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Lethal Danger of CT Scans

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By William Faloon



We tried everything... from *pleading* with arrogant physicians to providing *irrefutable* documentation to support our position. The response was always the same: we were “*out of our minds*” for suggesting that medical X-rays increase future **cancer** risks.

Our opposition could never substantiate that exposing healthy cells to ionizing radiation was safe. They did at one point rely on the **Atomic Energy Commission**, who claimed there were no dangers to low-level radiation exposure.

The **Atomic Energy Commission** was created to “manage the development, use, and control of atomic (nuclear) energy for military and civilian applications.” Like so many federal agencies, the priority was not to protect the public’s health. Instead this tax-funded bureaucracy (like the FDA) functioned to guarantee the economic success of the industries it regulated.¹

By ridiculing those who warned about the carcinogenic effects of X-rays, the federal government and medical establishment enabled companies making CT scanners (and other radiation devices) to earn **tens of billions of dollars** in profit, with Medicare and private health insurance picking up most of the costs.

Radiation Overload

Compared to regular medical X-rays, CT scans yield much higher-resolution images. Unfortunately, CT scans also expose the patient to hundreds and sometimes thousands of times more radiation.²⁻⁴

The routine use of CT scans and other dangerous X-ray imaging procedures has *skyrocketed* over the past three decades. In **1980**, there were **3 million** CT scans done. By the year **2007**, the number increased to about **70 million**.^{5,6}

We at **Life Extension**® long ago warned members to avoid CT scans and any kind of X-ray unless absolutely necessary. Up against us was an armada of for-profit companies who promoted CT scans to *healthy* people to measure **coronary artery** calcification, *virtual colonoscopy* in place of the more effective standard colonoscopy (flexible tube procedures), and even *whole-body* CT scans to identify abnormalities anywhere in one’s anatomy.

The irony is that health-conscious people, who often paid for *whole-body* CT scans out of their own pockets, unwittingly exposed their whole body to **huge** levels of DNA gene-mutating radiation!

Absolutely Shocking Data

The uninformed public is in for a shocker. A study released at the end of last year reveals that CT scans deliver up to **four times more radiation** than what was previously believed, which was already dangerously high.⁷



William
Faloon

scans administered in the year **2007 alone** may contribute to **29,000** new cancer cases and nearly **15,000** cancer deaths.⁸

The problem is that the explosion in unnecessary CT scans has been going on every year. If we carry this back just ten years, this means that **150,000** Americans are facing horrific deaths from CT scan-induced cancers.



Adding to this impending cancer epidemic are other medical procedures that deliver cancer-causing radiation into the body.

If the *only* benefit you ever obtain from **Life Extension®** membership is the knowledge to avoid unnecessary CT scans and medical X-rays, this alone is well worth the annual membership fee.

Unsafe at Any Dose

Doctors argue that the amount of radiation emitted from regular medical X-rays is so low that there is no cancer risk. This flies in the face of data showing that any amount of radiation inflicts free radical damage to DNA that adversely affects our genes.^{9,10} We long ago reported statistics indicating that a significant percentage of today's cancers are caused by medical radiation.^{8,11-13} Radiation-induced cancers occur in response to mutations in genes that regulate cellular proliferation.

While doctors state that radiation is safe as long as it is kept at a certain level, we argued that even the smallest particle of radiation inflicts DNA damage. For radiation to be safe, all of the DNA damage must be repaired perfectly. Any damage not perfectly repaired creates mutations, any one of which has the potential to lead to further mutations that cause cancer. In fact, we long ago pointed to research showing that the lowest possible dose of radiation is not only unsafe, but also does far more damage than previously thought and is indeed mutagenic.¹⁴

National Academy of Sciences Report

In June 2005, the National Academy of Sciences released a report stating that even very low doses of radiation can cause cancer. In its report, the National Academy defined low dose as being as low as “near zero.”¹⁵

While the researchers indicated that the cancer risk from any given X-ray is very small, their report stated: “**Risk would continue at a linear fashion at lower doses without a threshold and that the smallest dose has the potential to cause a small increase in risk to humans.**”¹⁵

As you can see by the chart on this page, the amount of radiation emitted from a typical medical X-ray is quite low. Typical X-rays, however, are becoming a relic of the past. CT (computerized tomography) scans provide a much better picture of your insides, but use much more radiation. A CT scan of your abdomen, for example, exposes you to an amount of radiation equivalent to that of **500** or more chest X-rays.¹⁶

The more worrisome diagnostic procedure is the whole-body scan, which experts have

estimated is the equivalent of **900** chest X-rays.¹¹ According to the *National Academy of Sciences* report, a 45-year-old who planned to undergo 30 annual whole-body scans would potentially increase his or her cancer risk many times.¹⁵

The National Academy of Sciences stated that there is no radiation threshold below which exposure can be viewed as harmless. This finding means that everyone who has had a medical X-ray is at some increased risk for developing leukemia or a solid cancer. Considering how many X-rays people are exposed to in a lifetime, the risk of developing cancer from the cumulative effects of so many X-rays and CT scans is a serious concern.

Radiation Overdoses from CT scans

The amount of radiation a patient is exposed to can be greatly reduced if X-ray technicians took the time to adjust the intensity of the dose depending on individual circumstances. For instance, more radiation is needed for an abdominal CT scan of an obese individual compared to someone lean. A child needs much less radiation than an adult.

You can request “intensity modulated radiation” prior to a CT scan, but whether an apathetic technician pays attention to your request is another matter. They are more likely to state there is no danger to any dose they administer.

As risky as properly done CT scans are, reports published at the end of 2009 exposed instances of major medical centers being so sloppy in adjusting the settings on their CT scanners that patients were exposed to up to **eight times** the normal radiation dose.¹⁷⁻¹⁹

Children are more vulnerable to the long-term effects of the DNA damage inflicted by X-rays. In one particularly heinous case, a 30-month-old child was exposed to more than **60** minutes of continuous CT scans when the normal time period is only **2-3** minutes. The hospital’s radiology manager called the overdose a “*rogue act of insanity*” while the chief of the state’s regulatory division said it was “*one of the more egregious, extreme cases that I have ever seen.*”²⁰

The reality is that for the convenience of the X-ray technicians, CT scanner settings are seldom adjusted to use the least amount of radiation to obtain a clear image.



Diagnostic Procedure	Typical Effective Dose (mSv)¹	Number of Chest X-rays (PA film) for Equivalent Effective Dose²	Time Period for Equivalent Effective Dose from Natural Background Radiation³
Chest X-ray (PA film)	0.02	1	2.4 days
Skull X-ray	0.07	4	8.5 days
Lumbar spine	1.3	65	158 days
IV urogram	2.5	125	304 days
Upper GI exam	3.0	150	1.0 year
Barium enema	7.0	350	2.3 years
CT scan (head)	2.0	100	243 days
CT scan (abdomen)	10.0	500	3.3 years

1. Effective dose in millisieverts (mSv).

2. Assumes an average “effective dose” from chest X-ray (PA film) of 0.02 mSv.

3. Assumes an annual average “effective dose” from natural background radiation of 3 mSv in the US.

Source: European Commission, Radiation Protection Report 118, “Referral guidelines for imaging.” Directorate General for the Environment of the European Commission; 2000.

Tribute to the Pioneer Who Took On the Establishment

In 2005, I had the privilege of receiving a telephone call from **John Gofman, MD, PhD**. For those who don't know, he was one of the great scientific minds of the 20th century. Dr. Gofman praised our work for getting the word out about the lethal dangers of medical X-rays and encouraged us to keep up the fight.

Dr. Gofman was a **physicist** turned **medical doctor** whose early work on radioactive isotopes resulted in his recruitment to work on **The Manhattan Project** at Los Alamos, New Mexico to develop the first atomic bomb.

In **1947**, Dr. Gofman began research that would soon lead him to conclude that **cholesterol** is a cause of **atherosclerosis**.^{21,22} Dr. Gofman and his colleagues were the first to show that specific fractions of cholesterol such as **LDL** (low-density lipoprotein) are the most dangerous. Dr. Gofman was involved in the publication of possibly the first book in **1951** about how low-fat and low-cholesterol diets prevent heart disease.²³



Dr. Gofman's expertise on the biological effects of radiation caused him to later take a very controversial position. He meticulously documented how diagnostic X-rays were a cause of cancer and vascular disease in the 1960s, long before anyone suspected this link. The Atomic Energy Commission and medical establishment fiercely contested Dr. Gofman's allegations that medical X-rays caused any harm.

I am always amazed at individuals who are able to contribute so much to our scientific base of knowledge. In Dr. Gofman's case, he was instrumental in harnessing nuclear energy, warning of the dangers of low-level radiation, and then moved on to a completely different field to discover specific fractions of cholesterol that cause atherosclerosis.

I was saddened to learn that Dr Gofman died of heart failure two years after my conversation with him, possibly caused by the radiation exposure he encountered while working with radioactive isotopes.

Dr. Gofman Explained How X-rays Cause Atherosclerosis

John W. Gofman, MD, PhD, was Professor Emeritus of Molecular and Cell Biology at the University of California, Berkeley and one of the world's most distinguished medical and nuclear scientists. His research showed that no amount of radiation—no matter how small—is safe.²⁴⁻²⁷

Dr. Gofman's data analysis conflicts with other reports from the standpoint that he believed far more cancers are caused by medical radiation. Further, he came to the conclusion that exposure to radiation from medical procedures is a "highly important (probably principal) cause" of cancer and ischemic heart disease in America.¹³

How would radiation cause heart disease? According to Dr. Gofman, the same way it causes cancer. Radiation damages DNA—in this case, DNA in the arteries. The radiation-induced changes create a cancer-like phenomenon in the arteries known as atheroma. Dr. Gofman believed that the interaction between atheromas and lipids blocks arteries and causes blood clots.



One of radiation's most striking effects is causing arterial cells to multiply abnormally. The

abnormal growth of cells lining the arteries has the effect of narrowing the arteries.

Abnormal growth of smooth muscle tissue inside the artery creates something similar to scar tissue that occludes the arteries and ruins their flexibility. Lipid-laden cells, monocytes, macrophages, cholesterol, fibrin, and calcium are all components of plaques and collect within damaged areas in the inner arterial wall where arteries eventually clog.

As early as **1944**, scientists showed that radiation could produce plaques and foam cells.²⁸ Since then, additional studies have demonstrated that radiation can produce arterial lesions, sticky platelets, and increased free radicals.²⁹⁻³⁴ In fact, radiation can create atherosclerosis in its entirety.³⁵ Studies show that people who have undergone radiation of areas containing major blood vessels often develop atherosclerosis in those blood vessels.^{36,37}

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