ANZSNM / ARPS Reference Activities for Nuclear Medicine

Procedure Name	Nuclide	Chemical Form	Route of Administration	Number of Responses	Most Common Activity (MCA) (MBq)	Reference Activity (MBq)	Effective Dose for MCA (mSv)		Effective Dose for Ref Act. (mSv)		Reference for Effective Dose
							Males	Females	Males	Females	
Arterial infusion	Tc-99m	MAA	i.arterial	11	100	180	0.9	1.2	1.7	2.2	1
Bone marrow	Tc-99m	colloid	iv	28	200	400	1.9	2.4	3.9	4.9	1*
Bone scan	Tc-99m	MDP or HDP	iv	96	800	900	4.6	5.7	5.1	6.5	1
Brain	Tc-99m	DTPA	iv	19	800	800	3.9	5.3	3.9	5.3	1
Brain	Tc-99m	HMPAO	iv	71	800	800	7.4	8.8	7.4	8.8	1
Cardiac GHPS	Tc-99m	RBCs	iv	89	1000	1000	7.0	9.0	7.0	9.0	1
Cardiac first pass	Tc-99m	RBCs	iv	47	1000	925	7.0	9.0	6.5	8.3	1
Cardiac L/R shunt	Tc-99m	Pertechnetate	iv bolus	43	400	800	5.2	6.4	10.4	12.8	1
Cardiac R/L shunt	Tc-99m	MAA	iv	28	150	185	1.7	2.1	2.0	2.6	1
CSF leak	Tc-99m	DTPA	intrathecal	34	370	370	1.9	2.4	1.9	2.4	2
CSF leak	In-111	DTPA	intrathecal	18	15	40	1.0	1.2	2.6	3.3	2
CSF shunt patency	Tc-99m	DTPA	cisternal	34	40	200	0.15	0.18	0.7	0.9	1*
GIT blood loss	Tc-99m	RBCs	iv	81	1000	1000	7.0	9.0	7.0	9.0	1
GIT colonic transit	Ga-67	citrate	oral	63	6	40	1.1	1.4	7.4	9.3	3
GIT gastric emptying	Tc-99m	colloid	oral	80	40	40	1.0	1.0	1.0	1.0	1
GIT gastric emptying	Ga-67	citrate	oral	18	8	11	1.5	1.9	2.0	2.6	3
GIT oesoph. Transit	Tc-99m	colloid	oral	65	40	45	0.8	0.8	0.9	0.9	1
GIT oesoph reflux "milk scan"	Tc-99m	colloid	oral	42	40	40	0.8	0.8	0.8	0.8	1
GIT small bowel transit	Tc-99m	colloid	oral	20	40	40	0.8	0.8	0.8	0.8	1
Hepatobiliary	Tc-99m	HIDA	iv	92	200	200	3.4	4.1	3.4	4.1	1
Infection	Tc-99m	WBC-colloid	iv	69	500	740	5.5	6.5	8.1	9.7	1
Infection	Ga-67	citrate	iv	86	200	200	20.0	24.0	20.0	24.0	1
Le Veen shunt	Tc-99m	colloid	intra peritoneal	28	40	185	0.3	0.4	1.3	1.6	4
Liver blood flow	Tc-99m	RBCs	iv	81	800	1000	5.6	7.2	7.0	9.0	1
Liver/spleen	Tc-99m	colloid	iv	89	185	200	1.7	2.2	1.9	2.4	1
Lung perfusion	Tc-99m	MAA	iv	92	185	200	2.0	2.6	2.2	2.8	1
Lung ventilation	Tc-99m	Technegas	inhaled	40	2 k counts/s	2 k counts/s	0.6	0.8	0.6	0.8	1*
Lymphoscintigraphy - melanoma	Tc-99m	nanocolloid	intradermal	30	80	80					

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Lymphoscintigraphy - breast Ca	Tc-99m	nanocolloid	perilesional	15	40	80					
Meckel's diverticulum	Tc-99m	pertechnetate	iv	88	400	400	5.2	6.4	5.2	6.4	1
Myocardial hot spot	Tc-99m	PYP	iv	50	800	800	4.6	5.8	4.6	5.8	1
Myocardial perfusion - rest	Tl-201	chloride	iv	44	100	120	22.0	13.2	26.4	15.8	1
Myocardial perfusion - stress	Tl-201	chloride	iv	58	100	100	22.0	13.2	22.0	13.2	1
Myocardial perfusion - reinjection	Tl-201	chloride	iv	56	40	40	8.8	5.3	8.8	5.3	1
Myocardial perfusion - 2 day stress/rest (stress)	Tc-99m	mibi	iv	22	750	750	5.9	7.2	5.9	7.2	1
Myocardial perfusion - 2 day stress/rest (rest)	Tc-99m	mibi	iv	22	700	750	6.3	7.7	6.8	8.2	1
Myocardial perfusion - 1 day stress/rest (stress)	Tc-99m	mibi	iv	14	400	400	3.2	3.9	3.2	3.9	1
Myocardial perfusion - 1 day stress/rest (rest)	Tc-99m	mibi	iv	14	850	1000	7.7	9.3	9.0	11.0	1
Myocardial perfusion - 1 day rest/stress (rest)	Tc-99m	mibi	iv	29	300	400	2.7	3.3	3.6	4.4	1
Myocardial perfusion - 1 day rest/stress (stress)	Tc-99m	mibi	iv	29	1000	1100	7.9	9.6	8.7	10.6	1
Myocardial perfusion - 1 day rest/stress (rest)	Tl-201	chloride	iv	10	120	120	26.4	15.8	26.4	15.8	1
Myocardial perfusion - 1 day rest/stress (stress)	Tc-99m	mibi	iv	10	1000	1000	7.9	9.6	7.9	9.6	1
Parathyroid	Tc-99m	mibi	iv	70	700	800	6.3	7.7	7.2	8.8	1
Parathyroid	Tl-201	chloride	iv	30	80	100	17.6	10.6	22.0	13.2	1
Renal cystogram	Tc-99m	pertechnetate	bladder	45	40	140	0.02	0.02	0.06	0.08	5
Renal scan	Tc-99m	DTPA	iv	85	400	500	2.0	2.7	2.5	3.3	1
Renal scan	Tc-99m	DMSA	iv	83	100	185	0.9	1.0	1.6	1.9	1
Renal scan	Tc-99m	MAG3	iv	52	200	350	1.4	2.0	2.5	3.4	1
Renal transplant	Tc-99m	DTPA	iv	37	200	400	1.0	1.3	2.0	2.7	1
Salivary glands	Tc-99m	pertechnetate	iv	42	185	300	2.4	3.0	3.9	4.8	1
Somatostatin receptors	In-111	Octreotide	iv	21	200	200	10.8	13.5	10.8	13.5	1*
Spleen	Tc-99m	RBCs-damaged	iv	31	300	400	5.7	6.8	5.7	6.8	1
Testicular scan	Tc-99m	pertechnetate	iv	51	400	600	5.2	6.4	7.8	9.6	1
Thyroid	Tc-99m	pertechnetate	iv	94	200	200	2.6	3.2	2.6	3.2	1
Thyroid	Tl-201	chloride	iv	19	80	100	17.6	10.6	22.0	13.2	1
Thyroid - WB scan for Ca	I-131	iodide	oral	44	200	200	12.2	14.9	12.2	14.9	1

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							Males	Females	Males	Females	
Tumour	Tc-99m	[V]-DMSA	iv	12	370	370	2.1	2.7	2.1	2.7	6
Tumour	Tl-201	chloride	iv	44	120	160	26.4	15.8	35.2	21.1	1
Tumour	Ga-67	citrate	iv	79	400	400	40.0	48.0	40.0	48.0	1
Tumour	I-131	MIBG	iv infusion	27	37	37	5.2	6.8	5.2	6.8	1
Tumour	I-123	MIBG	iv infusion	15	200	370	2.6	3.5	4.8	6.4	1
Tumour	Tc-99m	mibi	iv	25	800	800	7.2	8.8	7.2	8.8	1
Venogram	Tc-99m	pertechnetate	iv	20	800	800	10.4	12.8	10.4	12.8	1
GFR	Tc-99m	DTPA	iv	16	60	110	0.3	0.4	0.5	0.7	1
GFR	Cr-51	EDTA	iv	11	3	8	0.006	0.008	0.017	0.021	1*
Breath test	C-14	urea	oral	15	0.185	0.37	0.015	0.019	0.030	0.037	1*
Red cell volume	Cr-51	RBCs	iv	11	2	4	0.3	0.4	0.7	0.9	1*
Red cell survival	Cr-51	RBCs	iv	11	4	6	0.7	0.9	1.0	1.3	1*

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