

Methylcobalamin B-12



by Margy Squires

The B vitamin family wears many hats when it comes to human health maintenance.

While part of their job is to metabolize fats and carbs for energy, they are also co-enzymes in many nervous system functions. One B in particular, the methylcobalamin form of B-12, is the subject of a review that looked specifically at its ability to modify nerve pain in diabetic neuropathy, low back pain and neuralgia.

How exactly does B-12 do this? Methylcobalamin, the active form of B-12 that some simply call methyl B-12, improves normal nerve conduction by its neuroprotective nature. Per clinical studies, it is capable of promoting nerve regeneration when the nerve is injured, and calm down neuron toxicity caused by glutamate excitability. This B-12 form has been used to treat Alzheimer's, Bell's palsy, and rheumatoid arthritis, as well as to improve sleep-wake cycles and visual function. It also appears to have an analgesic or pain relieving effect by inhibiting the firing of injured sensory nerves.



Diabetic nerve pain (peripheral neuropathy) affects mostly the legs and feet. Common symptoms are tingling, burning pain, numbness and even skin sensitivity. Methyl B-12 appears to relieve these symptoms which do not abate with traditional prescription drugs for this condition.

Low back pain is difficult to treat. It is often nonspecific, meaning it can be caused by infection, inflammation, injury or structural issues. Treatment with methyl B-12 reduced pain and improved functionality. Likewise, the pain, allodynia and numbness of patients with neck pain improved significantly with this B vitamin.

Shingles is a painful skin rash caused by activation of the herpes zoster virus in nerve cells. If nerves are damaged by the virus, it can result in constant nerve "firing" and uncontrolled pain. Patients in the subacute phase (1-3 months post-rash) given methyl B-12 which inhibited the "firing" showed relief, offering a viable therapy option for a condition that otherwise is incurable if it proceeds to the chronic stage.

While methyl B-12 has been used for pain for decades, especially in Europe, how it offered relief was not quite known. This review illustrated one way may be as a gatekeeper of noradrenaline and 5-hydroxytryptamine (pain pathways). Another is in the synthesis and regeneration of nerve cells, specifically myelin, their protective covering, thus

restoring nerve function. The third means is by inhibiting nerve "firing" to decrease spontaneous and all over pain.

Could B-12 in its active methylcobalamin form work for your pain? Doses mentioned in the review from multiple studies included intramuscular and intravenous injections along with oral supplementation. B-12 is offered in micrograms; a good daily dose for healthy individuals is 1000 mcg a day, not typically found in a multi-vitamin but as a solo supplement. Therapeutic dose ranges needed to instigate a medical change were from 3,000 mcg orally up to 25,000 mcg IV (showing its safety in higher doses for these disorders). The longer this form of B-12 was used, the better the pain relief benefit; perhaps to allow time for the body to heal?

Interestingly, fibromyalgia (FM) often has the classic allodynia or all over pain, skin sensitivity and spontaneous firing described in other conditions. Although research has not shown that nerves are injured as in Alzheimer's or Multiple Sclerosis, FM is classified as an "amplified pain" syndrome to supposedly non-painful stimuli, suggesting a spontaneous, uncontrolled firing mechanism. Due to its ability to modify pain in a trio of ways, perhaps giving methyl B-12 a try might be in the future for FM patients?



Source: Zhang, et al. Methylcobalamin: A Potential Vitamin of Pain Killer. *Neural Plasticity* 11/13

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