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The dangers of vitamin C

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It has been proposed that dietary [anti-oxidants](#), such as vitamin C, may be effective in cancer prevention by acting as scavengers of reactive oxygen species (ROS) that induce DNA damage and genotoxin formation. In the June 15 [Science](#), Lee *et al.* provide evidence that vitamin C can in fact induce the formation of genotoxins (*Science* 2001, **292**:2083-2086). They developed a specialized method, involving liquid chromatography (LC)/atmospheric pressure chemical ionization (APCI)/mass spectrometry (MS)/ultraviolet (UV), to identify DNA-reactive bifunctional electrophiles. They then performed a series of *in vitro* experiments to examine the effects of vitamin C on the decomposition of lipid hydroperoxides. The vitamin C concentrations they used are comparable with concentrations resulting from oral vitamin C doses of 200mg per day. They found that vitamin C induced the formation of bifunctional electrophiles in the absence of transition metal ions. The authors suggest that these results may explain why vitamin C has not proved effective as a cancer therapeutic agent and suggest that patients in vitamin C [chemoprevention studies](#) should be carefully monitored for etheno-dAdo adducts and DNA damage lesions.

References

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3. Do antioxidants still have a role in the prevention of human cancer?