

Dietary Supplements and Nutraceuticals for Children with Migraines

Many supplements are marketed to help reduce or help control chronic migraines. Only a few research studies have shown that the use of some supplements are safe and effective for children. A summarized list of supplements and suggested dosing recommended by American Headache Society is reviewed below.

Magnesium

Magnesium is an important ion that, at low levels, has been linked to migraine. Some researchers think that individuals with frequent migraines, particularly those who have migraine with aura, have low levels of magnesium in brain tissue. Magnesium is considered to have natural anti-inflammatory effects. It is difficult to eat enough dark green vegetables, nuts and seeds every day to adequately raise magnesium levels.

Magnesium comes in several different forms including magnesium hydroxide, magnesium citrate and chelated magnesium. Chelated magnesium is a soluble form of magnesium and is better absorbed in the gut; thus, this type of magnesium may cause less side effects (diarrhea or abdominal cramping).

Since magnesium may reduce migraine severity and frequency in children, the dose suggested is 9mg/kg/day of a soluble form of magnesium for at least three months.

Available in pill form of 200mg or 250mg
Maximum dose: 500mg per day

Riboflavin (vitamin B2)

Riboflavin is the most frequently studied supplement in children and adolescents with migraine. However, riboflavin is quickly eliminated (half-life is about 2 hours) and may need to be taken **2 or 3 times a day** for best effect. Also, riboflavin should be taken with food.

Dosing for children: 100mg twice per day (200mg per day) for <40kg
200mg twice per day (400mg per day) for >40kg

Coenzyme Q10

CoQ10 is an antioxidant made in our bodies that plays a role with energy metabolism. Studies have shown that at moderate doses, CoQ10 is well tolerated, safe and effective to decrease headache frequency and decrease disability.

Dosing for children: 50mg twice per day if <40kg, and 100mg twice per day if >40kg
(Typically available in pill form of 50-400mg)

Vitamin D

There are no controlled studies to show benefit for patients with migraine. However, there are several studies that show benefits of vitamin D for pain conditions.

Dosing for children: 600 Units/day (recommended daily allowance) up to 1000 Units/day



Melatonin

Melatonin is produced naturally by the pineal gland in the brain, and plays a role in initiating and sustaining sleep. Melatonin has shown benefit in a number of headache disorders when taken nightly. Headache benefit from melatonin is thought to occur due to improved sleep, anti-inflammatory and anti-pain properties, as well as positive effects on other parts of the brain involved in headache disorders.

Dosing for children: 3mg 20 minutes before bedtime. Can increase to 6mg or 9mg if needed to help with sleep. Brands which have been studied in children include Natrol and Rugby, however other brands are readily available and effective.

Herbal treatments to use with caution:

Butterbur root extract (*Petasites hybridus*) contains a substance that when purified, is used to treat migraines, asthma and allergies. Generic forms have been found to contain chemicals that damage the liver and carcinogens, even with the Petadolex brand, and thus butterbur is no longer recommended for use in migraine prevention.

Feverfew has not been studied in children as treatment for migraines and long-term safety is unknown.