

The Threefold Magnesium Mystery

“All that is flexible is alive, all that is rigid is dead”

Lao Tzu

Flexibility

The mystery of magnesium is akin to the mystery of flexibility. Calcium makes the teeth hard, magnesium renders the teeth flexible—when combined the teeth have strength. Without flexibility the tissues, bones, or cellular structures become rigid, overly permeable, lacking in local viscosity or at worse—they die. One example, magnesium helps the hemoglobin’s oxygen transport functions via magnesium-dependent structural flexibility and magnesium-dependent viscosity—not too sticky nor too dry. Magnesium assists the formation of the sigmoidal surface of the hemoglobin platelet allowing for better uptake and off-loading of the oxygen molecule—increasing oxygen efficiency. The flexible structure itself is a product of magnesium’s role in buffering the calcium input to insure magnesium flexibility in the structures of the body, including the cell, and provides a healthy viscosity due in part to magnesium’s water carrying capacity. This also insures the right shape and form (discocytes) to the platelets allowing them to better fit in the capillaries and deliver nutrients to the body.

Magnesium is also nature’s calcium channel blocker. This key function reduces inflammation via down-regulating the contractions caused by too much calcium in the blood and tissues. 30% of the cell’s energy is used in trying to remove calcium from the cell. Magnesium buffers this process and allows for the cell wall structure to ensure itself from rigid apoptosis (cell death) by limiting or incorporating magnesium into the structure—rendering it more flexible. This flexibility contributes to the selective permeability of the cell wall whereas without magnesium the cell becomes too permeable. Calcium without magnesium causes inflammation, brittleness and cracking which also renders the cell wall hyper permeable. So to summarize, we first have a structural deficiency caused by a previous magnesium deficiency, then to that can be added an active deficiency of magnesium in the cells and tissues which create an imbalance in the local viscosity, enabling a hyper permeability and cracking.

Well Distributed Executive Power

Magnesium also regulates the immune system. Imagine a lattice structure sprinkled with diamonds. Let us say that magnesium represents the diamonds. Noble minerals have astounding effects on harmful bacteria by their presence alone. This well distributed executive is a key to how the structures defend themselves before any immune system police are called. In the Wild West, only groups of bandits could rob banks, because everyone was armed and a lone-shooter would be dead before he could even get a hold of the money. This principle holds true as sentinels built into the structure, capable of regulating the innate immune system (macrophages, granulocytes, etc.) and having their own bacterial resistance can provide a more perfect protection. This network also runs through the nervous system allowing for

the right neuro-plasticity for better nerve conduction via neurotransmitters who are also magnesium dependent.

The Spark of Cellular Exchange

Whether we are talking about chelation, uptake, bonding, enzyme conjugation, catalyzation, detoxification or the regulation of membrane transport, magnesium is the spark.

In the living body, enzymes play a key role in cellular interactions. Magnesium is involved in all of these interactions through the enzymes' own dependence on magnesium for a more perfect transformation, catalyzation, chelation or conjugation. Magnesium is an essential factor for enzyme and hormone efficiency. Many supplements which have been made outside the body such as magnesium malate, magnesium citrate, magnesium aspartate, magnesium glycinate, magnesium threonate, etc., differ from the R-form, natural and mirror molecule within the living body. The body creates these forms from the base magnesium chloride molecule by acidification processes combined with lipid molecules (fats) to create what it needs internally. This does not mean that these supplements do not have value as they can be helpful in certain situations. However, once the transdermal route for magnesium chloride is understood fully in the future, as it was in the past through the Roman and Greek thalasso, bath and thermal culture of Antiquity, we will realize that the skin is the ideal, yet overlooked, place for these transformations into the various magnesium combinations the body needs.

Malic acid is a well known chelation agent of aluminum in the body. Aluminum is one of the most pervasive toxins in the environment and in the body. Malic acid is not only found in apples but it is also found at the cellular level and is part of the ATP cycle, known as the malate-aspartate shuttle. Magnesium combines with malic acid to form magnesium malate, which becomes a fierce detoxifier of aluminum in the body. Many cosmetics use malic acid as it falls under the category of AHA (alpha-hydroxy acids), beneficial catalysts in the propagation of skin cells and tissue regeneration. The skin, as a barrier, has a natural acidity. The acids in the skin act not only as a protective agent, but as in the process of fermentation, they help create a living flora on the skin. When applied, magnesium chloride brine, the base form of magnesium from the sea or from crystallized sea strata within the Earth, penetrates into the skin and combines with these acids in the first layer, then fats in the next layers, to be better assimilated and used by the body.

Magnesium is also a well known antagonist to the fixation of aluminum (along with calcium), if optimal levels of magnesium are maintained. Nutrient-dense nutrition alongside the transdermal application practiced by our ancestors, as mentioned above, is key here. In France, doctors still prescribe bathing in certain mineral-rich waters found throughout France for many different conditions from rheumatism, to fatigue, stress, and lung disorders. Many in America have forgotten these traditions.

Magnesium is also an antagonist to cadmium, lead, nickel, and beryllium absorption in the body. Increased magnesium intake facilitates the elimination of cadmium through urinary excretion. Magnesium along with a healthy metabolism is also antagonistic to lead absorption in the vital organs.