A WHOLARA GUIDE

All about *magnesium* — the great calmer.

Magnesium is a cofactor in over 300 enzymatic reactions — it regulates muscle and nerve function, blood sugar, bone formation, and energy production itself. Yet NHANES data show nearly half of US adults consume less than the Estimated Average Requirement. The result is often invisible: poor sleep, low-grade anxiety, stubborn migraines, PMS, and elevated blood pressure that responds to a nutrient most people are quietly short on.

What high-magnesium foods can do for you.

CALMS NERVES & MUSCLES	BUILDS & STRENGTHENS BONE	SUPPORTS CIRCULATION	IMPROVES SLEEP QUALITY
Relaxes the nervous system and skeletal muscle — the basis for its use in twitching, tension, and cramping.	60% of body magnesium lives in bone. Cofactor for vitamin D activation and calcium regulation.	Dilates blood vessels, modulates vascular tone, and lowers blood pressure in those with hypertension.	Activates GABA pathways and quiets the stress response — RCTs show shorter sleep latency and better quality.

Signs you may need more *magnesium.*

Magnesium status is hard to measure (serum tests miss it — 99% is intracellular), so symptoms matter. If several of these are familiar, you are likely under the EAR.

Muscle weakness, tremors, or spasms	Especially in exercisers and women in the second half of their cycle. Twitching eyelids and stubborn calf cramps are classic.
Heart palpitations or irregular rhythm	Magnesium stabilizes cardiac membrane excitability. Low intracellular magnesium is linked to arrhythmias and elevated resting heart rate.
Migraines or recurring headaches	2024 meta-analysis of 10 RCTs found 600 mg/day reduced attack frequency by ~42% vs 16% on placebo. American Headache Society lists magnesium as Level B preventive.
Elevated blood pressure	A 2025 meta-analysis of 38 RCTs (n=2,709) showed ~3 mmHg systolic and ~2 mmHg diastolic reductions, with larger effects in hypertensive populations.
Trouble falling or staying asleep	Magnesium glycinate and L-threonate have been shown to reduce sleep onset latency and improve PSQI scores in poor sleepers.
Anxiety, irritability, or low mood	A 2023 systematic review of 7 RCTs (Front Psychiatry) found a large effect size for depression scores; another trial showed PHQ-9 dropped 6 points in 6 weeks.
PMS, painful periods, or hormonal cycle issues	Trials show 300 mg/day reduces dysmenorrhea pain and PMS mood symptoms; often more effective combined with vitamin B6.
Unstable blood sugar or insulin resistance	2020 meta-analysis (26 RCTs) showed magnesium supplementation significantly lowered fasting glucose, HOMA-IR, and 2-hr OGTT response.

EAT THESE FIRST

Foods that are rich in *magnesium.*

Ranked by magnesium density. The greener and leafier, the better — magnesium sits at the center of the chlorophyll molecule, which is why dark leafy greens are unmatched. Pair with healthy fats and protein for best absorption.

Swiss chard · Kale	EXCELLENT
Spinach (raw or cooked)	EXCELLENT
Pumpkin seeds, raw	EXCELLENT
Almonds, dry-roasted	EXCELLENT
Dark chocolate (70%+)	EXCELLENT
Black beans, cooked	VERY GOOD
Cashews, raw	VERY GOOD
Avocado	VERY GOOD
Edamame, shelled	VERY GOOD
Tofu, firm	VERY GOOD
Brown rice, cooked	VERY GOOD
Quinoa, cooked	VERY GOOD
Halibut or salmon, baked	VERY GOOD
Blackstrap molasses	VERY GOOD
Sunflower seeds, raw	VERY GOOD
Sesame seeds (tahini)	VERY GOOD
Buckwheat, cooked	VERY GOOD
Mustard greens, boiled	GOOD
Collard greens, boiled	GOOD
Broccoli, steamed	GOOD
Green beans, boiled	GOOD
Flaxseeds, ground	GOOD
Banana, ripe	GOOD
Whole oats, cooked	GOOD

GO DEEPER

Seven evidence-based ways to *raise your magnesium.*

These are the strategies most consistently supported by clinical trials — ordered roughly from food-first to supplementation-when-needed.

01	Start with leafy greens, every day	Magnesium is the central atom of the chlorophyll molecule — meaning the darker and greener the leaf, the more magnesium it carries. One cup of cooked spinach delivers ~157 mg (about 40% of the RDA for women). Aim for at least one large serving daily.	*USDA FoodData Central; NHANES dietary data*
02	Add seeds & nuts as a snack	A 1-oz handful of pumpkin seeds provides ~168 mg of magnesium — the single most concentrated common food source. Almonds, cashews, sunflower seeds, and chia all qualify. Easiest high-leverage addition for most diets.	*USDA FoodData Central; J Am Coll Nutr.*
03	Choose whole grains over refined	Refining grains strips 80–97% of magnesium. Brown rice, oats, quinoa, and buckwheat retain it; white rice, white bread, and most cereals do not. Switching one daily serving back to whole-grain is often enough to close a deficit.	*Int J Vitam Nutr Res. 2025 (global deficiency review)*
04	Eat fatty fish twice a week	Halibut, salmon, and mackerel are excellent magnesium sources and also supply vitamin D — which magnesium activates. The two nutrients work together, and supplementing vitamin D without adequate magnesium can paradoxically worsen status.	*J Am Osteopath Assoc. 2018; Nutrients. 2018*
05	Try magnesium glycinate for sleep & anxiety	Glycinate (and bisglycinate) is highly bioavailable, gentle on the gut, and has independent calming effects from the glycine. A 2024 RCT showed 250 mg elemental magnesium glycinate reduced Insomnia Severity Index scores within weeks. A solid starting form.	*Nat Sci Sleep. 2024 (RCT); Sleep Med X. 2024*
06	Consider L-threonate for cognition & sleep	Magnesium L-threonate (Magtein®) is the only form shown to meaningfully cross the blood–brain barrier. RCTs report improvements in working memory, daytime focus, and sleep quality, with one trial in older adults showing an equivalent of ~9 years of cognitive improvement.	*Sleep Med X. 2024; Nutrients. 2022 (Magtein® RCTs)*
07	Citrate for constipation & general repletion	Magnesium citrate is well absorbed with a mild osmotic laxative effect — useful if constipation is part of the picture. 200–400 mg elemental daily is the typical research range.	*Magnes Res. 2003 (Walker); Cleveland Clinic guidance*

EQUALLY IMPORTANT

What quietly *depletes* your magnesium.

Even with a magnesium-rich diet, certain inputs raise your need or accelerate excretion. Most people don't realize how much these add up.

CHRONIC STRESS

Cortisol drives urinary magnesium loss — and low magnesium amplifies the stress response. A self-reinforcing loop most people never name.

ALCOHOL

Increases renal magnesium excretion and reduces absorption. Even moderate intake meaningfully depletes status over time.

CAFFEINE (EXCESS)

A mild diuretic effect on magnesium. 1–2 cups daily is fine; multiple high-caffeine drinks compound losses.

REFINED & ULTRA-PROCESSED FOOD

Magnesium is stripped during processing and not added back. A diet built on these almost guarantees low intake.

PPIS & CERTAIN MEDS

Long-term proton pump inhibitors (Prilosec, Nexium), diuretics, and some antibiotics deplete magnesium. FDA has warned on PPIs since 2011.

INTENSE EXERCISE

Sweat, urine, and increased cellular demand raise magnesium needs. Athletes often need 10–20% above the RDA to stay replete.

Which *form* should you take?

Glycinate / bisglycinate	**Sleep, anxiety, daily use**	Highly absorbed, gentle on gut. Best general starting form.
L-threonate (Magtein®)	**Cognition, memory, focus**	Only form that meaningfully crosses the blood–brain barrier.
Citrate	**Constipation, general repletion**	Well absorbed; mild laxative effect at higher doses.
Malate	**Fatigue, fibromyalgia, muscle pain**	Malic acid involved in cellular energy (ATP) production.
Taurate	**Cardiovascular & blood pressure**	Taurine has its own cardiovascular benefits.
Oxide	**Budget option only**	Cheapest but ~4% absorbed. Mostly a laxative.

The Wholara take.

If you sleep poorly, run anxious, get migraines, have PMS, struggle with blood pressure or blood sugar, or train hard — magnesium is the first nutrient worth checking. Food first, *always*: leafy greens, seeds, beans, fish, whole grains, dark chocolate. Supplement only if dietary intake is genuinely hard to raise — and choose the form that matches what you're trying to support.

Most adults tolerate 200–400 mg supplemental magnesium daily; the tolerable upper limit from supplements is 350 mg/day per the NIH. Talk to a clinician before supplementing if you have kidney disease or take heart, diuretic, or thyroid medications.

EVIDENCE BASE

Where this came from.

Synthesizes findings from 25+ peer-reviewed studies (2016–2026), including systematic reviews, meta-analyses, and RCTs published in: Hypertension (AHA), Frontiers in Psychiatry, PLOS One, BMC Complementary Medicine, British Journal of Nutrition, Diabetes Metab Res Rev, Nature & Science of Sleep, Headache, Cochrane Database, Pain Physician, Int J Mol Sci, Osteoporosis International, Nutrients, and NIH NHANES dietary data. Where doses or population specifics are given, they reflect the most consistent finding across multiple trials — not a clinical prescription.