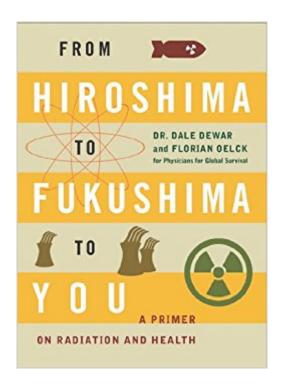


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# From Hiroshima To Fukushima To You





### **Synopsis**

The bombing of Hiroshima on August 6, 1945, brought radiation to international attention but the exact nature of what had been unleashed was still unclear to most. The 1986 meltdown at the Chernobyl nuclear plant again made headlines with estimates of fatalities ranging from 4000 to almost a million deaths. By the time of the shocking 2011 disaster at the Fukushima nuclear plant social media meant governments and corporations no longer had a monopoly over the release of information, but transparency remains low on the agenda. Meanwhile, few physicians give thought to the delayed health effects of radiation. It has been the bold physician who has challenged the potential overuse of chest X-rays, CT scanning, or PET scans. This book provides clear and accurate information about radiation so that we can all make informed choices. In clear language it offers answers to citizens' questions: What is radiation? Where do we encounter it? What are the benefits and risks? How do we develop a responsible future around the uses and abuses of radioactivity?

#### **Book Information**

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#### **Customer Reviews**

" This book combines accessibility with the authors ' integrity and competence. Written from the perspective of an experienced physician and drawing conclusions from decades of evidence it provides a vital resource for those who look for critical understanding and comprehension." (Ursula M. Franklin, FRSC, Professor Emerita, University of Toronto) "Too much of what is written about radiation, and its adverse effects, is conveyed in the language of physics and statistics. Dewar and Oelck teach through stories, each one fascinating, and the lessons they offer

come with just the right dose of humility." (David Richardson, Department of Epidemiology, University of North Carolina at Chapel Hill)

Dr. Dale Dewar is associate professor in the Department of Family Medicine at the University of Saskatchewan and Executive Director of Physicians for Global Survival. Florian Oelck has a master's degree in International Studies from the University of Ottawa.

This book offers an unblinking look from an independent physician at the human health effects of ionizing radiation as of 2014. As a writer myself, who has a medical student in the family, I always value the health professional's perspective. I also know the brutal challenges of writing on this subject. On the question of bias, Dr. Dewar acknowledges putting the patient's needs first; to me, it's not an issue of bias for a physician author to do that. As the preface itself notes, "this is the doctor's voice." Funding for the book was provided by the Physicians for Global Survival, the Canadian affiliate of International Physicians for Prevention of Nuclear War. I myself have financial connections with neither the global nuclear industry nor any anti-nuclear groups. Several of this book's chapters present the essential facts. Topics like radiation in medicine, industrial uses of radiation, nuclear power plants, uranium mining, transport of radioactive materials, and radiation in war are expertly handled. At the end of the book a Notes section provides references to mostly online sources, drawn from the global nuclear industry, the popular press, scholarly journals and various online locations. A real standout is the section on smoke detectors; information on that topic is otherwise very difficult to find. The book also shines in the clarity of its definitions. Terms like radioactive are too often defined elsewhere with such technical language that the average reader is left none the wiser, but not here! FHFY has my favorite definition of "radioactive," and that opinion comes after 3 years of reading every book on nuclear power ever published in English. The proper usage of measurements like Becquerels and millisieverts is also expertly explained, as is the potentially confusing topic of radiation hormesis. I recommend, however, that the authors persevere and produce a 2nd edition. There are a number of enhancements and corrections I recommend for the future. Some of these comments may seem harsh, but keep in mind that the need for these corrections is purely due to the staggering difficulties in finding and then verifying the needed materials. Here's my list: 1) If alpha rays are really 20 times as dangerous to cells as gamma rays, give us citations for that; reference(s) are essential on that point. 2) According to British radiation scientist Ian Fairlie (you can contact him at his website), the Petkau effect has yet to be accepted in the scientific mainstream because its findings have yet to be independently verified, or at least

sufficiently verified; in addition, a number of possibilities have been raised for additional variables which must be accounted for before the Petkau effect can be considered to be accepted science. 3) The chart on page 52 is misleading; there are a number of other assumptions, such as type of radiation involved, and many other factors, that must be identified before readers can draw any conclusions here. 4) I recommend that your 2nd edition include a chapter on medical ethics. For example, the university epidemiologist Steve Wing, PhD, is co-author of Tortured Science: Health Studies, Ethics, and Nuclear Weapons in the United States. He gives ingenious examples of nuclear-affected situations where new ethical strategies can be tried. 5) I recommend that you add a chapter on stress. An older book, How to be Your Own Nutritionist, by Stuart Berger, MD, was and still is way ahead of its time in analyzing how to identify and deal with stress. (After all, UNSCEAR and other United Nation-affiliated groups identify stress as one of the main clinical syndromes damaging the health of those impacted by nuclear disasters, so your expert analysis of that subject [e.g., what stress is and is not] would be a huge help to health care providers on the nuclear front lines.) 6) The current comparisons you give for Xrays and gamma rays are unnecessarily confusing, so that needs clarification. (See especially page 60, but that's not the only page involved.) 7) On page 104, the amount of core melt for TMI is wrong. According to journalist and Purdue University engineer Mike Gray in his TMI book The Warning, core melt there was just over 50%. 8) On page 106, be aware that your claim that damage to the Fukushima power plant itself was negligible is at best highly controversial and even now unproven. 9) Since the term TEPCO is an acronym, it must always be spelled in all caps; in my copy of the book, that name is always spelled as Tepco. 10) In your Further Reading section, I was surprised you didn't mention Dr. Helen Caldicott's latest book, Nuclear Power is Not the Answer, which contains an array of citations throughout. There are other books that you should consider recommending, such as Hiroshima to Fukushima: Biohazards of Radiation, by Eiichiro Ochiai, PhD, 2014; due to its maps, charts, tables, and graphs it is expensive but there is a Kindle edition available. Other books I recommend for you to include on your list are The Enemy Within: the high cost of living near nuclear reactors, by Jay M. Gould, PhD, 1996; Conscious Eating, by Gabriel Cousens, MD (see his discussion on ionizing radiation), 2nd ed., 2000; Nuclear Inc.: the men and money behind nuclear energy, by the noted journalist Mark Hertsgaard, 1983. (I include Nuclear Inc. because the structure, motivations and dynamics of the global nuclear industry are otherwise almost impossible to understand.)

I would note that this book is the product of physician in the field of family medicine and a graduate from a school of international affairs. Neither has had any training in the field of nuclear science and

radiation. Hence their competence to speak in this field is suspect. Furthermore this work has been supported by Physicians for Global Survival which is affiliated with Physicians for Social Responsibility, an organization that was redirected by Helen Caldicott from abolishing nuclear weapons to abolishing nuclear power. In this endeavour Caldicott has made the most outrageous claims on the dangers of nuclear power and radiation to the point of being almost indistinguishable from falsehoods. Thus to begin I was not favourably disposed towards this book. Upon perusing this book, almost the first sentence I happened to glance at, which was on page 25, was:"A neutron is made up of a proton plus an electron and is neutrally charged. "followed by "Neutrons behave like a type of glue to keep positively charged protons together as nuclei become larger. "The first sentence is grossly incorrect, and demonstrates a complete ignorance of nuclear science, and no one with any shred of competence in the field could have written it. The neutron is not made up of a proton and an electron, There can be no electron inside the neutron because the electron wave function is too large to fit within the spacial dimensions of the neutron. The neutron is an arrangement of quarks and gluons whose combined charges add up to zero. A proton is made up of the same constituents, but in this case the combined charges add up to +1 e where e is the elementary charge. An electron has a charge of -1 e. The difference between a proton and a neutron is the exchange of a +2/3 e "up" quark for a -1/3 e "down" quark. It is true that a neutron will decay into a proton, electron, and an anti-neutrino, but the process by which this happens is the conversion of a "down" quark into an "up" quark by the emission of a heavy W- boson which materializes into an electron and an anti-neutrino. Neutrons are definitely not a type of glue holding the nucleus together. An expert in nuclear science or a good science writer would never publish a sentence like this. An excess of neutrons can make a nucleus unstable just as an excess of protons does. With protons there is the added repulsion of like positive charges to enhance the effect. That is why as the nuclei become larger, they favour an excess of neutrons to protons. The nuclear force actually prefers equal numbers of protons to neutrons. What keeps the nucleus together are the mesons which are exchanged between the nucleons. This however is only the outer superficial appearance of whatâ Â™s going on. The mesons themselves are composed of quarks as are the nucleons and these are all held together by gluons. Even this picture is over-simplified but I will stop here. It goes to say that to describe neutrons as a sort of nuclear glue is not correct and displays great ignorance on the part of the authors. These sentences are telling and damming. It says that the authors cannot even get the simplest facts about nuclear science correct. If they cannot get those facts correct, why would you trust anything else they had to say on the subject. They really do not understand the subject they are writing about. I bought this book to review it because it was being considered as a

resource book for a course being taught regarding nuclear issues. You cannot consider this book for such a purpose.

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