

5-Methyltetrahydrofolic acid stimulates endothelin-1 production in low density lipoprotein-treated human endothelial cells

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Background and aims: Several studies have shown the beneficial effects of folate treatment in improving cardiovascular function. However, the mechanisms involved have not been clearly identified. The aim of this study is to determine the effect of folates and vitamin B 12 on endothelial vasoconstriction/vasodilatation parameters in cultured human endothelial cells incubated with human low density lipoproteins (LDL). **Methods and results:** Human umbilical vein endothelial cells (HUVEC) were extracted from recently delivered umbilical cords, cultured until confluence was achieved, and then incubated for 24 h with folic acid (FA), 5-methyltetrahydrofolic acid (5-MTHF) or vitamin B 12 (B 12) in the presence or absence of LDL that was isolated from healthy volunteers. Total nitrites (as a measure of nitric oxide production), thiobarbituric acid reactive species (TBARS, a parameter of lipid peroxidation), and endothelin-1 (ET-1) were determined in the incubation media. None of the vitamins, ei