

## Appendix VII: Mg Therapy – Things to Consider

### 1. Who needs to use Mg supplements?

Given the facts that modern food diets are low in Mg, rising in Ca, and the modern lifestyle can raise Mg requirements, it is a good idea for most (if not all) people consuming a modern processed food diet to consider using Mg supplements.

### 2. Things to know about using Oral Mg therapy (Mg Supplements) for CVD and/or CVD risk factors

Monitoring oral Mg therapy by assessing Mg status can be difficult. Serum Mg can be a useful tool. Some clinical laboratories erroneously consider serum Mg levels lower than 0.85 mmol/L (as recommended by Dr. Elin, which is the same as 2.07 mg/dl and 1.70= mEq/L using other “units”) to be “normal” but research shows serum Mg levels lower than these to be within the “low” Mg range and indicative of a Mg deficit status. Many physicians are not aware of research on Chronic Latent Magnesium Deficit (CLMD) – a condition in which serum Mg appears in the “normal” range but the patient actually is in a marginal Mg status (Elin, 2010; Rosanoff et al., 2012). In such cases, a Mg retention test is usually necessary and available in most clinical laboratories.

When correcting a low Mg status, serum Mg may actually decline during the first few months of oral Mg therapy. Oral Mg therapy should be given for at least 6 months in these cases. ([See Figures 10a and 10b.](#))

Hypertension medications have been shown to enhance the effect of oral Mg therapy in the treatment of high blood pressure. (Rosanoff, 2010)

### 3. There are many forms of Mg supplements –

Inorganic forms such as magnesium oxide and magnesium chloride as well as

Organic forms such as magnesium citrate, magnesium malate, magnesium lactate, etc.

And amino acid chelate forms such as magnesium aspartate or magnesium tartarate.

In general, the organic forms seem to absorb to a greater degree in the GI tract than do the inorganic forms. Some people can only take small doses of oral Mg therapy (Mg supplements) without GI distress while others can easily take 1,000 mg per day without any GI symptoms. Breaking up the daily dose can be helpful in maximizing Mg intake and absorption while minimizing any GI distress. Selecting a form of Mg which is easily individualized as to dose is warranted since an individual’s tolerance can change as the Mg therapy becomes effective.

### 4. Importance of total nutritional adequacy and balance

Is low nutritional Mg the only cause of rising CVD rates? In 1975, Dr. Leslie M. Klevay introduced the zinc/copper hypothesis of coronary heart disease, linking high zinc/copper ratios, sometimes derived

from low levels of dietary copper, as a factor in the etiology of coronary heart disease (Klevay, 1975). As has Mg, both copper and zinc have declined in wheat grain since the 1960s (Fan et al., 2008). All essential nutrients (<http://www.magnesiumeducation.com/essential-nutrients-for-humans>), in adequate and balanced amounts are necessary for optimal health.

References – ([See Appendix VII Highlighted abstracts for these reference](#))

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Fan, M.-S., et al. (2008). "Evidence of decreasing mineral density in wheat grain over the last 160 years " *Journal of Trace Elements in Medicine and Biology* **22**(4): 315-324.

Rodriguez-Moran M and Guerrero-Romero F 2003 Oral magnesium supplementation improves insulin sensitivity and metabolic control in type 2 diabetic subjects: a randomized double-blind controlled trial. *Diabetes Care* **26**, 1147-1152.

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