

PLUTONIUM AND STRONTIUM-90 IN THE HUMAN BODY AND PARAMETERS  
IN METABOLIC AND DOSIMETRIC MODELS

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Transfer of radionuclides from the environment to man and estimation of internal dose have been matters of major concern with respect to the effects of fallout to humans released by the atmospheric weapons testing, and is of increasing importance in view of the steadily developing nuclear power production and industrial activities related to nuclear fuel cycles.

In this paper, data on the distribution of plutonium in human tissues and strontium-90 in bone in the Japanese will be reported and discussed with respect to metabolic and dosimetric models, such as ICRP's. Emphasis will be put on the distribution of fallout plutonium in skeleton, or between trabecular and cortical bones, which is needed in extrapolating and analytical data for bone to the skeletal burden, and transfer factor for strontium-90 in the diet to bone in relation to a possible influence of larger content of stable strontium in the Japanese diet on the basis of unit calcium content than that in the Western nations.

Comparison will be made on the "measured" tissue burden and the "estimated" body burden from the environmental data using prediction models. Discussion will be made on problems, if any, to be encountered in the application of some metabolic and dosimetric models to the general public primarily in the authors' country.