

No symptoms from internal radium have been recognized at levels lower than those associated with radium-induced malignancy. Radium levels 1,000 times the natural ^{226}Ra levels found in all individuals apparently do little or no recognizable damage. These statements may suggest that a threshold exists for radium-induced malignancies; at least, they recognize that the available data demonstrate a steep dose response, with the risk dropping very rapidly for lower radium doses.

These and other unexpected conclusions have come from Argonne's study of radium in humans. The Argonne study is the largest ever undertaken of the effects on humans of an internally deposited radioelement, in which the insult has been quantitated by actual measurements of the retained radioisotope. The study has now been terminated, even though more than 1,000 subjects with measured radium burdens are still alive. The original plan was to follow all measured cases until death, so that a large body of radiation experience would be obtained and preserved for future study. However, the data accumulated to date will apparently constitute the total available human radium experience. This document is written as a brief summary of current knowledge accumulated in this incomplete study.