

**NUCLEAR MEDICINE PROCEDURES AVAILABLE AT
FRANKLIN SQUARE HOSPITAL CENTER**

PROCEDURE	RADIOTRACER	MAIN INDICATIONS
ENDOCRINE SYSTEM		
Thyroid Iodine Uptake	Sodium Iodine-131 PO	Calculation of Iodine-131 dose for radioiodine therapy of hyperthyroidism, differential diagnosis of thyrotoxicosis
Thyroid Scan	Technetium-99m pertechnetate IV	Evaluation of thyroid nodules, goiter, hyperthyroidism
Whole Body Scan	Sodium Iodine-123 PO	Detection of metastasis after treatment of papillary or follicular thyroid cancer
Parathyroid Scan	Technetium-99m Sestamibi IV	Preoperative localization of parathyroid adenomas
HEMATOPOETIC & LYMPHATIC SYSTEMS		
Lymphoscintigraphy -Breast Sentinel Lymph Node -Melanoma Sentinel Lymph Node	Technetium-99m sulfur colloid intradermally	Identification of the sentinel node in patients with breast cancer or melanoma prior to surgery
GASTROINTESTINAL SYSTEM		
Liver/Spleen Scan –colloid	Technetium-99m Sulfur colloid IV	Liver cirrhosis-severe hepatocellular dysfunction, Budd-Chiari syndrome, Accessory spleen, Splenosis
Hemangioma Scan	Technetium-99m labeled autologous red blood cells IV	Evaluate for cavernous hemangioma of the liver
Hepatic Artery Catheter Check	Technetium-99m MAA IV	Confirm proper positioning of catheter
Hepatobiliary (HIDA) scan	Technetium-99m HIDA IV	Acute cholecystitis Chronic cholecystitis and gallbladder dyskinesia (with cholecystokinin administration and measurement of gallbladder ejection fraction) Sphincter of Oddi dysfunction (post cholecystectomy syndrome) Detection of biliary leaks after cholecystectomy Common bile duct obstruction
Gastric Emptying	Technetium-99m Sulfur colloid PO mixed with solid meal	Evaluation of gastroparesis
GI Bleeding Scan	Technetium-99m labeled autologous red blood cells IV	Localization of intestinal bleeding source
Meckel's Scan	Technetium-99m pertechnetate IV	Meckel's diverticulum as a cause of GI bleeding
Peritoneal-Venous Shunt Patency Test	Technetium-99m-MAA intraperitoneally	Assessment of patency of a peritoneal-venous shunt
MUSCULOSKELETAL SYSTEM		
Whole Body Bone Scan	Technetium-99m-MDP IV	Metastatic bone disease
Three Phase Bone Scan	Technetium-99m-MDP IV	Fractures (Stress, Occult, or Compression), Spondylosis, Shin splints, Bone infarction, osteonecrosis (i.e. steroid induced, ETOH), Osteomyelitis, Joint prosthesis evaluation (loosening/infection), Sarcoid, Reflex sympathetic dystrophy, Paget's disease, Heterotopic ossification, Hypertrophic pulmonary osteoarthropathy
CARDIOVASCULAR SYSTEM		

Radionuclide Venogram Upper Extremities	Technetium-99m DTPA	Detection of deep venous thrombosis in the upper extremities
Radionuclide Venogram Lower Extremities	Technetium-99m autologous red blood cells IV	Detection of deep venous thrombosis of lower extremities and pelvis
Myocardial Perfusion Scan (rest + redistribution images)	Thallium-201 chloride IV	Myocardial viability of hibernating myocardium
Myocardial Perfusion Scan (stress first-rest optional + wall motion/LVEF)	Technetium-99m Tetrofosmin (Myoview®) IV	Myocardial ischemia, myocardial infarction, assessment of stunned myocardium
Gated Cardiac Blood Pool (MUGA scan)	Technetium-99m labeled autologous red blood cells IV	Measurement of left ventricular ejection fraction. Assessment of regional wall motion (left and right ventricles). Precise monitoring of LV function in patients receiving cardiotoxic chemotherapy or patients with cardiomyopathies.
RESPIRATORY SYSTEM		
Ventilation & Perfusion Scan	Technetium-99m-MAA IV Xenon-133 gas inhaled	Detection of pulmonary emboli, detection of right to left shunt (pulmonary or cardiac)
Quantitative Lung Scan	Technetium-99m-MAA IV Xenon-133 gas inhaled	Evaluation of differential perfusion and ventilation prior to lung resection
NERVOUS SYSTEM		
Brain Death Study	Technetium-99m HMPAO IV	Confirmation of brain death with absent cerebral blood flow
Cerebral Perfusion Scan	Technetium-99m HMPAO IV	Early detection of Alzheimer disease, HIV encephalopathy, extent of cerebrovascular disease, hypoxic or traumatic brain injury
DaTscan	I-123 Ioflupane	Differentiation between essential tremor and Parkinsonian syndromes
Cisternogram	Indium-111 DTPA intrathecal	Detection of normal pressure hydrocephalus, CSF shunt patency
GENITOURINARY SYSTEM		
Renal Scan	Technetium-99m-DTPA IV or Technetium-99m-MAG3 IV	Renal flow, differential renal function, obstructive uropathy
Captopril renal scan	Technetium-99m-MAG3 IV	Detection of renovascular disease as a cause of hypertension
DMSA Renal Scan	Technetium-99m-DMSA IV	Detection of renal scarring
Radionuclide cystogram	Technetium-99m pertechnetate transurethral	Detection of vesicoureteral reflux
Testicular Scan	Technetium-99m pertechnetate IV	Detection of testicular torsion vs. epididymitis or orchitis
OTHER PROCEDURES		
MIBG Scan	Iodine-123 MIBG IV	Localization, staging and restaging of neuroendocrine tumors including neuroblastoma, paraganglioma, and pheochromocytoma
OctreoScan (somatostatin receptor imaging)	Indium-111-octreotide IV	Neuroendocrine tumors expressing somatostatin receptors: Carcinoid, gastrinoma, paraganglioma, pheochromocytoma, insulinoma and small cell lung cancer
Labeled White Blood Cell Scan	Technetium-99m HMPAO-WBC IV/ Indium-111-WBC IV	Osteomyelitis of extremities/ Thoracic, abdominal, pelvic abscesses
Labeled White Blood Cell Scan and Bone marrow imaging	IV/ Indium-111-WBC IV Technetium-99m sulfur colloid	Osteomyelitis in instrumented or injured bone
RADIONUCLIDE THERAPY		
Iodine-131 Therapy	Sodium Iodine-131 PO	Graves' disease, toxic thyroid adenoma and toxic

(moderate dose)		nodular goiter
Iodine-131 Therapy (high dose)	Sodium Iodine-131 PO	Thyroid remnant ablation after thyroidectomy. Treatment of papillary and follicular thyroid cancer metastasis, massive goiter.
P-32 Therapy	Phosphorus-32 phosphate	Treatment of Polycythemia Vera
Samarium Therapy	Samarium-153 lexidronam IV	Palliative treatment of multifocal painful bone metastasis not well controlled with traditional analgesic therapy
Zevalin®	Yttrium-90 Ibritumonab Tiuxetan	Relapsed or refractory low grade, follicular or CD 20+ transformed (B-cell) Non-Hodgkin's lymphomas
POSITRON EMISSION TOMOGRAPHY		
PET-CT Scan	(F-18) Fluoro-D-Glucose (FDG)	Diagnosis, staging and restaging of most cancers, evaluation of dementia, evaluation for hibernating myocardium
Other less common Nuclear Medicine Procedures are available upon request		

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For more detailed information or questions, please call the Nuclear Medicine Technologists or the Nuclear Medicine Physician at **443-777-7441**