

## Dietary Supplements for Migraine Prevention



A majority of patients with migraine have tried using minerals, herbs, and vitamins to treat their headaches. Patients have different reasons for using supplements, including the idea that they are “more natural” or do not require a prescription. Because these complementary and alternative treatments can affect pain pathways and other body functions similar to prescription medications, it is important to be aware of the nature of these supplements, including potential side effects and the quality of evidence supporting their use for migraine prevention.

### **Riboflavin (vitamin B2)**

Riboflavin (vitamin B2) was studied as a migraine preventive in a few small trials and found to be potentially helpful in preventing migraine in adults. However, two pediatric studies with riboflavin did not show any benefit in children. Even though the evidence from clinical trials to use riboflavin isn’t strong, both the American Academy of Neurology (AAN) and the Canadian Headache Society recommend its use in adults with migraine, because it is well tolerated and side effects are very limited and mild. Some people can experience diarrhea or frequent urination, and it’s common to see bright yellow urine. The recommended dose in adults is 400 mg of riboflavin per day, and it can take at least 2-3 months to see benefit.

### **Coenzyme Q10 (CoQ10)**

Coenzyme Q10 (CoQ10) is an antioxidant important for many basic cell functions and has been studied in migraine prevention. Based on the available studies, the AAN considers CoQ10 to be possibly helpful in migraine prevention (level C evidence). Even more, the guidelines by the Canadian Headache Society strongly recommend its use despite the low-quality evidence because it is well tolerated. Side effects of CoQ10 are rare, and can include loss of appetite, upset stomach, nausea, and diarrhea. Adults typically use 100 mg 3 times a day, and while the best dose in children is not clear, 1-3 mg/kg is frequently suggested. Similar to riboflavin, it can take 3 months to see benefit.

### **Magnesium**

Magnesium is a mineral that is important for a number of body functions and binds to specific receptors in the brain involved in migraine. Low brain magnesium has been associated with migraine aura. Studies suggest magnesium supplementation can be helpful for migraine with aura and menstrually-related migraine. Both the AAN and Canadian guidelines recommend its use for migraine prevention, either as oral magnesium citrate 400-600 mg daily or by eating more magnesium rich foods.

## **Petasites (Butterbur)**

*Petasites*, an herb from the butterbur shrub, has been shown to be helpful in reducing migraine frequency in 3 randomized, placebo-controlled studies. In these studies, the optimal dose was 150 mg per day and it took 3 months to see headache improvement. For that reason it has been deemed effective in preventing migraine by the AAN. However, because of a rare but serious risk of liver toxicity, *Petasites* has been removed from the market in many European countries and many headache experts in the United States have also stopped recommending its use.

## **Feverfew**

Feverfew is an herb sometimes used in migraine prevention. There have only been a limited number of studies, however, and they have given conflicting results. The AAN guidelines give feverfew a second-line, level B recommendation for migraine prevention, supporting the idea that it is probably helpful. Side effects can include abdominal pain, nausea, vomiting, and diarrhea. Chewing raw feverfew can cause mouth sores, loss of taste, and swelling of the lips, tongue, and mouth. Feverfew can also increase the risk of bleeding, especially in individuals already on blood-thinning medications or aspirin. Feverfew should not be used during pregnancy.

In conclusion, there are many different herbs, vitamins, and minerals that can be helpful in preventing migraine. Regardless of which one is tried, patients must be upfront with their physicians about using such supplements and keep in mind that it can take 2-3 months of consistent use to see benefit. In addition, women who are pregnant or considering pregnancy should discuss with their physician prior to using any supplements for migraine.

## **Reference:**

Tepper SJ. Neutraceutical and other modalities for the treatment of headache. *Continuum* 2015;21(4):1018-1031.