

Dimethylglycine HCL

Dimethylglycine, or DMG, is an amino acid, a building block for protein. This non-protein amino acid that is found naturally in animal and plant cells. In the body, DMG is found only in very small amounts and for only seconds at a time. It is produced in cells as an intermediate in the metabolism of choline to glycine.

DMG is often used to reduce stress and the effects of aging, as well as boost the immune system's defenses against infection. It has been reported that Dimethylglycine can enhance oxygenation at the cellular level, reduce fatigue and enhance physical stamina.

Features & Benefits

- Dimethylglycine aids in the production of metabolic intermediates, the building blocks of many biologically important molecules.
- DMG may help the body adapt to physical and mental stress.
- DMG may help improve muscle recovery after strenuous exercise.
- DMG may help improve endurance in athletes.

How DMG helps the body to work better*:

Athletic Performance - DMG supports oxygen utilization, decreases lactic acid buildup, encourages greater endurance and stamina as well as better muscle recovery after strenuous exercise*.

Cardiovascular Health - DMG supports normal cholesterol and triglyceride levels, improves circulation, supports healthy blood pressure and homocysteine levels and helps combat hypoxia (low oxygen levels)*.

Immune System Support - DMG supports the immune system by promoting B-cell, T-cell and macrophage activity. It can help support the body's resistance to infections*.

Liver Function - DMG acts as a methyl donor, detoxifier, and supports Glutathione and SAME production. It defends the liver and the rest of the body from toxins*.

Neurological Functions - DMG provides important building blocks for the synthesis of neurotransmitters and hormones. It supports energy production for the brain and may be beneficial for those affected by seizures*.

Anti-Stress - DMG helps the body cope with physical, emotional and metabolic stress by improving oxygen utilization and supporting the immune system when being challenged*.

Methylation Pathways

One of the principal pathways by which DMG, or Dimethylglycine, produces a beneficial effect on the body is to supply methyl groups for cellular reactions.

Methylation is essential for good health, vitality, and wellness*. Every cell in the body needs an adequate source of methyl groups to function correctly and efficiently.

A methyl group is simply a carbon atom with three hydrogen atoms attached (-CH₃) and DMG has two methyl groups which it can give up to other molecules to use to complete their synthesis in the cell. Methylation is involved in hundreds of reactions in the body which involve transferring a methyl group from one molecule to another.

DMG can supply methyl groups to produce vitamins, enzymes, neurotransmitters, amino acids, hormones, antibodies and even DNA. If there is a deficiency of available methyl groups in the body then these molecules don't get made with potentially dire consequences.

Besides being involved in the synthesis of bioactive molecules, methylation contributes to a wide range of bodily functions including:

- Energy production*
- Immune function*
- Detoxification*
- Repairing and building of DNA*
- Brain activity and mood balancing*
- Inflammatory response*
- Neurological function*
- Production of key hormones and neurotransmitters*

A deficiency of methyl groups can lead to the development of health problems in the body. Methylation is one way that the body protects itself from toxic substances, especially in the liver. Methyl groups cover DNA to protect it from free radical damage and aging. DNA methylation influences the expression of genes which controls which pathways are activated or shut down. The immune system depends on methylation to help protect the body from infections and acute inflammation. The cardiovascular system depends on methylation to reduce the risks of heart disease.

The principle methylating agent in the body is SAME (S-Adenosyl methionine) which can acquire its methyl groups from a number of sources including DMG. SAME is involved in over 200 methylation reactions and therefore the body requires a large supply of methyl groups to function at maximum efficiency. Supplementing with DMG can help prevent a person from having a shortage of methyl groups*.