

# Magnesium TAURATE Debuts in Revive MD Magnesium+

written by Mike Roberto | November 3, 2022

**Revive MD** always hits it out of the park with *sophisticated, top-shelf supplements* whose formulas are based on cutting-edge research.

It's a brand that really *lives up to its name*, as it was co-founded by a *doctor* in Dr. Domenic Iacavone. He and his business partner *Matt Jansen* work as hard as they can to deliver over-the-counter, consumer supplements based on *institutional research and practical experience*.



You'd probably expect an MD working in supplements would stay abreast of the latest research, and in the case of Revive MD, you'd be correct. This is a company that's always coming out with genuinely innovative products. Today we're excited to write about a *new form of magnesium, magnesium taurate*.

## Revive MD Magnesium+: Calming magnesium powder with magnesium *taurate*

Because it's an *elemental metal* that isn't well-absorbed on its own, magnesium is often *chelated* with an amino acid. In the past we've seen chelated forms of magnesium like magnesium *threonate* and magnesium *glycinate* (another supplement Revive MD produced) gain popularity in the supplement market. These forms have significantly better bioavailability and uptake.

In addition, with a *chelated* mineral supplement, you aren't *just* getting the

benefits of the mineral. You're also benefiting from whatever amino acid it's chelated to. That's a *big* plus in the case of magnesium *taurate*, a combination of **magnesium** and *taurine*.



After all, taurine is one of our all-time *favorite* ingredients here on the PricePLOW Blog. We're fond of pointing out that you can put taurine into *any* kind of supplement – fat burner, pre-workout, nootropic, whatever – and it will make perfect sense, because taurine has hugely beneficial effects on so many different dimensions of human health.

What's more, some of taurine's many benefits *echo and overlap* with those of magnesium, making it a logical choice of pairing for this wonder mineral. Today, we get into the benefits of *magnesium* and *taurine*, and also the *synergistic effects* when they're combined.

But first, let's check the PricePLOW news and deals:

## Revive MD Magnesium+ – Deals and Price Drop Alerts

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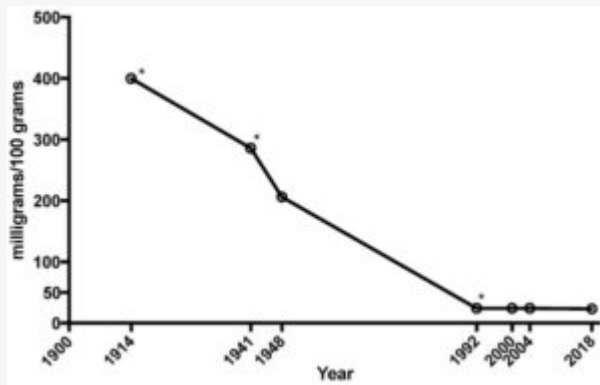
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*Below we cover magnesium and our ongoing magnesium crisis. You can skip to the specific magnesium taurate section if you're already up to speed on the basics.*

## A Primer On Magnesium: The Failure of Modern Agriculture

Every day, millions of Americans adjust their dietary intake based on the U.S. Department of Agriculture's (USDA) data on the micronutrient content of food.



The average amount of calcium, magnesium, and iron in vegetables like spinach, lettuce, cabbage, and tomatoes has plummeted as much as 80–90% since 1914.[1] Sadly we have to supplement it back in.

The *vitamins and minerals* contained in fruits and vegetables are a huge part of the reason we eat these foods: crops are great at both *concentrating* nutrients that naturally occur in soil *and* synthesizing their own nutrients as well.

But *is the USDA's data accurate?*

Unfortunately, the answer in many cases is *no*. Data kept by the USDA can be based on measurements taken decades ago, or sometimes even a century ago. And *since then, the nutrient content of our food has declined precipitously*.

The reason for this is that contemporary agricultural practices fail to account for *soil cycle* – the process of soil's natural renewal over time.

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The result is that following years' of successive growing seasons, our soil's mineral content has *declined*. [1-6]

### **The shocking extent of soil magnesium loss**

How much? Some estimates are downright shocking. Some experts believe that **as much as 80% to 90% of the magnesium has been stripped from our soil by monocultural practices**, [1-6] defined as the practice of growing only one crop at a time on any given field, which reduces biodiversity over time.

That's where *magnesium supplements* come in. And as you'll see, we *need* adequate amounts of this critical nutrient.

### **Who should take magnesium?**

Given how much the magnesium content of our soil has dropped, it probably won't surprise you to learn that most American adults are magnesium deficient. And the situation is worse than you probably think: *even considering the USDA's outdated magnesium content data*, approximately *half* of U.S. adults still aren't getting enough magnesium from food. [7,8]

A 2017 meta-analysis found that magnesium supplementation significantly improves anxiety symptoms in those who take it, [9] which is not surprising considering how pervasive magnesium deficiency really is.

## **Revive MD Magnesium+ with The New Kid On The Block: Magnesium Taurate**

A single *1-scoop* (5.5 gram) serving of Revive MD Magnesium+ yields **475 milligrams of elemental magnesium**. It comes from both *magnesium taurate* and *magnesium carbonate*, led by the taurate form.

## SUPPLEMENT FACTS

Serving Size 1 Scoop (5.5g)  
Servings Per Container 30

	Amount Per Serving	%DV
Calories	10	
Total Carbohydrate	1 g	<1% *
Dietary Fiber	1 g	4% *
Magnesium (as Magnesium Taurate and Magnesium Carbonate)	475 mg	113%

\*Percent Daily Values (DV) are based on a 2,000 calorie diet.

**OTHER INGREDIENTS:** Citric Acid, Natural Flavor, Organic Rebaudioside A (from Organic Stevia Leaf).

With so much magnesium taurate in here, you'll also get a clinically validated dosage of taurine, which is what the magnesium is bound to

We can't disclose the full blend, but can tell you that there's enough to provide roughly *1.5-2 grams of taurine* – enough to cite some powerful research on taurine as well.

- **Magnesium (as Magnesium Taurate and Magnesium Carbonate) – 475 mg (113% DV)**

- **Magnesium's *psychological effects***

**Magnesium is absolutely crucial for optimal brain health, and hence mental health.**

This is primarily due to magnesium's central role in *neurotransmitter synthesis*, [10] but there's also a *second-order effect* caused by magnesium's positive impact on *sleep*. If you don't have enough magnesium, there's a good chance you'll end up with chronically impaired sleep, which over time is an independent risk factor for psychological and emotional disorders as your *sleep debt* compounds. [11]

For these reasons, **magnesium deficiency frequently produces symptoms associated with *stress and anxiety*, and often causes chronic *fatigue*.** [10,12,13]

A study published in 2015 found that low magnesium consumption in people under the age of 65 was associated with a *22% higher likelihood of depression*. [14]

- **Improved sleep**



Many research studies have found that supplemental **magnesium can significantly improve both the *quantity* and *quality* of a person's sleep.** [15-18]

One of the primary mechanisms by which magnesium *improves sleep* is its **cortisol-lowering effect**, which helps *normalize* sleep patterns in most people. [16]

One study found that a person's level of magnesium consumption correlated *inversely* with the midpoint of their sleep. In other words, people who consume adequate amounts of the mineral typically go to bed earlier than those who are deficient. [19]

- **Magnesium's other benefits**

Although magnesium supplements are most commonly taken to improve sleep and mood, those two outcomes are *really* just the tip of the iceberg.

Magnesium is a cofactor for over *600 different metabolic processes* in your body, [20] so it shouldn't be much of a shock that magnesium deficiency can contribute to *tons* of pretty awful second- and third-order health problems.

Research shows that correcting a magnesium deficiency through appropriate supplementation can:



- Lower blood pressure[21-24]
- Lower HbA1c and blood glucose levels[21,25,26]
- Mitigate hyperinsulinemia[21,25,27]
- Improve *insulin sensitivity*[21,25,26,28]
- Decrease risk of type 2 diabetes[29-31]
- Improve *bone mineralization*[32]
- Mitigate PMS symptoms[33-36]
- Facilitate the clearance of *lactic acid* following exercise[37]
- Increase muscle *mass* and power[38]
- Lower C-reactive protein[39] and limit its effects[38]
- Reduce *interleukin 6* (IL-6) levels[40]
- Reduce the extent of muscle damage from exercise[41]
- Prevent and mitigate the severity of migraine attacks[42,43]
- *Relieve* ongoing migraine symptoms[44]

Suffice it to say, getting enough magnesium is absolutely *essential* for optimal health.

- **Magnesium's basic mechanism of action: inhibitory effects**

So *how* can one mineral affect so many different metabolic processes?

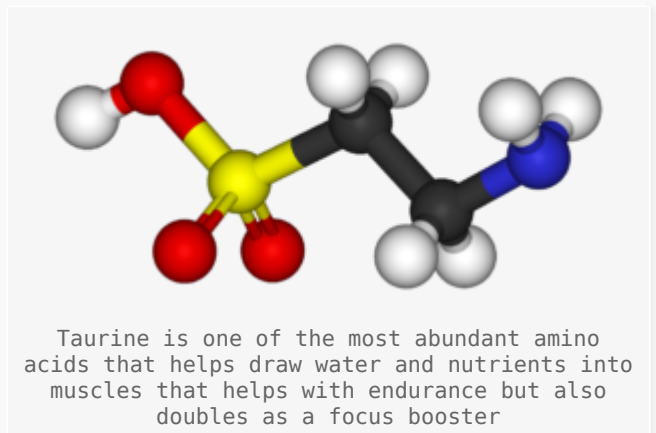
The big-picture answer is that magnesium is an *inhibitory* compound. Its "opposite" element, *calcium*, is responsible for *exciting* both peripheral and central nervous tissue – which in *skeletal muscle* causes contractions. Magnesium helps your muscles *relax* by terminating the impulse to contract.[45,46]

This *whole-body relaxation* has significant downstream effects, and a wave of relaxation can usually be felt palpably when someone with an ongoing deficiency supplements with magnesium for the first time.

*Athletes* and other physically-active people should consider magnesium supplementation more seriously than others, as the body consumes magnesium at an increased rate during exercise.[47]

- **Taurine (as magnesium taurate) – ~1.5 to 2.0 grams inside**

**Taurine** is high on PricePlow's list of *rockstar* ingredients.



This is a *good dose* too. Although we can't disclose *exactly* how much taurine is in Revive MD Magnesium+, we *can* tell you that it's somewhere between 1.5 and 2.0 grams. Even the lower end of this range is *well* above the clinically-validated dose of 1,000 milligrams (1 gram).

- **Taurine's brain benefits**

Most people look into magnesium supplementation for cognitive and emotional support, so let's start off by talking about taurine's *brain benefits*.

Like magnesium, taurine is *inhibitory* – it opposes the *excitatory* action of calcium. Taurine is a *GABAergic* compound, meaning it actually *acts like*



the neurotransmitter *gamma-aminobutyric acid* (GABA), which itself has a calming, anti-inflammatory effect on *neurons*.<sup>[48]</sup>



Taurine also triggers *mitochondrial biogenesis* in *brain cells*,<sup>[48]</sup> which is a huge deal, as regular readers of the blog will know (just search our archive for *mitochondrial biogenesis* if you want to read our take on the importance of this process).

Taurine supplements have been shown to facilitate *learning* – particularly *motor learning*.<sup>[49]</sup>

It might even protect brain tissue from metabolic damage in people with metabolic syndrome and type 2 diabetes,<sup>[50]</sup> both of which are characterized by insulin resistance and high blood glucose levels.

Besides its neuroprotective properties, taurine is also *dopaminergic*,<sup>[51]</sup> helping improve dopamine production and function.<sup>[51]</sup>

- **Taurine's metabolic benefits: BAT vs. WAT**

As we discussed earlier, magnesium has a *hugely* beneficial impact on glucose metabolism and insulin sensitivity, and taurine can also improve metabolic health, albeit from a slightly different angle.

Taurine has been shown to help convert *white adipose tissue* (WAT) into *brown adipose tissue* (BAT).<sup>[52]</sup>

Whereas *WAT* is your body's storage for *long-term energy reserves*, which it

only dips into in times of great metabolic stress, *BAT* is a *metabolically-active organ*. *BAT* is where a process called *non-shivering thermogenesis* (NST) occurs. In NST, calories are burned as *heat*.



The image is a promotional graphic for 'Revive MD Magnesium Glycinate Master Class'. It features a white bottle of capsules and a white bottle of capsules lying on a white surface. The background is a dark, textured blue and black. In the top right corner, there is a logo consisting of two stylized 'P' characters with the word 'PRICEFLOW' underneath. The text 'REVIVE MD MAGNESIUM GLYCINATE MASTER CLASS' is prominently displayed in the center, with 'PRICEFLOW ARTICLE' written below it. At the bottom, there is a short paragraph of text.

If you prefer capsules, then get ready for a master class in not just magnesium, but glycine as well: **Revive MD's Magnesium Glycinate.**

The mechanism of action behind WAT-to-BAT conversion is, again, *mitochondrial biogenesis*. [52] WAT is called *white* adipose tissue because it appears white when illuminated under a microscope; and *BAT* is called *brown* adipose tissue because it's *full* of mitochondria, which occlude much of the light coming through a microscope slide. This gives it a *dark brown* appearance, hence the name.

Taurine can also *selectively inhibit* the proliferation of new WAT cells, while allowing BAT cells to grow. [53]

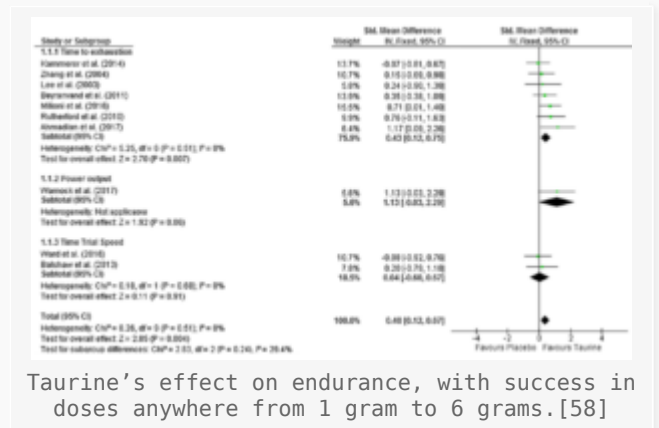
The more BAT you have relative to WAT, the higher your *total daily energy expenditure* (TDEE), measured in calories. [54] A higher TDEE can make it easier to lose weight, for obvious reasons.

And what's *even better* is that because *glucose* is often used as the substrate for NST, having more BAT means you *burn more sugar*, which can improve blood glucose levels and insulin sensitivity. [55] This in turn, as most of us know already, can have a beneficial impact on long-term metabolic health.

It's partly by this mechanism that taurine can mitigate the negative metabolic effects of excess body fat by lowering inflammation and blood sugar levels, which are usually elevated in cases of obesity. [56]

## • Taurine's athletic benefits: ergogenic aid and osmolyte

Magnesium is particularly important for *athletes*, and taurine has athletic benefits as well.



Taurine's effect on endurance, with success in doses anywhere from 1 gram to 6 grams.[58]

In order to understand how taurine aids athletic performance, you need to know that it's an *osmolyte*. Osmolytes are compounds that increase *osmotic pressure* around your cells, which forces more water *into* your cells than is ordinarily present.[57]

This creates a state called *hyperhydration*, in which the increased water content of cells increases the nutrients available to them, as well as protecting them from *heat stress*.

Incredibly, taurine starts working *immediately* after you take it. A 2018 meta-analysis of taurine studies found that a single 1,000-milligram dose – which, again, is significantly less than what's present in Revive MD Magnesium+ – can boost *endurance* during a workout immediately following consumption.[58]

Taurine is a great *antioxidant*[59,60] and can help support *calcium* signaling in skeletal muscle.[61]

## Taurine: an all-around awesome anti-stress compound

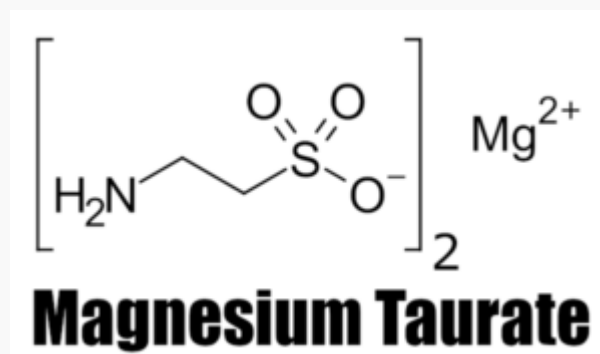
The bottom line on taurine is it can help you feel and perform your best, whether you're engaged in mental or physical work.

Taurine is *conditionally essential*, meaning that taurine consumption is elevated during stress, which is why we say, like magnesium, taurine is particularly important for athletes.[48,57,58]

## What's special about *magnesium taurate*?

We've covered the benefits of magnesium and taurine when taken *independently*

of each other. But what about when they're *combined*? Are there special properties associated with magnesium taurate, compared to other magnesium compounds?



The answer is yes, special effects of magnesium taurate have already been discovered despite the fact that the research is still in its infancy.

- **Crosses the blood-brain barrier**

Magnesium taurate seems to be particularly good at crossing the *blood-brain barrier*, [62] which has traditionally been a challenge for magnesium compounds – most forms of magnesium have *low* bioavailability in the brain.

*Magnesium threonate* has been marketed for a few years as a BBB-permeable form of magnesium, and we do like that magnesium compound. But given the choice, we'd rather take *magnesium taurate* simply because *taurine* is more beneficial than threonine, *particularly* when it comes to neurological health.

- **Cardioprotective**

We've discussed how *correcting a magnesium deficiency* can lead to improvements in cardiovascular function, but magnesium taurate seems to go beyond this – it can actually *protect the cardiovascular system against toxin-induced injury*, as demonstrated in an animal study where researchers used *cadmium chloride* to induce hypertension and cardiotoxicity. [63]

## **What about magnesium carbonate?**

*Magnesium carbonate* gives Revive MD Magnesium+ a nice *fizzy texture*, which most consumers will love. There are also some benefits associated with *carbonic acid* consumption.



For one thing, increased CO<sub>2</sub> content in the blood triggers a phenomenon called the *Bohr Effect*, in which oxygen molecules *unbind* from hemoglobin and subsequently saturate body tissue.[64] This is undoubtedly one of the reasons why we've evolved a taste for carbonated beverages. It feels good when we drink them.

Some studies have also shown that carbonated beverages can *increase feelings of satiety*,[65,66] undoubtedly a helpful effect for dieters.

## Magnesium Dosage

Your magnesium dosage will really depend on your diet. If you eat magnesium-rich foods like green leafy vegetables, nuts, legumes, and beans, you may need less than someone who doesn't. But again, those foods are likely lower in magnesium than we'd like to admit nowadays.

So with that said, supplemental dosage is often anywhere from 250-500 milligrams – a full scoop of Revive MD Magnesium+ has 475, on the upper end of that level.

How do you know if you've had too much? Diarrhea is generally the most common side effect when dosages get too high – but note that this is *far* more common with magnesium oxide or magnesium citrate forms, which aren't in here. One study found that 12% of users taking a full *gram's* worth of magnesium from magnesium oxide (the worst-performing supplemental form of the mineral) had diarrhea. That's over twice as much as what we have here, and with a lesser-absorbed form.

Long story short – it depends on your diet, but we endorse a full scoop of Magnesium+, and if you have any GI side effects, back it down to half a scoop.

## Flavors used, flavors available

Note that Revive MD Magnesium+ is *naturally flavored*, but sweetened with *stevia*, a non-caloric sweetener.



The other Revive MD Magnesium option – Magnesium *Glycinate*, if you want to use capsules!

If you're not into powdered magnesium drinks, then you can always look at our massive article on *Revive MD Magnesium Glycinate* – 2 to 4 caps daily (especially before bed) will have similar effects. We don't suggest stacking both – Magnesium+ already has 113% of the daily recommended value.

## Conclusion: Magnesium Taurate is here

In our opinion, this product contains the best form of magnesium currently available, although we're still huge fans of magnesium glycinate as well. You really can't go wrong with either of Revive MD's two supplements.

Taurine and magnesium, two *awesome* supplements, have significantly overlapping effects that make this compound a no-brainer for the vast majority of magnesium consumers, to say nothing of the high bioavailability that comes with chelation.

## Revive MD Magnesium+ – Deals and Price Drop Alerts

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## References

1. Workinger, Jayme, et al. "Challenges in the Diagnosis of Magnesium Status." *Nutrients*, vol. 10, no. 9, 1 Sept. 2018, p. 1202, 10.3390/nu10091202; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6163803/>
2. USDA, Agricultural Research Service USDA National Nutrient Database for Standard Reference, Release 28; <https://www.ars.usda.gov/northeast-area/beltsville-md-bhnrc/beltsville-human-nutrition-research-center/nutrient-data-laboratory/docs/usda-national-nutrient-database-for-standard-reference/>
3. Beeson K.C. *The Mineral Composition of Crops with Particular Reference to the Soils in Which They Were Grown: A Review and Compilation*. U.S. Department of Agriculture; Washington, DC, USA: 1941; [https://www.google.com/books/edition/The\\_Mineral\\_Composition\\_of\\_Crops\\_with\\_Pa/7asoAAAAYAAJ](https://www.google.com/books/edition/The_Mineral_Composition_of_Crops_with_Pa/7asoAAAAYAAJ)
4. Firman B. Ash and Mineral Cation Content of Vegetables. *Soil Sci. Soc. Am. Proc.* 1948;13:380-384; <https://web.archive.org/web/20180818163118/https://njaes.rutgers.edu/pubs/bear-report/ash.php>
5. Lindlahr H. *Nature Cure. Volume I The Nature Cure Publishing Co.; Chicago, IL, USA: 1914. (Philosophy and Practice Based on the Unity of Disease and Cure; The Nature Cure Series);* [https://www.google.com/books/edition/Nature\\_Cure/OMsvAQAAMAAJ](https://www.google.com/books/edition/Nature_Cure/OMsvAQAAMAAJ)
6. USDA, Agricultural Research Service USDA National Nutrient Database for Standard Reference, Release 13; <https://www.ars.usda.gov/northeast-area/beltsville-md-bhnrc/beltsville-human-nutrition-research-center/nutrient-data-laboratory/docs/usda-national-nutrient-database-for-standard-reference/>
7. Gröber U, Schmidt J, Kisters K. Magnesium in Prevention and Therapy. *Nutrients*. 2015 Sep 23;7(9):8199-226. doi: 10.3390/nu7095388; <https://pubmed.ncbi.nlm.nih.gov/26404370/>
8. Razzaque, Mohammed S. "Magnesium: Are We Consuming Enough?." *Nutrients* vol. 10,12 1863. 2 Dec. 2018, doi:10.3390/nu10121863; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6316205/>
9. Boyle, Neil Bernard et al; "The Effects of Magnesium Supplementation on Subjective Anxiety and Stress-A Systematic Review."; *Nutrients*; vol. 9,5 429; 26 Apr. 2017; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5452159/>
10. Cuciureanu MD, Vink R; "Magnesium and stress"; *Magnesium in the Central Nervous System*; <https://www.ncbi.nlm.nih.gov/books/NBK507250/>
11. Mellman TA. Sleep and anxiety disorders. *Psychiatr Clin North Am.* 2006 Dec;29(4):1047-58; abstract x. doi: 10.1016/j.psc.2006.08.005; <https://pubmed.ncbi.nlm.nih.gov/17118281/>
12. Ebrahimi, Elham, et al. "Effects of Magnesium and Vitamin B6 on the Severity of Premenstrual Syndrome Symptoms." *Journal of Caring Sciences*, vol. 2012, no. 4, pp. 183-189, 10.5681/jcs.2012.026; <https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC4161081/>
13. L, Barragán-Rodríguez, et al. "Efficacy and Safety of Oral Magnesium Supplementation in the Treatment of Depression in the Elderly with Type 2 Diabetes: A Randomized, Equivalent Trial." *Magnesium Research*, 1 Dec. 2008; <https://pubmed.ncbi.nlm.nih.gov/19271419/>
14. Tarleton EK, Littenberg B. Magnesium intake and depression in adults. *J Am Board Fam Med.* 2015 Mar-Apr;28(2):249-56. doi: 10.3122/jabfm.2015.02.140176;

<https://pubmed.ncbi.nlm.nih.gov/25748766/>

15. Nielsen, Forrest H., et al. "Magnesium Supplementation Improves Indicators of Low Magnesium Status and Inflammatory Stress in Adults Older than 51 Years with Poor Quality Sleep." *Magnesium Research*, vol. 23, no. 4, 1 Dec. 2010, pp. 158–168, 10.1684/mrh.2010.0220; <https://pubmed.ncbi.nlm.nih.gov/21199787/>
16. Held, Katja, et al. "Oral Mg(2+) Supplementation Reverses Age-Related Neuroendocrine and Sleep EEG Changes in Humans." *Pharmacopsychiatry*, vol. 35, no. 4, 1 July 2002, pp. 135–143, 10.1055/s-2002-33195; <https://pubmed.ncbi.nlm.nih.gov/12163983/>
17. Nielsen, Forrest H., et al. "Magnesium Supplementation Improves Indicators of Low Magnesium Status and Inflammatory Stress in Adults Older than 51 Years with Poor Quality Sleep." *Magnesium Research*, vol. 23, no. 4, 1 Dec. 2010, pp. 158–168, 10.1684/mrh.2010.0220; <https://pubmed.ncbi.nlm.nih.gov/21199787/>
18. Held, Katja, et al. "Oral Mg(2+) Supplementation Reverses Age-Related Neuroendocrine and Sleep EEG Changes in Humans." *Pharmacopsychiatry*, vol. 35, no. 4, 1 July 2002, pp. 135–143, 10.1055/s-2002-33195; <https://pubmed.ncbi.nlm.nih.gov/12163983/>
19. Sato-Mito, Natsuko, et al. "The Midpoint of Sleep Is Associated with Dietary Intake and Dietary Behavior among Young Japanese Women." *Sleep Medicine*, vol. 12, no. 3, 2011, pp. 289–94, 10.1016/j.sleep.2010.09.012; <https://pubmed.ncbi.nlm.nih.gov/21296614/>
20. de Baaij JH, Hoenderop JG, Bindels RJ. Magnesium in man: implications for health and disease. *Physiol Rev.* 2015 Jan;95(1):1-46. doi: 10.1152/physrev.00012.2014; <https://pubmed.ncbi.nlm.nih.gov/25540137/>
21. Guerrero-Romero, Fernando, and Martha Rodríguez-Morán. "Magnesium Improves the Beta-Cell Function to Compensate Variation of Insulin Sensitivity: Double-Blind, Randomized Clinical Trial." *European Journal of Clinical Investigation*, vol. 41, no. 4, 17 Jan. 2011, pp. 405–410, 10.1111/j.1365-2362.2010.02422.x; <https://pubmed.ncbi.nlm.nih.gov/21241290/>
22. Hatzistavri, L. S., et al. "Oral Magnesium Supplementation Reduces Ambulatory Blood Pressure in Patients with Mild Hypertension." *American Journal of Hypertension*, vol. 22, no. 10, 1 Oct. 2009, pp. 1070–1075, 10.1038/ajh.2009.126; <https://pubmed.ncbi.nlm.nih.gov/19617879/>
23. Kawano, Yuhei, et al. "Effects of Magnesium Supplementation in Hypertensive Patients." *Hypertension*, vol. 32, no. 2, Aug. 1998, pp. 260–265, 10.1161/01.hyp.32.2.260; <https://pubmed.ncbi.nlm.nih.gov/9719052/>
24. Guerrero-Romero, F, and M Rodríguez-Morán. "The Effect of Lowering Blood Pressure by Magnesium Supplementation in Diabetic Hypertensive Adults with Low Serum Magnesium Levels: A Randomized, Double-Blind, Placebo-Controlled Clinical Trial." *Journal of Human Hypertension*, vol. 23, no. 4, 20 Nov. 2008, pp. 245–251, 10.1038/jhh.2008.129; <https://pubmed.ncbi.nlm.nih.gov/19020533/>
25. Rodríguez-Morán, M., and F. Guerrero-Romero. "Oral Magnesium Supplementation Improves Insulin Sensitivity and Metabolic Control in Type 2 Diabetic Subjects: A Randomized Double-Blind Controlled Trial." *Diabetes Care*, vol. 26, no. 4, 1 Apr. 2003, pp. 1147–1152, 10.2337/diacare.26.4.1147; <https://pubmed.ncbi.nlm.nih.gov/12663588/>
26. Mooren, F. C., et al. "Oral Magnesium Supplementation Reduces Insulin Resistance in Non-Diabetic Subjects – a Double-Blind, Placebo-Controlled, Randomized Trial." *Diabetes, Obesity and Metabolism*, vol. 13, no. 3, 24 Jan. 2011, pp. 281–284, 10.1111/j.1463-1326.2010.01332.x; <https://pubmed.ncbi.nlm.nih.gov/21205110/>
27. Golf, S.W., et al. *Cardiovascular Drugs and Therapy*, vol. 12, no. 2suppl, 1998, pp. 197–202, 10.1023/a:1007708918683; <https://pubmed.ncbi.nlm.nih.gov/9794094/>
28. Simental-Mendía LE, Sahebkar A, Rodríguez-Morán M, Guerrero-Romero F. A systematic review and meta-analysis of randomized controlled trials on the effects of magnesium supplementation on insulin sensitivity and glucose control. *Pharmacol Res.* 2016 Sep;111:272-282. doi: 10.1016/j.phrs.2016.06.019; <https://pubmed.ncbi.nlm.nih.gov/27329332/>
29. Hruby A, Guasch-Ferré M, Bhupathiraju SN, Manson JE, Willett WC, McKeown NM, Hu FB. Magnesium Intake, Quality of Carbohydrates, and Risk of Type 2 Diabetes: Results From Three U.S. Cohorts. *Diabetes Care.* 2017 Dec;40(12):1695-1702. doi: 10.2337/dc17-1143; <https://pubmed.ncbi.nlm.nih.gov/28978672/>
30. Fang X, Han H, Li M, Liang C, Fan Z, Aaseth J, He J, Montgomery S, Cao Y. Dose-Response Relationship between Dietary Magnesium Intake and Risk of Type 2 Diabetes Mellitus: A Systematic Review and Meta-Regression Analysis of Prospective Cohort Studies. *Nutrients.* 2016 Nov 19;8(11):739. doi: 10.3390/nu8110739; <https://pubmed.ncbi.nlm.nih.gov/27869762/>
31. Zhao B, Deng H, Li B, Chen L, Zou F, Hu L, Wei Y, Zhang W. Association of magnesium consumption with type 2 diabetes and glucose metabolism: A systematic review and pooled study with trial sequential analysis. *Diabetes Metab Res Rev.* 2020 Mar;36(3):e3243. doi: 10.1002/dmrr.3243; <https://pubmed.ncbi.nlm.nih.gov/31758631/>



32. Carpenter, Thomas O., et al. "A Randomized Controlled Study of Effects of Dietary Magnesium Oxide Supplementation on Bone Mineral Content in Healthy Girls." *The Journal of Clinical Endocrinology & Metabolism*, vol. 91, no. 12, Dec. 2006, pp. 4866–4872, 10.1210/jc.2006-1391; <https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC2995550/>
33. Ebrahimi, Elham, et al. "Effects of Magnesium and Vitamin B6 on the Severity of Premenstrual Syndrome Symptoms." *Journal of Caring Sciences*, vol. 2012, no. 4, pp. 183–189, 10.5681/jcs.2012.026; <https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC4161081/>
34. Quaranta, S., et al. "Pilot Study of the Efficacy and Safety of a Modified-Release Magnesium 250 Mg Tablet (Sincromag) for the Treatment of Premenstrual Syndrome." *Clinical Drug Investigation*, vol. 27, no. 1, 2007, pp. 51–58, 10.2165/00044011-200727010-00004; <https://pubmed.ncbi.nlm.nih.gov/17177579/>
35. Walker, Ann F., et al. "Magnesium Supplementation Alleviates Premenstrual Symptoms of Fluid Retention." *Journal of Women's Health*, vol. 7, no. 9, Nov. 1998, pp. 1157–1165, 10.1089/jwh.1998.7.1157; <https://pubmed.ncbi.nlm.nih.gov/9861593/>
36. Facchinetti, F., et al. "Oral Magnesium Successfully Relieves Premenstrual Mood Changes." *Obstetrics and Gynecology*, vol. 78, no. 2, 1991, pp. 177–181; <https://pubmed.ncbi.nlm.nih.gov/2067759/>
37. Zhang, Yijia et al. "Can Magnesium Enhance Exercise Performance?." *Nutrients* vol. 9,9 946. 28 Aug. 2017, doi:10.3390/nu9090946; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5622706/>
38. Welch, Ailsa A, et al. "Dietary Magnesium Is Positively Associated with Skeletal Muscle Power and Indices of Muscle Mass and May Attenuate the Association between Circulating C-Reactive Protein and Muscle Mass in Women." *Journal of Bone and Mineral Research*, vol. 31, no. 2, 11 Sept. 2015, pp. 317–325, 10.1002/jbmr.2692; <https://asbmr.onlinelibrary.wiley.com/doi/10.1002/jbmr.2692>
39. Simental-Mendia LE, Sahebkar A, Rodriguez-Moran M, Zambrano-Galvan G, Guerrero-Romero F. Effect of Magnesium Supplementation on Plasma C-reactive Protein Concentrations: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Curr Pharm Des*. 2017;23(31):4678-4686. doi: 10.2174/1381612823666170525153605; <https://pubmed.ncbi.nlm.nih.gov/28545353/>
40. Steward CJ, Zhou Y, Keane G, Cook MD, Liu Y, Cullen T. One week of magnesium supplementation lowers IL-6, muscle soreness and increases post-exercise blood glucose in response to downhill running. *Eur J Appl Physiol*. 2019 Dec;119(11-12):2617-2627. doi: 10.1007/s00421-019-04238-y; <https://pubmed.ncbi.nlm.nih.gov/31624951/>
41. Córdova A, Mielgo-Ayuso J, Roche E, Caballero-García A, Fernandez-Lázaro D. Impact of Magnesium Supplementation in Muscle Damage of Professional Cyclists Competing in a Stage Race. *Nutrients*. 2019 Aug 16;11(8):1927. doi: 10.3390/nu11081927; <https://pubmed.ncbi.nlm.nih.gov/31426321/>
42. Chiu HY, Yeh TH, Huang YC, Chen PY. Effects of Intravenous and Oral Magnesium on Reducing Migraine: A Meta-analysis of Randomized Controlled Trials. *Pain Physician*. 2016 Jan;19(1):E97-112. PMID; <https://pubmed.ncbi.nlm.nih.gov/26752497/>
43. von Luckner A, Riederer F. Magnesium in Migraine Prophylaxis-Is There an Evidence-Based Rationale? A Systematic Review. *Headache*. 2018 Feb;58(2):199-209. doi: 10.1111/head.13217; <https://pubmed.ncbi.nlm.nih.gov/29131326/>
44. Shahrami A, Assarzagdegan F, Hatamabadi HR, Asgarzadeh M, Sarehbandi B, Asgarzadeh S. Comparison of therapeutic effects of magnesium sulfate vs. dexamethasone/metoclopramide on alleviating acute migraine headache. *J Emerg Med*. 2015 Jan;48(1):69-76. doi: 10.1016/j.jemermed.2014.06.055; <https://pubmed.ncbi.nlm.nih.gov/25278139/>
45. Berchtold MW, Brinkmeier H, Müntener M. Calcium ion in skeletal muscle: its crucial role for muscle function, plasticity, and disease. *Physiol Rev*. 2000 Jul;80(3):1215-65. doi: 10.1152/physrev.2000.80.3.1215; <https://pubmed.ncbi.nlm.nih.gov/10893434/>
46. Potter JD, Robertson SP, Johnson JD. Magnesium and the regulation of muscle contraction. *Fed Proc*. 1981 Oct;40(12):2653-6; <https://pubmed.ncbi.nlm.nih.gov/7286246/>
47. A A A Ismail, Y Ismail, A A Ismail, Chronic magnesium deficiency and human disease; time for reappraisal?, *QJM: An International Journal of Medicine*, Volume 111, Issue 11, November 2018, Pages 759–763; <https://academic.oup.com/qjmed/article/111/11/759/4209351>
48. Chen, C. et al. Aug. 2019. "Roles of Taurine in Cognitive Function of Physiology, Pathologies, and Toxication." *Life Sciences* vol. 15, 231; <https://pubmed.ncbi.nlm.nih.gov/31220527/>
49. Santora, Allison et al. "The effects of chronic taurine supplementation on motor learning." *Advances in experimental medicine and biology* vol. 775 (2013): 177-85. doi:10.1007/978-1-4614-6130-2\_15; <https://pubmed.ncbi.nlm.nih.gov/23392934/>
50. Rafiee, Zeinab et al. "Taurine Supplementation as a Neuroprotective Strategy upon Brain Dysfunction in Metabolic Syndrome and Diabetes." *Nutrients* vol. 14,6 1292. 18 Mar. 2022,

doi:10.3390/nu14061292; <https://pubmed.ncbi.nlm.nih.gov/35334949/>

51. Wang, Ke, et al. "Taurine Improves Neuron Injuries and Cognitive Impairment in a Mouse Parkinson's Disease Model through Inhibition of Microglial Activation." *NeuroToxicology*, vol. 83, Mar. 2021, pp. 129–136, 10.1016/j.neuro.2021.01.002; <https://www.sciencedirect.com/science/article/abs/pii/S0161813X21000085>
52. Kim, Kyoung Soo et al. "Taurine Stimulates Thermoregulatory Genes in Brown Fat Tissue and Muscle without an Influence on Inguinal White Fat Tissue in a High-Fat Diet-Induced Obese Mouse Model." *Foods (Basel, Switzerland)* vol. 9,6 688. 26 May. 2020, doi:10.3390/foods9060688; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC32466447/>
53. Kim, Kyoung Soo et al. "Anti-obesity effect of taurine through inhibition of adipogenesis in white fat tissue but not in brown fat tissue in a high-fat diet-induced obese mouse model." *Amino acids* vol. 51,2 (2019): 245-254. doi:10.1007/s00726-018-2659-7; <https://dx.doi.org/10.1007/s00726-018-2659-7>
54. Guo, Ying-Ying et al. "Taurine-mediated browning of white adipose tissue is involved in its anti-obesity effect in mice." *The Journal of biological chemistry* vol. 294,41 (2019): 15014-15024. doi:10.1074/jbc.RA119.009936; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC31427436/>
55. Kim SH, Plutzky J; "Brown Fat and Browning for the Treatment of Obesity and Related Metabolic Disorders"; *Diabetes & Metabolism Journal*. 2016;40(1):12-21; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4768046/>
56. Lin, Shan et al. "Taurine improves obesity-induced inflammatory responses and modulates the unbalanced phenotype of adipose tissue macrophages." *Molecular nutrition & food research* vol. 57,12 (2013): 2155-65. doi:10.1002/mnfr.201300150; <https://doi.org/10.1002/mnfr.201300150>
57. Ripps, H. et al. Nov. 2012. "Review: Taurine: A "Very Essential Amino Acid." *Molecular Vision* vol. 18. 2673-86; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3501277/>
58. Waldron, M., et al. May 2018. "The Effects of an Oral Taurine Dose and Supplementation Period on Endurance Exercise Performance in Humans: A Meta-Analysis." *Sports Medicine* vol. 48,5; 1247-53; <https://pubmed.ncbi.nlm.nih.gov/29546641>
59. Ibrahim, Marwan A et al. "Therapeutic role of taurine as antioxidant in reducing hypertension risks in rats." *Heliyon* vol. 6,1 e03209. 17 Jan. 2020, doi:10.1016/j.heliyon.2020.e03209; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6970174/>
60. Jong, Chian Ju et al. "Mechanism underlying the antioxidant activity of taurine: prevention of mitochondrial oxidant production." *Amino acids* vol. 42,6 (2012): 2223-32. doi:10.1007/s00726-011-0962-7; <https://pubmed.ncbi.nlm.nih.gov/21691752/>
61. Spriet, Lawrence L, and Jamie Whitfield. "Taurine and skeletal muscle function." *Current opinion in clinical nutrition and metabolic care* vol. 18,1 (2015): 96-101. doi:10.1097/MCO.000000000000135; <https://pubmed.ncbi.nlm.nih.gov/25415270/>
62. Uysal, Nazan et al. "Timeline (Bioavailability) of Magnesium Compounds in Hours: Which Magnesium Compound Works Best?." *Biological trace element research* vol. 187,1 (2019): 128-136. doi:10.1007/s12011-018-1351-9; <https://onlinelibrary.wiley.com/doi/10.1002/mnfr.201300150>
63. Shrivastava, Parikshit et al. "Magnesium taurate attenuates progression of hypertension and cardiotoxicity against cadmium chloride-induced hypertensive albino rats." *Journal of traditional and complementary medicine* vol. 9,2 119-123. 2 Jun. 2018, doi:10.1016/j.jtcme.2017.06.010; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6435948/>
64. Patel, Shivani, and Sapan H Majmundar. "Physiology, Carbon Dioxide Retention." *Nih.gov, StatPearls Publishing*, 3 June 2019; <https://www.ncbi.nlm.nih.gov/books/NBK482456/>
65. Poudroux, P et al. "Effect of carbonated water on gastric emptying and intragastric meal distribution." *Digestive diseases and sciences* vol. 42,1 (1997): 34-9. doi:10.1023/a:1018820718313; <https://link.springer.com/article/10.1023/A:1018820718313>
66. Wakisaka, Shiori et al. "The effects of carbonated water upon gastric and cardiac activities and fullness in healthy young women." *Journal of nutritional science and vitaminology* vol. 58,5 (2012): 333-8. doi:10.3177/jnsv.58.333; <http://japanlinkcenter.org/DN/JST.JSTAGE/jnsv/58.333>