

A/E Carotene Vitamin Profile in Serum- Serum levels of vitamin A (retinal), vitamin E (α -tocopherol), retinyl esters and carotenoids are measured by isocratic high performance liquid chromatography with detection at three different wavelengths. Serum is mixed with an ethanol solution of the internal standards, retinyl butyrate and nonapreno- β -carotene. The analytes are extracted into hexane, which is removed under vacuum. The extract is redissolved in ethanol; an equal volume of acetonitrile is then added. The extract is filtered to remove insoluble material. An aliquot of the filtrate is injected onto a C18 reversed-phase column and eluted with a 50% ethanol:50% acetonitrile solution containing 100 μ L of diethylamine per liter. Chromatograms at 300, 325 and 450 nm are recorded. Quantitation is accomplished by comparing the peak height of the analyte in the unknown with the peak height of a known amount of the same analyte in a standard solution. A correction based on the peak height of an internal standard is used. Retinol and the retinyl esters are compared with retinyl butyrate at 325nm, α -tocopherol is compared with retinyl butyrate at 300 nm, and the carotenoids are compared with nonapreno- β -carotene at 450 nm.

-from *Laboratory Procedures Used for the Third National Health and Nutrition Examination Survey (NHANES III) 1988-1994*
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