Abstract
Selenium levels in serum samples collected in 1973 from 111 subjects in whom cancer developed during the subsequent 5 years were compared with those in serum samples from 210 cancer-free subjects matched for age, race, sex, and smoking history. The mean selenium level of cases (0.129 +/- SEM 0.002 micrograms/ml) was significantly lower than that of controls (0.136 +/- 0.002 micrograms/ml). The risk of cancer for subjects in the lowest quintile of serum selenium was twice that of subjects in the highest. Multivariate adjustment for geographical area and serum levels of lipids, vitamins A and E, and carotene, did not alter this relation. The association between low selenium level and cancer was strongest for gastrointestinal and prostatic cancers. Serum levels of vitamins A and E compounded the effect of low selenium; relative risks for the lowest tertile of selenium were 2.4 and 3.9 in the lowest tertiles of vitamins E and A, respectively.

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