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1: [Integr Cancer Ther.](#) 2004 Dec;3(4):333-41.

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Dietary antioxidants and human cancer.

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Epidemiological studies show that a high intake of anti-oxidant-rich foods is inversely related to cancer risk. While animal and cell cultures confirm the anticancer effects of antioxidants, intervention trials to determine their ability to reduce cancer risk have been inconclusive, although selenium and vitamin E reduced the risk of some forms of cancer, including prostate and colon cancer, and carotenoids have been shown to help reduce breast cancer risk. Cancer treatment by radiation and anticancer drugs reduces inherent antioxidants and induces oxidative stress, which increases with disease progression. Vitamins E and C have been shown to ameliorate adverse side effects associated with free radical damage to normal cells in cancer therapy, such as mucositis and fibrosis, and to reduce the recurrence of breast cancer. While clinical studies on the effect of anti-oxidants in modulating cancer treatment are limited in number and size, experimental studies show that antioxidant vitamins and some phytochemicals selectively induce apoptosis in cancer cells but not in normal cells and prevent angiogenesis and metastatic spread, suggesting a potential role for antioxidants as adjuvants in cancer therapy.

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