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"Nuked Food"



Commentary

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"Nuked Food" - The Dangers of Irradiated Food



Nuked food is the common term for irradiated food - food which is exposed to high level radiation for the purpose of sterilizing it. This high level radiation penetrates the food which, as anyone who has paid attention in chemistry knows, raises the energy level of the atoms and molecules which the food is composed of. This results in myriad "free radicals" - atoms which have lost an outer electron due to having absorbed a shot of higher energy.

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And instead of being chemically neutral, such an atom has now become strongly attractive. This will break and re-arrange many chemical bonds in the atoms, molecules and chemical compounds of the cells of the food under radiation. So much so that the cellular processes of any micro-organisms in the food are disrupted, and the micro-organisms in the food are killed.

The cells of micro-organisms live and die by exactly the same chemical laws and processes that our cells live by. And if our cells were subjected to the same radiation, they would die just as surely.

The idea is that the radiation dissipates, and things return to normal. But we have come to know and understand that free radicals form stable compounds that are different from the original chemical compounds, and that the free radicals and the altered compounds are harmful to us in many, many ways - among them a trigger for heart diseases and cancer.

The greatest danger, in my view, is the havoc such free radicals can wreak in the delicate chemistry of reproduction, when our cells, or an ova, divide and replicate - a cell or an ovum is about the same size as a micro-organism - and in the growth and development of the embryo, when it is acutely vulnerable to any abnormalities.

Personally, I cannot understand how people can be so irresponsible to allow and apply what is such a powerful free radical creation tool that it kills all micro-organisms in the food - micro-organisms which live and die by exactly the same chemistry as we do. To me this is incomprehensible.

Here then is a calm and cogent article by an accomplished and respected Cancer research scientist, plus a few abstracts (no abstracts were available for many more papers) of animal trials done with irradiated food, as listed in the Public Archives of the National Library of Medicine.

Original Article:

George L. Tritsch, PhD

Cancer Research Scientist, Roswell Park Memorial Institute, New York State Department of Health.

I am speaking as a private citizen, and my opinions are my own, based on thirty-three years of experience since my doctorate at Cornell Medical College, Rockefeller University and, since 1959, as a cancer research scientist and biochemist at Roswell.

I am opposed to consuming irradiated food because of the abundant and convincing evidence in the refereed scientific literature that the condensation products of the free radicals formed during irradiation produce statistically significant increases in carcinogenesis, mutagenesis and cardiovascular disease in animals and man. I will not address the reported destruction of vitamins and other nutrients (what? - more nutrient deficiencies?; my comment) by irradiation because suitable supplementation of the diet can prevent the development of such potential deficiencies. However, I cannot protect myself from the carcinogenic and other harmful insults to the body placed into the food supplies and I can see no tangible benefit to be traded for the possible increased incidence of malignant disease one to three decades in the future.

Irradiation works by splitting chemical bonds in molecules with high energy beams to form ions and free radicals. When sufficient critical bonds are split in organisms contaminating a food, the organism is killed. Comparable bonds are split in the food. Ions are stable; free radicals contain an unpaired electron and are inherently unstable and therefore reactive. How long free radicals remain in food treated with a given dose of radiation or the reaction products formed in a given food cannot be calculated but must be tested experimentally for each food. Different doses of radiation will produce different amounts and kinds of products.

The kinds of bonds split in a given molecule are governed by statistical considerations. Thus, while most molecules of a given fatty acid, for example, may be split in a certain manner, other molecules of the same fatty acid will be split differently. A free radical can either combine with another free radical to form a stable compound, or it can initiate a [chemical] chain reaction by reacting with a stable molecule to form another free radical, et cetera, until the chain is terminated by the reaction of two free radicals to form a stable compound. These reactions continue long after the irradiation procedure.

I am bringing this up to give you a rationale for the vast number of new molecules that can be formed from irradiation of a single molecular species, to say nothing of a complicated mixture such as food. Furthermore, the final number and types of new molecules formed will depend on the other molecules present in the sample. Thus, free radicals originating from fats could form new compounds with proteins, nucleic acids [DNA], and so forth.

[found at: <http://www.geocities.com/CapitolHill/Lobby/8979/page26.html>].

Abstracts: [from the public archives of the [National Library of Medicine](#)]

1) Micronucleus test in mice fed on an irradiated diet.

Jpn J Vet Res 1989 Apr;37(2):41-7

Endoh D, Hashimoto N, Sato F, Kuwabara M.

A mutagenicity study was carried out in mice fed on a gamma-irradiated diet. As an indicator of mutagenic activity, we observed an incidence of micronuclei in erythrocytes. The average body weight of the mice fed on the diet irradiated to dose range of 400-1,000 kGy decreased, and the mice fed on the 800-1,000 kGy-irradiated diet died during the period from 8 to 14 days after the start of feeding. On the other hand, when the mutagenic activity of the irradiated diet was tested by observing occurrence of micronucleus in erythrocytes, no significant increase was recognized. These results indicated that the irradiated diet had no mutagenic activity, even though it possessed a toxic effect on the growth of mice. PMID: 2779058 [PubMed - indexed for MEDLINE]

2) Genetic effects of feeding irradiated wheat to mice.

Can J Genet Cytol 1976 Jun;18(2):231-8

Vijayalaxmi.

The effects of feeding irradiated wheat in mice on bone marrow and testis chromosomes, germ cell numbers and dominant lethal mutations were investigated. Feeding of freshly irradiated wheat resulted in significantly increased incidence of polyploid cells in bone marrow, aneuploid cells in testis, reduction in number of spermatogonia of types A, B and resting primary spermatocytes as well as a higher mutagenic index. Such a response was not observed when mice were fed stored irradiated wheat. Also there was no difference between the mice fed un-irradiated wheat and stored irradiated wheat. PMID: 990994 [PubMed - indexed for MEDLINE]

3) Chromosome studies on bone marrow cells of Chinese hamsters fed a radiosterilized diet.

Toxicology 1977 Oct;8(2):213-22

Renner HW.

Metaphase preparations of chromosomes from bone marrow cells of Chinese hamsters were examined for mutagenic effects following the feeding of a radiosterilized diet. No increase in the incidence of structural chromosomal aberrations was observed. As far as numerical aberrations were concerned, the proportion of cells with polyploidy increased to between 4 to 5 times the control level, irrespective of the moisture content of the diet. This polyploidy effect occurred very early, being detectable within 24 h, if the diet fed had been irradiated with an absorbed dose of 4.5 - 10(6) rad. The incidence of polyploidy remained below 0.5%, however, nor did it rise with higher radiation doses. When the feeding of the irradiated diet was stopped, the proportion of polyploid cells returned to the control level within a maximum of 6 weeks. If the diet was stored (initially) for 6 weeks following irradiation before being fed to the animals no increase in the number of polyploid cells was noted. These results are not interpreted as a mutagenic effect of the irradiated diet. PMID: 929628 [PubMed - indexed for MEDLINE]

4) Irradiated laboratory animal diets: dominant lethal studies in the mouse.

Mutat Res 1981 Feb;80(2):333-45

Anderson D, Clapp MJ, Hodge MC, Weight TM.

In 4 separate dominant lethal experiments groups of mice of either Charles River CD1 or Alderley Park strains were fed laboratory diets (Oakes, 41B, PRD, BP nutrition rat and mouse maintenance diet No. 1). The diets were either untreated (negative control diets) or irradiated at 1, 2.5 and 5 megarad and were freshly irradiated, or stored. The animals were fed their test diets for a period of 3 weeks prior to mating. Groups of mice given a single intraperitoneal injection of 200 mg cyclophosphamide per kg body weight served as the positive controls. Freshly irradiated PRD diet fed to male mice of both strains caused an increase in early deaths in females mated to the males in week 7 and to a lesser extent in week 4. The increase due to irradiation was small by comparison with that produced by the positive control compound. The responses for the other irradiated diets showed no significant increases in early deaths although some values for Oakes diet were

high. The effect of storage was examined with PRD and BPN diet on one occasion and produced conflicting results. Thus there was some evidence that irradiated PRD diet has weak mutagenic activity in the meiotic and/or pre-meiotic phase of the spermatogenic cycle which appeared to be lessened on storage; the inclusion of such a diet in toxicological studies would therefore need to be carefully considered. PMID: 7207489 [PubMed - indexed for MEDLINE]

5) The effect of ionizing irradiation on sensory changes in feed in relation to their utilization by dogs

Vet Med (Praha) 1985 Dec;30(12):739-48, [Article in Czech]

Smid K, Dvorak J, Hrusovsky J.

To evaluate the effect of ionizing radiation on sensory changes of feeds in relation to their utilization by dogs, four groups of experimental animals were formed. Two groups were fed a ration where the main component (meat feed mixture VETACAN and loose feed mixture VETAVIT) was irradiated by radioisotope Co 60 at the dose of 25 kGy/kg for the period of 90 days. In the remaining two groups a non-irradiated ration was used for the same period. For both diets, control groups of dogs were formed and the feed ration was biologically fortified by a vitamin-mineral supplement to the physiological standard. It followed from the observations that the effect of radiation caused a significant qualitative decrease in the level of energy nutrients, particularly in the protein and lipid sphere. It is assumed that the extent of damage of lipid fraction is also accompanied by deficient vitamin activity and further by significant changes of taste and aromatic properties felt by animals. Irradiation of the feed ration caused a significant 20 to 25% decrease of food intake with a subsequent decrease of live weight and deterioration of physical condition. Irradiated diets without biological fortification caused significant losses of weight from the initial value mean = 39.5 kg to mean = 35.33 kg, in comparison with the non-irradiated rations through which the live weight was stabilized, and at biological fortification positively influenced. Irradiation of the feed ration during the period of study had not caused a response of the organism displayed in changes of physiological values of body temperature and heart and respiration rates in experimental animals. Radiosterilization of feeds had not caused any significant decrease of training ability and performance of dogs. PMID: 3937317 [PubMed - indexed for MEDLINE]

6) Immune response in rats given irradiated wheat.

Br J Nutr 1978 Nov;40(3):535-41

Vijayalaxmi.

1. Rats given diets containing freshly-irradiated wheat showed significantly lower mean antibody titres to four different antigens, decreased numbers of antibody-forming cells in the spleen and rosette-forming lymphocytes as compared to rats given either unirradiated wheat or irradiated wheat stored for a period of 12 weeks.
2. The immune response in rats given 90 g protein/kg diet was essentially similar to that seen in animals given 180 g protein/kg diet. PMID: 568934 [PubMed - indexed for MEDLINE]

