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Vitamin B12 deficiency now endemic in India: Is Methylcobalamin the right solution?

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Some recent reports suggest that severe deficiency of Methylcobalamin is a silent epidemic in [India](#), impacting the lifestyles of scores of individuals across age groups. It has been found that the water-soluble vitamin, which gets excreted through urine, often goes unnoticed as its symptoms are usually

subtle and mimic other conditions, including hearing loss, erratic sleep cycle, pain in legs and hands, burning or tingling sensation, etc. Methylcobalamin, also known as cobalamin, is required for a variety of physiological functions in the human body, and a deficiency of it needs to be diagnosed and treated promptly.

An alternative to tackle such deficiency of the vitamin is its bioactive form Methylcobalamin, which is effective in several metabolic processes, including DNA synthesis, brain function, and red blood cell creation. Because of the distinctive methyl group (-CH₃) bonded to the cobalt atom, methylcobalamin differs structurally from other forms of vitamin B12, such as cyanocobalamin, adenosylcobalamin, and hydroxocobalamin. Because of this structural change, methylcobalamin has different biochemical characteristics and greater bioavailability, making it the most functional and easily absorbed form of Vitamin B12.

Methylcobalamin has shown potential in the treatment of neuropathic disorders such as diabetic neuropathy and peripheral neuropathy. It is thought to enhance nerve regeneration and relieve symptoms. It also participates in the production of neurotransmitters such as serotonin and dopamine, which are critical in controlling mood, emotions, and general mental [health](#).

According to some research, low levels of methylcobalamin may contribute to abnormalities in these neurotransmitters, potentially leading to mood problems. Furthermore, it can help protect nerve cells from injury and degeneration while giving neuronal protection in situations such as depression, where persistent stress and inflammation can influence brain health.

Methylcobalamin is essential for the creation of red blood cells, which helps to avoid anemia. A healthy consumption of Methylcobalamin enables adequate erythrocyte synthesis, minimizing weariness and weakness. Its relevance extends to its role in the prevention and treatment of neurological illnesses. Research suggests that Methylcobalamin supplementation may be advantageous in illnesses such as neuropathy, multiple sclerosis, and Alzheimer's disease. Adequate methylcobalamin levels can assist in lowering blood homocysteine levels, thereby benefitting heart health. It is required for the conversion of carbohydrates into glucose, which the body utilizes for energy.

Fatigue and poor energy too are frequent depressive symptoms.

Methylcobalamin helps the body convert carbs into glucose, which it utilizes for energy. Maintaining adequate methylcobalamin levels may reduce some of the tiredness associated with depression. Some studies have looked at the

potential synergistic effects of methylcobalamin with antidepressant drugs. Individuals with depression may react more well to traditional therapy if probable Methylcobalamin deficits are addressed.

Meat, fish, eggs, and dairy products are all good sources of methylcobalamin. Individuals with dietary limitations, such as vegetarians, are at risk of deficiency. Supplementation is indicated in such circumstances to ensure appropriate consumption. Methylcobalamin supplements come in a variety of formats, including oral pills, sublingual (under-the-tongue) drops, and injections, making them accessible to people with varying preferences and requirements. Maintaining appropriate methylcobalamin levels through diet or supplementation can improve general health, minimize deficiency-related problems, and perhaps provide therapeutic advantages for a variety of medical diseases.

(The author is an Ahmedabad-based Inventor & Pharmaceutical Consultant who holds more than 42 patents. Views are personal)