

## THE IMPORTANCE OF MAGNESIUM WITH STRESS

by Andrea Rosanoff PhD Centre for  
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"The magnesium requirement during stress soars," says Dr. Rosanoff. "This includes any kind of stress coming into the body from exercise, mental and emotional, high noise, chemicals, or any other source." Even someone regularly taking magnesium as part of a dietary program has far greater nutritional requirements when they experience a stress episode of some sort.

Magnesium requirements also rise during healing from a bodily trauma such as injury or an operation. "Part of any bodily healing should include a really good source of magnesium as well as other essential nutrients," she said.

Much study at the cellular, biochemical and physiological levels has shown that the stress response vitally involves the influx of calcium into cells, resulting in a drastic change in the cells' internal magnesium-to-calcium ratio. "In simple solutions, such as salt water, all ions are evenly dispersed," says Dr. Rosanoff. (An ion is simply an atom with an electrical charge, and on a cellular level elements such as calcium and magnesium exist as ions.)

"Not so in living cells. Ions are carefully and meticulously separated in living cells, and this ion 'packaging' is vital to life processes and health. Calcium ions, for the most part, are kept outside cells while magnesium ions are kept mainly inside cells. The stress response changes this. During stress response, calcium ions rush inside the cell, and this alters the internal magnesium-to-calcium ratio. This change in ratio exhibits wide effects because, while magnesium and calcium are very similar in their chemistry, biologically these two elements function and react very differently."

Magnesium and calcium are two sides of a physiological coin: they are antagonistic to one another yet operate as a

team. For example, calcium excites nerves; magnesium calms them down. Calcium makes muscles contract, but magnesium is necessary for muscles to relax. Calcium is necessary to the clotting reaction - essential for wound healing - but magnesium keeps the blood flowing freely and prevents abnormal thickening when clotting reactions would be dangerous.

Scientific study shows more and more that the underlying cellular change enabling the stress response is a low magnesium-to-calcium ratio caused by a large and sudden influx of calcium into cells. The stress response subsides when the cells' magnesium returns to its dominant presence inside cells, moving extra calcium back to its "normal" position, thus restoring the cells' normal ratio.

If a person is not getting adequate magnesium for their individual needs, they can go into what we call a marginal state," Dr. Rosanoff says. "A certain trauma or onslaught to that organism can take the magnesium status from a marginal into a depleted state, which can manifest as hypertension, high cholesterol, heart disease and, if it happens suddenly, a heart attack."

Such a trauma can be brought about by strenuous exercise - something heart patients are encouraged to do. Dr. Rosanoff only encourages people to exercise if they have an adequate magnesium level. "Exercise is really, really good," she says. "It appears from recent research that exercise makes magnesium more available, moving it from areas that don't currently need it as much to areas that do need it. And one of those is, of course, the heart. But if magnesium is marginal, exercise can cause problems." Magnesium chelate is the best absorbed. At Polio Office, 100G \$25, 200G \$42, 300G \$55 + postage.

### How can you use the whole lemon without waste?

Simple: place the lemon in the freezer section of your refrigerator. Once the lemon is frozen, get your grater, and shred the whole lemon (no need to peel it) and sprinkle it on top of your foods.

Sprinkle it to your whisky, wine, vegetable salad, ice cream, soup, noodles, spaghetti sauce, rice, fish dishes. All of the foods will unexpectedly have a wonderful taste, something that you may have never tasted before. Most likely, you only think of lemon juice and vitamin C. Not anymore. Now that you've learned this lemon secret, you can use lemon even in instant cup noodles.

What's the major advantage of using the whole lemon other than preventing waste and adding new taste to your dishes?

Well, you see lemon peels contain as much as 5 to 10 times more vitamins than the lemon juice itself. And yes, that's what you've been wasting. But from now on, by following this simple procedure of freezing the whole lemon, then grating it on top of your dishes, you can consume all of those nutrients and get even healthier. It's also good that lemon peels are health rejuvenators in eradicating toxic elements in the body.

from Tina Hicks

An hour with your grandchildren can make you feel young again. Anything longer than that, and you start to age quickly.



Bloke sitting in his armchair shouts to his wife "WHEN I DIE I'M GOING TO LEAVE EVERYTHING TO YOU LOVE."

She shouts back "YOU ALREADY DO YOU LAZY B#%^!"