

Exposure Of The American People To Iodine131 From Nevada Nuclearbomb Tests Review Of The National Cancer Institute Report And Public Health Implications

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NIH advisory committees. 1988a |AP 1987

Iodine 131 in Children's Thyroids from Environmental Exposure Henry N. Wellman 1965

NIH public advisory groups. 1985b |OC 1969

Exposure of the American Population to Radioactive Fallout from Nuclear Weapons Tests Committee to Review the CDC-Nci Feasibility Study of the Health Consequences from Nuclear Weapons Tests 2003-02-25 This report is a review of the draft feasibility study that was issued at the request of Congress by the Centers for Disease Control and Prevention (CDC) and the National Cancer Institute (NCI). Over 500 atmospheric nuclear-weapons tests were conducted at various sites around the world during 1945-1980. As public awareness and concern mounted over the possible

health hazards associated with exposure to the fallout from weapons testing, a feasibility study was initiated by CDC and NCI to assess the extent of the hazard. The CDC-NCI study claims that the fallout might have led to approximately 11,000 excess deaths, most caused by thyroid cancer linked to exposure to iodine-131. The committee noted that CDC and NCI used the best available data to estimate exposure and health hazards. The committee does not recommend an expanded study of exposure to radionuclides other than 131I since radiation doses from those radionuclides were much lower than those from 131I. It also recommended that CDC urge Congress to prohibit the destruction of all remaining records relevant to fallout.

NIH public advisory groups. 1986 |OC 1969

Exposure of the American People to Iodine-131 from Nevada Nuclear-

Bomb Tests National Research Council 1999-05-17 In 1997, after more than a decade of research, the National Cancer Institute (NCI) released a report which provided their assessment of radiation exposures that Americans may have received from radioactive iodine released from the atomic bomb tests conducted in Nevada during the 1950s and early 1960s. This book provides an evaluation of the soundness of the methodology used by the NCI study to estimate: Past radiation doses. Possible health consequences of exposure to iodine-131. Implications for clinical practice. Possible public health strategies--such as systematic screening for thyroid cancer--to respond to the exposures. In addition, the book provides an evaluation of the NCI estimates of the number of thyroid cancers that might result from the nuclear testing program and provides guidance on approaches the U.S. government might use to communicate with the public about Iodine-131 exposures and health risks.

Iodine 131 in Children's Thyroids from Environmental Exposure; a Report H.N. Wellmann 1965

Assessment of the Point-source Method for Estimating Dose Rates to Members of the Public from Exposure to Patients with 131I Thyroid Treatment 2015 The U.S. Nuclear Regulatory Commission (USNRC) initiated a contract with Oak Ridge National Laboratory (ORNL) to calculate radiation dose rates to members of the public that may result from exposure to patients recently administered iodine-131 (131I) as part of medical therapy. The main purpose was to compare dose rate estimates based on a point source and target with values derived from more realistic simulations that considered the time-dependent distribution of 131I in the patient and attenuation of emitted photons by the patient's tissues. The external dose rate estimates were derived using Monte Carlo methods and two representations of the Phantom with Movable Arms and Legs, previously developed by ORNL and the USNRC, to model the patient and a nearby member of the public. Dose rates to tissues and effective dose rates were calculated for distances ranging from 10 to 300 cm between the phantoms and compared to estimates based on the point-source method, as well as to results of previous studies that estimated exposure from 131I patients. The point-source method overestimates

dose rates to members of the public in very close proximity to an 131I patient but is a broadly accurate method of dose rate estimation at separation distances of 300 cm or more at times closer to administration.

Atomic Harvest Michael D'Antonio 1993 An account of the crusaders who exposed the state of Washington nuclear weapons facility's role in the radioactive poisoning of thousands discusses the lives of people suffering from sterility and chronic ill-health. 35,000 first printing.

NIH advisory committees. 1987b |OC 1987

American Journal of Public Health and the Nation's Health 1967

NIH advisory committees. 1989a |APil 1987

Review of the Hanford Thyroid Disease Study Draft Final Report

National Academy of Sciences 2000-02-01 In 1986, officials of the US Department of Energy revealed that the Hanford Atomic Products Operations in Richland, Washington, had been releasing radioactive material, in particular iodine-131, into the environment over a period of years. This information, which confirmed the suspicions of some people in the Pacific Northwest about what they called the Hanford Reservation or just Hanford, created quite a stir. Both the US Congress and citizens of the Northwest became keenly interested in knowing whether these radiation releases had caused human health effects. They were particularly concerned about whether Hanford releases of iodine-131 had led to an increase in thyroid disease among the population of the area. In 1988, Congress ordered a study of the human health effects of exposure to the iodine-131 released from Hanford. Funded by the Centers for Disease Control and Prevention (CDC), the study was carried out by the Seattle-based Fred Hutchinson Cancer Research Center over the last decade. The study examined estimate of exposure of the thyroid and rates of thyroid disease because iodine-131 concentrates in the thyroid and that organ would be the best indicator of radiation damage in the population. The Centers for Disease Control and Prevention (CDC) asked the National Academy of Sciences-National Research Council (NAS-NRC) to give an independent appraisal of the study methodology, results, and interpretation and of the communication of the study results to the public. Review of the Hanford Thyroid Disease Study Draft Final Report

constitutes the response of the NRC subcommittee to that request. To respond to the charge, the NRC subcommittee felt that it needed to go beyond the specific questions addressed to it by CDC and develop a broad understanding and critique of the HTDS and the Draft Final Report. As part of those activities, the subcommittee solicited comments from outside experts and members of the public primarily in a public meeting held in Spokane, Washington, in June 1999, where 14 scientists and members of the public made formal presentations to the subcommittee about various aspects of the Draft Final Report. Other members of the public also spoke during four open-comment sessions at the meeting. In addition, efforts were made to evaluate all information materials prepared for the public and additional CDC communication plans. Information was gathered through interviews with journalists, members of concerned citizen groups in the Hanford region, members of the CDC scientific and media staff in Atlanta, and the HTDS investigators. In this summary, the main points follow the structure of our report and are presented under several headings: epidemiologic and clinical methods and data collection, dosimetry, statistical analyses, statistical power and interpretation of the study, and communication of the study results to the public. We then provide a brief synopsis of our response to the questions raised by CDC.

Estimated Dose Rates to Members of the Public from External Exposure to Patients with 131I Thyroid Treatment 2015

The purpose of this study is to estimate dose rates that may result from exposure to patients who had been administered iodine-131 (¹³¹I) as part of medical therapy were calculated. These effective dose rate estimates were compared with simplified assumptions under United States Nuclear Regulatory Commission Regulatory Guide 8.39, which does not consider body tissue attenuation nor time-dependent redistribution and excretion of the administered ¹³¹I. Methods: Dose rates were estimated for members of the public potentially exposed to external irradiation from patients recently treated with ¹³¹I. Tissue attenuation and iodine biokinetics were considered in the patient in a larger comprehensive effort to improve external dose rate estimates. The external dose rate estimates are based on Monte Carlo simulations using the Phantom with Movable Arms and

Legs (PIMAL), previously developed by Oak Ridge National Laboratory and the United States Nuclear Regulatory Commission. PIMAL was employed to model the relative positions of the ¹³¹I patient and members of the public in three exposure scenarios: (1) traveling on a bus in a total of six seated or standing permutations, (2) two nursing home cases where a caregiver is seated at 30 cm from the patient's bedside and a nursing home resident seated 250 cm away from the patient in an adjacent bed, and (3) two hotel cases where the patient and a guest are in adjacent rooms with beds on opposite sides of the common wall, with the patient and guest both in bed and either seated back-to-back or lying head to head. The biokinetic model predictions of the retention and distribution of ¹³¹I in the patient assumed a single voiding of urinary bladder contents that occurred during the trip at 2, 4, or 8 h after ¹³¹I administration for the public transportation cases, continuous first-order voiding for the nursing home cases, and regular periodic voiding at 4, 8, or 12 h after administration for the hotel room cases. Organ specific activities of ¹³¹I in the thyroid, bladder, and combined remaining tissues were calculated as a function of time after administration. Exposures to members of the public were considered for ¹³¹I patients with normal thyroid uptake (peak thyroid uptake of ~27% of administered ¹³¹I), differentiated thyroid cancer (DTC, 5% uptake), and hyperthyroidism (80% uptake). Results: The scenario with the patient seated behind the member of the public yielded the highest dose rate estimate of seated public transportation exposure cases. The dose rate to the adjacent room guest was highest for the exposure scenario in which the hotel guest and patient are seated by a factor of ~4 for the normal and differentiated thyroid cancer uptake cases and by a factor of ~3 for the hyperthyroid case. Conclusions: It was determined that for all modeled cases, the DTC case yielded the lowest external dose rates, whereas the hyperthyroid case yielded the highest dose rates. In estimating external dose to members of the public from patients with ¹³¹I therapy, consideration must be given to (patient- and case-specific) administered ¹³¹I activities and duration of exposure for a more complete estimate. The method implemented here included a detailed calculation model, which provides a means to determine dose

rate estimates for a range of scenarios. Finally, the method was demonstrated for variations of three scenarios, showing how dose rates are expected to vary with uptake, voiding pattern, and patient location.

Nuclear Information 1958

NIH advisory committees. 1991a |AP 1987

Hanford R. E. Gephart 2003 In *Hanford: A Conversation About Nuclear Waste and Cleanup*, Roy Gephart takes us on a journey through a world of facts, values, conflicts, and choices facing the most complex environmental cleanup project in the United States: the U.S. Department of Energy's Hanford Site. Starting with the top-secret Manhattan Project, Hanford was used to create tons of plutonium for nuclear weapons. Hundreds of tons of waste and millions of curies remain. In an easy-to-read, illustrated text, Gephart crafts the story of Hanford becoming the world's first nuclear weapons site to release large amounts of contaminants into the environment. This was at a time when radiation biology was in its infancy, industry practiced unbridled waste dumping, and the public trusted what it was told. Hanford history reveals how little we sometimes understand events when caught inside of them. The plutonium market stalled with the end of the Cold War. Public accountability and environmental compliance ushered in a new cleanup mission. Today, Hanford is driven by remediation choices whose outcomes remain uncertain. It's a story whose epilogue will be written by future generations. This book is an information resource, written for the general reader as well as the technically trained person. It provides an overview of Hanford and cleanup issues facing the nuclear weapons complex. Each chapter is a topical mini-series. It's an idea guide that encourages readers to be informed consumers of Hanford news, and to recognize that knowledge, high ethical standards, and social values are at the heart of coping with nuclear waste. Hanford history is a window into many environmental conflicts facing our nation; it's about building upon success and learning from failure. And therein lies a key lesson: when powerful interests are involved, no generation is above pretense.

Iodine 131 in Children's Thyroids from Environmental Exposure 1965

Abstracts ... Annual Meeting of the American Public Health Association

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[Abstracts of Papers Presented at the Meeting](#) Health Physics Society. Meeting 1987

American Journal of Public Health 1981

Cancer Risk Communication Barbara K. Rimer 1999

Recommendations for Waste Disposal of Phosphorus-32 and Iodine-131 for Medical Users United States. National Bureau of Standards 1951

U.S. Government Research & Development Reports 1970

[Exposure of the American Population to Radioactive Fallout from Nuclear Weapons Tests](#) National Research Council 2003-03-25 This report is a review of the draft feasibility study that was issued at the request of Congress by the Centers for Disease Control and Prevention (CDC) and the National Cancer Institute (NCI). Over 500 atmospheric nuclear-weapons tests were conducted at various sites around the world during 1945-1980. As public awareness and concern mounted over the possible health hazards associated with exposure to the fallout from weapons testing, a feasibility study was initiated by CDC and NCI to assess the extent of the hazard. The CDC-NCI study claims that the fallout might have led to approximately 11,000 excess deaths, most caused by thyroid cancer linked to exposure to iodine-131. The committee noted that CDC and NCI used the best available data to estimate exposure and health hazards. The committee does not recommend an expanded study of exposure to radionuclides other than 131I since radiation doses from those radionuclides were much lower than those from 131I. It also recommended that CDC urge Congress to prohibit the destruction of all remaining records relevant to fallout.

Environmental Impact of Radioactive Releases International Atomic Energy Agency 1995

Public Health Service publication. no. 1672, 1967 1950*

Iodine 131 in Children's Thyroids from Environmental Exposure Henry N. Wellman 1965

Signal Transduction and Neoplastic Transformation in Endocrine Systems 2004

Controlling the Atom George T. Mazuzan 1985

Health Breakthroughs 2006 2005

Nuclear Test Explosions, Scope 59 International Council for Science 2000-04-14 Nuclear Test Explosions Environmental and Human Impacts Edited by Sir Frederick Warner University of Essex, UK and Rene J.C. University of Liege, Belgium Nuclear Test Explosions summarises the findings of the international project SCOPE-RADTEST (Scientific Committee on Problems of the Environment - RADiation from nuclear TEST explosions), on the environmental and human impacts of nuclear tests. The location and dates of 730 explosions and the 2419 tests performed between 1945 and 1998 are given followed by discussion of their effects. The nuclear test sites include: Nevada, Semipalatinsk, Novaya Zemlya, South Pacific, Australia and Lob Nor. The fallout from 541 atmospheric tests and effects on human health and environment are assessed and the development of nuclear weapons is described. The contents of the book have been assembled by a team of experts and should greatly assist in the discussion of weapons limitation.

NIH advisory committees. 1990a |APil 1990

Recomendations for Waste Disposal of Phosphorus-32 and Iodine-131 for Medical Users United States. National Bureau of Standards 1951

How Safe is Safe? Barrie Lambert 1990

2008 Healthcare Standards Official Directory ECRI Institute Staff 2007-12
The Arctic Aeromedical Laboratory's Thyroid Function Study Committee on Evaluation of 1950s Air Force Human Health Testing in Alaska Using Radioactive Iodine-131 1996-02-09 During the 1950s, with the Cold War looming, military planners sought to know more about how to keep fighting forces fit and capable in the harsh Alaskan environment. In 1956 and 1957, the U.S. Air Force's former Arctic Aeromedical Laboratory conducted a study of the role of the thyroid in human acclimatization to cold. To measure thyroid function under various conditions, the researchers administered a radioactive medical trace, Iodine-131, to Alaska Natives and white military personnel; based on the study results, the researchers determined that the thyroid did not play a significant role in human acclimatization to cold. When this study of thyroid function was revisited at a 1993 conference on the Cold War legacy in the Arctic, serious questions were raised about the appropriateness of the activity-- whether it posed risks to the people involved and whether the research had been conducted within the bounds of accepted guidelines for research using human participants. In particular, there was concern over the relatively large proportion of Alaska Natives used as subjects and whether they understood the nature of the study. This book evaluates the research in detail, looking at both the possible health effects of Iodine-131 administration in humans and the ethics of human subjects research. This book presents conclusions and recommendations and is a significant addition to the nation's current reevaluation of human radiation experiments conducted during the Cold War.