



Magnesium



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Magnesium
Patient Guide

Accurate Education

Nutraceuticals: Magnesium

What Is Magnesium and Why Does It Matter?

Magnesium is a mineral that helps your body produce energy, build proteins and control muscles. It also plays an important role in processing pain. Nearly half of Americans don't get enough magnesium from their diet, which can affect their health—especially if they have chronic pain. For people with chronic pain, having adequate magnesium levels may help reduce or prevent pain hypersensitivity.

<i>Conditions More Likely to Have Low Magnesium Levels</i>	<i>Medications That Can Lower Magnesium Levels</i>
Diabetes	Proton pump inhibitors (Prilosec, Nexium)
Fibromyalgia	Diuretics (water pills)
Migraine headaches	Some antibiotics: fluoroquinolones (Cipro) & others
Inflammatory Bowel Disease (IBD)	Steroids like prednisone
Osteoporosis	

Symptoms of Low Magnesium: muscle cramps, weakness, fatigue, sleep disturbance

How Magnesium May Help Your Pain

Magnesium is available in different formulations that vary in their characteristics. They may help with pain in two ways, pain associated with a **pain condition** and the pain associated with **pain processing**:

PAIN CONDITIONS

General Chronic Pain

- **Formulation:** Magnesium Citrate
- **Dose:** 1,800 - 2,400mg/day Magnesium Citrate (300-400 mg/day elemental)
A 500 mg Magnesium Citrate capsule contains 80-85 mg elemental
—> Take 4-5 capsules daily; can be divided into 2-3 daily doses
- **Duration:** 8-12 weeks minimum; continue long-term if beneficial

Neuropathic pain (diabetic neuropathy, sciatica)

- **Formulation:** Magnesium L-Threonate
- **Dose:** 2,000 mg/day Magnesium L-Threonate (140-190 mg/day elemental)
A 2,000 mg Magnesium L-Threonate dose has 144 mg elemental magnesium
- **Duration:** 8-12 weeks minimum; continue long-term if beneficial

Muscle Pain/Spasm:

- **Formulation:** Magnesium Citrate
- **Dose:** 1800 - 3,000 mg/day Magnesium Citrate (300-500 mg/day elemental)
A 500 mg Magnesium Citrate capsule contains 80-85 mg elemental magnesium
—> Take 4-6 500 mg capsules daily; Can be taken once daily or divided into 2-3 doses.
- **Timing:** Evening doses may help with nighttime muscle cramps. Muscle relaxation effects may start within hours to days

Migraine Prevention

- **Formulation:** Magnesium Citrate
- **Dose:** 2,400-3,750 mg/day Magnesium Citrate (400-600 mg/day elemental)
A 500 mg Magnesium Citrate capsule contains 80-85 mg elemental magnesium
—> Take 5-7 500 mg capsules daily; can be divided into 2-3 daily doses
- **Duration:** 12 weeks minimum for full effect; continue if beneficial

Fibromyalgia

- **Formulation:** Magnesium L-Threonate (Magnesium Citrate as alternative option - see Chronic Pain)
- **Dose:** 1,500-2,000 mg/day Magnesium L-Threonate (140-190 mg/day elemental)
A 2,000 mg Magnesium L-Threonate dose contains 144 mg elemental magnesium
- **Duration:** 8-12 weeks minimum; continue long-term if beneficial

PAIN PROCESSING

Magnesium plays important roles in the processing of pain and research suggests that magnesium helps *prevent, reduce or improve:*

- Systemic Inflammation (SI) and Neuroinflammation (NI)
- Oxidative Stress (OS)
- Mitochondrial Function (MD)
- Central Sensitization (CS) including pre-existing Pain Hypersensitivity
- **Formulation:** Magnesium L-Threonate has been recommended due to preclinical studies demonstrating that oral magnesium L-threonate, unlike other magnesium formulations, penetrates the blood-brain barrier and increases cerebrospinal fluid and intra-neuron magnesium levels. It has shown effectiveness in models of neuropathic pain, including chemotherapy-induced peripheral neuropathy and radicular pain. Early research suggests it may improve cognitive and nerve function in pain processing. However, this research has not yet been translated into human research.
- **Safety:** *There is a lack of adequate data to establish human safety for magnesium L-threonate although there is no evidence suggesting it is less safe than other magnesium formulations.*
- **Dose:** 1,500-2,000 mg/day Magnesium L-Threonate (140-190 mg/day elemental)
 - **Neuro-Mag®** Magnesium L-Threonate (Life Extension) —> 3 caps/day in divided doses

ALTERNATIVE FORMULATIONS

1. Magnesium Glycinate

- **Recommended** for sleep, anxiety and for those with bowel sensitivity/diarrhea
- **Dose:** 2,100-2,900 mg/day Magnesium Glycinate (300-400 mg/day elemental)

2. Magnesium Oxide

- **Recommended** for constipation; inexpensive but more likely to cause diarrhea
- **Dose:** 2,100-2,900 mg/day Magnesium Oxide (300-400 mg/day elemental)

3. Magnesium Malate

- **Recommended** for fatigue-dominant symptoms
- **Dose:** 2,000-2,700 mg/day Magnesium Malate (300-400 mg/day elemental)

SYNERGIES

Improved pain benefits when co-administered with other nutraceuticals: Vitamin D3; Vitamin B6; Vitamin B2 (Riboflavin) & CoQ10 for migraines; Omega-3 Fatty Acids; Curcumin; Melatonin; Alpha-Lipoic Acid; (ALA); N-Acetylcysteine (NAC).

PRECAUTIONS

- **Recommended doses** refer to **elemental** magnesium. Look for “elemental magnesium” on labels.
- **Start with lower doses** (200-300 mg/day) with food and gradually increase to avoid stomach upset.
- **Side effects:** Nausea, diarrhea, bloating; Divide doses 2x/day to reduce side effects.
- **Take 2-4 hours apart** from antibiotics, thyroid medications, osteoporosis drugs
- **Kidney disease:** Confer with physician, avoid high doses, monitor blood levels.

Foods Rich in Magnesium

- Seeds & Nuts (Chia, flax & pumpkin seeds; Almonds); Black beans; Dark leafy greens (spinach, kale)