

**HEALTH FOOD INDUSTRY MYTHOLOGY:
Mineral Aspartates Are Not Toxic. Magnesium, Calcium, and Potassium
Aspartate Are the Most Bioactive Mineral Supplements**

1. Oh my --- here we go again. It seems about every 5-10 years the scare stories about aspartate supplementation make the rounds among all the popular “natural” nutrition gurus.
2. In quelling this nonsensical misinformation, the first thing to do is to assure patients that aspartic acid or aspartates are not some “chemical” contrived as a nutrition supplement.

We must assure our patients that aspartic acid is one of our most important amino acids. Particularly, it is one of the most important protein-building amino acids. There is hardly a protein in the human body that our bodies do not make using aspartic acid. In addition to its critical role as a protein builder, aspartic acid has several other important functions. First, it is a major detoxifier --- it is part of the urea cycle that helps our bodies detoxify ammonia. Another major function of aspartic acid is in gluconeogenesis --- helping our liver produce enough energy. Yet another major function of aspartic acid is (since it is exchangeable with oxaloacetate) to help load the Krebs energy cycle with its essential substrates.

3. In addition to emphasizing for our patients the important qualities of aspartic acid, we must inform them of the quantities our bodies need. The Institute of Medicine reports data from the Third National Health and Nutrition Examination Survey that the average adult consumes 9.3 grams (9,300 mg) per day of aspartic acid on a typical diet. On a diet that eliminates a lot of refined carbohydrates and relies more heavily on natural meats and vegetables, the dietary intake of aspartic acid is closer to 12,000 mg daily.
4. When combining aspartic acid with magnesium as a magnesium aspartate supplement, we have by far the most effective magnesium supplement available. The Scientific Panel on Food Additives, Flavorings, Processing Aids and Materials in Contact with Foods (AFC), evaluated magnesium supplements including magnesium aspartate, oxide, chloride, sulfate, carbonate, acetate, pidolate, citrate, gluconate, and lactate. Of all the magnesium supplements evaluated, magnesium aspartate had the second highest absorption and retention values. Its absorption rate was 15X as high as magnesium oxide, the most popular form of magnesium in nutrition supplements. [Side Note: The only form of magnesium that was slightly better than magnesium aspartate in both absorption and retention was magnesium gluconate. --- But --- magnesium aspartate is far superior to magnesium gluconate as a supplement because magnesium when

supplemented as aspartate is not only absorbed and retained but also utilized so much more effectively than other magnesium supplements because the aspartate transports the magnesium into tissue membranes.]

5. There are many studies in the scientific literature showing the benefits of magnesium aspartate supplementation in specific clinical conditions.
 - Some of these include as therapy in patients who have suffered acute heart attack to help prevent irreversible heart injury.
 - There is also benefit from administering magnesium aspartate to pregnant women with preeclampsia (--- this study also showed that there was absolutely no toxicity to the fetus from the magnesium aspartate supplementation of pregnant women).
 - Studies show benefits from magnesium aspartate supplementation to prevent atrial fibrillation after a coronary artery bypass. Magnesium aspartate is also beneficial in treating and preventing other cardiac arrhythmias.
 - Studies show that alcohol-induced vascular damage to the brain can be prevented or treated by magnesium aspartate, and that magnesium aspartate probably possesses some unique cerebellar vascular protective properties that have not yet been completely identified.
 - Studies show that magnesium aspartate helps eliminate the build-up of ammonia in athletes after intensive training.
 - Studies show that magnesium aspartate lowers elevated blood pressure, and potentiates the effect of beta blockers in hypertensive patients.
 - This list of magnesium aspartate benefits in health and disease could go on and on and on.

6. So why the irrational fear of aspartic acid in general, and magnesium aspartate in particular?

Aspartic acid is a component of the neurotransmitter NMDA. High levels of NMDA allow excess calcium into brain neurons, and thus cause excitotoxic reactions.

Now, here is where the health food industry gurus show their ignorance and their incapacity for even basic logic, let alone scientific reasoning. Studies on excitotoxic damage from NMDA are done on cell cultures of various types of brain cells, or on slices of brain tissue. If these cell cultures or tissue slices are subjected to huge doses of NMDA, researchers can observe the specific dynamics of excitotoxicity. Furthermore, if they add extra aspartic acid to the cell culture, the NMDA-induced damage accelerates. --- No surprise there --- simply the law of mass action at work. But the health food gurus shriek in hysterical unison, "Look out! Aspartate supplements will cause toxic brain damage!"

7. There is not a single study either on animals or on humans showing that supplementation with magnesium aspartate or any other form of aspartic acid causes any toxic reaction in the brain or any other tissue.
8. There are many, many legitimate studies showing the brain damage and organ damage from aspartame ingestion. But just because aspartic acid is one ingredient of aspartame does not implicate aspartic acid or aspartate supplements as an organic toxin. --- Again, there are no studies showing damage from magnesium aspartate supplements.