

DIETARY INTAKE OF CAROTENE IN NONSMOKERS WITH AND WITHOUT PASSIVE SMOKING AT HOME

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There is considerable epidemiologic evidence suggesting an inverse relation between dietary intake or blood levels of beta-carotene (provitamin A) and cancer, especially lung cancer (1-6). Several studies have demonstrated that cigarette smokers have lower blood beta-carotene or carotenoid levels than nonsmokers (7-10). Therefore, beta-carotene status as measured by dietary intake or blood levels may be a confounding factor in the relation of cigarette smoking to lung cancer.

Passive smoking has been linked with an increased risk of lung cancer in nonsmokers in a number of studies (11-17). To our knowledge, there have been no studies examining the relation of beta-carotene status to passive smoking. We therefore conducted a cross-sectional study of current dietary carotene intake in a population of 2,142 nonsmokers for whom we collected information about passive smoking at home.

METHODS

Study population

The study population consisted of the 2,142 nonsmokers in the group of 3,899

Kaiser Permanente Medical Care Program members who received multiphasic health checkups in Oakland, California, during 1985 and who satisfactorily completed self-administered research questionnaires regarding tobacco use, alcohol consumption, and diet. The membership of the Kaiser Permanente Medical Care Program, which provides health care to approximately 25 per cent of the population of the San Francisco Bay Area, is heterogeneous (18). Those who take multiphasic health checkups are also heterogeneous but tend to be better educated and more health-conscious (19-20). Excluded from the study population were 766 nonsmokers who did not complete all the questions on the dietary questionnaire.

Assessment of passive smoking

Passive smoking at home was ascertained by the response to the question on the tobacco use questionnaire, "On the average, how many hours per week are you exposed to cigarette, cigar or pipe smoke in your home because of smoking by others? (Write in 000 if less than 1 hour per week) ——— hours." This questionnaire was administered to Kaiser Permanente multiphasic health checkup examinees between 1979 and 1986; a study of passive smoking based on the questionnaire has previously been published (21). Nonsmokers were classified as being exposed to passive smoke at home if the response to this question was greater than zero.

Assessment of dietary carotene intake

A 30-item semiquantitative food frequency questionnaire for the assessment of

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