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More about B-12 Deficiency

Vitamin B-12 decrease seen in metformin users (a well-known phenomenon) is progressive over time and in some individuals reaches levels at which many authorities agree substitution is required. The clinical manifestations of vitamin B-12 deficiency (fatigue, cognitive changes, neuropathy, anemia) may be subtle, difficult to distinguish from symptoms due to aging and to the complications of diabetes, and irreversible. Therefore, many clinicians choose to treat individuals with vitamin B-12 levels below 150 pmol/L even in the absence of clear symptoms.

For Diabetic Patients Using Metformin: PERQUE Activated B-12 Guard & PERQUE Vessel Health Guard to Help Mitigate B-12 Deficiency

[PERQUE Activated B12 Guard](#) and [PERQUE Vessel Health Guard](#) contain 2000mcg of Vitamin B12 in the bioavailable hydroxocobalamin form. PERQUE Vessel Health Guard provides 2.5mg of folinate and 10mg of Vitamin B6 for added methylation and homocysteine control.

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Vitamin B12 Declines in Patients Taking Metformin Oral Diabetes Drug

Dr. Jaffe Recommends



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Metformin (brand names Glucophage, Glucophage XR, Fortamet, Riomet, Glumetza, and others) is a popular and highly effective oral diabetes drug used to help manage Type 2 diabetes. This drug works by lowering the amount of glucose made by the liver and by making the body's cells more sensitive to insulin.

Taking metformin increased the chances of developing vitamin B12 deficiency, according to a new study of type 2 diabetics on insulin. The Dutch trial randomized 390 patients to receive either 850 mg of metformin or a placebo three times a day for 4.3 years. Their levels of vitamin B12, folate and homocysteine were measured at baseline and 4, 17, 30, 43 and 52 months.

The metformin group showed a persistent, progressive decrease in B12 concentrations, with a mean decrease of 19% compared to the placebo group. At the end of the study, patients taking metformin were 7% more likely to be B12-deficient (less than 150 pmol/L) and 11% more likely to have a low level (15 to 220 pmol/L). The metformin patients also had lower folate concentrations than placebo recipients, although both groups showed an overall increase and the difference between groups was eliminated after adjustments for body mass index and smoking.

There was also an increase in homocysteine levels in the metformin group that was not statistically significant across the whole group, but showed that patients who were B12-deficient had higher concentrations of homocysteine (a mean of 23.7 $\mu\text{mol/L}$ compared to 14.9 $\mu\text{mol/L}$ in patients with normal B12 levels). The study was published online by BMJ.

Based on the findings, study authors concluded that regular measurement of B12 concentrations should be considered for patients on long-term metformin treatment. They noted that deficiencies are relatively easy and cheap to treat effectively and safely.

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[Scientific Abstract](#)

Stop feeling weak and tired. You'll feel the difference with PERQUE Activated B-12 Guard and PERQUE Vessel Health Guard.

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Sincerely,

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The PERQUE™ Promise

- PERQUE is an ultra premium, quality driven nutrition company based on the principle of Physiology First the Alkaline Way.
- PERQUE products are Fully Bioavailable - the purest, most hypo-allergenic ingredients plus needed co-factors and transporters used by nature and in food.
- PERQUE product labels are Full Disclosure -no hidden ingredients.
- PERQUE products come with a 100% unconditional money-back guarantee - the strongest in the natural health industry.
- PERQUE products provide 100% potency and activity for entire shelf life.
- PERQUE products are produced following or exceeding FDA pharmaceutical cGMP regulations.
- PERQUE products use pharmaceutical grade or better ingredients.
- PERQUE products contain no GMOs.
- PERQUE uses 3rd party post production assays and clinical bioassays to assure product integrity.

PERQUE LLC | 44621 Guilford Drive | Suite 150 | Ashburn | VA | 20147