

Radiation



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July 22, 1975

Dr. Joshua Lederberg
Dept. of Genetics
Stanford University School of Medicine
PALA ALTO, California 94304

Dear Dr. Lederberg:

As a Professor in Diagnostic Radiology, I am concerned by the unwise use of diagnostic radiation, particularly in children and in women of the childbearing age. It is a sad commentary on medical thinking, or perhaps merely another example of the apocryphal Murphy's Law, that the young woman with the most vague, atypical and often insignificant symptoms, receives the largest number of radiographic examinations. The less they are indicated, the more she receives.

I teach our medical students that the following are not sufficient indications for radiographs of the pelvic area of women under 45 years: the patient expects it; the doctor wishes to appear thorough and not take a remote risk of making a mistake; for reassurance of the patient; for the curiosity of the doctor; for supposed medico-legal reasons; as a substitute for the doctor thinking; for something to do. I am convinced there is a slight risk to all radiation and that there must be an expected benefit to be balanced against the possible risk.

Doctors in general and even radiologists, frequently come to me with questions. The topics of inquiry are most often the maximum acceptable dose for diagnostic procedures (there isn't any); the problems involved with the ten-day rule; what to do when there is an inadvertent exposure to the pregnant woman and is abortion ever indicated; and guidelines for use of diagnostic radiation in the woman known to be pregnant.

I thought the BEIR report was excellent and feel that the findings in it should be more widely disseminated to the medical profession to help them deal with problems such as mentioned above. In this regard I was very much intrigued by their extrapolations from your interesting calculations, which you published as the Foreword to The Mutagenicity of Pesticides, Concepts and Evaluation (MIT Press, Cambridge, Mass. 1971) and as "Squaring an Infinite Circle, Radiobiology and the Value of Life" (Bulletin of the Atomic Scientists 27: 43-45, Sept. 1971).

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I have made a further paraphrase and extrapolation of the extrapolation and would like to use it in the article I am preparing for probable publication in the Canadian Medical Association Journal.

If you could spare the time, I would very much appreciate a note to correct any fallacies in my understanding or calculations. I did not think it was necessary to divide by the 30 year generation and then multiply by the same 30 years, and although perfectly correct, thought this could be left out of the calculations. It is entirely possible that I have not fully comprehended every facet of your argument and that I have in my ignorance misled my potential readers.

I would very much appreciate an early reply, either by mail or if it is more convenient to you, I would be most appreciative if you would phone me collect at my office 1-306-343-3041 or at my residence 1-306-244-0742. (I will be leaving on a month's holiday on the evening of Friday August 1).

Thanking you in anticipation.

Yours sincerely,



C. Stuart Houston, M.D., F.R.C.P. (C), F.A.C.R.

CSH/jm
encl.

P.S.: My classmate, Glen Lillington (M.D. Manitoba 1951) was a chest physician at Stanford for a great many years and although it is a large campus, you may possibly have run into him. He has recently moved to Davis as Head of the Department of Medicine there.

CSH