

## VITAMINS AND SUPPLEMENTS

Chances are, you are already vitamin deficient and lack many essentials nutrients and enzymes, especially if you eat a lot of prepared or processed foods. Like any diet that restricts your food groups, you will be limiting your access to certain nutrients. Supplements are a good idea and there is a good chance you are already deficient in some areas anyway. Here is a list of supplements you should be thinking about adding to your diet:

### MCT OIL

- MCTs or Medium-chain triglycerides are metabolized differently than long-chain triglycerides which are the most common type of fat found in food.
- MCTs are broken down quickly by your liver which enter your bloodstream to be used as a fuel source for your brain and muscles.
- Coconut oil has some of the highest source of MCTs, at around 17% of its fatty acids being in the form of MCTs.
- You can take MCT oil in a concentrated form for even more benefit.
- MCT oil can reduce hunger, increase ketone levels and help keep you in ketosis.

***NOTE: Increasing MCT oil consumption too quickly has been known to cause nausea and diarrhea. Just reduce your intake and increase your dosage slowly.***

### OMEGA-3 FATTY ACIDS

- Omega-3 fatty acid supplements, like fish oil or krill oil also contain eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), which benefit health in many ways.
- EPA and DHA have been shown to reduce inflammation, lower heart disease risk and prevent mental decline.

***NOTE: processed foods, highly refined vegetable oils and cheaper quality foods such as inexpensive eggs have been found to contain higher amounts of omega-6 fatty acids. A high intake of Omega-6 can cause oxidation and inflammation in the body which can lead to many inflammatory diseases. Omega-3 can fight inflammation and oxidation, helping to offset your intake of Omega-6.***

Choose a reputable brand that provides at least a combined 500 mg of EPA and DHA per 1,000 mg serving of Omega-3.

#### Keto-friendly foods that contain Omega-3:

1. Salmon
2. Sardines
3. Anchovies

## **VITAMIN D**

- In a Ketogenic Diet, Milk is not typically suggested, so taking Vitamin D as a supplement is a good idea.
- Vitamin D is responsible for supporting your immune system, regulating cellular growth, promoting bone health and lowering inflammation in your body.

### **Keto-friendly foods that contain Vitamin D:**

Few foods are good sources, but many alternative milk products have vitamin D added and in many cases, more than milk.

## **PREBIOTICS, PROBIOTICS AND DIGESTIVE ENZYMES**

- Refined sugars and process foods have severely damage our gut microbiome. Since the ketogenic diet is high in fat content our digestive system may not be up to the task.
- Improving the good bacteria in our gut can be fixed quickly with some good fiber rich prebiotic foods and some probiotic supplements that contains enzymes that break down fats (lipases) and proteins (proteases).
- As a bonus, these enzymes have been shown to dramatically reduce post-workout soreness.
- Fortunately, our system can get up to speed quickly and any symptoms you experience should go away in just a few days.

## **EXOGENOUS KETONES (OPTIONAL)**

- Exogenous ketones are ketones supplied through an external source and as of this video is only available to the public as a salt (Usually in pill form but sometimes sold as a pre-dissolved liquid) and not as an ester (esters are significantly more powerful and higher quality but have a very limited life). If you read any studies regarding Exogenous Ketones, those studies were conducted only with Keto Esters, not Keto Salts, so the studies are not likely to apply to the supplements you can purchase.
- If you follow the diet but do not utilize intermittent fasting or increase your activity, there may be some benefit in phase 1 to help you transition into ketosis and potentially reduce side effects if you experience any, but once you've reached phase 2 there is some evidence that suggests these Keto pills may actually hinder your progress.
- If you choose to take the Keto Pills, be sure to look for a high quality brand. They are not cheap when you consider the limited benefit.

- For you athletes though, the opposite may be true and there may be a good argument to take the pills for a limited period of time. They have been shown to boost athletic performance and speed muscle recovery during the first month of Ketosis. Also, there seems to be limited if any effect on hindering your weight loss. But again, it only seems to help in the first month of phase 2.

## **GREENS POWDER**

- Vegetables contain a wide variety of vitamins, minerals and powerful plant compounds that can fight inflammation, lower disease risk and help your body function at optimal levels.
- The keto diet tends to be flexible regarding how carnivorous or vegetarian you lean during the diet. If you regularly consume a variety of keto friendly vegetables, this may not be necessary, but if you are more carnivore, while it shouldn't be used as a replacement for fresh produce, this can greatly improve your overall nutritional intake.
- Most greens powders contain a mixture of powdered plants like spinach, spirulina, chlorella, kale, broccoli, wheatgrass and more. And it can be added to drinks, shakes and smoothies, making them pretty convenient.

## **ELECTROLYTE SUPPLEMENTS: (PROBABLY THE MOST IMPORTANT ITEMS ON THIS LIST)**

- As I stated earlier, in phase 1 which is your first week or so you will lose mostly water. That will also mean you will lose a lot of minerals and electrolytes.
- Your levels of sodium, potassium and magnesium can drop, leading to symptoms of the keto flu, such as headaches, muscle cramps and fatigue.
- Additionally, athletes may experience even greater fluid and electrolyte losses through sweating so unless you take these electrolytes your risk of Keto Flu is pretty high.
- This is a triple threat but can be easily avoided and remember, this typically only happens in the first week if at all.

### **SODIUM: (3000-5000MG OF SODIUM)**

So, simply salting foods or sipping on a broth made with bouillon cubes should cover most people's sodium needs.

### **POTASSIUM: (3000-4000MG OF POTASSIUM)**

And there are many good quality supplements on the market. Stick with a quality brand and you should do just fine.

### **MAGNESIUM: (300-500MG OF MAGNESIUM)**



Magnesium is a mineral that boosts energy, regulates blood sugar levels and supports your immune system. This can also help reduce muscle cramps, difficulty sleeping and irritability.

The most absorbable forms of magnesium include magnesium glycinate, magnesium gluconate and magnesium citrate.

***NOTE:** At least for the first month, look for high absorption and watch out for Magnesium Stearate as a supplement. Although it is commonly used to regulate absorption of other nutrients for better consistency and quality control, it does not provide as much benefit as quickly as the Magnesium supplements previously mentioned.*

**There are also a variety of Electrolyte supplements that contain all of the above if you don't want to take them separately.**

1. Dark leafy greens, nuts, avocados and seeds are all keto-friendly foods that are high in both magnesium and potassium.
2. Spinach
3. Avocado
4. Swiss chard
5. Pumpkin seeds
6. Mackerel
7. Almonds

### **PERFORMANCE SUPPLEMENTS:**

This section is primarily for athletes and highly athletic activities. There are some great Supplements to Boost Athletic Performance

Athletes looking to boost performance may benefit from taking the following keto friendly supplements: Watch your labeling though, some brands contain additional high carb ingredients in their products, in particular, Maltodextrin and Dextrose.

**CREATINE MONOHYDRATE:** Creatine monohydrate is an extensively researched dietary supplement that has been shown to promote muscle gain, improve exercise performance and increase strength.

**CAFFEINE:** An extra cup of coffee or green tea can benefit athletic performance and boost energy levels, especially in the first week of keto.

**BRANCHED-CHAIN AMINO ACIDS (BCAAS):** Branched-chain amino acid supplements have been found to reduce exercise-related muscle damage, muscle soreness and fatigue during exercise.

**HMB (BETA-HYDROXY BETA-METHYLBUTYRATE):** HMB may help protect muscles and increase muscle mass, especially in those who are just beginning an exercise program or increasing the intensity of their workouts.

**BETA-ALANINE:** Supplementing with the amino acid beta-alanine may help prevent fatigue and muscle burnout.

**NOTE:** Ingredients to avoid even when the product says it is keto friendly or low-carb

- Maltodextrine (Has a GI nearly 70% higher than Sugar [110:65])
- Dextrose (Has a GI more than 50% higher than Sugar [100:65])

## **NATURAL SWEETENERS**

Natural sweeteners have come a long way in the last few years and taste great. Because of that and the horrific effects that many artificial sweeteners have on the digestive tract, I can no longer recommend using any artificial sweeteners for making food and drinks at home and I would try to avoid them as much as possible when purchasing off the shelf items.

This is a list of sweeteners in order of my own preference but feel free to pick and choose your own preferences.

**For your reference, Sugar is about 4 calories per gram and has Glycemic Index of 65.**

**ALLULOSE: 0.4 Calories per Gram (10% of sugar but actually suppresses GI [>-1:65])**

- Allulose is by far my favorite sweetener for cooking and many of you probably haven't even heard of it before now. It's the sugar that doesn't like to be called sugar.
- Allulose is quite new to the scene and it is a low-calorie sweetener that is naturally occurring in small amounts in wheat, fruits such as raisins and dried figs, and in other sweet foods such as brown sugar and molasses. It can also be manufactured. While Allulose has a chemical structure similar to other sugars, it is not metabolized by the body in the same way as most sugars and does not contribute the same number of calories. As a matter of fact, I consider Allulose a net zero sweetener when I use it in recipes.
- It's 70% to 80% as sweet as regular sugar, tastes almost identical to sugar and yet it contains only 10% of the calories at just 0.4 calories per gram.
- It can be used at a 1:1 ratio, which is what I do, but to get that matching sweetness use 1 1/4 cups:1 Cup of sugar.
- Allulose can be used just like sugar as well. It can be dissolved, caramelized and cooked with just like sugar.

**NOTE:** Using large quantities of Allulose in recipes has caused minor digestive issues in a few people, but for most of these people these issues go away after a few uses.

*A trick to help your body adapt is to add a 50% mix of another sweetener, like Erythritol and slowly increase the amount of allulose over several uses.*

**MONK FRUIT EXTRACT: 0 Calories per gram. (0% of sugar no GI [0:65])**

- As its name implies, monk fruit extract is a natural sweetener extracted from the monk fruit, a plant native to southern China.
- It contains natural sugars and compounds called mogrosides, which are antioxidants that account for much of the sweetness of the fruit. The mogrosides may also stimulate the release of insulin, which can improve the transportation of sugar out of the bloodstream to help manage blood sugar levels.
- It has a similar sweet taste but can have a mild aftertaste, especially in foods with a mild flavor.
- Monk Fruit Extract is available in both liquid and powdered form and can be used to sweeten everything from drinks to desserts.
- Depending on the concentration of mogrosides, monk fruit extract can be anywhere between 100–250 times sweeter than regular sugar.
- Typically, for each cup (200 grams) of sugar, substitute only 1/2-3/4 teaspoon (2-3 grams) of powdered Monk Fruit Extract.

Be sure to check the ingredients label when buying Monk Fruit Extract, as many of the preferred monk fruit sweeteners are mixed with other sweeteners such as Erythritol and you should follow serving size instructions on the packaging. Many people can barely distinguish between the more popular Monkfruit/Erythritol blends and regular sugar. Avoid Monk Fruit products mixed with sugar, maltodextrine or other artificial sweeteners.

***NOTE:** The pure powdered form of is such a small amount, that it may be difficult to mix properly in many baking recipes. In this case either use the liquid form or choose another sweetener.*

**STEVIA: 0 Calories per gram. (0% of sugar no GI [0:65])**

- Stevia is a natural sweetener derived from the Stevia rebaudiana plant.
- Stevia is also available in both liquid and powdered form and can be used to sweeten everything from drinks to desserts.
- However, because it can be anywhere between 25-50 times sweeter than regular sugar, recipes require less stevia to achieve the same flavor.
- Typically, for each cup (200 grams) of sugar, substitute only 1 teaspoon (4 grams) of powdered Stevia.

- Stevia contains no calories and no carbs.
- Be sure to check the ingredients label when buying Stevia, as Stevia is sometimes mixed with other sweeteners such as Erythritol and follow serving size instructions on the packaging. Avoid Stevia products mixed with sugar, maltodextrine or other artificial sweeteners.
- Just like the monk fruit, the pure powdered form is such a small amount, that it may be difficult to mix properly in many baking recipes. Again, either use the liquid form or choose another sweetener.
- Also, be aware that many of the less expensive Stevia products can cause a bitter aftertaste. Look for Brands that use only the leaf and come from Peru. If you can avoid any Stevia products that come from China as they use caustic chemicals to break down the plant matter and often include the stem which can be extremely bitter.
- Also, for some people, they do not taste the bitterness at all and others are more sensitive to it. The reason is the makeup of Stevia can react to both the sweetness taste buds and bitter taste buds, but not for everyone.
- Stevia can be used in baking or liquids but the powder can be difficult to dissolve in cold foods and drinks.
- For me, Stevia has been a little hit and miss from refill to refill, so I've gone to the monkfruit.

**ERYTHRITOL: 0.2 Calories per gram (5% of sugar but almost no effect on GI [1:65])**

- Erythritol is a type of sugar alcohol — a class of naturally occurring compounds that stimulate the sweet taste receptors on your tongue to mimic the taste of sugar.
- It's up to 80% as sweet as regular sugar, yet it contains only 5% of the calories at just 0.2 calories per gram.
- Erythritol is used in both baking and cooking and can be substituted for sugar in a wide variety of recipes.
- It's important to note that Erythritol is an alcohol sugar so it tends to have a cooling mouthfeel. Additionally, it doesn't dissolve as well as sugar, which can leave foods with a slightly gritty texture, so when baking use Erythritol in powdered form instead of granular when possible.
- For best results, swap about 1 1/3 cups (267 grams) of Erythritol for each cup (200 grams) of sugar.
- Moreover, due to its smaller molecular weight, it typically doesn't cause the digestive issues associated with other types of sugar alcohols.



### **XYLITOL: 3.0 Calories per gram (75% of sugar but only a slight effect on GI [12:65])**

- Xylitol is another type of sugar alcohol commonly found in products like sugar-free gum, candies and mints.
- It's as sweet as sugar but contains just 3 calories per gram and 4 grams of carbs per teaspoon (4 grams).
- Xylitol can be easily added to tea, coffee, shakes or smoothies for a low-carb kick of flavor and is generally recommended for liquids.
- It also works in baked goods but may require a bit of extra liquid in the recipe, as it tends to absorb moisture and increase dryness.
- Because xylitol is as sweet as regular sugar, you can exchange it for sugar in a 1:1 ratio.
- Note that xylitol has been associated with digestive problems when used in high doses, so scale back your intake if you notice any adverse effects
- Although all of these sweeteners are great to use in foods and drinks, my favorite for cooking has become the Allulose which taste almost identical to sugar. As a matter of fact, once I've added it to a recipe, I can't tell the difference. The swerve brand brown sugar is still my favorite when a recipe calls for brown sugar though. I haven't found another brand that can match it in taste. It really works well. When making drinks though, I like to use the liquid monk fruit extract. It tastes great and it's really convenient just adding a few drops.

### **SWEETENERS TO AVOID ON A LOW-CARB KETO DIET**

While there are plenty of options for low-carb sweeteners you can enjoy on a ketogenic diet, there are many others that aren't ideal.

Here are a few sweeteners that are high in carbs, can increase blood sugar levels and interrupt ketosis:

#### **MALTODEXTRIN:**

This highly processed sweetener is produced from starchy plants like rice, corn or wheat and contains the same amount of calories and carbs as regular sugar with an even higher Glycemic Index and yet if the manufacturer says it isn't used as a sweetener it can be excluded from the list of carbohydrates.

#### **HONEY:**

High-quality raw unfiltered honey contains antioxidants and nutrients, making it a better choice than refined sugar. However, it's still high in calories and carbs and may not be suitable for a keto diet.

### **COCONUT SUGAR:**

Made from the sap of the coconut palm, coconut sugar is absorbed more slowly than regular sugar. However, it's also high in fructose, which can contribute to impaired blood sugar control.

### **MAPLE SYRUP:**

Each serving of maple syrup packs a good amount of micronutrients like manganese and zinc but is also high in sugar and carbs.

### **AGAVE NECTAR:**

Agave nectar is about 85% fructose, which can decrease your body's sensitivity to insulin and contribute to metabolic syndrome, making it difficult for your body to regulate blood sugar levels.

### **DATES:**

This dried fruit is often used to sweeten desserts naturally. Despite supplying a small amount of fiber, vitamins and minerals, dates also contain a substantial amount of carbs.

### **Cautions Regarding All Sweeteners During the Diet:**

Although, the sweeteners I've recommended may have negligible direct effects on weight and blood sugar levels, for some people they can create other problems.

Here's the potential **sweetener trap**:

For most of us, we've been eating refined sugar our entire lives.

All sweet tastes, whether real sugar or sugar substitutes, act upon the same sweet taste receptors of the tongue and may trigger similar brain neural reward pathways, so according to researchers eating even 0 carb sweeteners can maintain those sugar addictions and cravings for many people.

This is why I caution against any sweets for the first month.

If you just can't avoid sweets, then I suggest simply be reducing the sweetness of the foods for a few months until the craving subside or go away completely.