



Magnesium: Key Facts Everyone Should Know About the Body's Fourth Most Abundant Mineral

By Richard Hansen

A National Health and Nutrition Examination survey conducted by the National Center for Health Statistics found that a significant percentage of American adults receive less than the recommended daily amount of magnesium in their diet.

Magnesium is essential for over 300 biochemical reactions, many of which play a critical role in energy metabolism.

Almost half of the magnesium in our bodies is located in our bones. The rest is found in our organ cells and other body tissue.

Magnesium is absorbed by the small intestines and excreted by the kidneys. As a person ages their absorptive ability declines and the quantity excreted increases.

Magnesium absorption can be compromised by gastrointestinal conditions like Crohn's disease. Malabsorption places individuals at risk of developing a magnesium deficiency.

Certain medications deplete the body of magnesium. Common high blood pressure medications, like Lasix, increase the amount of magnesium lost in the urine. Some antibiotics and cancer medications have the same effect.

Alcohol abuse and poorly managed diabetes can deplete the body of magnesium. One study showed that between 30 and 60% of alcoholics have low magnesium blood levels.

Calcium and magnesium have a special relationship within the body. Magnesium facilitates calcium metabolism and regulation.

When the amount of calcium greatly exceeds magnesium, it can literally "wash" magnesium out of the cells. Those supplementing with calcium may also want to increase their magnesium intake for this reason. It

has been recommended that people consume calcium and magnesium at a ratio of 2:1 (2 mg calcium to 1 mg magnesium).

Magnesium, in healthy quantities, may offer health benefits that include promoting heart health, boosting the immune system, building stronger bones, and contributing to blood sugar control.

Low magnesium is common in diabetics. Magnesium affects carbohydrate metabolism, which in turn can influence insulin release. During episodes of very low blood sugar, the kidneys can lose their ability to resorb magnesium. This hazard is reason for diabetics to pay attention to their magnesium intake.

A connection between magnesium and heart health has been the subject of recent scientific research. It has been proposed that magnesium could improve cardiovascular fitness because of its potential ability to improve circulation and reduce clotting.

Researchers examined a group of patients with coronary artery disease who took magnesium supplements. They discovered that platelet dependent thromboses, which can produce dangerous clotting in the cardiovascular system, were reduced by 35% when patients took supplemental magnesium. Their findings were published in the *American Journal of Cardiology*.

In another study, 187 patients received either 355 mg of magnesium or a placebo twice a day for six months. Those taking the supplement improved their magnesium levels. They also experienced a 14% improvement in exercise duration and were less likely to experience chest pain.

Interestingly, the possible connection between magnesium and coronary

artery disease was first made when someone noted that mortality rates for ischemic heart disease were higher in areas with "hard" water than in those with "soft" water. High concentrations of calcium and magnesium cause water hardness.

It is suggested that adults receive between 320-400 mg/day of magnesium.

Dark, leafy greens, like spinach, are a good dietary source of magnesium. So are nuts, legumes, and whole grains.

Almonds and sunflower seeds, for example, contain 80 mg/oz (milligrams/ounce) and 100 mg/oz, respectively.

People who want to take a magnesium supplement should make sure they have proper kidney function and are not on tetracycline antibiotics. Magnesium can interfere with the effectiveness of these types of antibiotics.

Most magnesium supplements contain magnesium oxide, magnesium citrate, or magnesium lactate.

Tests have shown that magnesium chloride and lactate are more efficiently absorbed by the body than magnesium oxide. Those looking to take a high quality form of magnesium that will provide the maximum health benefits should look for a product that contains magnesium glycinate and Krebs cycle metabolites that are more easily metabolized by the body.

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Dr. Carl's Corner

The other day I went to the grocery store and was astounded by all of the new "vitamin-enhanced" water products. I counted at least five.

It's a nice idea, but do they give you what you need? Not really!

All of them came in clear plastic bottles. Unfortunately, light can penetrate these containers and degrade the vitamins inside. Oxygen, which naturally occurs in water, also oxidizes them.

All of the waters contained cheap synthetic vitamins.

They also had an oxidatively potent combination of Vitamin C and minerals. Laboratory research has shown that these can render Vitamin B-12 inactive, or worse.

While capsules might be a pain to swallow, they protect vitamins from the hazards of light, oxygen, and water.

During the early days of product development we had some fun making vitamin-enhanced products.

Let me tell you about what happened when we opened a Premium B Calm™ capsule and unwittingly emptied it into a full bottle of flavored carbonated water. Water shot out of the bottle, soaking us and the room. It was wild.

Next time, we made sure to drain off some of the bottled water before adding the B Calm.

So, when it comes to vitamin water, you're better off making your own.

Save a bundle and maximize your fun!

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If you've visited www.mend.net recently you may have noticed some major changes.

At MEND, we've been hard at work renovating the site to make it more engaging and user-friendly.

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Use What Your Body Knows Premium Magnesium Helper™



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Supplement Facts

Serving Size 1 Capsule
Servings Per Container 90

Amount Per Serving	%DV
Magnesium (as Magnesium Glycinate/ Krebs† Complex) 100 mg	25%

Other ingredients: Cellulose and vegetable stearate.

†Krebs=Citrate, Fumarate, Malate, Glutamate, and Succinate Complex.

10003 90 capsules \$29.95

This 'N That

Research has revealed that adding certain spices to your food may offer valuable health benefits. Here are a few you should stock on your spice rack and regularly use in your kitchen:

Cinnamon - The American Diabetic Association has recognized its ability to lower blood sugar levels. One study found that as little as half a teaspoon can lower blood glucose, cholesterol, and triglyceride levels. Try it on breakfast cereal or oatmeal. Adding it to your tea or coffee is also an easy way to incorporate more cinnamon into your diet.

Garlic - While it may be bad for your breath, garlic is great for your heart. Garlic can lower blood cholesterol, decreasing your risk of developing heart disease and high blood pressure.

Ginger - Commonly used in Asian cuisine, ginger can also be a tasty addition to many baked goods. Ginger aids digestion and helps relieve nausea. Try making your own ginger tea by adding a few slices of ginger root to hot water.

Turmeric - A staple of traditional Chinese and Indian medicine, this lively spice is also a key ingredient in curry. Turmeric contains curcumin, which has anti-oxidant and anti-inflammatory properties. Turmeric has been shown to help prevent and treat a host of ailments, ranging from arthritis to Alzheimer's Disease.

In The News

Speaking of turmeric, UCLA/VA researchers found that a chemical substance in curry and turmeric, curcumin, may enhance the natural function of the immune system to facilitate "clean-up" of amyloid beta. The build-up of amyloid beta is linked to the brain plaques found with Alzheimer's disease.

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Fun Finds

Resvera-Gold®, a dietary supplement with a unique herbal blend containing Resveratrol also contains 150 mg. of Standardized Curcumin Extract (root) in 1 serving (2 capsules). See "In the News" regarding recent UCLA study on Alzheimer's disease. **Resvera-Gold** (\$29.95 for 60 vegetarian capsules)

Laurie's Corner

Nine Servings a Day of Veggies and Fruits Made as Easy as 1-2-3!

In the past, I could never figure out how anyone could possibly eat the daily recommended amount of fruits and vegetables (nine – eeegaads!)

I used to skip breakfast entirely and for lunch I would have a bagel with cream cheese and fruit flavored yogurt. By early afternoon I hadn't even had 1 fruit or vegetable. By 3:00 PM every day I was so tired that if I didn't drink a Coke and/or eat a chocolate chip cookie, I would have fallen asleep. Then to really cap things off, my favorite dinner was popcorn and ice cream.

Total of the above recommended servings for a typical day for me: the big zero (unless popcorn counts as a vegetable)!

After marrying Dr. Carl, he suggested I devise a way so that eating properly became automatic. Luckily, I fell in love with smoothies!

Now, every morning I make a smoothie or a bowl of diced fruit – using 3-4 different types of fruit. For the two of us, that equals the recommended ½ cup each of 3-4 fruit servings – and that is

accomplished before we leave the house in the morning!

Now, for lunch every day I make a salad – with at least 4-5 veggies in it. Once again, for the two of us, that equals the recommended ½ cup each of 4-5 veggie servings.

So, who's counting? By early afternoon, we've had our daily recommended amount of fruits and veggies and we could even have popcorn and ice cream for dinner if we wanted to! Thanks to "automating" it, it is now as easy as 1-2-3!

And, for "extra credit" make beef stew for dinner and you'll add another 4-5 extra veggies in your daily "count!"

Even though fresh fruits and vegetables aren't as readily available in the winter, I've devised a smoothie and salad recipe with produce available now:

Pear Berry Smoothie

Serves 2

- 6 – 8 ice cubes
- 1/3 c. water
- 1 Banana, washed and peeled
- 1 Pear, washed, cored and diced
- 1 Kiwi, washed, peeled and diced
- ½ c. frozen Blueberries
- 2 scoops Vanilla Whey Protein

1. Add ice cubes and water to blender and crush ice coarsely.
2. Add fruits to blender and blend 5-10 seconds.
3. Add Whey Protein to blender and blend until smooth.
4. Divide in 2 and enjoy!

Greek Salad

Serves 2-4

- Lettuce
- 1 small Cucumber
- 1 Avocado
- 1 Tomato or Cherry Tomatoes
- Feta Cheese, crumbled
- 8-12 Kalamata Olives, pitted and quartered (lengthwise)
- 2-4 Pepperoncini, sliced
- ¼ small Red Onion, thinly sliced (optional)

- Extra Virgin Olive Oil
- Fresh Lemon Juice
- Balsamic Vinegar
- Parmesan Cheese, freshly grated
- Toasted Pine Nuts or Toasted Slivered Almonds

1. Wash and pat or "spin dry" lettuce. Tear into bite-sized pieces.
 2. Wash, peel and slice cucumber.
 3. Wash avocado and cut in half. Carefully remove pit. Remove skin and dice.
 4. Wash tomato, cut in half horizontally, squeeze out seeds and dice. If using cherry tomatoes, wash and slice in half vertically.
 5. Arrange the first 8 ingredients on salad plates in the order given or place in salad bowl.
 6. Drizzle with olive oil, squeeze on lemon juice and splash on balsamic vinegar.
 7. Top with Parmesan cheese and nuts
- As a dinner entrée, it can be served with grilled, sliced steak or chicken.

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Product	Daily Amount	Daily Cost	Initial Investment *	
Premium B Calm™	1 capsule	\$0.44	\$39.95	90 capsules
Premium Brain Support™	2 capsules	\$0.83	\$49.95	120 capsules
Premium DHA Helper™	2 softgels	\$0.80	\$23.95	60 capsules
Vitamin D3 (400 I.U.)	1 softgel	\$0.08	\$7.95	100 capsules
Daily and Initial Cost of Investment (Monthly Total: \$64.63)		\$2.15	\$121.80	* Plus Tax (MN orders). Free Shipping when you order all four products.

VS.

Product	Quantity	Cost ‡
Starbucks® Coffee	1 Grande	\$1.75
Big Mac® Hamburger	1 Burger	\$2.99
Diet Coke®	20 oz. Bottle	\$1.39
Glacéau VitaminWater®	20 oz. Bottle	\$1.49
Total		\$7.62

‡ Plus Tax and Travel Cost.

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