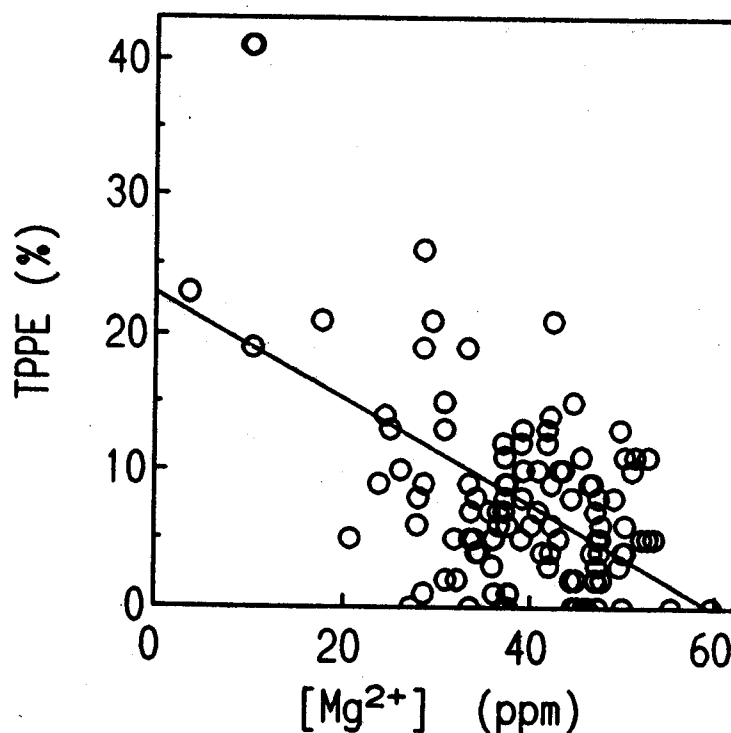


THE ROLE OF MAGNESIUM IN CLINICAL THIAMIN DEFICIENCY

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Thiamin plays essential roles in releasing energy from carbohydrates and fats and in normal functioning of the nervous system. Magnesium is required for virtually all thiamin-dependent reactions and is necessary for transformation of thiamin into the physiologically active form, thiamin diphosphate. Clinical observations of the aggravation of thiamin deficiency by magnesium depletion (Dyckner et al. 1985) have been investigated by our laboratory.

Blood samples, which were collected from patients suspected of thiamin deficiency, were analysed for thiamin status (thiamin pyrophosphate effect, TPPE) and magnesium status (erythrocyte magnesium concentration). An inverse relationship between thiamin deficiency (TPPE) and erythrocyte magnesium concentration was revealed (see figure, $P < 0.0001$).



Relationship between erythrocyte magnesium concentration and thiamin deficiency (n = 112).

The implication of this finding is that supplementation with thiamin might be without effect when magnesium deficiency is present simultaneously. This preliminary investigation will be followed up by studies which will use both laboratory and clinical means to assess patient's thiamin and magnesium status.

DYCKNER, T., NTHLIN, B. and WESTER, P. (1985). *Acta Med. Scand.* 218: 129.