

Estrogen's Role in Cancer

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A study by Mailman School of Public Health researchers led by Assistant Professor of Environmental Health Sciences Hari Bhat produced two key findings about the route cancer-causing estrogens take in stimulating tumors.

The results, published in the April 1 Proceedings of the National Academy of Science, showed that in the case of carcinogenic forms of estrogen, two sequences of steps are necessary to produce cancer. Blocking the second of the sequences may be feasible and could be a way to prevent estrogen-induced cancers.

In December 2002, the National Institute of Environmental Health Sciences added estrogen to its list of known cancer-causing agents, though not all forms of the hormone are carcinogenic.

The Columbia researchers found that estrogens considered noncarcinogenic can cause cancer under certain conditions. When noncarcinogenic estrogen was implanted in hamsters, along with a molecule that generates oxygen radicals, a natural byproduct of metabolism, 30 percent of the hamsters, developed kidney cancer within seven months. This more complete knowledge of how the combination of estrogen and oxygen radicals increases the risk of cancer could lead to new anti-oxidant therapies to treat or prevent cancer.



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