

## CoQ10 Targets the Cause of Migraine Headaches

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Migraines usually produce severe pain that can be difficult to prevent and treat with standard medications.

Migraine medications don't always work, don't work in all patients, and can have side effects.

In a **2018** published study, **coenzyme Q10 (CoQ10)** was shown to significantly *reduce* the frequency, severity, and duration of migraine headaches.<sup>1</sup>

This study showed that CoQ10 works by lowering levels of a **peptide** in the brain that is associated with pain and inflammation.<sup>1</sup> It is called *calcitonin gene-related peptide (CGRP)*.

Pharmaceutical companies are in the process of developing drugs that work by blocking this peptide. **CoQ10** functions to block CGRP, and is available right now.

### Migraine Prevention

Intrigued by reports that **migraine headaches** and **inflammation** are correlated,<sup>2,3</sup> and by studies showing that CoQ10 has certain **anti-inflammatory** properties,<sup>4,5</sup> researchers began to dig deeper to see if CoQ10 was a possible treatment option for migraines.

About one-third of migraine subjects have a deficiency in CoQ10. And restoring CoQ10 levels to the **normal range** reduces headache frequency and disability.<sup>6</sup>

Human studies have shown that CoQ10 (at doses of **150-300 mg** daily) can help migraine sufferers by:<sup>7-9</sup>

- Preventing migraine occurrence.
- Reducing **number of days** with migraine headache by more than **50%**.
- Reducing monthly **frequency** of headaches by more than **50%**.
- Being effective without any side effects.

The evidence favoring CoQ10's effectiveness and safety is so compelling that, as of 2015, the **Canadian Headache Society** included CoQ10 in its list of compounds receiving a strong recommendation for **migraine prevention**.<sup>10</sup>

More recently, a study released in **2018** confirmed CoQ10's role as a treatment for migraine headaches, and it also revealed important information about *how* it produces such impressive results.

## CoQ10 Heals Migraine Pain

For this recent study, premenopausal women with migraines received either **CoQ10 (400 mg daily)** or a placebo.<sup>1</sup>

After three months, the women taking CoQ10 had significantly **fewer** migraine attacks than those receiving the placebo, an indication that CoQ10 can prevent migraines from occurring.

When a migraine did occur, it was **shorter in duration** and **less severe**.<sup>1</sup>

Getting good, clinical pain relief for a migraine is an important advance, considering how challenging the condition is to treat.

This study confirmed previous research about CoQ10's benefits for migraine relief. It also revealed two important mechanisms whose actions are responsible for these benefits.

The ubiquinone form of CoQ10 was used in this study. An enhanced form called **ubiquinol** enables far **higher** CoQ10 blood levels, thus enabling a lower dose of ubiquinol. Absorption can be further boosted by taking either form of CoQ10 with a meal that contains fat.

### A New Target for Pain Control

At the end of the study showing that CoQ10 has pain-reducing benefits, it was found that the CoQ10-supplemented subjects had lower blood levels of two underlying compounds related to migraines.

One was **TNF-alpha**, a well-known marker of **inflammation**.<sup>1</sup>

This indicates that one way CoQ10 combats migraines is by reducing inflammation. This makes sense, considering that studies have shown a connection between migraines and inflammation.<sup>2,3</sup>

The second compound lowered by CoQ10 is **calcitonin gene-related peptide** (CGRP). CGRP is produced in nerve cells, and is now recognized as a key **mediator** of pain signals.<sup>1,11,12</sup>

**CGRP** appears to be intimately connected to migraine headaches and CoQ10 lowers it, along with **TNF-alpha**.

A previous study showed that people who suffer from *occasional* migraines have elevated levels of CGRP in the blood and those with *chronic* migraines have still higher **CGRP** levels.<sup>12</sup>

## How CGRP Works in the Brain

Pain is the most common reason people seek medical care, yet there's still a lot we don't understand about it.<sup>13</sup>

Migraine pain in particular is a difficult area in medicine. Available migraine treatments are imperfect: They don't work in all patients, they don't effectively prevent or treat all migraines, and many have undesirable side effects.

At present, it seems that migraines involve at least two factors:

- **Over-sensitization** of the brain to otherwise normal stimuli, and
- An **inflammatory response** generated within and around the brain itself.<sup>12</sup>

**CGRP** is released when the sensory nerve endings in the nerves and blood vessels that serve the face are stimulated. Once released, CGRP causes the blood vessels to dilate, including those in the highly pain-sensitive outer membrane covering the brain.<sup>11,12,14</sup>

Like other signaling molecules, CGRP binds to specific receptors in target tissues like blood vessels, which sets off the pain perception cascade.<sup>15</sup>

CGRP is so powerful that, injected intravenously, it provokes migraine attacks in **65%** of people with known migraines.<sup>16</sup>

## Fast Relief for Migraine Pain

The exciting news for migraine sufferers is that it's possible to prevent or treat migraine headaches by **reducing** or **inhibiting** CGRP release or binding to its receptors.

A **2017** meta-analysis pooled data from 13 studies that included more than 6,800 patients. This large review found that strategies that involved blocking, inhibiting, or reducing the production of CGRP were superior to a placebo in three key ways:

- Relieving migraine pain within 2 hours (bringing **fast** relief).
- Keeping the pain away for up to 24 hours (bringing **lasting** relief).
- Blocking the heightened sensitivity to light and sound that is such a prominent feature of migraines.<sup>17</sup>

These data prompted pharmaceutical companies to develop **CGRP-suppressing** drugs. CoQ10, which works by a similar mechanism, has been available to Americans since 1983.

## The Future of Migraine Treatment

Migraine drugs that work by inhibiting **CGRP** are being actively investigated.

These drugs use *monoclonal antibodies* to **bind** to **CGRP** or its receptor and prevent their connection. Doing so breaks the CGRP-induced pain cycle.<sup>18</sup>

Four drug companies are close to releasing their own versions of anti-CGRP drugs.<sup>18</sup> These drugs appear to be effective, but they come with some major downsides.

They are costly, must be injected, and can cause unwanted side effects like dry mouth, constipation, nausea, memory loss, numbness, and weight gain.<sup>18,19</sup> Plus, it will be years before they are widely available.

Fortunately, there's no need to await costly and uncertain CGRP-lowering prescription drugs.

CoQ10 safely lowers blood levels of CGRP, and it is available right now.

### Summary

CoQ10 can help prevent migraine headaches by breaking the cycle of inflammation and neural over-sensitization that contributes to their development.

CoQ10 blocks pain transmission by reducing levels of the pain-mediating compound **CGRP**.

A **2018** study showed that CoQ10 reduces headache pain, frequency, and duration.

Migraine sufferers now have another safe, scientific, and affordable option for preventing and treating their pain.

CoQ10's ability to **lower CGRP** levels is an important discovery for migraine sufferers because it reveals a potent new way to prevent and treat the condition.

Doses of **150-400 mg** daily of CoQ10 have been shown to effectively lower CGRP and prevent migraines.

If people choose the more readily absorbable **ubiquinol** form of CoQ10, they can probably reduce this daily dose by half, especially if they take it with a meal that contains some fat.

If you have any questions on the scientific content of this article, please call a Life Extension® Wellness Specialist at 1-866-864-3027.

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