TOP 10 MAGNESIUM SUPPLEMENTS

See our 34 product reports.

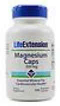
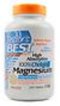
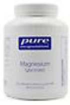
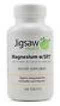
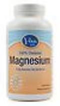
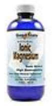
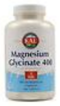
Back to all rankings

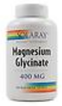
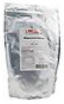
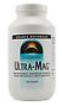
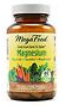
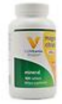
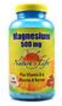
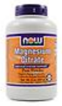
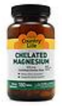
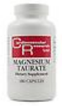
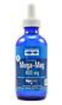
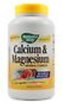
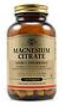
Rankings

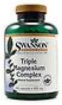
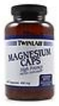
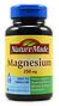
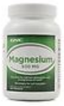
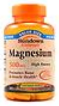
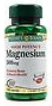
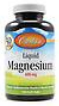
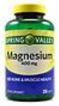
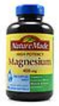
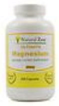
Report

Quality | Value

QUALITY RANKINGS

			SCORE	
1		Life Extension Magnesium Caps	85.1	See more
2		Metagenics Mag Glycinate	84.4	See more
3		Doctor's Best Magnesium	83.8	See more
4		Pure Encapsulations Magnesium	82.5	See more
5		Jigsaw Health Magnesium	80.1	See more
		Bluebonnet Chelated Magnesium	77.8	
7		Viva Labs Chelated Magnesium	75.3	See more
8		Good State Health Solutions Ionic Magnesium	72.9	See more
9		Kal Magnesium Glycinate	70.1	See more

10		Solaray Magnesium Glycinate	69.5	See more
11		Bulk Supplements Magnesium Citrate	68.6	See more
12		MagOx 400	68.6	See more
13		Source Naturals Ultra-Mag	66.0	See more
14		MegaFood Magnesium	63.9	See more
15		The Vitamin Shoppe Magnesium Citrate	60.2	See more
16		Nature's Life Magnesium	58.6	See more
17		NOW Foods Magnesium Citrate	56.9	See more
18		Country Life Chelated Magnesium	55.0	See more
19		Cardiovascular Research Magnesium Taurate	54.3	See more
20		Trace Minerals Mega-Mag	53.6	See more
21		Nature's Way Calcium and Magnesium	51.7	See more
22		Solgar Magnesium Citrate	50.9	See more

23		Swanson Magnesium Complex	50.1	See more
24		Natural Vitality Natural Calm	48.8	See more
25		Twinlab Magnesium Caps	48.6	See more
26		Nature Made Magnesium	44.3	See more
27		GNC Magnesium	44.1	See more
28		Sundown Naturals Magnesium	43.7	See more
29		Nature's Bounty High Potency Magnesium	43.5	See more
30		ChildLife Liquid Calcium with Magnesium	42.7	See more
31		Carlson Labs Liquid Magnesium	42.7	See more
32		Spring Valley Magnesium	42.6	See more
33		Nature Made High Potency Magnesium	41.9	See more
34		Natural Zest Ultimate Magnesium	39.4	See more

Analyses Performed

467 analytical tests on 34 best-selling magnesium supplements in the United States.

Must-see Statistic

2 out of every 3 products measured total arsenic levels in one serving that were projected to exceed California's Proposition 65 proposed safe daily intake limit for inorganic arsenic.

Unconventional Wisdom

Products ranged from having only 9.5% of their label claim for magnesium to exceeding their claims by 97.5%.

CONTENTS

Testing Summary

Labdoor analyzed 34 best-selling magnesium supplements in the United States for elemental magnesium content and heavy metal (arsenic, cadmium, lead, mercury) contamination.

Products in this batch analysis measured an average of 331 mg of magnesium per serving, ranging from 38.1 mg to 691.2 mg. Products deviated from label claims by an average of 11.5%. 15 of 34 products met the daily Recommended Dietary Allowances (RDAs) for magnesium to prevent deficiencies in both male and female adults. 19 products exceeded magnesium's Tolerable Upper Intake Level (UL), the threshold at which a risk for adverse effects like diarrhea and nausea appears for most people.

Arsenic, a carcinogenic heavy metal, was an issue in this testing round. In one serving, 25 of 34 products measured total arsenic levels that were projected to exceed California Proposition 65's proposed safe daily intake limit for inorganic arsenic. Six products contained titanium dioxide, a whitening agent classified as "Generally Recognized as Safe" by the US Food & Drug Administration despite being linked to cancer and neurological damage.

Analytical Chemistry Methods: ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry) to quantify levels of magnesium, calcium, copper, iron, manganese, phosphorus, potassium, sodium, and zinc; ICP-MS (Inductively Coupled Plasma - Mass Spectrometry) to quantify heavy metal (arsenic, cadmium, lead, mercury) load.

Label Accuracy

> *Measured magnesium content deviated from label claims by an average of 11.5%.*

Measured elemental magnesium content deviated from label claims by an average of 11.5%. Only 17 of 34 products recorded magnesium levels within 5% of their label claims.

Products ranged from having only 9.5% of their label claim for magnesium to having 97.5% more than their label claim for magnesium. Natural Zest Ultimate Magnesium recorded the worst underage with only 38.1 mg of its claimed 400 mg of magnesium per serving.

Product Purity

> *Projected inorganic arsenic levels reached a high of 9.76 mcg per serving, almost 100 times CA Prop 65's proposed safe daily intake limit of 0.1 mcg per day.*

In accordance with California's Proposition 65 (CA Prop 65), the following proposed and established safe daily intake limits were used to assess heavy metal load and product purity: 0.1 mcg of inorganic arsenic, 4.1 mcg of cadmium, 0.5 mcg of lead, and 0.3 mcg of mercury.

Arsenic was an issue in this batch analysis. At their lowest suggested doses, 2 out of every 3 products measured total arsenic levels that would exceed CA Prop 65's proposed safe daily intake limit for inorganic arsenic using an assumption of 80% inorganic arsenic as described below. In one serving, Trace Minerals Mega-Mag measured 12.2 mcg of total arsenic.

All products passed heavy metal screenings for cadmium, lead, and mercury.

NOTE: Currently, intake limits for total arsenic have only been established for drinking water. The only available guideline for arsenic in supplement products is a proposed limit from CA Prop 65 on the inorganic component of total arsenic. Chemical analysis of this batch of products measured arsenic in total. Since research has shown that the contribution of inorganic arsenic to total arsenic is ~80% (in rice), an 80% assumption was used to project and then compare inorganic arsenic content in these products to the CA Prop 65 proposed daily limit of 0.1 mcg.

Nutritional Value

> *Magnesium products averaged a 99.7 (out of 100) in Nutritional*

Value scores.

Magnesium products in this batch generally recorded minimal calories, fats, carbohydrates, and sugars. Only 6 of 34 products measured any calories, ranging from 5-15 calories per serving. Childlife Liquid Calcium measured 2 g of sugar per serving, which contributed to its 15 calorie per serving load.

Ingredient Safety

19 of 34 products recorded elemental magnesium levels that in one serving, exceed magnesium's established upper limit of 350 mg per day.

The NIH cites 350 mg of elemental magnesium per day as the UL for males and females ages 9+. For ages 4-8, the UL is set at 110 mg of magnesium per day. 19 of 34 products recorded elemental magnesium levels that exceed 350 mg per serving. 6 products recorded more than 500 mg of magnesium per serving.

Intake of supplemental magnesium above its UL can cause diarrhea, nausea, and abdominal cramping. A large excess can cause adverse effects as severe as difficulty breathing, arrhythmias, and cardiac arrest. Doses above the UL should only be taken under physician supervision. For adult males, the Recommended Dietary Allowances (RDAs) for magnesium are higher than its UL. To avoid potential side effects while meeting RDAs, magnesium can also be sourced from foods, in which case the UL does not apply.

Six products were found to contain titanium dioxide, an insoluble whitening agent. Although "Generally Recognized as Safe" by the US Food and Drug Administration, titanium dioxide has been linked in research to cancer and neurological damage.

Projected Efficacy

Products measured elemental magnesium levels ranging from 38.1 mg to 691.2 mg per serving.

Measured elemental magnesium content per serving ranged from 38.1 mg in Natural Zest Ultimate Magnesium to 691.2 mg in Natural Vitality Natural Calm. Products recorded an average of 325.6 mg of magnesium per serving. In one serving, 22 products met the daily Recommended Dietary Allowances (RDAs) of magnesium for adult (non-pregnant, non-lactating) females: 310 mg (ages 19-30), 320 mg (ages 31+). 15 products met the RDAs for adult males: 400 mg (ages 19-30), 420 mg (ages 31+).

FORMULATIONS: The 3 most popular magnesium formulations in this batch of products were magnesium citrate, magnesium oxide, and magnesium glycinate. In clinical study, amino acid chelates like magnesium glycinate demonstrate higher bioavailability than inorganic compounds like magnesium oxide. The bioavailabilities of magnesium aspartate, magnesium citrate, magnesium lactate, and magnesium malate fall somewhere in between. In a clinical trial of 16 subjects, magnesium chloride absorption was found to be slightly higher than that of magnesium aspartate and magnesium lactate.

USES: Our bodies require magnesium for energy production, muscle and nerve function, blood glucose control, calcium homeostasis, and heart rhythm normalization. Studies on clinical uses of magnesium are limited. Magnesium-based supplements have commonly been used as laxatives to treat constipation and as antacids. Research suggests that magnesium supplements may benefit postmenopausal women with osteoporosis. In 2012, The American Academy of Neurology concluded that magnesium therapy is “probably effective” for migraine prevention, but only at doses that should be taken under physician supervision. In patients with magnesium deficiency, magnesium supplements have been found to mildly reduce heart disease risk, improve insulin sensitivity, and help with sleep. Manufacturers sometimes claim that magnesium is effective for relieving premenstrual pain or for increasing testosterone levels as related to athletic performance despite research being limited and generally unsupportive.