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Dietary fat and risk of breast and colon cancer

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In the past decade, a substantial number of case-control and cohort studies have addressed the relationship between fat intake and the incidence of colon and breast cancer. Among the more recent case-control studies of colon or rectal cancer, relatively consistent findings have emerged indicating positive relationships with animal fat or red meat intake. In two large recent prospective studies, positive associations have been reported for consumption of animal fat and red meat in relation to risk of colon cancer in women (Willett *et al.* 1990), and in relation to risk of adenomatous polyps in men (Giovannucci *et al.* 1992). Such studies, as well as the international correlations, are also quite consistent in finding no association for vegetable fats. Although epidemiological studies of populations and individuals are relatively consistent in finding relationships between consumption of red meat or animal fat and risk of colon cancer, evidence is less clear whether the fat or some other factor in red meat is responsible for these associations.

In contrast to colon cancer, associations between fat intake and risk of breast cancer have not generally been found in case-control and cohort studies. In the Nurses' Health Study, only weak inverse associations have been seen between all types of fat intake and 1439 incident cases of breast cancer occurring during 8 years of follow-up (Willett *et al.* 1992). A similar lack of any clear positive association has also been seen in five other recent prospective studies. Some have claimed that insufficient between-person variation in fat intake exists within Western populations or that the methods used to measure fat intake are not sufficiently accurate to detect expected associations. However, the findings for colon cancer, as well as analyses that account for measurement errors in the dietary assessment methods argue against this claim. Although it remains possible that the level of dietary fat early in life, many years before diagnosis, or at levels much lower than those consumed by women in affluent countries may have some influence on breast cancer incidence, available evidence suggests that moderate reductions in total fat intake by middle-aged women are not likely to have any major impact on breast cancer incidence rates. An alternative hypothesis, derived from animal studies, suggests that energy restriction during the years of growth and development can substantially reduce the risk of breast cancer. In contrast to the largely null findings on fat intake, international correlations and case-control and cohort studies, using adult height as a surrogate measure, provide relatively consistent support for this concept (Micozzi, 1985; Tretli, 1989).

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