

**Estimation of Actinide Skeletal Content in Human Based on Bone Samples
Collected at Autopsy**

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The USTUR has developed simple linear and multiple regression models for estimating skeletal actinide concentrations on the basis of bone samples collected at autopsies of non-whole body tissue donors. Bone samples usually collected include a clavicle, the patella (e), one or more ribs, the sternum, and a vertebral wedge cut from within the abdominal cavity. The described models were derived by regression analyses with the analytical results from those bones and the entire skeletons of eight whole body donations to the USTUR. With the model, skeletal concentrations of ^{238}Pu , $^{239+240}\text{Pu}$, and ^{241}Am can be estimated from wet or ashed actinide concentrations in one to five of the bones usually collected at autopsy and analyzed. Application of the models to a selected USTUR non-whole body donation (Case 0240) indicated that the skeletal actinide concentration estimates were reasonably precise and that there was good agreement between the results from individual bones with wet or ashed actinide concentrations. The USTUR will apply the model that is based on wet concentrations of bones to estimate skeletal concentrations of actinides in all non-whole body autopsy cases for the sake of consistency because of the large number of early cases for which ashed weights of bone were not recorded.

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