha activates other genes that are involved in lipid metabolism. Better PPAR-alpha function means that you will do better with fasting. There are multiple known variants within this gene. Weak versions of PPAR-alpha may reduce fatty acid metabolism, apolipoproteins, HDL, LDL, and ketone body production, making it harder to enter ketosis or fast. [53]

ADRB2 (rs1043713 A) and **ADRB3** are thrifty genes. Certain variants of these genes are associated with belly fat and type 2 diabetes. [54, 55] People with weaker versions of these genes may need to be more careful with calories and saturated fats.

50 Jessica L. Saben, Anna L. Boudoures, Zeenat Asghar, Andrew Cusumano,Suzanne Scheaffer, Kelle H. Moley. (2016). *Maternal Metabolic Syndrome Programs Mitochondrial Dysfunction via Germline Changes across Three Generations* (No. 16). CrossMark: https://www.cell.com/cell-reports/pdfExtended/S2211-1247(16)30663-5
51 Falchi, M., El-Sayed Moustafa, J. S., Takousis, P., Pesce, F., Bonnefond, A., Andersson-Assarsson, J. C., … Froguel, P. (2014). Low copy number of the salivary amylase gene predisposes to obesity. *Nature Genetics, 46*(5), 492–497. https://doi.org/10.1038/ng.2939
52 Clemente, F. J., Cardona, A., Inchley, C. E., Peter, B. M., Jacobs, G., Pagani, L., … Kivisild, T. (2014). A Selective Sweep on a Deleterious Mutation in CPT1A in Arctic Populations. *American Journal of Human Genetics, 95*(5), 584–589. https://doi.org/10.1016/j.ajhg.2014.09.016
53 Contreras, A. V., Torres, N., & Tovar, A. R. (2013). PPAR-α as a key nutritional and environmental sensor for metabolic adaptation. *Advances in Nutrition , 4*(4), 439–452. https://doi.org/10.3945/an.113.003798
54 Takenaka, A., Nakamura, S., Mitsunaga, F., Inoue-Murayama, M., Udono, T., & Suryobroto, B. (2012). Human-specific SNP in obesity genes, adrenergic receptor beta2 (ADRB2), Beta3 (ADRB3), and PPAR γ2 (PPARG), during primate evolution. *PloS One, 7*(8), e43461. https://doi.org/10.1371/journal.pone.0043461
55 Brondani, L. A., Duarte, G. C. K., Canani, L. H., & Crispim, D. (2014). The presence of at least three alleles of the ADRB3 Trp64Arg (C/T) and UCP1 -3826A/G polymorphisms is associated with protection to overweight/obesity and with higher high-density lipoprotein cholesterol levels in Caucasian-Brazilian patients with type 2 diabetes. *Metabolic Syndrome and Related Disorders, 12*(1), 16–24. https://doi.org/10.1089/met.2013.0077

APOA2 is the "eat fat, get fat" gene, especially if it's saturated fat. Saturated fats tend to increase ghrelin, the hunger hormone in people with weaker versions of this gene. [56] You may be able to do a ketogenic diet but it's better to consume more unsaturated fats. Also, excessive HDL cholesterol could be bad with this genotype.

3. You Have Insulin Resistance

Many people with health conditions involving insulin resistance, such as type 2 diabetes and polycystic ovarian syndrome, find it easier to manage their conditions on ketogenic diets. Some others, however, find that plant-based diets work better for the same goal. Therefore, you should work with your doctor and coaches to monitor your biofeedback and bloodwork.

Even if you don't have diagnosed conditions, subclinical insulin resistance is extremely common. If you crave carbs, suffer from hormonal imbalances, or have mood swings, you may find that ketosis stabilizes or eliminates these symptoms altogether.

4. Brain Health Issues or Neurological Disorders

Ketogenic diets have been used to treat refractory epilepsy for over 80 years. [57] Ketones protect neurons and boost mitochondria function, which often jumpstarts the healing processes.

Recent studies confirm that ketosis may help with other neurological conditions, such as multiple sclerosis, Alzheimer's, and mild cognitive impairment. [58, 59]

Your neurons prefer ketones as fuels. All of these make ketones excellent nootropics that may provide cognitive boosts or help with brain health issues.

5. Athletic Goals and Recovery

Many superhuman athletes find that ketogenic diets boost their performance, improve their recovery, and help them stay lean.

For endurance sports, nutritional ketosis is emerging as the superior option to relying on carbs. Competing in ketosis taps into their fat stores, which eliminates the need to carb load pre-event. They no longer bonk or need to eat when they run out of glycogen during competition.

Endurance athletes may find it easier to enter ketosis as they already have more efficient mitochondria. [60]

56 Smith, C. E., Ordovás, J. M., Sánchez-Moreno, C., Lee, Y.-C., & Garaulet, M. (2012). Apolipoprotein A-II polymorphism: relationships to behavioural and hormonal mediators of obesity. *International Journal of Obesity , 36*(1), 130–136. https://doi.org/10.1038/ijo.2011.24
57 D'Andrea Meira, I., Romão, T. T., Pires do Prado, H. J., Krüger, L. T., Pires, M. E. P., & da Conceição, P. O. (2019). Ketogenic Diet and Epilepsy: What We Know So Far. *Frontiers in Neuroscience, 13*, 5. https://doi.org/10.3389/fnins.2019.00005
58 Brenton, J. N., Banwell, B., Bergqvist, A. G. C., Lehner-Gulotta, D., Gampper, L., Leytham, E., … Goldman, M. D. (2019). Pilot study of a ketogenic diet in relapsing-remitting MS. *Neurology(R) Neuroimmunology & Neuroinflammation, 6*(4), e565. https://doi.org/10.1212/NXI.0000000000000565
59 Włodarek, D. (2019). Role of Ketogenic Diets in Neurodegenerative Diseases (Alzheimer's Disease and Parkinson's Disease). *Nutrients, 11*(1). https://doi.org/10.3390/nu11010169
60 Nielsen, J., Gejl, K. D., Hey-Mogensen, M., Holmberg, H.-C., Suetta, C., Krustrup, P., … Ørtenblad, N. (2017). Plasticity in mitochondrial cristae density allows metabolic capacity modulation in human skeletal muscle. *The Journal of Physiology, 595*(9), 2839–2847. https://doi.org/10.1113/JP273040

A 2016 clinical trial in *Cell Metabolism* found that muscles can shift to burn ketones even at high-intensity efforts among professional cyclists. [61] Also, the cyclists in ketosis outperformed those who ran on carbs.

Ben Greenfield, a professional ultra endurance athlete, found that ketosis gives him the extra edge. He also found that it counteracts a lot of oxidative damage and inflammation from training and competing in these events. [62]

Dr. Peter Attia, MD, is a prominent longevity physician and extreme endurance athlete. He swam 20 miles across the Catalina channel within 12 hours while on a ketogenic diet.

Cole Robinson, a powerlifter who invented the Snake Diet, found that his strength and overall well-being significantly improved on ketogenic diets or extended fasting.

6. Optimizing Brain Performance

When it comes to mental performance, ketones may be a powerful advantage. From personal experience, we can attest that ketones can be a game-changer when it comes to pushing your brain to the max.

7. You Do Better With Rules and Fewer Options

The ketogenic diet can be a very restrictive diet. Unless you're on a refeed day, then you'll have to skip things like french fries and breads at restaurants. However, you can still consume your favorite, tasty carbs at the right times if you do a cyclical keto diet like the ones he shares in this chapter.

One of the main reasons Matt loves keto is because he's naturally undisciplined. That's why he's better with rigidity and having fewer options. The natural structure (to a certain degree) combined with less cravings helps him stay compliant. On the other hand, extreme rigidity would break Matt mentally. That's why he loves the weekly carb loads on refeed days where he can eat his favorite carbs.

8. You Enjoy MEAT

A nutritional strategy only works if you can follow it. To stick to a ketogenic diet, you have to enjoy keto foods. Meat lovers can usually thrive on keto or carnivore diets. People that don't LOVE meat and fish usually struggle. Is it possible to go keto as a vegetarian or vegan? Yes, but in our observation it tends to be a fail.

However, food preferences can change over the course of a few weeks as your gut bacteria changes. [63] If you think you may benefit from keto but dislike the foods, you can try it over a few weeks to see if you grow to like them.

61 Cox, P. J., Kirk, T., Ashmore, T., Willerton, K., Evans, R., Smith, A., ... Clarke, K. (2016). Nutritional Ketosis Alters Fuel Preference and Thereby Endurance Performance in Athletes. *Cell Metabolism, 24*(2), 256–268. https://doi.org/10.1016/j.cmet.2016.07.010
62 Aberásturi, M. (2013). The Great Ketogenic Experiment - Full Transcript - Ben Greenfield Fitness - Diet, Fat Loss and Performance Advice.https://bengreenfieldfitness.com/podcast/low-carb-ketogenic-diet-podcasts/great-ketogenic-experiment-full-transcript/
63 Alcock, J., Maley, C. C., & Aktipis, C. A. (2014). Is eating behavior manipulated by the gastrointestinal microbiota? Evolutionary pressures and potential mechanisms. *BioEssays: News and Reviews in Molecular, Cellular and Developmental Biology, 36*(10), 940–949. https://doi.org/10.1002/bies.201400071

9. Favorable Biofeedback

If the ketogenic diet is right for you, your blood markers and heart rate variability will show a favorable response in the right direction.

Reasons NOT To Do a Ketogenic Diet

Keto zealots will try to convert everyone into keto because they think it's the greatest diet for everyone. Matt was once a keto zealot. The truth is the ketogenic diet is NOT the greatest diet for all mankind. For Matt, it is. But you need to use the data and science to find out if it is for you.

1. Genetics

Some people, especially those from tropical climates, may have genes that do better on a higher-carb diet. Also, if you have the weak versions of the keto genes, then maybe the ketogenic diet isn't right for you.

2. Medical Contraindications

Avoid a ketogenic diet if you have pancreatitis, liver failure, and disorders of fat metabolism. [64] Also, if you don't have a gallbladder, you may be able to do a ketogenic diet but only under medical supervision and with plenty of digestive support.

3. Major Hormone Imbalances or Severe Adrenal Burnout

Going through keto-adaptation can be stressful to your body and demands a lot from your stress response system. If you have major hormone imbalances or deep adrenal burnout, you should address those issues first before trying to get keto-adapted. One exception would be if insulin resistance and blood sugar problems are driving the hormone imbalances.

4. Athletes Who Need Carbohydrates For Maximum Performance

When you attempt ketosis, your overall strength and physical performance will go down significantly, even if you use ketone supplements. It can take up to a year for peak athletic performance to return. Therefore, if you need to perform at your peak in the near future, a ketogenic diet may not be a good idea.

64 Masood, W., Annamaraju, P., & Uppaluri, K. R. (2020). Ketogenic Diet. *In StatPearls.* Treasure Island (FL): StatPearls Publishing. https://www.ncbi.nlm.nih.gov/pubmed/29763005

5. Unfavorable Biofeedback

Some people do have the genes to reverse their insulin resistance better with whole grains and legumes than with ketogenic diets.

If your cholesterol and inflammation markers skyrocket, while your HRV crashes on a ketogenic diet, then the ketogenic diet might not be right for you.

SUMMARY

Traditional ketogenic diets (aka "keto") are very low-carb, moderate protein, and high-fat. The goal of this diet is to enter "nutritional ketosis," or the state where your body is fueled primarily by ketones. Ketones or ketone bodies are made from short snippets of the fatty acids you eat or from your own body fat.

Our bodies adapted to handle: Low to no carb diets and starvation phases.

On a ketogenic diet, you deliberately cut out all carbs and eat mostly fats, causing the following to happen:

- **Your body uses up all the stored glycogen.**
- Your liver starts producing ketones from the fat you eat.
- **Your brain, muscles, and internal organs increase mitochondria and cellular enzymes that are involved in using ketones for energy.**
- Your anti-aging pathways, such as autophagy and sirtuins, are activated.
- **Your cells learn to shift back and forth between burning sugar and ketones for energy.**

Unique Health Benefits Of Keto:

- **A boost in brain function and cognitive clarity**
    - If you enter ketosis, even temporarily or with ketone supplements, you will experience the brain enhancing benefits.
- **Reduced blood pressure**
    - Properly mineralizing with sodium and potassium to help optimize cellular hydration is critical.
- **Better insulin sensitivity and stable blood sugar**
    - Reducing carbohydrate intake typically reduces insulin, which improves insulin sensitivity.

- **Diminished appetite and cravings**
    - Ketosis reduces appetite, even in caloric restriction during a weight loss program. Even after weight loss, ghrelin (the hunger hormone) remains low in people who stay in ketosis.
- **Reduced inflammation**
    - Ketone bodies have anti-inflammatory and antioxidant properties. Therefore, some people may experience some reduction in pain or remission of a chronic condition.

The following tips will help you enter ketosis smoothly, while avoiding painful and costly mistakes:

1 - **Use nutrigenomics**
2 - Optimize your digestion
3 - **Minimize inflammation**
4 - Support your microbiome and gut barrier
5 - **Add salt and minerals**
6 - Optimize your fats
7 - **Experiment with carnivore**
8 - Test, don't guess

Ways to know if the keto diet is right for you:

1 - **Your mother's and grandmother's metabolism**

» If obesity and insulin resistance run in your family, there is a chance that a ketogenic diet could be the healthiest diet for you.

2 - **Do you have the keto genetics?**

» Your genes create a genetic tendency but the tendency doesn't always play out. However, understanding your genes will provide you with powerful knowledge to control the outcome.

3 - **You have insulin resistance**

» Many people with health conditions involving insulin resistance find it easier to manage their conditions on ketogenic diets.

4 - **Brain health issues or neurological disorders**

» Ketones protect neurons and boost mitochondria function, which often jumpstarts the healing processes.

5 - **Athletic goals and recovery**

» Many superhuman athletes find that ketogenic diets boost their performance, improve their recovery, and help them stay lean.

6 - **Optimizing brain performance**

» Ketones can be a game-changer when it comes to pushing your brain to the max.

7 - **You do better with rules and fewer options**

» The ketogenic diet can be a very restrictive diet.

8 - **You enjoy MEAT**

» To stick to a ketogenic diet, you have to enjoy keto foods.

Reasons NOT to do a keto diet:

- **Genetics**
- Medical contraindications
- **Major hormone imbalances or severe adrenal burnout**
- Athletes who need carbohydrates for maximum performance
- **Unfavorable biofeedback**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