Mechanistic perspective on the relationship between pyridoxal 5'-phosphate and inflammation.

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BACKGROUND: A variety of inflammatory disease conditions have been found to be associated with low levels of plasma pyridoxal 5'-phosphate (PLP), the active form of vitamin B6, without any indication of a lower dietary intake of vitamin B6, excessive catabolism of the vitamin, or congenital defects in its metabolism.

SUMMARY OF FINDINGS: The present review was conducted to examine the existing literature in this regard. Current evidence suggests that the inverse association between plasma PLP and inflammation may be the result of mobilization of this coenzyme to the site of inflammation, for use by the PLP-dependent enzymes of the kynurenine pathway of tryptophan degradation, metabolism of the immunomodulatory sphingolipids, ceramide and sphingosine 1-phosphate, and for serine hydroxymethylase for immune cell proliferation.

PMID: 23550784