

ANZSNM/ARPS Survey 1999
Reference Amax, Amin and Effective Dose for pediatric procedures

Procedure Name	Nuclide	Chemical Form	Pediatric Ref Amin (MBq)	Pediatric Ref Amax (MBq)	Adult MCA (MBq)	Adult Ref Activity (MBq)	Effective Dose (mSv) body weight scaling of Ped Amax, Amin for wts (kg):					Effective Dose (mSv) surface area scaling of Ped Ref Amax, Amin for wts (kg):					(mSv) adult	Ped. dose refce.
							3.2	9.7	19.8	33.2	56.8	3.2	9.7	19.8	33.2	56.8		
Bone marrow	Tc-99m	nanocolloidi	80	400	200	400	7.7	4.2	3.4	3.6	3.9	7.7	5.6	5.5	5.1	4.4	3.8	1*
Bone scan	Tc-99m	phosphonate	70	750	800	900	4.4	2.8	2.9	3.9	4.3	4.7	5.5	4.8	5.5	4.8	4.3	1*
Brain	Tc-99m	DTPA iv	70	800	800	800	2.1	1.8	2.0	3.1	4.0	2.4	3.5	3.3	4.4	4.6	3.9	1*
Brain	Tc-99m	HMPAO	100	740	800	800	12.0	5.1	5.6	5.9	6.6	12.0	9.8	9.2	8.4	7.5	6.9	1
Cardiac GHPS	Tc-99m	RBCs invivo	80	800	1000	1000	5.6	4.4	4.7	5.3	5.8	5.6	8.4	7.7	7.5	6.6	5.6	1*
Cardiac 1st pass	Tc-99m	RBCs invivo	60	500	1000	925	4.2	2.7	2.9	3.3	3.6	4.2	5.3	4.8	4.7	4.1	3.5	1*
Cardiac L/R shunt	Tc-99m	pertech iv	50	450	400	800	7.2	5.0	5.3	5.5	6.2	7.2	9.6	8.7	7.8	7.0	5.9	1*
Cardiac R/L shunt	Tc-99m	MAA	30	110	150	185	5.1	1.9	1.0	1.2	1.4	5.1	1.9	1.7	1.7	1.6	1.2	1*
CSF leak	Tc-99m	DTPA i.thecal	40	60	370	370	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
CSF shunt patency	Tc-99m	DTPA cistern.	30	40	40	200	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
GIT blood loss	Tc-99m	RBCs invivo	90	770	1000	1000	6.3	4.2	4.5	5.1	5.6	6.3	8.1	7.4	7.2	6.3	5.4	1*
GIT colonic transit	Ga-67	citrate oral	5	5	6	40	4.5	2.3	3.9	2.8	1.7	4.5	2.3	3.9	2.8	1.7	0.9	2
GIT gastric emptying	Tc-99m	colloid oral	20	40	40	40	4.5	2.8	1.5	1.0	1.0	4.5	2.8	1.5	1.3	1.1	1.0	1*
GIT oesoph. transit	Tc-99m	colloid oral	20	40	40	45	4.5	2.8	1.5	1.0	1.0	4.5	2.8	1.5	1.3	1.1	1.0	1*
GIT reflux "milk scan"	Tc-99m	colloid oral	20	40	40	40	4.5	2.8	1.5	1.0	1.0	4.5	2.8	1.5	1.3	1.1	1.0	1*
GIT small bowel transit	Tc-99m	colloid oral	20	40	40	40	4.5	2.8	1.5	1.0	1.0	4.5	2.8	1.5	1.3	1.1	1.0	1*
Hepatobil inc liver Tx	Tc-99m	HIDA	25	170	200	200	5.4	2.5	2.1	2.3	2.9	5.4	4.6	3.5	3.3	3.3	2.9	1*
Infection	Tc-99m	WBCs	100	400	500	740	19.8	6.2	3.8	4.1	4.5	19.8	6.7	6.3	5.9	5.2	4.4	1*
Infection	Ga-67	citrate iv	20	150	200	200	23.2	13.4	13.9	14.1	15.8	23.2	25.9	22.8	20.1	17.9	15.0	1*
Liver blood flow	Tc-99m	RBCs invivo	80	740	800	1000	5.6	4.0	4.4	4.9	5.3	5.6	7.8	7.1	6.9	6.1	5.2	1*
Liver/spleen	Tc-99m	colloid iv	20	150	185	200	1.9	1.1	1.2	1.3	1.5	1.9	2.0	1.9	1.8	1.7	1.4	1*
Lung perfusion	Tc-99m	MAA	20	150	185	200	3.4	1.3	1.4	1.6	1.9	3.4	2.6	2.3	2.3	2.2	1.7	1*

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Lymphoscint/melanoma	Tc-99m	nanocolloid	20	30	80	80	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	
Meckel's diverticulum	Tc-99m	pertech iv	40	400	400	400	5.8	4.4	4.7	4.9	5.5	5.8	8.5	7.7	7.0	6.3	5.2	1*	
Myocard perfn/rest	Tl-201	chloride	25	100	100	120	91.3	70.0	47.6	56.4	24.3	91.3	75.6	78.2	80.4	27.6	22.0	1*	
Myocard perfn/stress	Tl-201	chloride	25	100	100	100	91.3	70.0	47.6	56.4	24.3	91.3	75.6	78.2	80.4	27.6	22.0	1*	
Myocard perfn/1 d R/S	Tc-99m	mIBI rest	40	300	300	300	5.6	2.2	2.4	2.5	2.9	5.6	4.3	3.9	3.6	3.3	2.7	1*	
Myocard perfn/1 d R/S	Tc-99m	mIBI stress	110	1000	1000	1100	13.0	6.3	6.4	7.5	8.1	13.0	12.2	10.6	10.7	9.2	7.9	1*	
Parathyroid	Tc-99m	mIBI rest	80	800	700	800	11.1	5.9	6.3	6.8	7.8	11.1	11.4	10.3	9.6	8.8	7.2	1*	
Renal cystogram	Tc-99m	pertech cysto	40	40	40	40	0.3	0.1	0.1	0.1	0.0	0.3	0.1	0.1	0.1	0.0	0.0	2	
Renal scan	Tc-99m	DTPA iv	50	370	400	500	1.5	0.8	0.9	1.4	1.9	1.5	1.6	1.5	2.0	2.1	1.8	1*	
Renal scan	Tc-99m	DMSA	35	130	100	185	3.0	1.3	0.8	0.9	1.2	3.0	1.3	1.3	1.3	1.3	1.1	1*	
Renal scan	Tc-99m	MAG3	30	180	200	350	0.8	0.7	0.6	1.0	1.3	0.8	1.1	1.0	1.4	1.5	1.3	1*	
Renal transplant	Tc-99m	DTPA iv	50	300	200	400	1.5	0.8	0.8	1.2	1.5	1.5	1.3	1.2	1.6	1.7	1.5	1*	
Salivary glands	Tc-99m	pertech iv	40	100	185	300	5.8	3.2	1.7	1.2	1.4	5.8	3.2	1.9	1.7	1.6	1.3	1*	
Spleen	Tc-99m	RBCs*	40	200	300	400	2.8	1.6	1.2	1.3	1.4	2.8	2.1	1.9	1.9	1.6	1.4	2	
Testicular scan	Tc-99m	pertech iv	40	400	400	600	5.8	4.4	4.7	4.9	5.5	5.8	8.5	7.7	7.0	6.3	5.2	1*	
Thyroid	Tc-99m	pertech iv	20	120	200	200	2.9	1.6	1.4	1.5	1.7	2.9	2.6	2.3	2.1	1.9	1.6	1*	
Tumour	Tc-99m	[V]-DMSA	40	280	370	370	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	
Tumour	Tl-201	chloride	20	120	120	160	73.0	56.0	57.1	67.7	29.2	73.0	90.7	93.8	96.5	33.1	26.4	1*	
Tumour	Ga-67	citrate iv	30	300	400	400	34.8	26.9	27.7	28.2	31.6	34.8	51.8	45.5	40.2	35.9	30.0	1*	
Tumour	I-131	mIBG 131	20	40	37	37	36.8	14.1	8.0	5.1	6.4	36.8	14.1	8.0	6.8	7.2	5.6	2	
Tumour	I-123	mIBG 123	70	250	200	370	10.3	4.8	2.6	3.1	3.4	10.3	4.8	4.3	4.4	3.9	3.3	1*	
Tumour	Tc-99m	mIBI rest	100	720	800	800	13.9	5.3	5.6	6.1	7.0	13.9	10.3	9.3	8.7	7.9	6.5	1*	
Somatostat. Tumour**	In-111	Octreotide	20	200	200	200	15.8	7.8	9.0	9.4	11.5	15.8	15.1	14.7	13.4	13.1	10.8	1*	
	F-18	FDG	50	200	200	200	11.5	4.8	2.8	3.4	4.1	11.5	5.1	4.6	4.8	4.6	3.8	1*	
* heat damaged red cells							**not in survey of pediatric departments. Included here for reference.					#N/A Effective Dose not available							
References:	1 ICRP Publication 80: Addendum to Publication 53 - Radiation dose to patients from radiopharmaceuticals																		
	2 Stabin M.G. Radiation Internal Dose Information Centre, Oak Ridge Institute for Science and Education. Personal communication, 1997																		
	1* ICRP Publication 80 plus value for newborn from Stabin M. G..																		