

BOOK REVIEW

"How well can we assess genetic risk? Not very"

- James F Crowe (Lecture No 5 in the Lauriston S Taylor Lecture Series in Radiation Protection and Measurements)
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In this lecture, published by the NCRP, the lecturer reviews our present state of knowledge about the genetic risks to humans from an increase in the rate of mutations. It is an elegantly presented and readable review which shows that although there is a considerable amount of information from which one can make deductions about the qualitative effects of induced mutations, human data is so sparse that at present all quantitative estimates of human DNA damage have been obtained by extrapolation from other organisms. The lecturer notes that even if we knew in detail exactly what change had occurred at the human DNA level we should still have little idea how to assess the impact of these changes on future generations. Studies in Hiroshima and Nagasaki have produced no statistically significant evidence of genetic change from radiation-induced mutations. The mean long-term effect of mutations on human welfare is a variety of slight impairments which could become important if the number of mutants is large enough.

The author expresses his firm belief that the net effect of mutation is harmful and that a zero mutation rate is best for the human species. He pleads for more studies of genetic epidemiology to provide badly needed data on the incidence, prevalence and social cost of genetic disease. Only through such studies can we hope to obtain the information needed to assess the true impact of induced mutations.

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