

IT HAS BECOME FASHIONABLE TO GET CT SCANS TO CHECK ONE'S HEALTH !

# Facts about X-Rays and CT Scans

## WHAT YOU DON'T KNOW CAN KILL YOU

ALSO IN THIS ISSUE: LIFE IN SOUTHERN CALIFORNIA

### THE DANGER OF X-RAYS

X-rays (*roentgen rays*) were discovered in December 1895. They were introduced so rapidly into medicine that, until about 1906, they “were tried out [as therapy] on nearly every chronic disease” (*MacKee, 1938, pp. 15-16*). After World War I, a radiologist commented to his colleagues about “the large number of internists who have placed fluoroscopes in their offices, not with the idea of specializing in the work, but simply wishing to have conveniently at hand an x-ray demonstration of their physical findings . . . The simplified apparatus which has developed from wartime practice is conspicuous” (*Hickey, 1923*).

The present writer recalls that the best shoe stores in the city where he grew up had fluoroscopes, so the customers could see through their new shoes and see how well they fitted. Yet fluoroscopes emit even higher radiation dosage than medical x-rays. Back then, the average x-ray dose per fluoroscopy was 65 rads (*Moeller, 1953, pp. 58-59*). (“Rads” are the measure of radiation doses.)

From 1970 onward, the use of fluoroscopy, which delivers x-rays at 2 to 20 rads per minute (!), has greatly expanded, especially during catheterizations, surgeries, and other common procedures (*Gofman, 1996*).

One expert declares that medical x-rays were, and remain, a necessary cofactor in over half the U.S. mortality rates, from cancer and ischemic heart disease (*Gofman, 1999; see box on next page*).

The *Committee for Nuclear Responsibility* is trying to prevent some 250,000 premature deaths per year in the U.S., by cutting average per capita x-ray exposure in half.

Although x-rays have been widely used in medical practice for over 100 years, in no decade have x-ray doses been measured. Indeed, for about the first 40 years, the response of the skin (whether or not it got red!) was the only “measure”!

Even after measurement became technically possible, it was not done in practice—and is very rarely done today. It can be said, with certainty, that there is no one in America who knows or could find out what his accumulated dose of precancerous x-rays is to any part of his body.

From one type of procedure to another, the x-ray dose can vary by 100-fold. There are only very loose estimates of how many procedures of which type were

given in any decade. A leading expert in radiology, Henry D. Royal, M.D., estimates that average per capita x-ray doses are 2 or 3 times higher now than they were in 1980, due to expanded use of CT (*Royal, in Veterans 200, pp. 260-261*).

Even for the same procedure, on patients of the same size, sporadic sampling programs show that x-ray doses vary widely from facility to facility, and even within a single facility.

*Even more dangerous than single x-rays are CT scans. They are the latest way to have your body flooded with radiation. Let us consider them next:*

### THE DANGER OF CT SCANS

Body scans are the current “health fad.” Extensive media attention, praising CT scans as a way to increase health and lengthen life, has caused many perfectly healthy people to get their bodies scanned for possible indications that, somewhere in the body, a disease may just be starting.

High-tech machines, known as CTs (*computed tomography*) use high-power, wide-area body x-rays to “photograph” internal organs, producing wafer-thin serial images that are then viewed on a computer screen. Theoretically, CT scans are supposed to reveal cancer, heart disease, osteoporosis, and other conditions at their earliest stages. The scans are said not to injure you. They are fast; and, for just \$700 to \$1300, you can take a look at your insides.

It may sound great; but the amount of radiation you will receive is immense.

According to a 2000 *Life Extension* report, for the doses needed to produce the CT scans, one CT chest scan is equivalent to 400 chest x-rays. A scan of the abdomen is equal to 500 chest x-rays. A scan of the head is equivalent to 115 chest x-rays. Combine the x-rays of the chest, abdomen, and head in the scan and you have over 1,000 x-rays. Imagine having 1,000 x-rays at one time! This is not healthy living.

Please understand that the above amounts are “effective doses.” That is, they are the minimum amount needed to produce the CT scan. In reality, you are likely to have received a lot more radiation than that listed above.

Frankly, this is as bad as the radioactive baths some wealthy people were taking back in the 1920s!

Back then, you could buy radioactive bath salts. They were supposed to be a cure for insomnia. Then,

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when you climbed out of the tub, nicely irradiated for the evening, you could get in bed and apply your *Radium Ore Heating Pad*—a nifty device said to be good for stomach, liver, and spine.

Now, of course you would laugh at the suggestion that you should take a radioactive bath;—but it is no laughing matter that you will ruin yourself about as fast if you get a CT scan!

The FDA's Dr. Thomas Shope has cautioned that multiple CT scans can expose a person to radiation approaching the lower levels of Hiroshima and Nagasaki.

A controversial new report estimates that if 600,000 children get head and abdomen CT scans, 500 will get cancer from those scans.

You might wonder why there is such a serious danger here; but the body does not forget radiation. It keeps count of every rad you get and the amount you get, whether it be from x-rays, CT scans, fluoroscopes, dental x-rays, etc. Most of the radiation you get stays with you for a lifetime. Radiation damage to DNA can never be completely repaired.

Beware of any physician or medical institution that offers to give you a "health scan" or a "body scan." CT scanners were never intended to be used in people

*Radiation from Medical Procedures in the Pathogenesis of Cancer and Ischemic Heart Disease* is a massive x-ray dose-response study written by John W. Gofman, M.D., Ph.D., in 1999. He is Professor Emeritus of Molecular and Cell Biology, at University of California, Berkeley.

The study's two principal conclusions are these:

(1) Medical radiation, introduced into medicine in 1896, became, and remains, an unnecessary causal factor in over half of the fatal cases of cancer in the U.S. (2) Medical radiation became, and remains, an unnecessary causal factor in over half of the fatal cases of ischemic heart disease (coronary artery disease) in America.

From these conclusions, plus the fact that x-ray harm is approximately proportional to accumulated x-ray dose, it follows that a very great deal of future cancer and ischemic heart disease could be prevented by reducing the dose-levels customarily administered during x-ray imaging procedures, especially CT and fluoroscopy. Indeed, it is very often feasible to get good images with half (or less) of the customary dose. Doing so, Gofman estimates, could prevent about 250,000 premature deaths every year in the United States.

But, as of 2005, few radiologists and radiological laboratories seem to care. Why bother? It would take extra work to be more careful how much radiation was given in each x-ray exposure.

with no symptoms and unknown risk. There are many diagnostic tools which do not thus endanger the body. (There are many which, themselves, are dangerous; for example, invasive checkup tools enter the body and could infect you with mad cow virus. See pp. 147-150 of my book, *International Meat Crisis*.)

The situation is becoming so dangerous, that some experienced radiologists are distancing themselves from whole body scans. You would not expect to find CT critics at the *American Roentgen Ray Center*; yet its president is highly critical of whole body CT screening in people who have no symptoms. Dr. Stanley, who knows CTs inside and out, says that the damage from a body scan might not be evident for many years. CT scans, he says, are much more complex than simply putting a person in a scanner and reading a computer printout.

Most people do not realize what is likely to happen after the scan. But, according to a *Wall Street Journal* report, one scan center sends 80% of those scanned to specialists afterwards. How did 80% of well people without symptoms—suddenly discover that there is evidence that they have a terrible disease? One director of a scan center said that he had never seen a normal body scan. The reason for this is because of what the scan sees.

When scans are made, they involve microscopic analysis of various organs of the body. But scans used in this way can reveal all kinds of supposed "abnormalities," which do not really exist.

One scan expert made this comment: "When you're looking for abnormalities millimeter-by-millimeter, you're going to find what appears to be problems: flaws, pockets of odd tissue, etc."

A person may go through thousands of dollars of unnecessary and invasive tests after a scan, including more radiation, to find out they have nothing—except diseases induced by the radiation. It is like thinking that every mole on your body is melanoma (skin cancer).

For example, if you do a CT scan on the kidneys of people who have just died, in 22% of them you will find renal tumors. If you examine their livers, you will find "cavernous angiomas." But all those so-called "tumors" were generally not cancerous, and would rarely have developed into full-blown cancer.

So do not listen to some medical expert who suggests that a whole body scan would be good for you. It may be good for his wallet; but it will not be good for you, now or later.

Ask yourself: Do I really need to undergo the equivalent of 1,000 x-rays to find out that I am not exercising, eating right, or that I need to buy a better mattress for my aching back?

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