



Does Everything Cause Cancer? No, but 228 Human Carcinogens May

After reading the ingredients label on the “fake butter” that a friend of mine bought to lower her husband’s cholesterol level, she started saying, “honey, here’s your carcinogen,” when she placed it on the table. Many people are like my friend in thinking that all sorts of things can cause cancer, and myths and rumors abound about perceived carcinogens.

So, what really does have the potential to cause cancer in humans? In December 2002, the Department of Health and Human Services released the tenth edition of the *Report on Carcinogens*. The report, prepared by the National Toxicology Program (2002), is published every two years and lists potentially carcinogenic substances that have been reviewed by three successive expert panels of government and nongovernment scientists. The full report can be found online at <http://ntp-server.niehs.nih.gov/newhomerc/aboutroc.html>.

The report was mandated by Congress in 1978 as part of the Public Health Act as a way for the U.S. government to keep the public informed about medications, substances, and environmental exposures that are “known” human carcinogens (i.e., sufficient evidence exists of carcinogenic potential from human studies) or “reasonably anticipated” carcinogens (i.e., either evidence of carcinogenicity is limited from human studies and/or evidence of carcinogenicity is sufficient from animal studies). Sixteen new listings appear in the most recent report, bringing the total known or reasonably anticipated substances to pose a cancer risk to 228 (National Toxicology Program, 2002).

The listings do not address the potential benefits of exposures to certain carcinogenic substances in specific situations. For instance, many chemotherapy drugs are associated

with secondary cancer development, but the benefits of these drugs may far outweigh the risk of a second cancer.

What’s new on the list? Newly listed in the report is the group of **steroidal estrogens**, such as oral contraceptives and estrogen re-



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placement therapy, which now are classified as known human carcinogens.

Several individual steroidal estrogens had been listed as reasonably anticipated carcinogens in past editions, but the 2002 report is the first to list all of these hormones as a group. The report cites data linking estrogen-containing oral contraceptives to an increased risk of breast cancer but notes that they may be protective against ovarian and endometrial cancers. The report also cites human epidemiology data revealing an association between estrogen replacement therapy and an increase in endometrial cancer risk (National Toxicology Program, 2002).

Other newly listed known human carcinogens include the following (National Toxicology Program, 2002).

- **Broad spectrum ultraviolet radiation (UVR):** UVR, produced by the sun and by other sources (e.g., tanning beds), has the potential to cause skin cancer, cancer of the lip, and melanoma of the eye. Skin cancers occur more frequently among people who experience sunburn and/or have long durations of UVR exposure.

- **Wood dust:** Wood dust is created when wood is cut, shaped, and finished and is prevalent in sawmills and furniture-manufacturing plants. Because unprotected workers have a higher risk of cancers of the nasal cavities and sinuses, wood dust now is listed as a known carcinogen.

- **Nickel compounds:** The report newly lists nickel compounds that are used in battery manufacturing and paint or ceramics industries as known human carcinogens based on studies of workers who had

higher lung and nasal cancer death rates compared to nonexposed individuals.

- **Beryllium and beryllium compounds:** Workers who inhale beryllium dust or handle items containing beryllium have a higher risk for lung cancer, which is related to the degree of exposure to beryllium and cannot be explained by tobacco use or other occupational or environmental exposures. Beryllium in mined; therefore, beryllium miners are at risk for cancer. Other occupational groups with beryllium exposure include alloy fabricators, ceramics workers, missile technicians, nuclear reactor workers, electric and electronic equipment workers, and jewelers.

New Reasonably Anticipated Human Carcinogens

Twelve substances are newly listed as reasonably anticipated to cause human cancers, including chloramphenicol, an antibiotic with restricted use in the United States because it can cause fatal blood dyscrasias. Studies

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