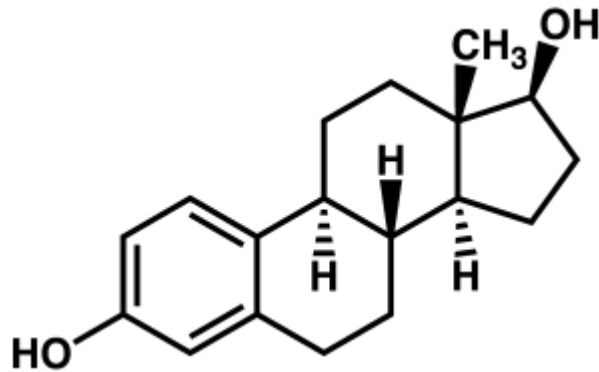


4 Reasons to Take Calcium-D-Glucarate



When it comes to supplements, you might consider a few goals:

- Counteract toxins that we create in our bodies or absorb from living
- Increase metabolic efficiency to help your body work better
- Optimize baseline levels of basic vitamins and minerals in case they're not in food
- Account for specific deficiencies or improve specific targets (cognitive, immune, etc.)

When I travel, I can take about forty pills a day including extra ones that counteract the added stress and toxins that air travel can bring. There was a time when I could peak at 187 capsules of various supplements a day during times when I was all-out Bulletproofing myself. When I'm at home, I take about 20 capsules a day, depending on what I eat and what I'm doing. This isn't necessary for people who want to be average, but if you want an unfair advantage in life, supplements can help.

Just doing the Bulletproof Diet by itself will get you 80% of the way there, and it will get you further than a plain Paleo diet too.

When selecting supplements, I look for the most effective, pure, and targeted ones I can find. One of my top supplements is calcium-d-glucarate.

I first started taking [calcium-d-glucarate](#) (CDG from here on) as a way to ensure my high protein diet didn't produce excess ammonia. As a former 300 pounder who was pre-diabetic, and born with only 1 kidney, I kind of like the one I have. But it has other health benefits. It can fight cancer, decrease LDL cholesterol, assist in protein digestion, and remove toxins and excess estrogen. Excess estrogen is a problem for everyone, but an even bigger problem for obese (or formerly obese) people.

To understand why CDG works, you have to understand a little biochemistry.

How The Body Gets Rid Of Toxins

One of the ways the body gets rid of toxins is through a process called conjugation. During conjugation, toxins are packaged into water soluble compounds called glucuronides. Glucuronides are meant to pass from the liver, to the bile, then to the gut where they are excreted. However, high levels of an enzyme called beta-glucuronide can inhibit this process. This enzyme separates toxins from their conjugate bond and allows them to be reabsorbed. This allows toxins to keep circulating in the body where they make you fat, tired, and weak.

Calcium-d-glucarate prevents beta-glucuronide from disturbing this process. It keeps the toxins bound inside a glucuronide which is then removed from the body. Toxins are most damaging in their free form, which is why you want them to be bound (conjugated) and released from the body. Calcium-d-glucarate [inhibits beta-glucuronidase](#) which allows toxins to be removed.

Hello Calcium-D-Glucarate

[Calcium-d-Glucarate](#) (CDG) is a natural substance produced by [all mammals](#), including humans. Small amounts are also found in fruits and vegetables. Early humans were able to get enough calcium-d-glucarate from their own production since they ate relatively low amounts of toxins and lived in a clean environment. As toxin exposure has increased, humans need more calcium-d-glucarate to excrete the extra toxins.

There is no *technical* deficiency of calcium-d-glucarate because it is not essential. However, humans produce small amounts, so it's easy to develop low levels. Low levels of CDG are correlated with higher levels of beta-glucuronidase. Elevated beta-glucuronidase is a risk factor for cancer, especially hormone related cancers like breast, prostate, and colon cancer. Here are four reasons calcium-d-glucarate is a seriously useful supplement.

1. Cancer Prevention

Toxins cause mutations in DNA which leads to cancer. Along with retinoids, CDG reduces breast cancer in rats by 70 percent.

Calcium-d-glucarate [removes carcinogens and other tumor promoting agents](#). In vivo, CDG,

“...increases detoxification of carcinogens and tumor promoters/progressors by inhibiting beta-glucuronidase and preventing hydrolysis of their glucuronides”

Calcium-d-glucarate increased toxin release and flushed out compounds that promote cancer. In rats with colon cancer, calcium-d-glucarate caused a sixty percent drop in tumor incidence. CDG also reduced the number of times cancer cells multiplied.

One of the reasons smokers develop lung cancer is believed to be low levels of D-glucaric acid. Smokers have 29 percent less d-glucaric acid than healthy people. Another study in rats showed that calcium-d-glucarate decreased skin cancer formation by 30 percent.

Calcium-d-glucarate is not guaranteed to prevent cancer, but everything helps.

2. Liver Detox

When calcium-d-glucarate is taken orally, it's metabolized into glucaric acid. This is the active form of calcium-d-glucarate and the one produced naturally by the body. Glucaric acid is not available as a supplement by itself which is why you have to buy calcium-d-glucarate. Another benefit of CDG over

glucaric acid is a longer detox period. CDG detoxes the liver for five hours instead of one.

Glucaric acid binds to toxins in the stomach which are then removed in the urine. Glucaric acid is also circulated around the body where it performs the same function – scavenging and releasing toxins. Removing toxins from the liver will increase liver function and promote a healthy metabolism. It will also allow your liver to flush out other toxins that would otherwise cause problems.

Bonus Feature: Dealing With High Protein Problems

Humans are meant to eat large amounts of protein and fat. Our livers and kidney efficiently process proteins and are able to remove harmful byproducts like ammonia. However, humans can only handle so many toxins. The human body is involved fending off xenoestrogens, air pollutants, chronic infections, and mycotoxins. This leaves very little room for dealing with the metabolites of protein. Our modern world is so polluted, that humans don't always have the necessary means to fend off natural byproducts of a healthy metabolism. If you're consuming a high protein diet (25-35 percent), you should consider supplementing with calcium-d-glucarate.

3. Removing Excess Estrogen

High levels of beta-glucuronide increase the number of estrogen receptors. This means estrogen that would have been excreted is now able to bind to more receptors. This can cause increased tissue growth, cancer, and even man boobs.

Estrogen dominance is one of the leading causes of infertility, cancer, and other health problems in women. One of the most common treatments for high estrogen levels is a drug called tamoxifen. Tamoxifen has [numerous side effects](#) including stroke, blood clots, uterine cancer, and cataracts.

New [research](#) is showing that CDG could be just as effective as Tamoxifen in treating estrogen dominance. CDG allows excess estrogen to be passed out of the body. A review in 2003 said calcium-d-glucarate could be as effective in preventing cancer as Tamoxifen.

In one study, calcium-d-glucarate was able to reduce the number of estrogen receptors by 48 percent. It's also been shown to lower serum estrogen levels by 23 percent.

High estrogen is also a problem for men. Whether you are a man or woman, calcium-d-glucarate will help maintain proper hormone balance.

4. Decrease LDL Cholesterol

Despite the numerous health effects of a paleo diet, one of the mysterious negative effects seems to be elevated LDL cholesterol. Paul Jaminet wrote an excellent [post](#) on this topic where numerous people said they experienced high LDL levels.

Not only is total cholesterol increased, but it's LDL cholesterol. This isn't necessarily a bad thing as long as it's type-A LDL (large, puffy, non-atherogenic). However, since being Bulletproof means doing everything possible to ensure optimal health, this is something that needs to be dealt with. High LDL isn't necessarily the problem. It's a sign of tissue damage or toxins which is the problem.

When cells are stressed or damaged, they need cholesterol for repair. As Dr. Jaminet also [pointed out](#), high LDL levels are needed to repair damaged tissue. The body sends LDL molecules to supply various parts of the body with cholesterol and fats. Limited blood flow is one form of stress. Calcium-d-glucarate is metabolized into glucaric salts. Glucaric salts reduces beta-glucuronidase production by gut bacteria. Reducing beta-glucuronidase enhances enterohepatic (liver) circulation which reduces cholesterol synthesis. This causes lower cholesterol levels.

In rats, CDG lowers total cholesterol by 12-15 percent, and LDL cholesterol by 30-35 percent. In humans, CDG lowers cholesterol by 12 percent, and LDL cholesterol by 28 percent. It can also lower triglycerides up to 43 percent. CDG is not arbitrarily playing with cholesterol numbers like statins. It decreases stress on the liver which lowers your need for cholesterol, especially LDL cholesterol.

Dosage & Side Effects

A normal detox dose is 500-1000mg. People with cancer or high estrogen may benefit from taking as much as 3000-4500mg a day. It doesn't really matter when you take it.

CDG can interact with alcohol and some drugs that act on the liver like statins. WebMD has the full list of possible interactions listed [here](#).

By taking this one supplement, you can decrease your risk of cancer, remove toxins, ensure healthy liver function, and lower your LDL and total cholesterol. [Calcium-d-glucarate](#) is one of the safest, most effective biohacks available.