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# **EZorb Calcium Product Information**

*For Medical Professionals*

*Updated: July 20, 2002*

## Calcium Absorption and Bioavailability

For calcium to be absorbed in the small intestine it has to meet two requirements: first, it has to be soluble in the luminal fluid of the small intestine; second, it has to present itself in a singular molecule as an ionic entity, so that it will be able to penetrate the mucous membrane and be absorbed.

### ***Traditional Calcium Supplements Are Not Soluble In The Small Intestine***

Traditional inorganic calcium sources such as *calcium carbonate* and *calcium citrate* are only soluble in an acidic medium but not in a solution with pH value over 7.0. The pH of the small intestinal fluid below the duodenum is 7.0-7.2, under which Inorganic calcium supplements will form insoluble hydroxides, a gelatinous magma type of precipitation, and become non-absorbable.

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This precipitation can coat the mucous membrane, resulting in gastrointestinal distress, such as diarrhea, constipation and malabsorption of other nutrients.

### ***Traditional Calcium Supplements Do Not Present Themselves In Singular Molecules In The Small Intestine***

#### Traditional Calcium Supplements May Cause:

- Kidney stones
- Small intestine stones
- Constipation
- Diarrhea
- Other G.I. Distress

Traditional calcium sources expose themselves to attacks from various substances commonly exist in foodstuffs, such as carbonates, phosphates, oxalates and phytates, forming insoluble complexes. These insoluble complexes further reduce the absorption of calcium in the small intestine. As an example, common inorganic forms of calcium and magnesium attack each other, resulting in insoluble complexes. In other words, inorganic calcium intake reduces magnesium absorption, and vice versa.

That is why one needs to supplement magnesium when takes inorganic calcium.

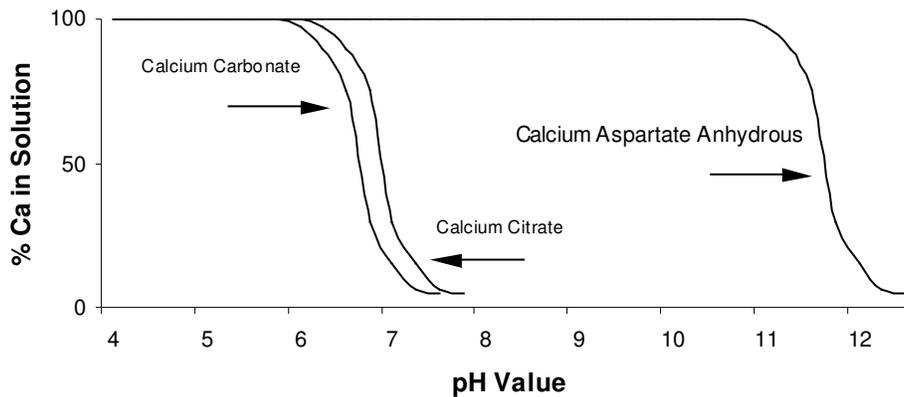
In the presence of Vitamin D, a very small percentage of calcium ions survived from attacks of other inorganic compounds may interact with Vitamin D to form soluble singular molecules. And that is exactly why most of the traditional calcium formula contains Vitamin D.

## EZorb Calcium is Completely Soluble, Highly Absorbable and Bioavailable in The Small Intestine

EZorb Calcium is completely soluble in a wide range of pH (4.0-11.0). It is made of *calcium aspartate anhydrous*, an organic compound formed of calcium atom and L-aspartic acid molecules.

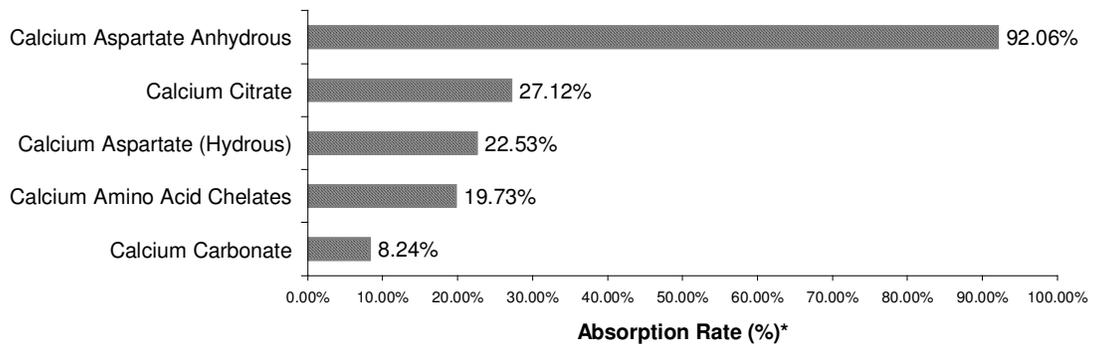
Molecule Formula:  
 $(C_4H_6NO_4)_2 Ca$

### Calcium Solubility Test Results



The calcium atom is strongly bound to ligands of L-aspartic acids to form unbreakable ties. L-aspartic acids fend off malicious attacks from inorganic compounds and transport calcium atoms to the small intestine, where absorption takes place.

### Calcium Absorption Test Results



\* Absorption rate of calcium was measured by determining the amount of calcium that appeared in urine, stool and serum.

## Organic Calcium Stability

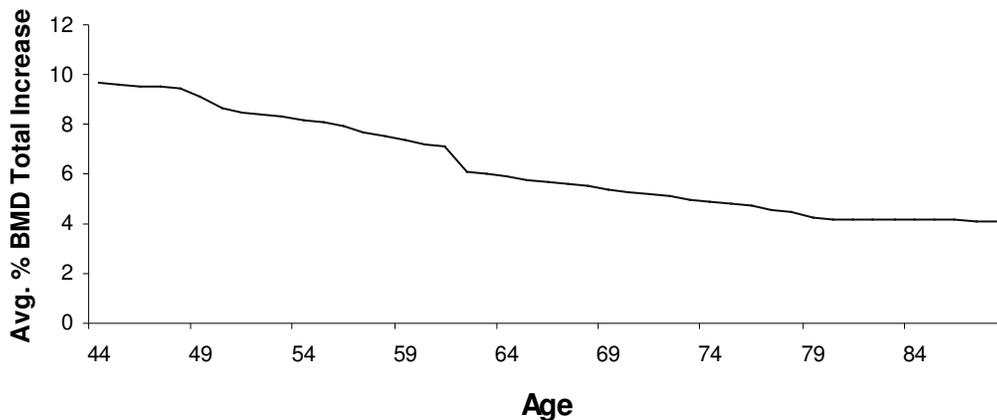
*Calcium aspartate anhydrous* is the most stable form of organic calcium compound. Other organic calcium compound, including calcium aspartate and various forms of amino acid chelates of calcium, are in hydrous forms. In other words, they all contain two or more crystalline water in their molecules. As a result, the bonding of amino acid molecules to calcium atoms is often too weak to stay stable. Hydrous form of calcium aspartate and amino acid chelates of calcium will become insoluble in the pH environment of the small intestine, and will not be bioavailable for absorption. In essence they are not better than common inorganic calcium supplements.

## EZorb Calcium Benefits

EZorb Calcium helps increase bone density by stimulating osteoblasts and enhancing Type II collagen production. It also promotes cartilage restoration by optimizing cartilage matrix. It is most effective for bone and joint related disorders including but not limited to:

- Osteoporosis / Bone Mass Loss
- Arthritis (Osteoarthritis)
- Bone Fracture
- Joint & Cartilage Damage
- Collagen Loss
- Nerve & Muscle Pain

### ***Clinical Study Result: Bone Mass Density Increases By Age Groups After 3 Months Use of EZorb***



\* These statements have not been evaluated by the Food & Drug Administration. This product is not intended to diagnose, treat, cure or prevent any diseases.