

## **Experimental Determination of the Absorption Rate of Unattached Radon Progeny from Respiratory Tract to Blood**

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An exposure methodology was developed for the determination of the absorption rate of unattached radon progeny deposited in the human respiratory tract to blood. Twenty-one volunteers were exposed in a radon chamber during well-controlled aerosol and radon progeny conditions, with predominantly unattached radon daughters. Special efforts were made to restrict the dose to the volunteers to an absolute maximum of 0.08 mSv. Measurements of radon gas and radon progeny in blood samples of these volunteers indicated absorption half times of 20 min to 60 min. Former determinations, mainly performed with much larger aerosol particles of diameters between 100 nm and 1000 nm, implied absorption half times around 10 h. This indicates that the absorption of radon decay products from ciliated airways into blood is dependent upon particle size and particle composition.

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