

Mouse-Trapped: The Regulatory Juggernaut of Rodent Cancer-Testing

By ACSH Staff — February 10, 2005

Superstitions -- closely held beliefs lacking any scientific support -- have been around for ages. They promise empowerment: if you take some pre-emptive action (avoid broken mirrors, black cats, or ladders) you can dodge dire consequences. True, there is no evidence that such actions protect you, but just in case, you take a few extra steps to avoid the ladder. After all, you never know.

Superstitions prevail in our high-tech era. Take for example the common practice of using the results of high-dose rodent cancer tests to predict which substances might cause human cancer.

The animal-to-man prediction model clearly meets the two main criteria for a superstition. First, it offers a promise: if we take action to prevent our exposure to even trace levels of chemicals that cause cancer in laboratory animals, we will avoid getting cancer ourselves, or at least reduce our risk. Second, that promise is a false one. There is absolutely no scientific evidence that human exposure to rodent carcinogens poses a risk of human cancer.

Our current war against animal carcinogens is irrational. But unlike taking evasive action upon spotting a black cat, the carcinogen superstition carries a huge cost, in the form of regulations -- designed to protect us from cancer risks that do not exist.

The assumption that "a rodent is a little man" first appeared on the regulatory scene in the 1950s, a valuable weapon for environmentalists who viewed the regulation of synthetic chemicals as the primary means to fight cancer. Starting in 1958, the Delaney Clause required the Food and Drug Administration to ban any food additives that cause cancer in animals. Prop 65 in California requires that any chemical "known to the state of California" to cause cancer in rodents be banned or labeled a carcinogen. The nation has panicked over countless food scares -- over cranberries, the artificial sweeteners cyclamate and saccharin, Alar on apples, acrylamide in French fries, and more. The result: economic disruption for the affected industry and its customers.

These regulations and scares not only consume economic resources (without any health benefit) but distract Americans from the real causes of cancer -- those documented through the study of humans, not rodents.

Scientists are at last stepping forward with the blunt truth: when it comes to using rodents to predict human cancer risk, the emperor has no clothes.

Back when laws based on animal tests were proposed, it was believed that "carcinogens" were (a) exclusively of synthetic origin and (b) rare. "Carcinogens," it was thought, could be identified and easily purged. These assumptions are false. Chemicals that cause cancer in animals abound in

natural foods -- and the high doses fed to rodents, not the chemicals themselves, cause the observed increases in rodent cancer. Incredibly, studies comparing different species reveal that carcinogen tests on mice cannot even accurately predict cancer risk in rats, much less humans. Yet, as with all superstitions, facts are ignored. Synthetic chemicals (like PCBs in the Hudson River and dioxin in paper towels) -- but not the myriad natural animal carcinogens -- are subjected to acts of regulatory exorcism.

This is not to say that animal testing is not valuable (it is essential to biomedical research) or that animal cancer tests cannot be useful: if a chemical causes cancer in many animal species and shows a dose-response relationship -- the more exposure the greater the risk -- prudence dictates limiting exposure to that chemical. This is the FDA's sensible regulatory approach to aflatoxin, a natural chemical produced by molds on peanut and wheat. Aflatoxins cause cancer in a full spectrum of animals, and the higher the exposure, the greater the risk. Since aflatoxins are natural they are not subject to draconian environmental laws, but the FDA prudently sets limits on the amounts allowed as residues in food. This commonsense approach stands in contrast to the banning or purging of synthetic chemicals following one or two experiments in which near-lethal doses were given to rodents.

This is a free country, and we all have the right to be guided by superstitions, no matter how nonsensical; for example, my mother still forbids me to open an umbrella in her apartment. But we should no longer tolerate the mindless regulatory ritual of banning useful, safe chemicals "at the drop of a rat."

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