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# Pain, Incontinence, Palpitations: The Many Faces of Magnesium Deficiency

## How low magnesium levels caused significant medical problems for both me and my husband in our retirement years

Nancy Brimhall

I'm a retired nurse who spent the last 20 years of my career working with elderly patients in the US. I understand the difficulty of trying to make sense of the multitude of physical changes experienced by older people, many of which could have multiple causes and are difficult to diagnose and treat. It's tempting to tell patients that these things come with age and one just has to live with them. However, my personal experience as an aging woman has taught me that the medical profession has some serious blind spots, and sometimes multiple common symptoms have one cause and an easy cure.



### A Cardiac Crisis in Florida

One pleasant Florida evening ten years ago, my husband Wayne and I were at our friends' home playing dominoes. Wayne, a heart patient, began taking deep breaths, looking distressed. I felt his pulse; it was racing.

The hospital was just a few miles away. I ran into the Emergency Room and yelled for help for a cardiac crisis. Someone immediately ran out with a wheelchair. In Wayne's words: "They took off my shirt and placed defibrillator pads on my chest. I yelled, 'Shouldn't I be sedated?' when I heard, 'Stand clear!' I felt a tremendous jolt, as if I was hit in the chest with a baseball bat. Then it was over, and I could breathe again."

We later learned Wayne's magnesium level was dangerously low, most likely due to his long-term use of a proton-pump inhibitor (PPI) for indigestion. It took a year, a pacemaker defibrillator, and a combination of medications to fully stabilize his heart rhythm.

## **A Cascade of "Age-Related" Symptoms**

A few years later, my own health issues began. It started with choking episodes while eating or swallowing pills. An ENT recommended daily pantoprazole, which helped. A year later, occasional leg cramps appeared, usually in the evening. Next came minor bladder leakage.

I started collecting business cards: gastroenterologist, neurologist, urologist. I collected phrases, too: "within normal parameters," "to be expected at your age," "nothing concerning." Then one night, as I lay in bed, my heart suddenly started hammering against my ribs like a trapped bird. I kept thinking: *This can't be normal.*

After speaking to a neighbor whose cardiologist had recommended a magnesium supplement for her own racing heart, I decided to try it. To my surprise and delight, not only did the rapid rhythm disappear, but so did the cramps and, eventually, the bladder leakage too. That's when the lightbulb went off and I decided to quit pantoprazole. To my astonishment, the choking problem did not return.

Since both Wayne's and my doctors knew we were taking antacids, why was a magnesium level never tested? Why were we never warned that continuous use of these drugs could cause these problems? The most likely reason is that the standard metabolic panel does not include magnesium. It must be added as an extra test, and in my experience, it rarely is.

## The Clinical Picture of a Common Deficiency

What I have learned is that magnesium is essential because it regulates major functions in our nervous system. As we age, gastric secretions become less acidic, reducing magnesium absorption. Add in chronic use of an antacid, and you have a recipe for a low magnesium level. That deficiency can manifest in so many ways, including higher blood pressure, muscle spasms (cramps), twitches or tremors, rapid heart rhythms, bladder irritability, fatigue, tingling or numbness, nausea, and in severe cases even seizures.<sup>1</sup>

Because of magnesium's wide reach, it's important to monitor magnesium levels for older patients or those with chronic conditions that may be worsened by low magnesium levels including Alzheimer's disease, asthma, cancer, cardiovascular disease, chronic fatigue syndrome, epilepsy, hypertension, inflammation, migraines, myocardial infarction, osteoporosis, Parkinson's disease, psychiatric disorders (including ADHD, depression and anxiety), sleep disorders, stroke, type 2 diabetes, or urinary incontinence.<sup>2-4</sup>

Low magnesium is a big enough problem for enough people that magnesium should be added to the standard metabolic panel. Until then, primary care providers should order it whenever a metabolic panel is done so it will not be missed as a common cause of so many symptoms.

## Integrating Magnesium into Routine Care

Today, our physicians help us monitor our magnesium levels through 24-hour urinary magnesium excretion tests, which may be more accurate than serum samples.<sup>3</sup> We also take supplements and maintain our active retirement.

The takeaway from our story is not complex. I propose that primary care providers consider adding a magnesium level to routine metabolic panels for their older patients and those with chronic conditions. Monitoring this single electrolyte could be the key to resolving a constellation of symptoms too often dismissed as merely "a part of aging."

## References

1. Dominguez LJ, Veronese N, Barbagallo M. Magnesium and the Hallmarks of Aging. *Nutrients*. 2024;16(4):496. doi:10.3390/nu16040496
2. Salinas M, López-Garrigós M, Flores E, Leiva-Salinas C. Improving diagnosis and treatment of hypomagnesemia. *Clin Chem Lab Med*. 2024;62(2):234-248. doi:10.1515/cclm-2023-0537
3. Xia P, Shi X, Yang Y, et al. Magnesium depletion scores as a risk factor for prevalence and mortality rates of urinary incontinence: a national survey analysis. *Front Nutr*. 2025;12:1439134. doi:10.3389/fnut.2025.1439134
4. Dominguez L, Veronese N, Barbagallo M. Magnesium and Hypertension in Old Age. *Nutrients*. 2020;13(1):139. doi:10.3390/nu13010139

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