NUTRITIONAL KETOSIS e-book

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WHAT IS KETO?

A ketogenic diet, or "keto" as many now refer to it, focuses on eating real, whole foods that are low in carbohydrates and generally high in fat. This low carb high fat diet keeps sugary and starchy foods to a minimum while providing your body with the nutrition it needs. By eating this way, you will quite literally change your metabolism (the way your body processes food). Instead of burning primarily sugars for fuel, your body will start burning fat as the preferred fuel

source. I like to call it "fat burning mode" because it sounds cool, but it's more commonly referred to as KETOSIS.

As we explore the ins and outs of the ketogenic diet, think of it more as a healthy way of eating and less of a diet to avoid the negative connotations associated with that dreadful four-letter word. Diets suck, keto doesn't.

MACROS: WHAT THEY ARE & WHY THEY MATTER

The term "macros" is short for MACRONUTRIENTS in the context of nutrition and the keto diet.

Macronutrients are the energy-giving components of food that fuels our body. They include carbohydrates, protein, and fat; this is where your dietary calories come from. Grasping

the concept of macros is important for the keto diet because you need to find the right balance of carbs, protein, and fats to get into ketosis, stay in ketosis, and turn your body into a fat burning machine.

Let's take a quick look at each type!

TYPES OF MACRONUTRIENTS

Carbohydrates

Carbohydrates are the only macronutrient that is not essential for survival. There are essential fatty acids and amino acids (the building blocks of fats and proteins), but there is no such thing as "essential carbohydrates". Sugars and starches fall into this category.

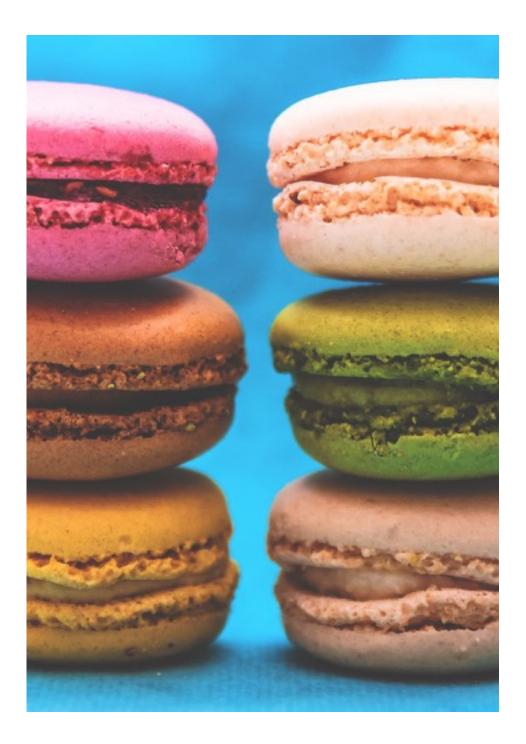
Proteins

Protein is important for growth, tissue repair, immune function, making essential hormones and enzymes, energy in the absence of carbohydrates, and preserving lean muscle mass. As you can see, protein plays a vital role in almost all biological processes. Proteins are considered the building blocks of the body. The body breaks protein down into amino acids, 9 of which cannot be made by the body. As a result, these essential amino acids must come from the food you eat.

Fats

Fats are the main source of nutrition for a ketogenic diet. We need adequate amounts of fat in the diet for energy, growth and development, absorbing certain vitamins (fat-soluble vitamins like Vitamins A, D, E, K, and carotenoids), providing protective cushioning for the organs, and maintaining cell membranes. Not to mention dietary fats help us stay full and add flavor to our food! Mmm, flavor. There are two essential fatty acids that our body can't synthesize, so they must be obtained from diet.

CHECK OUT MY COMPLETE GUIDE TO MACROS



CARBOHYDRATES 4 CALORIES PER GRAM

When you are starting out, aim for 20 grams of net carbs per day.

Total Carbs - Fiber = Net Carbs

Carbohydrates include: bread, rice, pasta, sugar, honey, fruit, sweets

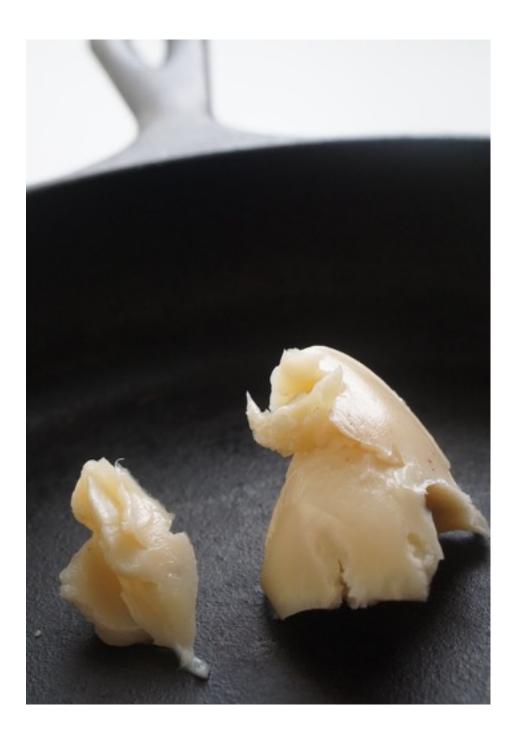
THE BUILDING BLOCK MACRO

PROTEINS4 CALORIES PER GRAM

You will need to eat enough protein to maintain your lean muscle mass without going overboard on your protein intake. Aim for:

- 0.7-0.8 grams of protein/ pound of lean body mass to maintain muscle
- 0.8-1.2 grams of protein/ pound of lean body mass to gain muscle

Protein includes: meat, fish, poultry, eggs, tofu



FATS9 CALORIES PER GRAM

Fat includes: animal fat, butter, oils, tallow, etc.

Once you have minimized your carbohydrate intake and are eating enough protein to spare your lean body mass, the rest of your fuel will come from fats!

Your carb and protein intake will generally remain constant while the amount of fat you eat depends on if you want to lose or maintain weight. To lose, you will eat at a calorie deficit coming from the amount of fat you intake (not the carbs or protein).

UNDERSTANDING KETOSIS

Ketosis is the state of using fat and protein as a fuel instead of carbohydrates. To better understand, let's look at the three main types of carbohydrates found in food:

- 1. STARCHES (complex carbs)
- 2. SUGARS (simple carbs)
- 3. FIBER

Sugars are simple carbs. They are quickly digested and instantly spike your blood glucose. This leads to the notorious sugar rush, followed by the inevitable sugar crash, all while taxing your pancreas and elevating insulin

levels. Most of us have been advised to stay away from simple sugars. Generally, everyone agrees that sugar is not good for your health and should be avoided.

Starches take a little longer to digest because they are broken down into simple sugar first, leading to a slower rise in blood glucose levels. This delayed rise in blood sugar has led to the belief that starches are "good carbs" in many other diets. However, the body actually treats sugars and starches very similar, so both must be avoided on a low carb ketogenic diet.

THE BODY PREFERS TO BURN GLUCOSE FOR ENERGY WHEN IT IS AVAILABLE; BUT WHEN EXCESS CARBS ARE EATEN, THE BODY DOES NOT HAVE IMMEDIATE USE FOR ALL OF THE EXTRA GLUCOSE. **THIS TRIGGERS HIGH LEVELS OF INSULIN, WHICH CAUSES THE BODY TO STORE THE EXTRA ENERGY AS FAT.** HIGH LEVELS OF INSULIN ALSO PREVENT THE RELEASE OF FAT FROM FAT CELLS AND IS LINKED TO A HOST OF OTHER METABOLIC DISORDERS.

Fiber is the only carbohydrate that does not impact the blood sugar. A low carb ketogenic diet encourages more fiber intake for this reason. When consumed, dietary fiber is mostly passed through the digestive system instead of being broken down, contributing more to digestive health rather than nutrition. Fiber keeps you regular and does not contribute to your total carb count. You can eat as much fiber as you want (and should!) on a low carb ketogenic diet.

IN THE ABSENCE OF CARBS, THE BODY SWITCHES OVER TO **NUTRITIONAL KETOSIS** AND USES FAT AS FUEL INSTEAD.

Diet Includes	Body's Main Metabolism	Primary Energy Supply
Minimal Amount of Carbs	Nutritional Ketosis	Ketones & Fatty Acids
Sugars & Starches	Glycolysis	Glucose

When you maintain a minimum carbohydrate intake, your body adapts from burning glucose for energy and readily releases fat from fat cells. The fat (triglyceride) is broken down into 3 fatty acid molecules and one glycerol molecule. Most of the cells in your body can, and do, burn the fatty acids for fuel. Through further metabolism, the liver creates ketones, which your cells use for metabolism. This process is known as nutritional ketosis.

Nutritional ketosis is fine — it just means that your body is burning fat. (Ketosis is commonly confused with 'ketoacidosis'- a serious condition that can occur in individuals with diabetes.) Ketosis is a completely normal mode

of metabolism when carbs are restricted. Your body flushes the excess ketones from your system via respiration and urination.

Your hunger will go away, and if you have extra weight on your body, you will eat less and lose weight. It's pretty cool.

If you are curious, you can measure your urine or blood ketones at home with urinary or blood ketone test strips. Not everyone has measurable ketones in the urine even when they are successfully fat-burning and losing weight. So if there are no ketones in the urine, it does not necessarily mean that you are not burning fat.

GETTING STARTED

- 1. Use a <u>keto calculator</u> to figure out your macros. The formulas behind these calculators are based on total energy expenditure, which is how many calories you burn during rest and activity combined. If you enter your data correctly, the macros calculated will keep carbs low enough to support ketosis, provide enough protein to maintain lean muscle mass, and assign dietary fat as the remainder of your daily intake. Give the calculator accurate data about your physical activity levels and current body composition for best results.
- 2. Calculate the macronutrient profile of the foods you want to eat. Check the labels on the package, add up the macros for different ingredients you use, and make sure the carbs, protein and fat fit within your daily allotted macros.
- 3. Create a meal plan based around the foods you previously identified and stick with it. (My preference, hands down.) OR If you're not the plan ahead type, TRACK everything you are eating as the day goes by. Keep an eye on each macro tallying up, making sure not to go over you daily allotment. People track in all sorts of ways: food journaling, apps (like MyFitnessPal), spreadsheets. Do whatever works for you!

"IF YOU FAIL TO PLAN, YOU ARE PLANNING TO FAIL."

- BENJAMIN FRANKLIN

I PERSONALLY CHOOSE TO PLAN ALL OF MY MEALS AHEAD OF TIME.
ESSENTIALLY, IT'S TRACKING ALL OF YOUR FOOD UP FRONT SO YOU
DON'T HAVE TO STRESS OVER EACH BITE AS YOU GO ABOUT YOUR DAY.
WHEN I STARTED, I DID THE TRACK AS YOU GO THING AND WAS
MISERABLE. PLANNING REQUIRES YOU DO SOME WORK UP FRONT, BUT
IT PAYS OFF THROUGHOUT THE WEEK! I'VE GOT IT DOWN TO A SCIENCE
NOW SO EVEN GROCERY SHOPPING AND PREP DAYS ARE A BREEZE!

GETTING STARTED CONTINUED...

Most beginners experience success at 20 grams or less of net carbohydrates per day. This means that you will need to avoid sugary/starchy food including: sugar, pasta, bread, flour, and most fruits.

You may be able to gradually increase carbs up to 50 grams or less per day, but the idea is to remain in ketosis continuously. It is best to stick to the lower amount of 20 grams or less per day until you are more experienced with a low carb way of eating.

Once you feel comfortable experimenting with your carb limit and dietary choices, you may be able to gradually increase your carb limit to 50 grams per day but not more. Keep in mind that everyone has a different limit depending on his or her height, weight, and activity level.

By becoming familiar with the carbohydrate content of different foods, you will quickly learn how to adjust your eating for success on the keto diet.

It's important to note that while a ketogenic diet is definitely low in carbs, it is not fundamentally a "NO" carbohydrate diet. Although some do prefer to aim for zero carbs, you don't necessarily have to get that low to reach ketosis. You can certainly eat your veggies, folks! (Especially your greens!)

Nutritional ketosis relies on limiting carbohydrates, but not eliminating them entirely; none is not necessarily better than some.

WHAT TO EXPECT

Once you switch from a high carbohydrate diet to a ketogenic diet, there are a few things that will take place as your body reaches ketosis over the first few days.

The body will continue to use available glucose and glycogen storages until it is depleted. As the glycogen is exhausted, you may see the number on the scale drop quickly; this is all water weight. Every gram of glycogen (stored form of glucose) has 4 molecules of water attached, so any extra water weight or bloating will whoosh away. As your body gets rid of this water, you'll probably pee a little more than usual. You'll want to make sure you drink plenty of water and increase your salt intake during this time to prevent dehydration. Water and broth over the first few days and weeks are a great idea!

Within a couple of days, the brain will make the switch to using ketones as the primary source of energy.

During this time, some people experience carb withdrawal type symptoms known as the "keto flu"; nausea, headache, feeling foggy/groggy, and muscle cramps. No one warned me. I've been down this road myself and it is no fun. It can definitely scare people away from sticking with the diet.

Fortunately, focusing on staying hydrated and replenishing your electrolytes can battle these symptoms! If you start experiencing any of the symptoms as you cut carbs, guzzle some water, sip some broth and know that it is only temporary. Do your best to avoid these icky feelings altogether.

To Prevent the Dreaded Keto Flu:

Sodium, magnesium and potassium are all important electrolytes that you'll want to actively incorporate into your low carb eating. You can take daily supplements to ensure you get an adequate amount of each electrolyte or you can focus on eating low carb foods that are rich in each kind of electrolyte.

Sodium - salt, broth, bouillon Magnesium - artichokes, fish, nuts, spinach Potassium - avocados, dark leafy greens, mushrooms, nuts, salmon

TRACKING YOUR PROGRESS

"THERE ARE ONLY TWO OPTIONS: MAKE PROGRESS OR MAKE EXCUSES."

- TONY ROBBINS

- 1. **Get a physical & blood tests performed.** If you want to see how the diet affects your health markers, get a baseline of where you are starting out and track over time with your health care practitioner.
- 2. Weigh yourself. I've said it before and I'll say it again: the scale can be a dirty liar. Don't base your progress (or self worth!) on a stupid number. It is just one way to measure. Weigh yourself when you start and every so often during your journey, but please don't weigh yourself every day. It can be really discouraging and I personally believe it does more harm than good. You're beautiful no matter what the stupid scale says and that's the truth whether you like it or not.
- 3. Measure your body fat and lean body mass. You can always visually estimate body fat percentage, but I'd recommend getting a body fat reading by someone skilled with calipers, a DEXA scan, or hydrostatic body fat testing. If you do this in the beginning, you'll have a really good idea of what your body composition actually was starting out and how it's improved over time. If the scale hasn't budged but your clothes are fitting looser and you look visibly fitter, chances are you have lost body fat and possibly gained some muscle. This would be the sure fire way to know that.
- 4. Choose an outfit that fits you really well right now and save them for later. Dont' throw them away now matter how loose they get. Try them on every now and then as time goes by. This was one of my favorite things to do! I still have my outfit!
- 5. Take pictures and videos of your progress. Even if you are camera shy, do yourself a favor and shoot some "before" photos or videos of yourself. You look at yourself in the mirror every day and it can be difficult to notice the change day to day. Progress photos and videos are SO powerful. Don't skip this one! I promise, it's worth it!

BENEFITS OF KETOSIS & LOW CARB LIVING

- Reduced Appetite
- Weight Loss
- Improved Body Composition
- Blood Pressure Reduction
- Improved Insulin Levels
- Healthy Blood Cholesterol and Triglyceride Levels
- Naturally Gluten-Free
- Treatment of Epilepsy
- Treatment of Diabetes
- Treatment of Polycystic Ovarian Syndrome (PCOS)
- Treatment of Neurodegenerative Disorders

For a list of peer reviewed references, visit the reference section of this post: http://ketogasm.com/what-is-keto

