

The Future is Female

(AND FAT-FUELED):

Women & the Ketogenic Diet



The ketogenic diet has been used for decades as a therapeutic treatment for epilepsy, and has recently demonstrated success in the mitigation of other neurological disorders. **Outside of the realm of nutritional therapy, the ketogenic diet has gained attention as an effective weight-loss regimen and a bio-hacking technique—**take the blended, fatty-coffee trend, for instance. Legions of people utilize a fat-infused coffee beverage to extend periods of intermittent fasting, sharpen their mental performance, and boost fat-loss, with great results. However, others—especially women—sometimes struggle with undesirable side-effects.

Leanne Vogel, a Calgary-based Holistic Nutritionist and author of the blog *Healthful Pursuit*, fell into the latter category. She embarked upon a strict ketogenic protocol that limited carbohydrate intake to a mere 20 grams per day. After six months, Leanne could tell that something wasn't right: her appetite was reduced such that she could go days without eating. Her hair began falling out, and she was always cold. She wasn't able to sleep, she was obsessed with fasting windows and calorie-counting, and she experienced a spike in her cortisol levels, along with a drastic reduction in her thyroid function and sex-hormone levels. But instead of throwing in the towel, Leanne took an n=1 approach to restoring her health: experimenting with supplementation, seeking help from healthcare practitioners, and shifting her macronutrient ratios. Through this process, she developed a ketogenic approach tailored to her unique situation, but then found that it helped many of her female clients as well. Now, Leanne runs a successful health-coaching program called *Fat-Fueled*, co-hosts *The No Sugarcoating Podcast*, and is writing her first

cookbook, *The Keto Diet: The Complete Guide to a High-Fat Diet* (for April 2017 release).

For the uninitiated, here is a primer on ketosis: The ketogenic diet is a high-fat, low-carbohydrate, moderate-protein diet that shifts the body's primary source of fuel from glucose to ketone bodies, which are compounds derived from fatty acids. Unlike many other molecules, ketone bodies can permeate the blood-brain barrier to serve as a source of nourishment for the brain.

Typically, in a non-ketogenic state, nutrients are broken down via the oxidation of acetyl-CoA by the Krebs Cycle to produce ATP, a high-energy molecule that is used to fuel cellular metabolism. In a ketogenic state, a dearth of glucose (carbohydrates), coupled with a primary dependence on fatty acids, produces large amounts of acetyl-CoA that are catabolized in the liver to produce ketone bodies. (Note: If a protocol combines low levels of carbohydrate with low levels of fat, protein will be metabolized via a pathway called gluconeogenesis; see Keto Glossary on page 45 for more information.) Ketone bodies then diffuse into the blood to be distributed



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to many peripheral tissues, including the brain, heart, and lungs. This occurs both in instances of starvation and when ketosis is being utilized intentionally.

It’s important to recognize that ketosis occurs naturally as a survival adaptation to periods of starvation. Specifically, when we talk about the female body, we know that starvation elicits certain important physiological responses that affect fertility and hormone balance, among other factors, and that these changes often arise on a ketogenic diet protocol. Does this mean that a keto diet simply won’t work for women?

According to Leanne, this is not the case, but there are a few things to keep in mind when it comes to implementing a ketogenic protocol as a woman. The first concerns personal health status. If a woman is experiencing thyroid or adrenal dysfunction, or if she is of reproductive age with a history of imbalanced hormones, she ought to approach a ketogenic protocol with caution.

The next factor applies to women across the board: the common misstep of consuming too few calories. Whether women on a keto diet do so intentionally or as a consequence of filling up on super-satiating fats, it’s common for their daily caloric intake to dwindle. And in an effort to “keto harder,” these under-eaters may force themselves to stay on a protocol for as long as they possibly can, even after their bodies start to show signs of extreme stress. These signs can include anything from menstrual changes or irregularities, to episodes of bingeing (as the body cries out for fuel). This is a dangerous adaptation that can quickly devolve into mental and emotional turmoil, as well as causing physical harm.

A final step involves finding one’s personal threshold for carbohydrate intake. For countless women on a keto protocol, this has been the key to greater health and peace of mind.

“This topic is highly controversial, and many in the low-carb space will claim that carbohydrates are not essential for living,” Leanne said. “I believe that that’s true to an extent, depending on the woman’s body. I know that, for me and many of my clients, my body feels very, very good in ketosis, but it also needs carbohydrate on occasion.”

Leanne reports the benefits of adding more carbohydrates to her keto diet: reversing her eight-year bout with amenorrhea, regaining her fertility, and resolving all of the symptoms she experienced when she first started a keto protocol.

Now, Leanne advocates for a dietary approach focused on a few key precepts: greens at every meal, high-quality fats, mineral-rich salt, organic options whenever possible, no dairy unless it is physically tolerated, and individually tailored carbohydrate intake. She also prioritizes the consumption of a real meal at breakfast, rather than reliance on high-fat drinks that stunt appetite and encourage a downward spiral of under-eating. Instead of a punishing regimen that attempts to decrease eating windows, calories, and reliance on food, this ketogenic protocol prioritizes nourishment, first and foremost.

It isn’t just the ladies who acknowledge that ketogenic eating may require some tweaking. Jimmy Moore, of the *Living La Vida Low Carb* blog and podcast fame, and author of the international bestsellers *Keto Clarity* and *The Ketogenic Cookbook*, is an enthusiastic promoter of the ketogenic diet for both men and women. But he has caveats to offer.

“It’s no secret that women have more obstacles in their way when it comes to their weight and health,” Jimmy said. “The hormonal swings and monthly cycles can make it difficult to stay in ketosis at times, and this sometimes leads women to mistakenly believe that ketosis isn’t for them... If women take the focus off of their weight as the only measurement for success or failure on a ketogenic diet, then they’ll find that they’re getting just as much health benefit from it as the guys are.”

The unique needs of the female body can be clearly highlighted via a look at the phenomenon of Bulletproof coffee. This was a component of a keto protocol that Leanne originally supported: that is, until it stopped working for her.

The symptoms that made keto so difficult for her started to appear en masse after Leanne began drinking butter- and MCT-oil-laced coffee. The dairy caused her to break out, and each sip made her more shaky and tired, despite the hefty dose of caffeine. She knew she probably wasn’t the only one experiencing these symptoms, so she began substituting ingredients to see if the addition of a little carbohydrate plus a little protein to the fatty drink made a difference. It worked, and the Rocket-Fuel Latte was born.

“I brought up my Bulletproof coffee reactions to the thousands of members in my private keto Facebook group, and many of the women had not only experienced the same thing, but had also noticed sugar cravings, blood-sugar irregularities, and odd experiences with their leptin and ghrelin levels,” Leanne says.

With the addition of hemp hearts and collagen for a bit of protein and carbohydrate, and the substitution of cacao butter for dairy, Leanne’s blended coffee recipe dramatically improved her group’s collective experience with the drink. Considering the reasons for this, Leanne speculates that the dairy exacerbated inflammation in those who are sensitive to even high-quality butter, while the heavy caffeine and fat loads devoid of any other macronutrients only increased women’s stress responses.

“I’ve worked with countless women, especially those of reproductive age, for whom it’s critical to assure the body that fuel is coming in order to maintain hormonal balance,” Leanne said. It doesn’t take much to send a body into survival mode. A woman’s body is especially complex, but a ketogenic diet can work for females if it emphasizes adequate calories, macronutrients, and micronutrients. This, in combination with the food freedom Leanne and her clients have experienced on a high-fat protocol, lends keto the potential to be much more than just a diet plan. →



Rocket Fuel Latte

8 oz brewed coffee or tea
1 TBSP MCT oil or coconut oil
1 TBSP cacao butter
1 TBSP hemp hearts
1 TBSP grass-fed collagen
(2-4 drops alcohol-free stevia, optional)

Brew coffee or tea; add to the jug of your high-powered blender along with MCT oil, cacao butter, and hemp hearts. Blend on high for one minute. During the last 10 seconds, add collagen. Transfer to a cup and enjoy.

Recipe published with
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Photo by Leanne Vogel

Signs You May Need to ADJUST YOUR KETO APPROACH

Leanne warns women to watch out for these signs when beginning a ketogenic protocol:

- Obsession with macronutrient ratios
- Amenorrhea (absent menstrual cycle)
- Forcing intermittent fasting despite hunger pangs
- Energy fluctuations (fatigue in the morning, or post-meal)
- Hair loss
- Changes in sleep cycle/poor-quality sleep
- Feelings of being overwhelmed
- Difficulty building muscle
- Obsession with food, particularly carbohydrates or other items you “can’t” have

Signs That The Ketogenic Diet MAY BE RIGHT FOR YOU

Implementing a ketogenic protocol might be the right step for you if these factors ring true:

- You’ve tried every type of dietary protocol, but still haven’t seen the scale budge
- You’re following all of the common guidelines with regard to healthy lifestyle, but something still feels “off”
- You have a hard time concentrating, especially in the afternoon
- You struggle with hormone-related weight-loss resistance
- No matter how much you eat, you never feel full
- You can’t get a handle on your food allergies or sensitivities
- You experience bloating after meals
- You consistently experience afternoon fatigue
- You’ve tried, unsuccessfully, to eliminate sugar
- You’ve struggled with systemic candida overgrowth

Keto Glossary

CARBOHYDRATE:

A class of carbon molecules to which hydrogen and oxygen atoms are attached, and which vary in length and complexity from monosaccharides (single sugars) to polysaccharides (complex sugars). Through *glycolysis*, carbohydrate breaks down into free glucose units; the latter are metabolized in the liver via the Krebs Cycle in order to provide cells with energy. Excess carbohydrate is either stored as fatty acids (triglycerides) or as glycogen, which is the major form of stored carbohydrate in animal tissue. Glycogen is mainly found in muscle, although is also present in small amounts in the liver.

GLUCONEOGENESIS:

The synthesis of glucose from non-carbohydrate sources. The Cori Cycle transports lactate from the muscles to the liver, where it is converted into glucose and then transferred back to muscle.

GLYCOGENESIS:

The creation of glycogen from glucose; occurs regularly in non-ketogenic nutrient metabolism.

GLYCOGENOLYSIS:

The breakdown of glycogen to produce individual glucose units as a fuel source; occurs regularly in non-ketogenic nutrient metabolism.

GLYCOLYSIS:

The breakdown of glucose to produce ATP; occurs regularly in non-ketogenic nutrient metabolism.


LIPID METABOLISM:

The body’s alternative energy pathway in the absence of glycolysis. When the body is in a fasted state, blood-glucose levels decline as cells exhaust muscle and liver glycogen. Insulin levels decrease, initiating a hormonal shift toward increased lipolytic activity in adipose tissue (i.e. increased release of stored triglycerides). The enzyme intracellular lipase helps hydrolyze triglycerides, yielding free fatty-acids that circulate in plasma before being taken up by the liver and oxidized to acetyl-CoA, a key molecule in energy metabolism. In a scenario of low glycogen stores, moderate protein intake, and increased fat metabolism, acetyl-CoA is used to form ketone bodies.

KETOSIS:

A state in which the body relies primarily on ketone bodies for fuel.

KETOACIDOSIS:

A condition of diabetes characterized by elevated blood-glucose levels and presence of ketones in the blood. Ketoacidosis occurs in the absence of sufficient insulin for glucose metabolism, coupled with the increased production and decreased use of acetoacetate and β -hydroxybutyrate. If untreated, can result in coma or even death. 

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