

# B Vitamins

## Can They Help Your Pain?

by Channing Dallstream

**Pain can be a good thing.** This signal triggered by the central nervous system warns you to “Stop doing that!” or “Help, I’m hurt!” Pain turns bad when the nervous system misfires sending unnecessary pain signals with no shut off valve, as with fibromyalgia or neuropathy. Since B vitamins support and calm the nervous system, can taking them turn down an amplified pain signal and bring relief if you’re deficient?



### QA How do B vitamins affect pain?

The B vitamins are essential for a healthy nervous system. Your brain, spinal cord, and peripheral (sensory and motor activities) and autonomic (rest, digest, fight and flight reactions) make up the nervous system. The neurotransmitter serotonin modulates the pain signal and is made based on the availability of the coenzymes vitamin B6 provides. Pain-related neurotransmitters norepinephrine and “feel good” dopamine are also dependent on the same B6 coenzyme, known as pyridoxal 59-phosphate (PLP). So if you are alive and breathing, you are using your nervous system and your Bs. For more than simple survival (stress, chronic pain) you’ll need to maintain adequate levels and possibly increase your vitamin B intake.



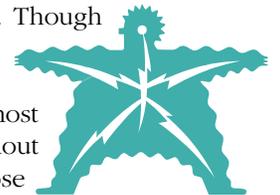
### QA Could my pain be due to a vitamin B deficiency?

Pain mechanisms themselves can be tricky to assess. All B vitamins support the nervous system in some way. Unresolved nerve pain caused by inflammation (as in carpal tunnel), virus (like shingles) or trauma can result in permanent nerve damage. Neuropathy like “burning feet” pain resulting from diabetes is another example. Interestingly, you can’t tell pain caused by vitamin B6 deficiency and diabetic neuropathy apart.<sup>1</sup> In a study done with non-vitamin taking males it was determined that decreased blood levels of PLP were associated with increased pain, tingling and nighttime waking; all symptoms of carpal tunnel syndrome (CTS). These symptoms were relieved with B6 supplementation.<sup>2</sup>

### QA Can B vitamins target specific painful conditions?

Yes. B vitamins can calm over-stimulated nerves. Migraine sufferers instinctively seek relief from their pain by retreating to a quiet dark place, reducing outside

stimulation. A few studies suggest that specifically riboflavin (B2) may reduce the frequency and duration of migraines; those who took B2 reduced the number of migraine headache attacks by more than half.<sup>3</sup> Low levels of the coenzyme PLP are common in CTS. Medical studies suggest that B6 may also help reduce inflammation and symptoms of carpal tunnel and conclude “it appears reasonable to recommend vitamin B6 supplementation to people with CTS.”<sup>4</sup> *The Prescription for Nutritional Healing* includes a B-100 complex as ‘very important’ in helping recover from shingles, a painful condition from the latent chicken pox virus which spreads along the spinal nerves. Though individual B vitamins have been shown to reduce back pain, the combination of them (B1, B6 and B12) brought the most significant and longest term relief without the side effects found from high dose painkiller use.<sup>5</sup>



### QA What about arthritis pain?

Both B5 and B6 are being studied for their affect on improving rheumatoid arthritis (RA) pain symptoms. Some very early evidence suggests that pantothenic acid (B5) may reduce RA. Those with RA tested lower in B5 levels and consistently reported higher pain levels than their healthy counterparts. Others suggest that people with RA may need more B6 as chronic inflammation may lower B6 levels.<sup>6</sup> Also, B6 and B12 help regulate homocysteine, a chemical that provokes inflammatory-type pain.

### QA Why take a supplement?

Foods high in B include brewer’s yeast, brown rice, garlic, meats and whole grains. Bananas, nuts, potatoes and sweet potatoes also contain significant B6. The best way to get this balance of Bs is from a very high quality, raw diet every day – not your typical American daily fare. Vegans and those with digestive issues (Celiac, candida) may not be able to absorb enough



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## B Vitamins *continued*

Bs from food alone. Plus prescription medications including antiepileptic drugs, gabapentin and pregabalin reduce the blood levels of both folate and B12.

### Q Are Bs in my multivitamin?

**A** Check the label. We purposely put a high B complex in Multi-Gold™, along with full spectrum vitamins and Albion chelate minerals. Eating a healthy, balanced diet and taking a multivitamin is a good idea for anyone with a chronic pain condition, such as RA and FMS. Look for magnesium (Mg), too. Like Bs, it's an enzyme cofactor and helps relieve pain by blocking pain receptors. Mg is required for serotonin synthesis to modify pain signals as well.



The Bs work better when taken together as a complex, just like they're found in foods naturally. The only exception to the balanced B rule is B12, which protects the myelin sheath. Nerve damage can occur when the sheath deteriorates, "short-circuits" and sends false signals (pain and tingling). The stand alone dose of B12 is 1000 mcg, a higher amount than found in a complex or multiple.

## B Research Studies

### B Vitamins Reduce Lung Cancer Risk

B6, folate & methionine (an essential amino acid) each reduce lung cancer risk by protecting DNA even for current smokers. Taken together, these nutrients' effectiveness is increased, reducing lung cancer risk 50%, with "never" smokers reporting the lowest cancer incidence. Nearly 400,000 men and women aged 37-79 years from 10 European countries participated in this 8 year study. [Source: *JAMA* 2010; 303(23):2377-85]

### Chronic Cough Quietened by B12

Italian researchers find B12 deficiency can be the reason for chronic coughing, and that supplementing with B12 significantly reduces or stops the cough. 42 patients, 15 of whom tested low for B12, participated in an eight-week study. The low B12 group responded favorably to B12 injection while the non-deficient group showed little or no improvement. Research suggests the low B12 level causes "central and peripheral nervous system damage leading to both sensory and autonomic nervous system dysfunction". Summary: Got a cough you can't stop? Have your B12 level checked. [Source: *Am J Clin Nutr* Jan 2011]

### Antiepileptic Meds Lower B12 & Folate Levels; Raise Homocysteine

Prescription medications for epilepsy, pain syndromes and psychiatric disorders can deplete B vitamin levels. Pregabalin and others are tied to lower B12 levels. Gabapentin, used to treat epilepsy and fibromyalgia, reduces serum folate (folic acid). Low vitamin B levels relate to higher homocysteine levels, a chemical tied to inflammatory-type pain. Vitamin levels can be restored by supplementation. 95% of the 141 patients taking B12 and folate tested normal for vitamin levels at the three-month's trial end, as well as reduced homocysteine. [Source: *Ann Neurol.* 2011 Feb;69(2):352-9. Epub 2011 Jan 19]

### Low Vit & Mineral Levels Tied to Myofascial Pain

38 patients ranging from age 33 to 37 with myofascial pain (MPS) symptoms at least 6 months in duration were tested for zinc, magnesium (Mg), vit B12, folic acid (blood). Daily severity of pain and pain pressure threshold were also measured. When compared to the control group zinc was found "significantly decreased" and low Mg & vit B12 levels were "statistically significant" for the MPS group. Researchers conclude that trace elements and vitamins may "play an important role in the pathophysiology (disease process)" of myofascial pain. [Source: *Arthritis Res Ther.* 2010;12(4):R134. Epub 2010 Jul 7]



## Q What is a therapeutic amount?

**A** Nutrients are typically labeled in recommended daily amount (RDA). It's important to note the RDA was founded in the '50s as a minimum amount to prevent severe nutritional deficiencies and not necessarily to facilitate wellness. Nor does the RDA address therapeutic levels of vitamins and minerals needed to help specific conditions. Technically a "therapeutic" dose is higher than the RDA which is not a problem given the safety of B vitamins. The role of nutrition and supplements in relation to pain continues to evolve as research progresses.

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