

Radiation Dose Estimates for Tc-99m DTPA (aerosol)

ORGAN	Estimated Radiation Dose	
	mGy/MBq	rad/mCi
Adrenals	1.9E-03	7.2E-03
Brain	6.8E-04	2.5E-03
Breasts	1.4E-03	5.2E-03
Gallbladder Wall	1.8E-03	6.7E-03
LLI Wall	5.2E-03	1.9E-02
Small Intestine	3.5E-03	1.3E-02
Stomach	2.4E-03	9.0E-03
ULI Wall	5.3E-03	2.0E-02
Heart Wall	2.5E-03	9.3E-03
Kidneys	3.0E-03	1.1E-02
Liver	1.7E-03	6.4E-03
Lungs	1.4E-02	5.3E-02
Muscle	1.5E-03	5.6E-03
Ovaries	3.3E-03	1.2E-02
Pancreas	1.9E-03	7.1E-03
Red Marrow	1.6E-03	5.9E-03
Bone Surfaces	2.4E-03	8.7E-03
Skin	7.8E-04	2.9E-03
Spleen	1.7E-03	6.2E-03
Testes	1.7E-03	6.4E-03
Thymus	1.8E-03	6.7E-03
Thyroid	1.1E-03	4.1E-03
Urinary Bladder Wall	3.2E-02	1.2E-01
Uterus	4.8E-03	1.8E-02
Effective Dose Equivalent	6.1E-03 mSv/MBq	2.2E-02 rem/mCi

Dose estimates are given per unit activity inhaled, based on an assumed 0.25 μ m AMAD aerosol. Deposition fractions and kinetics based on lung model in ICRP 30, except that activity is cleared from the pulmonary region into the bloodstream with a one hour biological half time. DTPA absorbed into the bloodstream treated as in MIRD Dose Estimate No. 12 (data gathered in human subjects), J Nucl Med 25:503-505, 1984. Urinary bladder voiding interval 4.8 hours.

Estimate calculated using phantom of Cristy & Eckerman (Report ORNL/TM-8381/V1 & V7)