



## [Ketone Supplements Extend Lifespan](#)

### **Very Low Carbohydrate Ketogenic Diets**

Eating a very low-carbohydrate diet results in the production of ketones, which the body uses as an alternative fuel source; hence these diets are called ketogenic.

The liver makes ketones from fatty acids when glycogen has been depleted, hence going without carbohydrates, or fasting altogether, ramps up ketone production, and it does this to spare glucose. While it's been known for a long time that ketogenic diets have therapeutic uses, such as for weight loss and in epilepsy, new research is showing the relation between ketones, longevity, and cancer.

## **Ketone supplements extend lifespan**

The ketones, often referred to as ketone bodies, are beta hydroxybutyrate (BHB), acetoacetate, and acetone.

Ketogenic diets are thought to be therapeutic for several reasons, one of the most important being a decrease in levels of the hormone insulin. Low insulin allows fat to be released from fat (adipose) tissue, hence a ketogenic diet speeds weight loss.

One of the main benefits of ketogenic diets may be the production of ketone bodies themselves. Ketones mimic many of the changes that calorie restriction causes, and [ketones have been found to extend lifespan in C. elegans.](#)

Scientists believe ketones should also extend human lifespan.

## **Calorie restriction works via ketones**

Calorie restriction as a method of extending lifespan in animals has been known for a long time, maybe 80 years or so, but the concept goes back much further. Luigi Cornaro (1464-1566) sought the advice of physicians when he was in his 30s (placing the time at about 1500) when he was so sick that he felt he was going to die. (I suspect that Cornaro was diabetic.) One of the doctors advised him to

cut back his food intake radically, which he did, eating only one meal a day and including a healthy half a bottle of wine. Cornaro returned to health, lived to over 100 years of age, and wrote about his experiences in his book, *On the Temperate Life*.

Since one of the physicians knew that cutting food meant better health, that must have been known long before Cornaro's time.

In modern times, scientists discovered that restricting rats' food by 10% or more made them live longer, contrary to expectations. Since calorie restriction (CR) is one of the very few interventions that extends lifespan, we'd like to know how it works. If we could discover that, we could intervene in other ways, for example with CR mimetics such as resveratrol.

Many theories have sought to explain CR, e.g. it results in less fat mass, less oxidative stress, less inflammation, beneficial changes in the gut microbiome, less insulin, less growth hormone and IGF-1, lower metabolic rate, less iron accumulation, and others. But what may have escaped notice is that CR reliably produces ketones in virtually every species.

The production of ketone bodies could account for the life-extension effects of calorie restriction, at least in part.

Maybe just as important, exogenous ketones could extend human lifespan. No need for calorie restriction or very low carbohydrate ketogenic diets (VLCKD), although the benefits of a VLCKD likely go far beyond just the production of ketones.

[Giving exogenous ketones to rats decreases blood glucose and insulin](#). When rats were given 30% of their calories as corn starch, palm oil, or beta hydroxybutyrate (BHB, the most quantitatively important ketone body), those that got the ketones had about half the glucose and insulin levels of the group given starch. Their food intake also dropped by about half. The experiment lasted only 6 days, so no weight loss, which probably would have happened if it had gone on longer.

MCT oil, which produces ketones in humans, results in better weight loss than an equal amount of olive oil.

Exogenous ketones may extend lifespan partially by lowering glucose and insulin. But they also increase antioxidant defense mechanisms.

As humans age, blood glucose and insulin increase, possibly as a result of decreased muscle mass and increased fat mass. Exogenous ketones (a ketone supplement) could improve these. Alzheimer's, which has lately come to be called type 3 diabetes, could possibly be

treated with exogenous ketones. (Recall the well-known N=1 study in which a doctor treated her husband's Alzheimer's with coconut oil.)

## **Ketones can treat cancer**

In mice who that had metastatic cancer, [exogenous ketones increased survival time by 70%](#). That survival time was *independent of glucose level or calorie restriction*. This effect looks like a direct targeting of the Warburg effect, i.e. it's a treatment based on [the metabolic theory of cancer](#).

Many people, even cancer patients, won't cut their carbohydrates to get into ketosis. Exogenous ketones could help.

For anti-aging purposes also, ketone supplements could work; MCT oil probably would as well. I regularly eat a very low carbohydrate diet, but even here, boosting ketones with a supplement might be advantageous.

## **Ketone supplements**

I've tried [KetoCaNa](#), a ketone supplement, and it works; killed my appetite when I took it. Currently, I occasionally use [MCT oil](#), since it's a lot cheaper than exogenous ketones. You can put a tablespoon or more in your coffee in the morning instead of breakfast, get those ketones going. BTW, these are NOT raspberry

ketones, which don't work.

For more life-extending interventions, skip the Starbucks and spend it on [Stop the Clock](#).



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