A Revised Model for the Deposition and Clearance of Inhaled Particles in Human Extra-Thoracic Airways

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The International Commission on Radiological Protection (ICRP) Task Group that developed the Human Respiratory Tract Model for Radiological Protection (HRTM) identified a lack of published information on aspects of the clearance of inhaled particles deposited in the human nasal passage. Using the results of a recent human volunteer study on the clearance of inhaled particles from the nose, a revised model of clearance from the extra-thoracic (ET) airways has been developed that addresses important issues for which simplifying assumptions had to be made in the ICRP Publication 66 HRTM ET model. This ET clearance model has been adopted by ICRP for inclusion in the revised HRTM. The derivation of the model and parameter values from the experimental data are explained.

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