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Riordan Clinic

Health Hunters Newsletter

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Inside This Issue

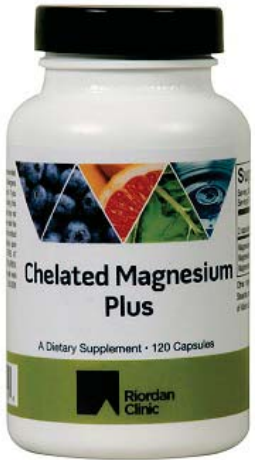
Riordan Clinic is a not-for-profit 501(c)(3), nutrition-based health facility in Wichita, Kansas. We have integrated lifestyle and nutrition to help you find the underlying causes of your illness. Since our inception in 1975, the mission has been clear and unwavering to "…stimulate an epidemic of health."

The Miracle of Magnesium

THE AUTHOR

Thomas E. Levy, MD, JD

More quality supplements are available to the health-seeking consumer today than ever before. These supplements primarily come in the form of vitamins, minerals, and a wide variety of nutrient compounds. However, because of the fact that so many supplements are now available, it has become increasingly difficult for even the most educated of health-seeking consumers to decide what the best regimen of supplementation is for them.



In terms of a direct impact on health and longevity, there is no supplement more important than magnesium. Magnesium is the agent best suited to lessen the toxicity of excess calcium, which is present in varying degrees in all adults today. Understanding the toxicity of calcium and the benefits of magnesium, it is important to understand the physiology of disease at the cellular level. When this is appreciated, it then becomes clear as to what needs to be done to restore good health or at least how to slow the evolution of disease.

All chronic degenerative diseases are characterized by increased oxidative stress inside the cells of the affected tissues. In many diseases, increased oxidative stress is also present in some of the extracellular areas outside of the cells. Whenever increased oxidative stress is present, it simply means that there are more biomolecules that are depleted of electrons, or oxidized, than should normally be the case. Oxidation and oxidized molecules are always present, even in the healthiest of individuals, but their levels need to be maintained at minimal levels for optimal health to exist.

When a biomolecule is oxidized, it is rendered dysfunctional. Frequently, an oxidized biomolecule cannot perform its biological function at all. It is only when the oxidized biomolecules are restored to normal by an electron-donating reducing agent that normal physiological function can resume. The term redox, or reduction/oxidation, refers to the balance of reduced and oxidized biomolecules in a given biological organism or tissue. When reduced, electron-saturated biomolecules are present above a certain level, good health is present. As the percentage of reduced biomolecules declines and the percentage of oxidized or electron-depleted biomolecules increases, health becomes increasingly compromised and all degrees of chronic disease can ensue.

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Contact the Editor

Please send any comments or suggestions to newseditor@riordanclinic.org.

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Editor

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This relationship of the redox status with disease in the body makes it clear that the goal of good nutrition and good supplementation, or any other therapy for that matter, should be the optimization of the ratio of reduced to oxidized biomolecules inside and around the cells of the body. When one is eating and digesting correctly, as well as taking quality supplementation, the end result is that more reduced biomolecules are available to reverse and prevent disease-sustaining levels of oxidation. In other words, anything that has a positive nutrient value ultimately is metabolized down to molecules that are capable of donating electrons to oxidized biomolecules, or to toxic, pro-oxidant molecules before they have opportunity to oxidize, or effectively poison, another biomolecule. Conversely, anything ingested that has a negative impact on health ultimately breaks down to more oxidized than reduced molecules, and the redox balance is shifted more toward oxidation and disease.

To better understand the nature of the redox balance and disease in the body, it is also very important to appreciate that all toxins inflict their damage on the body by directly, or less commonly indirectly, causing important biomolecules to become oxidized. In other words, all toxins shift the redox balance, to a greater or lesser degree, toward oxidation. When, for example, the oxidation shift is rapid and affecting very critical molecules affecting energy production, as with inhaled cyanide, death can occur quickly. When the shift to oxidation is more gradual and affecting less critical biomolecules, chronic illness can occur, as with poisoning by some heavy metals. Nevertheless, at the cellular level, the final common denominator of all toxins is still nothing more than certain biomolecules becoming oxidized.

One of the most important agents that increase oxidative stress, especially inside the cells, is calcium. In fact, the scientific evidence indicates that increased intracellular calcium levels are always present when increased intracellular oxidative stress is present. Furthermore, a great deal of evidence indicates that increased intracellular oxidative stress does not occur in the absence of increased intracellular levels of calcium. This is further substantiated by research that shows that whenever these intracellular calcium levels can be lowered, disease resolves or at least improves. The highest intracellular calcium levels are seen in malignant cells, and when calcium can be taken out of these cells, they become less malignant, or invasive. With the removal of enough calcium, malignant cells can even revert to a normal phenotype.

This important information then begs a very important question: What can be done to lower elevated intracellular calcium levels? Arguably the single best answer to this question is magnesium. Magnesium has long been regarded as a natural, or orthomolecular, calcium channel blocker. Calcium enters cells through defined calcium channels, and agents that can block these channels will reliably reduce intracellular levels of calcium.

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The Miracle of Magnesium continued from page 2...

Magnesium supplementation has been shown to have many positive effects on health. Some of the more impressive conditions improved by such supplementation include asthma, inflammation, atherosclerosis, heart attack size, many cardiac arrhythmias, high blood pressure, osteoporosis, and even a wide array of neurological/psychological/psychiatric conditions.

Interestingly enough, there are no clear conditions that magnesium alleviates that are not caused by, or worsened by, increased intracellular calcium levels. While magnesium is also a vital cofactor in more than 300 enzymatic reactions, it would appear that virtually all of the most dramatic positive effects of magnesium supplementation relate directly to how effectively intracellular calcium levels can be lowered, or at least stabilized. A large amount of supplementation is not needed in order to sustain its interactions with enzymes, but a very large and chronic intake of magnesium is needed to keep the effects of too much intracellular calcium at bay.

Proper magnesium supplementation has been documented to both inhibit the formation of abnormal areas of calcification throughout the body and to help dissolve preexisting abnormal calcifications. Also, magnesium as a monosupplement has been documented to decrease all-cause mortality. This means that taking magnesium decreases the chances of dying from anything, not just a few conditions like cancer and heart disease. This also fits very nicely with the fact that calcium supplementation increases all-cause mortality.

Oral magnesium supplementation is also virtually non-toxic in individuals with normal kidney function. And even though the intravenous administration of magnesium can be pushed to toxic levels, a flushing diarrhea will always prevent a given individual from ever ingesting too much oral magnesium on a regular basis.

How much magnesium should one supplement? The best answer to this is as much as can be tolerated, bowel-wise. A minimal daily dose for most adults would be 500 mg, and depending on one's bowel sensitivities, such a dose would have to be taken in divided doses, and also with meals.

Many different forms of magnesium can be taken. Generally, it is best to take forms of magnesium that also have anions of nutrient value as well. Such anions would include glycinate, citrate, phosphate, carbonate, and chloride. Milk of magnesia, which is magnesium hydroxide, will provide 500 mg of magnesium in one tablespoon, or 15 cc.

For reasons beyond the scope of this, all adults have too much calcium in their bodies. All individuals with chronic disease of any kind have too much calcium inside their cells. Magnesium is the natural, orthomolecular agent that counterbalances calcium throughout the body. The more calcium there is in the body, the less magnesium there is and vice-versa. This is why magnesium supplements dosing needs to be vigorously pushed as high as can be tolerated on a regular basis.

For those individuals who have access to receiving intravenous infusions, the opportunity should never be missed to have as much as a gram or two of magnesium added when possible. Studies show the long-term positive effects of magnesium given intravenously

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Clinic Feature

Magnesium Injections

Increased levels of magnesium have been shown to address a wide variety of symptoms.

"In the last 70 years magnesium content of food and water has decreased over time from 500 mg down to 200 mg in the average human diet. Everyone could use this essential nutrient. Ask our nurses how to check your levels and what you can take to boost them."

—Dr. Ron

Just a Few Benefits of Magnesium Injections:

- More energy
- Reduced anxiety levels
- Helps support normal blood pressure
- Helps regulate blood sugars

PATIENT PROFILE

Annette Chlumsky, RN

A longtime co-learner who has a high stress level at her employment, employed full-time and also attending college to complete a degree, presented with increasing high blood pressure and episodes of increased heart rate with irregular beats accompanied by feelings of increased anxiety and panic. She felt chest discomfort which was discovered to be related to rib misalignment. The patient also had instances of tingling in her hands, occasional muscle twitching around the mouth, and tense, tight neck and shoulder muscles. Blood pressure readings were as high as 180/110.

Knowing the benefits of taking magnesium citrate for constipation, and upon consultations with Dr. Ron and Karen Wheeler, APRN, the co-learner increased her oral supplementation with a combination of chelated magnesium for the hypertension, anxiety, and muscle related issues, and continued magnesium citrate for constipation. She gradually

Patient Profile continues on page 5...

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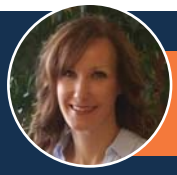
are nothing short of astounding. If you are not on a magnesium supplement at this time, consider filling out a general questionnaire looking at as wide an array of symptoms as possible, and rating their prominence from 0 to 5. Then start your magnesium regimen and push it to as high a daily dosage as you can. Repeat your questionnaire two to four months later and compare. You will be amazed at how many symptoms seemingly unrelated to anything will be improved or even eliminated.

To become a patient, please call us at 1.800.447.7276 today!

Let Us Count The Ways to Boost Your Magnesium!



THE AUTHOR

Krystal Shaw, RN

A review of the forms that magnesium comes in, routes of administration and common uses.

Magnesium comes in many forms, from Magnesium Carbonate to Magnesium Citrate which you may know as a commonly used laxative. It plays an important role in the pumping of your heart, bone and tooth formation, relaxation of your blood vessels and bowel function. It has been shown to help normalized blood pressure, prevent cardiac arrest, heart attack and stroke. It has therapeutic benefits for;

- Fibromyalgia
- Cardiovascular Disease
- Atrial Fibrillation
- Migraines
- Type II Diabetes
- Aging
- Premenstrual Syndrome
- Mortality

And, it plays a role in detoxification, helping to prevent damage from environmental chemicals, heavy metals and other toxins.
Below is a list of each type of magnesium and their most common uses.

Magnesium Glycinate is a chelated form of magnesium that provides the highest levels of absorption and bioavailability. It is ideal for anyone who may be trying to correct a deficiency.
Magnesium Oxide is non-chelated. It is bound to an organic or fatty acid and only contains about 60 percent magnesium. It is most commonly used for its stool softening properties and is not very bioavailable to the rest of the body.

Let us Count the Ways to Boost Your Magnesium continues on page 5...

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Magnesium Chloride and Magnesium Lactate contain only about 12 percent magnesium but is more readily absorbed than Magnesium Oxide which contains five times the amount of magnesium.

Magnesium Sulfate and Magnesium Hydroxide (aka: milk of magnesia) are most commonly used as a laxative. Take them only as directed to avoid excessively loose stools. Magnesium Carbonate is primarily used as an antacid and contains 45 percent magnesium.

Magnesium Taurate contains a combination of magnesium and taurine, which is an amino acid. This combo typically produce a calming effect for the body and mind. Magnesium Citrate, as stated above, is an over the counter and very commonly used laxative.

Magnesium Threonate is emerging as a newer magnesium supplement that has the ability to penetrate the mitochondrial membrane, and cross the blood brain barrier giving researchers hope that it will provide effective treatment for disorders such as headaches and cognitive impairment.

Magnesium has many different routes of administration. It can be ingested orally. It can be administered intravenously for cardiac emergencies, or pre-eclampsia of pregnancy. And, we also use it in your Riordan Clinic IV's! Our nurses can inject it intramuscularly, but magnesium is also available in a topical oil, cream or flakes.

Improving your magnesium with a healthy diet

Ideally the best way to improve your magnesium level is to consume it through eating organically bound magnesium found in whole foods. Unfortunately, the amount of magnesium contained in such foods is dependent upon the level of magnesium in the soil where they were grown. Organic foods will contain higher amounts by virtue of nitrogen, phosphorous and potassium containing fertilizers used to grow non-organic produce. Foods with the highest amount of magnesium include;

- Spinach
- Pumpkin seeds
- Yogurt or kefir
- Almonds
- Black Beans
- Avocado
- Flaxseed
- Figs
- Dark Chocolate
- Bananas

How to determine the form and amount of magnesium that is right for you
Certain health concerns predispose you to magnesium deficiency. Such as;

- An unhealthy digestive system which impairs absorption (i.e. Crohn's disease, or leaky gut).
- Poorly controlled diabetes
- Unhealthy kidneys leading to excessive excretion of magnesium in the urine.
- Alcoholism
- Age
- Certain medications, such as diuretics

Some early symptoms of magnesium deficiency include, but are not limited to; loss of

Let us Count the Ways to Boost Your Magnesium continues on page 6...

Patient Profile continued from page 4...

cont. PATIENT PROFILE

increased to 7 capsules daily with no bowel disturbances. She was also started on magnesium sulfate injections intramuscularly every two weeks. This regimen helped some of the muscle issues, but her blood pressure was still high. Upon further consultation, she increased the injections to twice weekly, and when experiencing additional stress, sometimes three times a week. Blood pressure readings now are 128/84 – 130/78 with much less anxiousness. Her RBC magnesium level was measured and is now up to 5.8, which is in the upper range of normal, very close to the optimal level of 6.0. Another benefit the co-learner observed was a much more relaxed disposition when flying to a conference recently. She also had several chiropractic adjustments with Dr. Anne which relieved the chest discomfort and muscle tenseness.

The patient is also taking an extensive number of oral supplements in addition to the magnesium and she feels that krill and fish oils and L-arginine powder have been beneficial, both helping with vascular health. Other non-pharmaceutical remedies that can be helpful for high blood pressure are hawthorn and garlic.

Schedule an appointment with one of our providers to get your RBC magnesium level checked and see how magnesium can benefit you!

316-682-3100

NUTRIENT SPECIALS

Natural Calm helps with both restoring a healthy magnesium level and balancing your calcium intake—the result of which is natural stress relief.

Regular Price: $19.95

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Available in Raspberry Lemon, Orange, and Cherry.

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Why Chelated Magnesium Plus?
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Riordan Clinic

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Offer valid through February 29, 2016. Offer not valid with other offers or coupons.

Let us Count the Ways to Boost Your Magnesium continued from page 5...

appetite, headache, nausea and vomiting, fatigue and weakness. More serious symptoms include;

- Numbness and tingling
- Personality changes
- Muscle contractions and cramps
- Abnormal heart rhythms
- Seizures
- Coronary spasms

If you have been diagnosed with any of the above conditions, are experiencing any of the above symptoms, or are considering adding a magnesium supplement to your current regimen consult with your Riordan Clinic Provider. The Bio-Center Laboratory offers a very common, simple and inexpensive laboratory test to determine your magnesium level. Your provider will use your test results, medical diagnoses, and symptoms as well as their knowledge of how nutrients influence and synergistically affect each other to develop a nutritional plan and supplement regimen to help you achieve your goals!

To become a patient, please call us at 1.800.447.7276 today!

114 Indicators of Magnesium Deficiency

from Dr. Carolyn Dean's "The Magnesium Miracle"

1. Alcohol intake—more than 7 drinks/ week
2. Anger
3. Angina
4. Anxiety
5. Apathy
6. Arrhythmia of the heart
7. Asthma

BLOOD TESTS

8. Low calcium
9. Low potassium
10. Low magnesium

BOWEL PROBLEMS

11. Undigested fat in stool
12. Constipation
13. Diarrhea
14. Alternating constipation and diarrhea
15. IBS
16. Crohn's
17. Colitis
18. Brain trauma
19. Bronchitis, chronic
20. Caffeine (coffee, tea, chocolate) 3+ servings
21. Chronic fatigue syndrome
22. Cold extremities
23. Concentration difficulties
24. Confusion
25. Convulsions
26. Depression

114 Indicators of Magnesium Deficiency continues on page 7...

DIABETES

27. Type I (Lack of Insulin)
28. Type II (Insulin Resistance)
29. Gestational diabetes
30. FIBROMYALGIA

FOOD INTAKE IMBALANCES

31. Limited in green leafy vegetables, nuts, seeds, non-gluten whole grains, fresh fruit
32. High protein diet plans (i.e. Paleo)

FOOD CRAVINGS

33. Carbohydrates
34. Sweetened Chocolate
35. Table Salt
36. Junk food
37. Gagging or choking on food

114 Indicators of Magnesium Deficiency continued from page 6...

38. Headaches
39. Heart disease
40. Heart—rapid rate
41. High blood pressure
42. Homocysteine elevation/abnormality
43. Hyperactivity
44. Hyperventilation
45. Infertility
46. Insomnia/trouble falling asleep
47. Irritability
48. Kidney stones

MEDICATIONS

49. Digitalis
50. Diuretics
51. Antibiotics (i.e. ciprofloxacin)

52. Steroids
53. Oral contraceptives
54. Indomethacin
55. Cisplatin
56. Amphotericin B
57. Cholestyramine
58. Synthetic estrogens
59. Memory impairment
60. Mercury amalgam dental fillings
61. Menstrual pain and cramps
62. MIGRAINE HEADACHES

MINERAL SUPPLEMENTS

63. Take calcium without magnesium
64. Take zinc without magnesium
65. Take iron without magnesium
66. Mitral valve prolapse
67. Muscle cramps or spasms
68. Muscle twitching or tics (Tourette's)
69. Muscle weakness
70. Numbness of hands or feet
71. Osteoporosis
72. Paranoia
73. Parathyroid hyperactivity
74. PMS—Premenstrual Syndrome
75. Polycystic ovarian disease

PREGNANCY

76. Currently pregnant
77. Pregnant within one year
78. History of preeclampsia or eclampsia
79. Postpartum depression
80. Have a child with cerebral palsy
81. Radiation therapy, recent
82. Raynaud's syndrome
83. Restlessness
84. Sexual energy diminished
85. Shortness of breath
86. Smoking
87. Startled easily by noise
88. Stressful life or circumstances
89. Stroke
90. Sugar, high intake daily
91. Syndrome X
92. Thyroid hyperactivity
93. Tingling of hands or feet

TRANSPLANTS

94. Kidney
95. Liver
96. Tremor of the hands

WATER THAT CONTAINS THE FOLLOWING

97. Fluoride
98. Chlorine
99. Calcium
100. Wheezing

CHRONIC INFECTIONS

101. Root canal teeth
102. Gingivitis
103. Sinusitis
104. Colitis
105. Frequent Urinary Tract Infections
106. Candidiasis
107. Epstein Barr / chronic viral infections
108. Canker sores

ENVIRONMENTAL ILLNESS

109. Metal toxicity
110. Food sensitivities
111. Sensitive to all chemical smells
112. Mold sensitive
113. Animal dander sensitive
114. Grass, etc. inhalant allergies

Your Magnesium Level is YOUR BUSINESS! Maintain a healthy level for a healthy life.

ROOT CAUSES OF MAGNESIUM DEFICIENCY

DECLINE IN SOIL

- Overuse of pesticides (i.e. glyphosate)
- Deficient produce from deficient soil
- Acid Rain
- Soil erosion
- Processed (non-whole) foods
- Chlorination/Fluoridation of water

DECLINE IN STOMACH ACID

- Aging
- WIDESPREAD ANTACID MED OVERUSE
- Lack of dietary magnesium to make acid

MAGNESIUM MALABSORPTION

- Leaky gut (inflamed gut) syndrome
- Candida yeast overgrowth
- Small Intestine Bacterial Overgrowth
- Mercury—toxic metals in the gut
- Excessive dietary oxalic or phytic acid
- Junk-foods
- DRUGS (see Medications 49–58)

LACK OF NUTRIENT CO-FACTORS

- B1 & B6
- Selenium (and other trace minerals)
- Correct levels of calcium
- Vitamin D
- Zinc
- Potassium

LACK OF MAGNESIUM AWARENESS

- Not taught in medical schools
- Only 4% of doctors recognize side effects
- Supplementation discouraged: "You can get all your nutrients from a balanced diet."
- Serum magnesium level usually normal
- RBC's contain 40% of body's magnesium—optimal RBC Mag level is 6.0-6.7 mg/dl

NOT ALL MAGNESIUM IS ALIKE

- Magnesium oxide—only 4% absorbed
- Magnesium can be skin absorbed
- Chelated magnesium—20% absorbed
- Special liquid magnesium better absorbed

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RECNAC 2: Are You Ready to Get Healthy?

THE AUTHOR

Karen Wheeler, APRN

Here at Riordan Clinic the focus is on getting to the root cause of illness by doing an in-depth history and physical. By listening to the Co-Learner's story, our providers are able to determine the different things that have led to their current health conditions. By knowing those, a plan of action can be made to return the person to a state of health.

The main root causes that affect a person's health include the gut (dysbiosis and leaky gut), allergens, stress, non-whole foods, toxins, infections, and genetics. The interventions to improve health are to heal the gut, test for and give nutritional supplements, measure thyroid function and replace appropriately, measure and support or replace hormones, measure and support neurotransmitters and adrenal hormones, test for and eliminate exposures to toxins and chemicals, encourage movement and develop an enjoyable and purposeful lifestyle.

The root causes and the keys to balance are depicted on a graphic that Dr. Ron calls "The Riordan Delta". "Delta" is the Greek letter for change which is also a pyramid which just happens to be our logo! This synchronicity is great to point out to people because changing lifestyle truly is the key to getting healthy and staying that way!

Dr. James Prochaska and his team have done extensive research into how people are able to change habits and maintain them. Their studies include a wide variety of habits that need interventions ranging from addictions to weight problems. They have developed a theory with stages of change that include pre-contemplation, contemplation, preparation, action, maintenance and termination. In pre-contemplation, the person does not acknowledge that there is a problem. Contemplation states that they realize they may have a problem and are thinking that something needs to be done about it, but it is not until the action stage that the person actually does anything to initiate the change in behavior. Looking into steps that can help you become successful in developing healthy habits can be worth the time and effort.

"Changing for Good" by James Prochaska, PhD, John Norcross, PhD and Carlo Diclemente, 2010