# SERUM VITAMIN E IN PATIENTS ON MAINTENANCE HEMODIALYSIS

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**BACKGROUND**: Vitamin E is an essential nutrient and important component of nonenzymatic antioxidant defense. Although an indiscriminate supplementation with antioxidant vitamins has been shown to have even harmful effects in the general population, a recent meta-analysis demonstrated that chronically hemodialyzed patients might benefit from vitamin E supplementation.

**SUBJECTS AND METHODS**: Sixteen end-stage renal disease patients who had been on maintenance hemodialysis (HD) with a protocol of 3 HD sessions per week for more than two years were included in this study. Blood for analysis was taken immediately before and after a single HD session.
Twenty healthy individuals, nonsmokers, non-obese, without any acute or chronic disease, who did not take any medications, vitamins or supplements, were included in the study as a control group.
Alpha- and gamma-tocopherol were measured with a HPLC-fluorescence method.

**RESULTS**: Alpha-tocopherol is major vitamin E component in both HD patients (alpha-tocopherol: 37.4 ± 7.3 μmol/L, gamma-tocopherol: 2.0 ± 1.5 μmol/L, both measured before the single HD session) and healthy subjects (alpha-tocopherol: 36.5 ± 4.7 μmol/L, gamma-tocopherol: 2.0 ± 0.6 μmol/L). A single HD session slightly, but significantly increases both components (42.4 ± 8.2 μmol/L and 2.2 ± 1.4 μmol/L), which can be attributed to the hemoconcentration resulting from HD. There is not a statistically significant difference of the serum tocopherols between the patients before HD session and the control subjects.

**CONCLUSIONS**: Severe vitamin E deficiency is not present in the study group of chronically hemodialyzed patients. Given the increased oxidative stress in chronically hemodialyzed patients, those with clinical manifestations of muscle cramps and/or hypo-responsiveness to the erythropoietin treatment, and with serum vitamin E concentrations within lower reference range, might be considered for vitamin E supplementation.