

ESTIMATION OF URANIUM BODY BURDEN AND COMMITTED DOSE  
EQUIVALENT BASED ON RESULTS OF RADIOTOXICOLOGICAL  
URINALYSIS

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The deposition and clearance of the inhaled particles are influenced by the chemical, physical and biological characteristics of uranium.

Kidney, lung and bones are the principal organs of deposition of absorbed uranium compounds, whose biological half-lives determined were approximately  $6,62 \pm 0,95$ ;  $72,6 \pm 2,2$  and  $322 \pm 6$  days respectively.

An excretion function for the urinary pathway of uranium was developed through the results of radiotoxicological urinalysis. This function is composed by three exponential terms, corresponding to the three organs of deposition.

An estimation of the committed dose equivalent was carried out by utilizing:

- 1<sup>st</sup> - half-lives and excreted fraction suggested by I. C.R.P.;
- 2<sup>st</sup> - the average excreted fraction calculated from experimental data,
- 3<sup>rd</sup> - half-life in the Kidney and the fraction,  $Y_U^{(1)}$ , excreted during the first day, experimentally determined,
- 4<sup>th</sup> - experimental half-lives in the Kidney and lung and  $Y_U^{(1)}$ , and finally,
- 5<sup>th</sup> - by utilizing all parameters of the individual obtaining therefore, through this fifth determination a more reliable value of the committed dose equivalent in function of the particular metabolism of the individual.