




Go with the Guidelines!

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

North American Consensus Guidelines for Administered Radiopharmaceutical Activities in Children and Adolescents*

Radiopharmaceutical	Recommended administered activity (based on weight only)	Minimum administered activity	Maximum administered activity	Comments
¹²³ I-MIBG	5.2 MBq/kg (0.14 mCi/kg)	37 MBq (1.0 mCi)	370 MBq (10.0 mCi)	EANM Paediatric Dose Card (2007 version (13)) may also be used in patients weighing more than 10 kg.
^{99m} Tc-MDP	9.3 MBq/kg (0.25 mCi/kg)	37 MBq (1.0 mCi)		EANM Paediatric Dose Card (2007 version (13)) may also be used.
¹⁸ F-FDG	Body, 3.7–5.2 MBq/kg (0.10–0.14 mCi/kg) Brain, 3.7 MBq/kg (0.10 mCi/kg)	37 MBq (1.0 mCi)		Low end of dose range should be considered for smaller patients. Administered activity may take into account patient mass and time available on PET scanner. EANM Paediatric Dose Card (2007 version (13)) may also be used.
^{99m} Tc-DMSA	1.85 MBq/kg (0.05 mCi/kg)	18.5 MBq (0.5 mCi)		
^{99m} Tc-MAG3	Without flow study, 3.7 MBq/kg (0.10 mCi/kg) With flow study, 5.55 MBq/kg (0.15 mCi/kg)	37 MBq (1.0 mCi)	148 MBq (4 mCi)	Administered activities at left assume that image data are reframed at 1 min/image. Administered activity may be reduced if image data are reframed at longer time per image. EANM Paediatric Dose Card (2007 version(13)) may also be used. EANM Paediatric Dose Card (2007 version(13)) may also be used.
^{99m} Tc-iminodiacetic acid derivatives (mebrofenin, disofenin)	1.85 MBq/kg (0.05 mCi/kg)	18.5 MBq (0.5 mCi)		Higher administered activity of 37 MBq (1 mCi) may be considered for neonatal jaundice. EANM Paediatric Dose Card (2007 version (13)) may also be used.
^{99m} Tc-MAA (^{99m} Tc-macroaggregated albumin)	If ^{99m} Tc used for ventilation, 2.59 mBq/kg (0.07 mCi/kg) No ^{99m} Tc ventilation study, 1.11 MBq/kg (0.03 mCi/kg)	14.8 MBq (0.4 mCi)		EANM Paediatric Dose Card (2007 version (13)) may also be used. EANM Paediatric Dose Card (2007 version (13)) may also be used.
^{99m} Tc-sodium pertechnetate (Meckel diverticulum imaging)	1.85 MBq/kg (0.05 mCi/kg)	9.25 MBq (0.25 mCi)		EANM Paediatric Dose Card (2007 version (13)) may also be used.
¹⁸ F-sodium fluoride	2.22 MBq/kg (0.06 mCi/kg)	18.5 MBq (0.5 mCi)		
^{99m} Tc for cystography (different forms)	No weight-based dose		No more than 37 MBq (1.0 mCi) for each bladder-filling cycle	^{99m} Tc-sulfur colloid, ^{99m} Tc-pertechnetate, ^{99m} Tc-diethylene triamine pentaacetic acid, or possibly other ^{99m} Tc radiopharmaceuticals may be used. There is wide variety of acceptable administration techniques for ^{99m} Tc, many of which will work well with lower administered activities.
^{99m} Tc-sulfur colloid For oral liquid gastric emptying	No weight-based dose	9.25 MBq (0.25 mCi)	37 MBq (1.0 mCi)	Administered activity will depend on age of child, volume to be fed to child, and time per frame used for imaging.
For solid gastric emptying	No weight-based dose	9.25 MBq (0.25 mCi)	18.5 MBq (0.5 mCi)	^{99m} Tc-sulfur colloid is usually used to label egg.

*This information is intended as a guideline only. Local practice may vary depending on patient population, choice of collimator, and 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 maximum administered activity not exceed product of patient's weight (kg) and recommended weightbased administered activity. Some practitioners may choose to set fixed maximum administered activity equal to 70 times 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 Tc-99m radiopharmaceuticals and a medium energy collimator for I-123-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 certain patients. No recommended dose is given for ⁶⁷Ga-citrate. Intravenous ⁶⁷Ga-citrate should be used infrequently and only in low doses.

Reprinted with permission from The Journal of Nuclear Medicine, Feb. 2011.