

Food Irradiation: Do We Have All the Facts?
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The Centers for Disease Control, CDC, Food and Drug Administration, FDA, and US Department of Agriculture, USDA, agree that food irradiation is safe. Consumer groups and some scientists however, are expressing concern that irradiation is not as harmless to humans as proponents would have us believe.

Food irradiation is a process that exposes food to a beam of light containing roughly 15 million times the amount of radiation in a single X-ray. This mega-dose of radiation breaks the chemical bonds of different organisms; and renders *E. Coli*, *Salmonella* and other bacteria harmless by damaging their DNA. Additionally, food irradiation causes insects and other parasites to lose their ability to reproduce thus decreasing the number of 'bonus bits' in your food. Proponents of the process liken food irradiation to pasteurization or pressure-cooking. According to the CDC, "The effects of irradiation on the food and on animals and people eating irradiated food have been studied extensively." Government experts and others claim the food irradiation process is safe, effective and will prevent most food borne diseases.

If taken at face value, why would anyone argue with government experts? After all, these same people said Vioxx, Celebrex, and Bextra were safe and effective.

It turns out that the pasteurization metaphor, as put forth by the CDC and other irradiation proponents, is not an accurate comparison to irradiation. In milk pasteurization, the milk is heated to a temperature that kills most bacteria and certain enzymes, and then reduced back to a consumable temperature. Pasteurization, unlike irradiation does not use radiation. Food irradiation, on the other hand, uses about 150 times the amount of radiation necessary to kill a human. Irradiation not only kills or mutates bad bacteria; it also kills good bacteria, and can produce new byproducts that have been shown to cause a variety of health problems.

Before tossing on the HAZMAT suit to chow down on that burger, please keep in mind that the food, usually meat, though it is legal to irradiate fruits, vegetables, and grain, does not

become radioactive. It would require a much higher dose of radiation before that could happen. Irradiation will protect you if the meat is undercooked. However, Urvashi Rangan, Ph.D., an environmental health scientist for Consumers Union says, “There’s no reason to [buy irradiated meat] if you cook meat thoroughly. Irradiation actually destroys fewer bacteria than does proper cooking.”

Irradiation will also destroy beneficial nutrients and enzymes found in non-irradiated food while extending the food's shelf life. Some estimates say that the vitamin content can decrease as much as 90% (Tom King, *Meat Irradiation Masks Factory Filth*, Minnesota Food Association, <http://www.mnfoodassociation.org/news/meatirrad.html>). The trade off is longer shelf life for food, but the food will pack less nutritional value. There are also some studies that indicate the irradiation process creates trans-fatty acids, which have a proven relationship between bad ‘LDL’ cholesterol and an increased risk of heart disease. These concerns and other chemical byproducts of the process (byproducts that may act as tumor promoters in lab rats) have prompted the European Union to call for additional studies and halt further approval of irradiated foods.

According to some watchdog groups, the effects of irradiated food have not been ‘studied extensively’ as claimed by the CDC. “The FDA relied on only 7 of more than 400 scientific studies to determine that irradiated food is safe to eat. Of those seven, only three were published in peer-reviewed journals,” said Wenonah Hauter, the Director of Public Citizen’s Food Program. Long-term studies on the impact of humans consuming irradiated food have not been completed. Neither, according to documents provided by Public Citizen, has the FDA followed its own regulations that require “elaborate toxicological experiments.” There are potential long term effects that the FDA has not addressed. From Ms. Hauter, “A wide range of health problems have been observed in animals fed irradiated foods, including premature death, stillbirths, fatal internal bleeding, organ damage, immune system dysfunction, stunted growth and nutritional deficiencies.”

There seems to be little chance of compromise between the two sides of this issue. On the website of the Better Health Channel, a venue for consumer health created by the Victorian (Australia) government, some of the potential benefits of irradiation include extended shelf life, less food spoilage, reduced risk of food-borne disease and less need for pesticides (http://www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Food_irradiation?OpenDocument). When asked what Public Citizen, the consumer group founded by Ralph Nadar, believed were the benefits of irradiation, Ms. Hauter replied, “We don’t think there is any good reason for irradiating food. The industry promotes it as a technological fix for zapping bacteria at the end of the line in meat plants, letting the industry off the hook for the intensive factory-farm methods of raising animals and the poor sanitation and fast line speeds that cause the contamination.”

Notwithstanding the nutritional issues, consumers are going to be concerned with how it tastes. Pamphlets from the irradiation companies and the supermarkets that carry the product assure us that “you can’t taste the difference”. The truth is less palatable. *Consumer Reports* magazine, in article “The Truth About Irradiated Meat” (August 2003, http://www.consumerreports.org/main/content/display_report.jsp?FOLDER%3C%3Efolder_id=341223&ASSORTMENT%3C%3Eeast_id=333139&bmUID=1110405930768) said, “Our trained taste testers noted a slight but distinct off-taste and smell in most of the irradiated beef and chicken we cooked and sampled, likening it to singed hair. In the beef, the taste was detectable even with a bun, ketchup, and lettuce. Because it was usually subtle, however, some consumers may not notice it.”

Consumers Union, according to Doctor Rangan, recommends that the best way to improve meat quality is to clean up the food-supply chain. Public Citizen is in full agreement. Ms. Hauter said, “The focus should be on preventing contamination, not just sterilizing it after the fact. *E. coli* is a good example. This pathogen is found in the intestinal tract of cattle. It gets on meat through contamination by fecal matter. Irradiation doesn’t remove that contamination, it simply disinfects it. Reigning in massive factory farms, reducing the line speed in meat plants

(the average production line kills 400 cows an hour), and increasing the authority of government meat inspectors would all go a long way to improving meat safety. Instead, we hear from the meat industry and regulators that irradiation is the only option we have left.”

Consumers should know what they are buying. Currently irradiated beef must be marked with a radura, the international symbol of irradiation, as well the text “treated with irradiation.” Public Citizen recommends that if local grocery store carries irradiated meat consumers should tell the manager why they are not buying it. It is not as easy to tell about irradiation in restaurants or school cafeterias; because these venues are not required to notify consumers or parents what type of meat they are serving. Parents must call the school board in their district to find out what their children are being served. Public Citizen again recommends that if you do not want your children eating irradiated foods you make your concerns known to your school board.

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