

TISSUE DISTRIBUTION OF RADON DAUGHTER PRODUCTS

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It has been observed that lifespan shortening produced by inhalation of radon (essentially free of daughter products) is considerably less than that produced by equivalent radiation doses from injected  $Po^{210}$  (RaF). In the former case, alpha doses are received not only from radon itself, but from  $Po^{218}$  (RaA) and  $Po^{214}$  (RaC').

A possible cause of this difference might be due to differences in the kinetics of dose distribution in the two cases. Experiments are in progress in which the tissue distribution of radon daughter products is determined as a function of exposure time and post-exposure time. Preliminary data show that kidney, liver and lung evidence a large ratio of decay products to radon. The accumulation of these daughter products in a tissue appears to be related directly to the blood minute volume of the tissue.

Distribution alone does not appear to offer a clear-cut explanation for the difference in effectiveness since  $Po^{210}$  also accumulates in the kidney.

Experiments will continue until all tissues have been studied. These data will then be compared with similar data from  $Po^{210}$  experiments.

Radon  $\mu = 60 \text{ m}^3/\text{hr}$   
 3 cc per liter air inhaled  
 Ratio

Kidney	3	17
Liver	3	3
Muscle	15	3
Lung	14	
Spleen	7	

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