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Lung alert

Vitamin B deficiency may increase risk of lung cancer

It has been hypothesised that deficiencies in B vitamin levels may influence gene expression by means of aberrant methylation patterns as vitamin B is essential for DNA synthesis and methylation. This study investigated the role of B vitamins (B2, B6, B9, B12) and methionine status on the development of lung cancer. It was conducted over 8 years and included participants from the EPIC (European Prospective Investigation into Cancer and Nutrition) cohort.

899 cases were suitable for serum analysis. Using sex, smoking and age-specific incidence rates, cumulative risks of lung cancer were greatest for current smokers followed by former smokers and never smokers. After adjusting for matching variables and cotinine (a marker of smoking), a substantially lower risk of lung cancer was seen for increasing levels of B6 and methionine. The study also revealed a high deficiency in nutrient levels of B vitamins in many western populations. Smokers were found to consume fewer fruits and vegetables (B vitamins source). Smoking intensity was inversely associated with folate, B12 and B6 levels. Serum levels of B vitamins and metabolites were ascertained to be partially determined by diet and clearly affected by vitamin supplements so low vitamin levels were found to be modifiable.

This study suggests that smoking and dietary intake can have an impact on lung cancer development. Although previous studies of vitamin B supplementation in other cancers have not been shown to be of benefit, this is clearly an interesting area for further development.

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