



STANFORD UNIVERSITY MEDICAL CENTER

STANFORD, CALIFORNIA 94305

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STANFORD UNIVERSITY SCHOOL OF MEDICINE
Department of Genetics
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Professor R. Neider
Bundesanstalt für Materialprüfung (BAM)
87 Unter den Eichen
1 Berlin 45, Germany

Dear Professor Neider,

Thank you for your letter of January 8, 1976 and for telling me about the material that has been appearing in the German press purporting to express my views on the problems of nuclear power.

I must say that I am absolutely astonished at some of the commentary which ranges from a distortion and selective extraction of some of my statements to outright fabrication.

Some of the figures were taken from a purely hypothetical discussion of the eventual consequences of certain policy directions, which would amount to a total carelessness about the spread of radiation. I am happy to say that for many years the Atomic Energy Commission in this country has adopted much more cautious and restrictive regulations that put all of the quoted figures very far beyond the bounds of credibility.

I am enclosing an article that I wrote a little while ago that offers, if anything, a view of the costs of radiation exposure that may be on the high side. The largest number that is readily justified would be of the order of \$100 per man-rad of exposure. As discussed in the article, this would be equivalent to allocating a health cost of \$10 per year per capita for exposure to natural radiation and at present levels of exposure to nuclear power sources the number would be at most a few cents.

Yes, I did sign the statement concerning the importance of including nuclear energy in our national and global energy policy and I do adhere to that statement. At the same time I am probably more critical than most of my colleague co-signers in the belief that we do indeed need to approach this problem with even more caution than in the past: my chief concern is, however, nuclear accidents rather than the background exposure within the present regulatory framework.

To be more specific, I cannot possibly imagine where anyone arrives at the belief that in the United States we already must spend twenty-six thousand million DM for "atom patients". On the other side, I do not know where my so-called critics got the idea that my field of work has been in kidney research. I am as you can tell from the present letterhead a geneticist and I have taken a long interest in problems of genetic

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LT. J. P. KENNEDY, JR. LABORATORIES FOR MOLECULAR MEDICINE, DEDICATED TO RESEARCH IN MENTAL RETARDATION

MOLECULAR BIOLOGY

HEREDITY

NEUROBIOLOGY

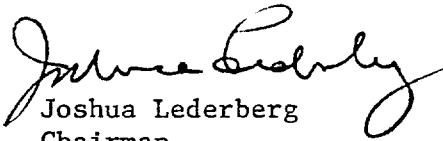
DEVELOPMENTAL MEDICINE

damage from radiation. As to the application of x-rays to dentistry, I do not see how there can be any dispute about the immense importance of this diagnostic procedure. The issue is not to repress its rational application, but rather to be sure that the most elementary precautions of shielding and protection of patients and of workers from unnecessary exposure are undertaken.

Let me summarize that I believe that the natural background is probably the best framework in which to examine the possible consequences of increases of radiation exposure. This already fluctuates between 100 and 200 millirads per year depending on altitude and other aspects of the environment. I do not believe that further fluctuations of a few tens of millirads can be regarded as highly consequential from the standpoint of the health impact - if we did believe that, then there are many other things that we would have to be looking into in order to protect ourselves.

It is difficult to come to a simple estimate of the health costs of radiation and the calculations in my article are to be regarded only as a rough first attempt. However, even if they are only accurate within a factor of 100, I think they can still be a useful guide for public policy in getting the best advantage of radiation, and suffering the least from it.

Sincerely yours,



Joshua Lederberg
Chairman
Department of Genetics

Enclosures
JL/rr