

MIBG

Special Instructions For pediatric SPECT-CT examinations, confirm with the radiologist whether the CT is required.

When scheduling, please ask all adult patients for a current list of medications and consult with the radiologist about whether these medications need to be stopped (and for how long).

Medications that interfere with the uptake of I-123 MIBG include some blood pressure medications, some antidepressants, and some nasal decongestants. See the Adreview prescribing information, Section 7 “Drug Interactions” at <http://md.gehealthcare.com/shared/pdfs/pi/adreview.pdf>. See the EANM procedure guideline for duration to stop these medications at [http://interactive.snm.org/docs/EANM Guideline for I131 I123 MIBG Scintigraphy.pdf](http://interactive.snm.org/docs/EANM_Guideline_for_I131_I123_MIBG_Scintigraphy.pdf) (copied at the bottom of the protocol).

To be performed at UNMH only.

Radiopharmaceutical: I-123 MIBG

Dose (Adult/Pediatric): Refer to Nuclear Medicine Dose Chart

Route of Administration: Intravenous for radiopharmaceutical
Oral for SSKI

Patient Preparation: Pre-treat with 1-2 drops of SSKI at least one hour prior to radiopharmaceutical administration.

Many medications interfere with the uptake of I-123 MIBG, particularly some blood pressure medications, antidepressants, and nasal decongestants.

Please ask all adult patients for a current list of medications; medication list and time to hold medications should be **confirmed with radiologist before ordering and before administering the dose**

Equipment Setup: Collimator (All): Medium energy

Computer setup:

Anterior/posterior whole-body sweep (teenagers/adults):

Static acquisition, 256 x 1024 matrix

1.00 ZOOM

Scan speed 5 cm/min

Spot views (for pediatric patients, generally ≤ 12 years old; as needed for additional views in adults):

Static acquisition, 128 x 128 matrix

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1.00 ZOOM or **more** for small pediatric patients
5 min/image

SPECT or SPECT-CT images:

High resolution collimator, 128 x 128 matrix

Zoom = 1.0

180 degrees, CW (clockwise)

60 steps, 25 sec/step

Noncircular, continuous

Patient Positioning: Feet first, supine

Procedure: Imaging time post-injection: 24 hours

Acquire planar anterior/posterior whole-body images (pediatric patients) or **sweep top of skull through feet** (adult patients)

Check with the radiologist for any additional spot views as needed.

Follow with SPECT or SPECT-CT (confirm region to image with radiologist)

Processing: Dual-intensity static display of whole-body images

Static display of any additional spot views

SPECT-CT: Follow automatic processing workflow

If SPECT-CT, process CT in soft tissue (B30) and bone (B60) algorithm; should have attenuation corrected and non attenuation corrected SPECT tomo files

If SPECT only, should have reconstructed tomographic file and axial/coronal/sagittal lightboxes/savescreens

Items Required For Complete Study:

- Processing and transfer of all images to PACS and/or Leonardo as appropriate
 - Raw data of all planar images (to PACS)
 - Planar: Lightbox/savescreen of all planar images (to PACS), including dual-intensity display of anterior/posterior whole-body images and display of any additional spot views
 - SPECT: Reconstructed Tomo (to Leonardo and PACS), Lightboxes/savescreens of axial/coronal/sagittal SPECT (to PACS). Rename SPECT to include region imaged (e.g., Reconstructed Tomo ABD/PELVIS)
 - SPECT-CT: Attenuation Corrected and Non Attenuation Corrected Tomo Reconstructions, CT (B30 and B60) to Leonardo and PACS. Rename SPECT and CT files to include region imaged (e.g., Reconstructed Tomo- AC - ABD/PELVIS)
- Complete the examination in RIS

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Table 2: Drug interactions with mIBG

(adapted from the Radiopharmacy Protocol of the Nuclear Medicine Department, Queen Elizabeth Hospital, Birmingham, UK)

Drug Group	Approved name	Recommended withdrawal time	Mechanism of interaction *
CARDIOVASCULAR AND SYMPATHOMIMETIC DRUGS			
Anti-arrhythmics for ventricular arrhythmias	Amiodarone	Not practical to withdraw	1,3
Combined β_1/β_2 blocker	Labetalol	72 hours	1,3
Adrenergic neurone blockers	Brethilium	48 hours	2,3
	Guanethidine	48 hours	2,3
	Reserpine	48 hours	2,3
α_1 -blockers	Phenoxybenzamine (IV doses only)	15 days	5
Calcium channel blockers	Amlodipine	48 hours	4,5
	Diltiazem	24 hours	4,5
	Felodipine	48 hours	4,5
	Isradipine	48 hours	4,5
	Lacidipine	48 hours	4,5
	Lercanidipine	48 hours	4,5
	Nicardipine	48 hours	4,5
	Nifedipine	24 hours	4,5
	Nimodipine	24 hours	4,5
	Nisoldipine	48 hours	4,5
Verapamil	48 hours	4,5	
Inotropic sympatho-mimetics	Dobutamine	24 hours	3
	Dopamine	24 hours	3
	Dopexamine	24 hours	3
Vasoconstrictor sympathomimetics	Ephedrine	24 hours	1
	Metaraminol	24 hours	3
	Norepinephrine	24 hours	3
	Phenylephrine	24 hours	3
β_2 stimulants (sympathomimetics)	Salbutamol	24 hours	3
	Terbutaline	24 hours	3
	Eformoterol	24 hours	3
	Bambuterol	24 hours	3
	Fenoterol	24 hours	3
	Salmeterol	24 hours	3

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Other adrenergic stimulants	Orciprenaline	24 hours	3
Systemic and local nasal decongestants, compound cough and cold preparations	Pseudoephedrine	48 hours	3
	Phenylephrine	48 hours	3
	Ephedrine	24 hours	1
	Xylometazoline	24 hours	3
	Oxymetazoline	24 hours	3
Sympathomimetics for Glaucoma	Brimonidine	48 hours	3
	Dipivefrine	48 hours	3
NEUROLOGICAL DRUGS			
Antipsychotics (neuroleptics)	Chlorpromazine	24 hours	1
	Benperidol	48 hours	1
	Flupentixol	48 hours, or 1 month for depot	1
	Fluphenazine	24 hours, or 1 month for depot	1
	Haloperidol	48 or 1 month for depot	1
	Levomepromazine	72 hours	1
	Pericyazine	48 hours	1
	Perphenazine	24 hours	1
	Pimozide	72 hours	1
	Pipotiazine	1 month for depot	1
	Prochlorperazine	24 hours	1
	Promazine	24 hours	1
	Sulpiride	48 hours	1
	Thioridazine	24 hours	1
	Trifluoperazine	48 hours	1
	Zuclophenthixol	48 hours, or 1 month for depot	1
	Amisulpride	72 hours	1
	Clozapine	7 days	1
	Olanzapine	7 – 10 days	1
	Quetiapine	48 hours	1
Risperidone	5 days or 1 month for depot	1	
Sertindole	15 days	1	
Zotepine	5 days	1	
Sedating antihistamines	Promethazine	24 hours	1
Opioid analgesics	Tramadol	24 hours	1
Tricyclic anti-depressants	Amitriptyline	48 hours	1
	Amoxapine	48 hours	1
	Clomipramine	24 hours	1
	Dosulepin (Dothiepin)	24 hours	1
	Doxepin	24 hours	1
	Imipramine	24 hours	1
	Lofepramine	48 hours	1
	Nortriptyline	24 hours	1
Trimipramine	48 hours	1	
Tricyclic-related anti-depressants	Maprotiline	48 hours	1
	Mianserin	48 hours	1
	Trazolone	48 hours	1
	Venlafaxine	48 hours	1
	Mirtazepine	8 days	1
	Reboxetine	3 days	1
CNS Stimulants	Amphetamines eg Dexamfetamine	48 hours	3
	Atomoxetine	5 days	1
	Methylphenidate	48 hours	5
	Modafinil	72 hours	5
	Cocaine	24 hours	1
	Caffeine	24 hours	5