EANM
European Association of Nuclear Medicine

Dosage Card (Version 1.5.2008)

Multiple of Baseline Activity

Weight kg	Class A	Class B	Class C	Weight kg	Class A	Class B	Class C
3	1	1	1	32	3.77	7.29	14.00
4	1.12	1.14	1.33	34	3.88	7.72	15.00
6	1.47	1.71	2.00	36	4.00	8.00	16.00
8	1.71	2.14	3.00	38	4.18	8.43	17.00
10	1.94	2.71	3.67	40	4.29	8.86	18.00
12	2.18	3.14	4.67	42	4.41	9.14	19.00
14	2.35	3.57	5.67	44	4.53	9.57	20.00
16	2.53	4.00	6.33	46	4.65	10.00	21.00
18	2.71	4.43	7.33	48	4.77	10.29	22.00
20	2.88	4.86	8.33	50	4.88	10.71	23.00
22	3.06	5.29	9.33	52-54	5.00	11.29	24.67
24	3.18	5.71	10.00	56-58	5.24	12.00	26.67
26	3.35	6.14	11.00	60-62	5.47	12.71	28.67
28	3.47	6.43	12.00	64-66	5.65	13.43	31.00
30	3.65	6.86	13.00	68	5.77	14.00	32.33

$$A[MBq]_{\text{Administered}} = BaselineActivity \times Multiple$$

a) For a calculation of the administered activity, the *baseline* activity value has to be multiplied by the multiples given above for the recommended radiopharmaceutical class (see reverse).
b) If the resulting activity is smaller than the minimum recommended activity, the minimum activity should be administered.
c) The national diagnostic reference levels should not be exceeded!

Examples:

a) ^{18}F FDG (WB 3D), 50 kg:
activity to be administered [MBq] = 14.0 x10.71 [MBq]
≈ 150 MBq

b) ^{123}ImIBG, 3 kg:
activity to be administered [MBq] = 28.0 x1 [MBq] = 28 MBq
< 80 MBq (Minimum Recommended Activity)
=> activity to be administered: 80 MBq

c) ^{99m}Tc HMPAO (Brain), 58 kg:
activity to be administered [MBq] = 51.8 x12 [MBq]
≈ 621 MBq
This would e.g. exceed the German diagnostic reference level of 550 MBq
=> activity to be administered in Germany: 550 MBq

This card is based upon the publication by Jacobs F, Thierens H, Piepsz A, Bacher K, Van de Wiele C, Ham H, Dierckx RA. Optimized tracer-dependent dosage cards to obtain weight-independent effective doses. Eur J Nucl Med Mol Imaging. 2005 May; 32(5):581-8.

This card summarizes the views of the Paediatric and Dosimetry Committees of the EANM and reflects recommendations for which the EANM cannot be held responsible.
The dosage recommendations should be taken in context of „good practice" of nuclear medicine and do not substitute for national and international legal or regulatory provisions.

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Recommended Amounts in MBq

Radiopharmaceutical	Class	Baseline Activity (for calculation purposes only) MBq	Minimum Recommended Activity[1] MBq
^{123}I (Thyroid)	C	*0.6*	3
^{123}I Amphetamine (Brain)	B	*13.0*	18
^{123}I HIPPURAN (Abnormal renal function)	B	*5.3*	10
^{123}I HIPPURAN (Normal renal function)	A	*12.8*	10
^{123}I mIBG	B	*28.0*	80
^{131}I mIBG	B	*5.6*	35
^{18}F FDG (2D)[4]	B	*25.9*	26
^{18}F FDG (3D), Recommended in children[4]	B	*14.0*	14
^{18}F Fluorine (2D)	B	*25.9*	26
^{18}F Fluorine (3D), Recommended in children	B	*14.0*	14
^{67}Ga Citrate	B	*5.6*	10
^{99m}Tc ALBUMIN (Cardiac)	B	*56.0*	80
^{99m}Tc COLLOID (Gastric Reflux)	B	*2.8*	10
^{99m}Tc COLLOID (Liver/Spleen)	B	*5.6*	15
^{99m}Tc COLLOID (Marrow)	B	*21.0*	20
^{99m}Tc DMSA	A	*17.0*	15
^{99m}Tc DTPA (Abnormal renal function)	B	*14.0*	20
^{99m}Tc DTPA (Normal renal function)	A	*34.0*	20
^{99m}Tc ECD (Brain perfusion)	B	*32.0*	110
^{99m}Tc HMPAO (Brain)	B	*51.8*	100
^{99m}Tc HMPAO (WBC)	B	*35.0*	40
^{99m}Tc IDA (Biliary)	B	*10.5*	20
^{99m}Tc MAA / Microspheres	B	*5.6*	10
^{99m}Tc MAG3	A	*11.9*	15
^{99m}Tc MDP	B	*35.0*	40
^{99m}Tc Pertechnetate (Cystography)	B	*1.4*	20
^{99m}Tc Pertechnetate (Ectopic Gastric Mucosa)	B	*10.5*	20
^{99m}Tc Pertechnetate (Cardiac First Pass)	B	*35.0*	80
^{99m}Tc Pertechnetate (Thyroid)	B	*5.6*	10
^{99m}Tc RBC (Blood Pool)	B	*56.0*	80
^{99m}Tc SestaMIBI/Tetrofosmin (Cancer seeking agent)	B	*63.0*	80
^{99m}Tc SestaMIBI/Tetrofosmin[2] (Cardiac rest scan 2-day protocol min)	B	*42.0*	80
^{99m}Tc SestaMIBI/Tetrofosmin[2] (Cardiac rest scan 2-day protocol max)	B	*63.0*	80
^{99m}Tc SestaMIBI/Tetrofosmin[2] (Cardiac stress scan 2-day protocol min)	B	*42.0*	80
^{99m}Tc SestaMIBI/Tetrofosmin[2] (Cardiac stress scan 2-day protocol max)	B	*63.0*	80
^{99m}Tc SestaMIBI/Tetrofosmin[2] (Cardiac rest scan 1-day protocol)	B	*28.0*	80
^{99m}Tc SestaMIBI/Tetrofosmin[2] (Cardiac stress scan 1-day protocol)	B	*84.0*	80
^{99m}Tc Spleen (Denatured RBC)	B	*2.8*	20
^{99} Tc TECHNEGAS (Lung ventilation)[3]	B	*70.0*	100

[1] The minimum recommended activities are calculated for commonly used gamma cameras or positron emission tomographs. Lower activities could be administered when using systems with higher counting efficiency.

[2] The minimum and maximum values correspond to the recommended administered activities in the EANM/ESC procedural guidelines (Hesse B, Tagil K, Cuocolo A, et al). EANM/ESC procedural guidelines for myocardial perfusion imaging in nuclear Cardiology. Eur J Nucl Med Mol Imaging. 2005 Jul;32(7):855-97.

[3] This is the activity load needed to prepare the Technegas device. The amount of inhaled activity will be lower.

[4] For brain imaging using FDG the maximum injected activity recommended by the EANM is within the range of 300-600 MBq (typically 370 MBq) for 2D and 125-250 MBq (typically 150 MBq) for 3D. See guideline "Brain Imaging using [18F]FDG" on www.eanm.org (section "Publications --> Guidelines").