

HIROSHIMA STUDY
ERRORS INVOLVED IN USING THE HIROSHIMA SURVIVORS
TO PREDICT RISKS FOR LOW-LEVEL INTERNAL EXPOSURE

1) EXTRAPOLATION OF HIGH-DOSE TO LOW DOSE.

Cells are killed at high dose but are just damaged at low dose so that cancer and other results of mutation are unlikely to be linear functions of dose over the wide range between the very high doses received by the exposed and low-dose exposure.

Cells at the high-dose level received hundreds of tracks, whereas at the low dose level they receive only one track

(2) EXTRAPOLATION FROM EXTERNAL TO INTERNAL

External radiation gives average homogenous dose to all the cells and can be treated by averaging techniques. With internal radiation there may be very high doses in the vicinity of the internal isotopes due to biochemical concentration effects or due to short range radiation types.

(3) OTHER EXTRAPOLATIONS and FAULTS

Control group was exposed to internal radiation.

Extrapolation of Acute to Chronic irradiation.

Extrapolation of Japanese population to European.

Extrapolation of War survivors to peacetime population.