

Acrylamide in Food: Is It a Real Threat to Public Health?

By ACSH Staff — February 1, 2002

Executive Summary

- There is no credible evidence that acrylamide in food poses a human cancer risk.
- Recent studies indicate that acrylamide, a known animal carcinogen, is formed in many foods when they are cooked.
- Acrylamide has not, even in high exposure occupational settings, been shown to cause cancer in humans. The high-dose rodent tests that concluded that acrylamide increases the incidence of tumors cannot be extrapolated directly to humans.
- Toxicity and carcinogenicity tests on rodents are performed using very high doses for much of the animals' lifespan. These doses may be hundreds or thousands of times greater than those to which humans are typically exposed.
- One hypothesis suggests that any chemical at high enough dose will kill some cells, thus causing an animal's body to increase proliferation of cells for replacement. This increased rate of cell division in and of itself makes the animal more susceptible to any carcinogen or mutagen. But this type of experimental approach skews the results of the tests, and artificially inflates the risk calculated from those results.
- The fact that a chemical causes cancer in one species, e.g. rats, does not necessarily mean it will be carcinogenic in other species like mice, let alone in humans. Sometimes only one sex of one species will be susceptible to the carcinogenic effects. This was evident in the case of the synthetic sweetener saccharin, which increased the risk of cancer only in male rats.
- There are many naturally occurring and cooking-induced chemicals in human foods that, like acrylamide, can cause tumors at high doses in rodent tests. Avoiding all of them would leave practically nothing for humans to eat.
- The risk that acrylamide (and most other rodent carcinogens) in our foods increases the risk of human cancer is hypothetical at best. ACSH does not advise consumers to alter either their food choices or food preparation methods on the basis of postulated cancer risks.

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