



Go with the Guidelines!

Follow the new North American Guidelines for Pediatric Nuclear Medicine for high quality images at low radiation dose.

2014 UPDATE OF THE NORTH AMERICAN CONSENSUS GUIDELINES FOR PEDIATRIC ADMINISTERED RADIOPHARMACEUTICAL ACTIVITIES¹

Please also see the notes at the end of this guideline (*)

Radiopharmaceutical		Administered Activity/kg	Minimum Administered Activity	Maximum Administered Activity
¹²³ I-MIBG	[A]	5.2 MBq/kg (0.14 mCi/kg)	37 MBq (1.0 mCi)	370 MBq (10.0 mCi)
^{99m} Tc-MDP	[A]	9.3 MBq/kg (0.25 mCi/kg)	37 MBq (1.0 mCi)	
¹⁸ F-FDG	[A, B]	Body, 3.7-5.2 MBq/kg (0.10-0.14 mCi/kg)	26 MBq (0.7 mCi)	
		Brain, 3.7 MBq/kg (0.10 mCi/kg)	14 MBq (0.37 mCi)	
^{99m} Tc-DMSA	[A]	1.85 MBq/kg (0.05 mCi/kg)	18.5 MBq (0.5 mCi)	100 MBq (2.7 mCi)
^{99m} Tc-MAG3	[A, C]	Without flow study, 3.7 MBq/kg (0.10 mCi/kg)	37 MBq (1.0 mCi)	148 MBq (4.0 mCi)
	[A]	With flow study, 5.55 MBq/kg (0.15 mCi/kg)		
^{99m} Tc-IDA	[A, D]	1.85 MBq/kg (0.05 mCi/kg)	18.5 MBq (0.5 mCi)	
^{99m} Tc-MAA	[A]	If ^{99m} Tc used for ventilation, 2.59 MBq/kg (0.07 mCi/kg)		
	[A]	No ^{99m} Tc ventilation study, 1.11 MBq/kg (0.03 mCi/kg)	14.8 MBq (0.4 mCi)	
^{99m} Tc-pertechnetate (Meckel diverticulum imaging)	[A]	1.85 MBq/kg (0.05 mCi/kg)	9.25 MBq (0.25 mCi)	
¹⁸ F-sodium fluoride	[A]	2.22 MBq/kg (0.06 mCi/kg)	14 MBq (0.38 mCi)	
^{99m} Tc (for cystography)	[E]	No weight-based dose		No more than 37 MBq (1.0 mCi) for each bladder filling cycle
^{99m} Tc-sulfur colloid (for oral liquid gastric emptying)	[F]	No weight-based dose	9.25 MBq (0.25 mCi)	37 MBq (1.0 mCi)
^{99m} Tc-sulfur colloid (for solid gastric emptying)	[G]	No weight-based dose	9.25 MBq (0.25 mCi)	18.5 MBq (0.5 mCi)

(*) This information is intended as a guideline only. Local practice may vary depending on patient population, choice of collimator, and the specific requirements of clinical protocols. Administered activity may be adjusted when appropriate by order of the nuclear medicine practitioner.

For patients who weigh more than 70 kg, it is recommended that the maximum administered activity not exceed the product of the patient's weight (kg) and the recommended weight-based administered activity. Some practitioners may choose to set a fixed maximum administered activity equal to 70 times the recommended weight-based administered activity, for example, approximately 10 mCi (370 MBq) for ¹⁸F- body imaging. The administered activities assume use of a low energy high-resolution collimator for ^{99m}Tc- radiopharmaceuticals and a medium energy collimator for ¹²³I-MIBG.

Individual practitioners may use lower administered activities if their equipment or software permits them to do so. Higher administered activities may be required in selected patients. No recommended dose is given for ⁶⁷Ga-citrate. Intravenous ⁶⁷Ga-citrate should be used very infrequently and only in low doses.

[A] The EANM Dosage Card 2014 version² administered activity may also be used

[B] The low end of the dose range should be considered for smaller patients. Administered activity may take into account patient mass and time available on the PET scanner. The EANM Dosage Card 2014 version² administered activity may also be used

[C] The administered activities assume that image data are reframed at 1 min/image. The administered activity may be reduced if image data are reframed at a longer time per image

[D] A higher administered activity of 1 mCi may be considered for neonatal jaundice

[E] ^{99m}Tc-sulfur colloid, ^{99m}Tc-pertechnetate, ^{99m}Tc-DTPA or possibly other ^{99m}Tc radiopharmaceuticals may be used. There is a wide variety of acceptable administration and imaging techniques for ^{99m}Tc cystography, many of which will work well with lower administered activities. An example of appropriate lower administered activities is found in the 2014 revision of the EANM Paediatric Dose Card²

[F] The administered activity will depend on the age of the child, the volume to be fed to the child and the time per frame used for imaging

[G] ^{99m}Tc-sulfur colloid is usually used to label egg

¹Gelfand MJ, Parisi MT, Treves ST. Pediatric Radiopharmaceutical Administered Doses: 2010 North American Consensus Guidelines. J Nucl Med 2011; 52(2):318-322.

²Lassmann M, Treves, ST, et al. Pediatric Radiopharmaceutical Administration: Harmonization of the 2007 EANM Paediatric Dosage Card (Version 1.5.2008) and the 2010 North America Consensus guideline. Eur J Nucl Med Mol Imaging; Epub Mar 6 2014.

