

CoQ10

Supporting *Real* Energy Without the Crash

by Life Extension®

LifeExtension®
Stay Healthy, Live Better



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#1

**Stimulants are
Not Real Energy**

Stimulants are not real energy!

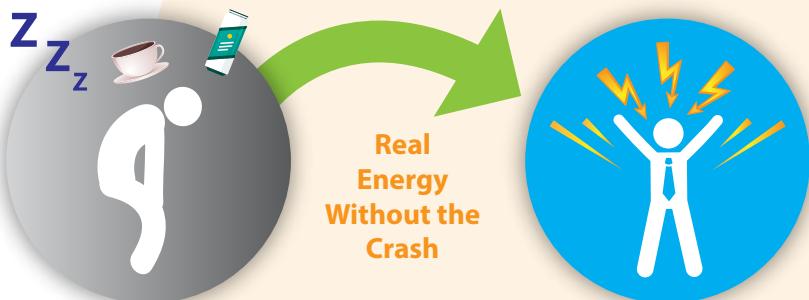


Unlike the instant energy you get from stimulants, you might not get a jolt of energy when first starting a nutritional regimen that boosts ATP. But over time, as your levels of ATP rise, you'll feel better and may need fewer stimulants.

There are so many reasons for our lack of energy throughout the day. Stress and not sleeping well are probably at the top of the list. But living go-go-go lifestyles, coupled with never ending newsfeeds and information overload, definitely doesn't help.

But, regardless of the cause, consuming caffeine-rich energy drinks is not the solution to our energy crisis. And let's be real, even the healthiest energy drinks only work for a couple of hours at best. Afterwards, the dreaded crash hits and we're reaching for another "shot."

What we need is real, lasting energy without the crash.



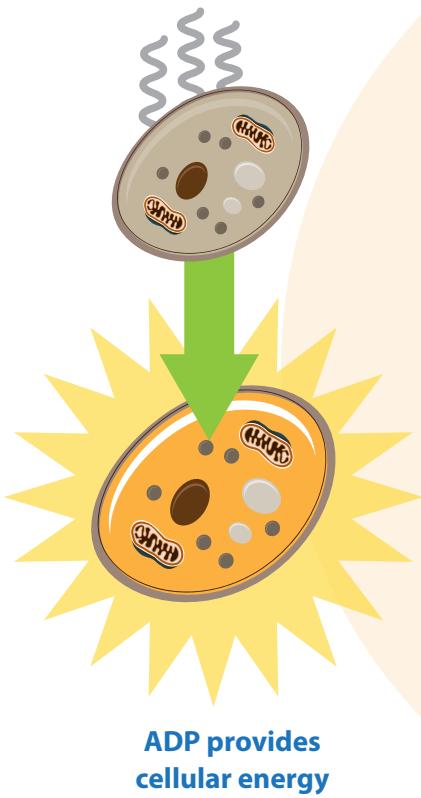
And what is real energy? Well, it doesn't come from stimulants like caffeine.

Real energy is found in a compound called adenosine triphosphate—better known as ATP.



#2

What is Real Energy?



ADP provides cellular energy

What is Real Energy?

One of the main ways to feel energized throughout your day, without crashing, is to produce more of the energy compound adenosine triphosphate (ATP).

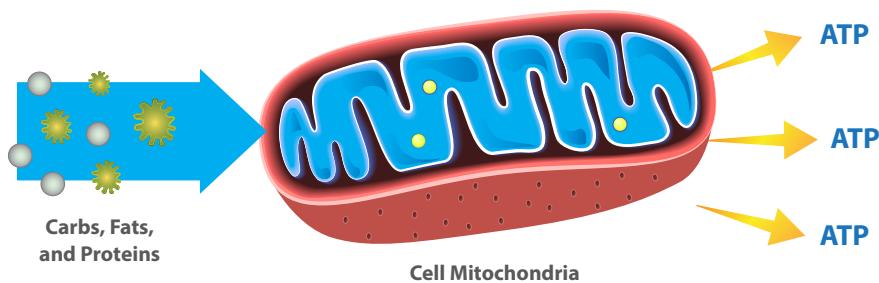
When metabolized, ATP releases energy for cellular functions. It's not magic, but simple chemistry. The part of the compound referred to as "triphosphate" is made up of three, high energy phosphate bonds. This creates a lot of potential energy.

The potential energy trapped within the compound is released and converted into real energy when one of the phosphate bonds is chemically broken. This burst of real energy is utilized by the cell to fuel basic cellular functions.

When ATP provides energy, cells—like brain cells and muscle cells—can function at a high capacity, doing the jobs they were meant to do. You know, important things, like creating thoughts, developing memories, increasing mental alertness, and contracting muscles.

The net result to you is real energy that brings about mental sharpness, muscle strength, and improved well-being. Yes, more ATP is a good thing! As a matter of fact, it's the real, lasting energy your body craves, and it comes without the crash that's so common with stimulants.

ATP is produced in mitochondria, the cell's powerhouses. Food sources are broken down during digestion into their building blocks (like glucose from carbohydrates). These building blocks are then delivered into the mitochondria, and following several chemical reactions, ATP is produced. Don't forget: Real energy comes from ATP. The more of it we have, the better off we'll be.



So, do you want to feel more energized without the crash? Then you need more ATP.

The Good Green Juice: A natural pick-me-up!

Instead of coffee in the morning, green juice can suffice as a healthy alternative. According to Judita Wignall, author of *Going Raw*, green juice contains lots of leafy goodness with chlorophyll that some people believe can oxygenate your blood, making your brain sharper and increasing energy.

Use a juicer to press some cucumber, celery, kale, spinach, parsley and lemon. For a zesty finish, add a little ginger. Pour into a tall glass with some ice and garnish with a slice of cucumber. After drinking this concoction, you'll find yourself more alert and ready to take on the day.





#3

**Energy Support
Without the Crash**

Energy Support Without the Crash

Imagine one morning, waking up without really needing two large cups of coffee. Now, there's nothing wrong with coffee—if you like it, drink it! But imagine a morning when you really don't need it.

Yes, let's imagine your body supplied with a steady state of energy. A state of optimal energy production—morning, noon, and night—that just might result in needing fewer stimulants to wake up, stay up, and remain productive throughout the day.

Your body doesn't need caffeine. But it does need real energy, or ATP. And the first step to improving ATP production is supplementing with CoQ10. Not only does CoQ10 help supply your body with a steady state of real energy, but it also won't let you crash if you're avoiding the stimulants.

As a matter of fact, CoQ10 does the opposite of crashing. It helps your cells maintain a constant supply of ATP. With lots of energy to use, all the cells of your body will function at optimal levels. Your brain, heart, gut—all will work more efficiently and effectively.

Go ahead and drink coffee because you like it, not because you need it!

This is what CoQ10 can do for you.

So what does CoQ10 actually do inside your cells? It acts as an electron shuttle.

Do you remember electrons from high school biology? They are negatively charged and perfect for helping your cells make ATP. But electrons are a little unruly. They need to be corralled, or shuttled, into place.

This is what CoQ10 does: It manages what is called the *electron transport chain*, helping to transfer electrons into ATP for use in cellular functions.⁵ With plenty of CoQ10 on board and the electrons properly corralled, the mitochondria can enhance real energy production.

We suggest starting with 50 mg a day of CoQ10. Stay at this dose for one month. Then increase your dose to 100 mg a day. Some of you might require higher doses based on certain conditions. So we've developed a table of specific conditions and the suggested dose.



As humans grow older, their natural internal synthesis of CoQ10 diminishes greatly. The following list reveals the tissue-specific decrease in CoQ10 that occurs normally with aging:²⁻⁴

Tissue Affected	Percent Decrease of CoQ10
Heart	57%
Heart Muscle Wall	72%
Pancreas (digestion)	69%
Kidney (filter)	35%
Liver (detox)	17%
Adrenal Glands (hormones)	47%
Skin	75%

Specific Condition	Suggested CoQ10 Dose (mg/day)
Heart disease	200-400
Peripheral neuropathies	200-400
Brain conditions	400-600
Cancers	400-600

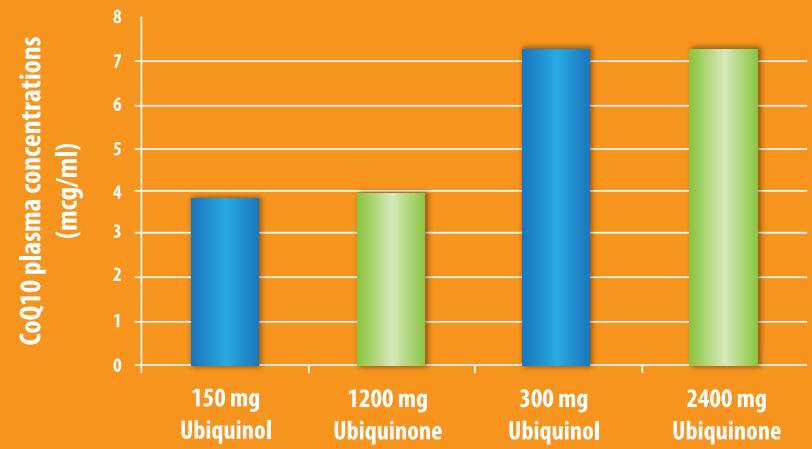
The Difference between CoQ10 Forms

All CoQ10 supplements are not created equal. There are two forms: ubiquinol and ubiquinone. Both ubiquinol and ubiquinone are true forms of CoQ10. However, ubiquinone is the oxidized form, which is converted into the reduced form called ubiquinol in the body.

Ubiquinone is fat-soluble and not very absorbable on its own, so to aid in absorption, many companies add an orange peel extract called *d*-limonene to serve as an emulsifier.

On the other hand, ubiquinol is water-soluble and, therefore, is much more easily absorbed into the bloodstream. Ubiquinol is more absorbable than ubiquinone and has shown to be more effective for managing health issues such as heart failure and fibromyalgia.⁶⁻⁸

Absorption Comparison Using Different Forms of CoQ10



Regul Toxicol Pharmacol. 2006 Aug 17.

Arch Neurol. 2002 Oct;59(10):1541-50.

Exp Neurol. 2004 Aug;188(2):491-4.

As this graph shows, it takes a lot higher dose of ubiquinone to achieve the same level of absorption as lower doses of ubiquinol.



#4

Proven Health Benefits of CoQ10

Proven Health Benefits of CoQ10



CoQ10 isn't just about feeling energized. It turns out that the more ATP your cells make, the better they function. And this has whole-body benefits.

Preventing Heart Failure Deaths



Heart failure is a leading cause of death in the United States. It's caused when the heart does not pump blood effectively to meet the body's oxygen demands. Symptoms may include cough, swelling, weakness, and difficulty breathing.

CoQ10 can help people with congestive heart failure, improving the heart's pumping ability and even reducing the need for medications.

A study out of Denmark showed CoQ10 drastically lowered deaths related to heart failure. Scientists recruited 420 heart failure patients with late stages of heart failure and monitored their condition for two years.

These patients were assigned to take 100 mg of CoQ10 three times daily or a placebo. They were tracked for major heart-related emergencies.

According to the results, CoQ10 reduced major cardiovascular events by 50%. And half as many patients died in the CoQ10 group compared to the placebo group. Hospitalizations also decreased significantly.⁹

Why is CoQ10 so beneficial to people suffering from heart failure? CoQ10 increases cellular energy production. With more energy to burn, heart muscle cells can pump longer and stronger.

Hope for Kidney Patients

Approximately 13% of Americans have chronic kidney disease.¹⁰ This is a condition in which your kidneys are damaged and don't filter waste properly.

Chronic kidney disease can progress to complete failure, a condition that can only be treated by dialysis or kidney transplantation. However, if chronic kidney disease is treated in time, kidney function can be preserved.

Fortunately, nutrients like CoQ10 preserve kidney function by not only optimizing cellular energy, but also by increasing the production of protective antioxidants—an important factor for waste-managing organs like kidneys.

CoQ10 increases levels of glutathione and catalase, which are both powerful kidney-protective antioxidants. In addition, it quenches production of superoxide, a damaging free radical.¹¹

Doctors monitor kidney function by examining markers such as creatinine and BUN from the blood and albumin and protein levels from the urine. The kidneys filter these compounds, and elevations may signal kidney damage or disease.

At the University of Tokyo, rats given CoQ10 showed decreases in urine albumin levels after being subjected to a kidney-damaging procedure.¹²

CoQ10 was found to be helpful in preserving kidney function. The researchers concluded, "Ubiquinol [CoQ10] may be a candidate for the treatment of patients with kidney disease."

CoQ10 Fights Migraines

Migraine headaches occur in an estimated 8.7 million women and 2.6 million men in the United States, producing moderate to severe disability. More than 3 million women and 1 million men are estimated to suffer one or more attacks per month.^{13,14}

The exact chain of events leading up to a migraine is unclear, but it may be related to brain energy levels, as indicated by low CoQ10 levels in people with migraines.¹⁵

Studies of CoQ10 supplementation in children, adolescents, and adults show substantial decreases in the frequency of migraine episodes, number of days with migraine symptoms, headache disability, and frequency of nausea, a common feature of migraines.¹⁵⁻¹⁷

CoQ10 is so effective in managing migraine headaches that it is now listed among the 11 most effective "drugs" for preventing migraines by the Canadian Headache Society.¹⁸

Some Animals Live Longer with CoQ10

Of course, eating healthy and exercising are top priorities for any anti-aging program, but we think there's more to the story than that.

Nature has given us additional "tools" in the form of antioxidants to help fight and even reverse aging. As such, it's no surprise that exploring them in depth has been a major focal point of ours for decades.

And one of the antioxidants we keep coming back to is CoQ10!

CoQ10 supplementation has been shown to extend the lives of different species. In one study, mice given CoQ10 lived 11.7% years longer, which is approximately 9 human extra years based on today's life expectancy (78.5 years).¹⁹





#5

**Super Charging
CoQ10**

Super Charging CoQ10

Now that we understand the importance of CoQ10 to producing real energy, let's talk about how we can super charge it. This is where shilajit comes into play!

Preserved in the rocks of the Himalayas, shilajit is a rich organic material that forms in the part of the earth called the rhizosphere—the thin layer where living roots and microorganisms interact with the rocky core of the planet itself.

In traditional medicine, shilajit is prized for its ability to restore energy, increase fertility, enhance immunity, and safeguard memory against the effects of aging.²⁰⁻²²

So how does it work?

It's simple. Shilajit restores and sustains cellular energy by enhancing the production of ATP. As you've already learned, ATP production becomes sluggish with age, resulting in a body-wide energy deficiency.

When combined with ubiquinol CoQ10, shilajit has been clinically shown to double levels of CoQ10 in the mitochondria.²³



Shilajit is a rich organic material that forms in the rhizosphere—the thin layer where living roots and microorganisms interact with the rocky core of the planet.



The effect of more CoQ10 inside the mitochondria is quite remarkable. For instance, in a mouse study, the combination of CoQ10 and shilajit produced a 56% increase in cellular energy production in the brain and a 144% increase in the muscles.²⁴

So super charging CoQ10 is really just about getting more of it into the cell's powerhouses—the mitochondria. And this is best accomplished with rich organic material—shilajit!

Putting it All Together



01

Coffee and energy drinks don't provide real energy.

They mimic energy by stimulating your cells—but it doesn't last, and soon you crash. And ironically, they deplete your levels of real energy over time.

02

We instead need a consistent supply of real energy.

ATP (adenosine triphosphate) is real energy, a natural compound made in the cell's powerhouse, the mitochondria. If we enhance our production of ATP, everything our cells and bodies need to do is better.



04

How do we enhance ATP production? Exercise and CoQ10 supplements.

Our cells need a constant supply of CoQ10 (Coenzyme Q10) to produce a constant supply of ATP. CoQ10 manages the conversion of sugar into chemical energy, ATP—so a daily CoQ10 supplement can create a constantly high level of ATP.

03

There are whole-body benefits of a high ATP level.

All cells can optimally function when there's a constant supply of ATP. In turn, energize while at work, play, and even at rest.



Super Charging CoQ10

The more CoQ10 working in the mitochondria, the higher your level of ATP and the better the result. Stand-alone CoQ10 supplements don't deliver a lot of CoQ10 into the mitochondria. Life Extension is unique: We added **Shilajit** to our CoQ10 supplement which delivers **double the amount of CoQ10** into the mitochondria. What is shilajit? It's a soil compound found where the roots of plants meet the deeper, rocky soil. It is considered a vitality compound.



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